

Theoretical Analysis of the Basic Financial Education Funding Allocation Mechanism for Compensating the Costs of Higher Education Institutions

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Abstract: Based on the practical needs of higher education cost-sharing and improving the efficiency of financial fund allocation, this paper conducts a theoretical analysis of the financial education funding allocation mechanism in higher education institutions. It aims to construct a new allocation framework based on cost compensation, providing a theoretical basis for optimizing fund distribution. The research adopts methods including conceptual definition, interdisciplinary theoretical reference, and comparative analysis to systematically explain core concepts such as higher education costs and the allocation of financial education funds. It establishes a theoretical foundation from dimensions including the organizational nature of higher education institutions, product characteristics, the principle of cost-sharing, and the relationship between equity and efficiency. The research results indicate that the funding allocation mechanism centered on “per-student cost” is more rational compared to the traditional “per-student expenditure”. It demonstrates significant advantages in terms of authenticity, comprehensiveness, fairness, and policy guidance, enabling a more comprehensive reflection of resource consumption and promoting the optimization of cost management in higher education institutions. The conclusion states that promoting the shift in the financial funding allocation for higher education institutions from an “input-oriented” approach to a “cost compensation-oriented” approach is an effective path for enhancing the efficiency of financial fund usage and promoting equity and high-quality development in higher education.

Keywords: Higher Education Institutions;

Cost Compensation; Educational Funding; Allocation Mechanism

1. Introduction

This paper defines the key concept categories involved in the study, summarizes the interdisciplinary theories used in the analysis, and their economic significance, and discusses the rationality of optimizing the reform of the financial education funding allocation mechanism in higher education based on the consideration of educational cost compensation, thereby providing necessary theoretical basis for further in-depth research.

2. Definition of Key Concepts

2.1 The Cost of Higher Education and Compensation for the Cost of Higher Education

The main purpose of this project is to study the issue of the allocation mechanism of financial education funds in universities from the perspective of cost compensation, which assumes that the basic basis for the allocation of financial education funds in universities should be a specific “cost” incurred by universities. Therefore, the connotation of this “cost” category has a crucial influence on the process and results of the allocation of financial education funds in universities. Therefore, the term “cost” used in this project is an important concept that needs to be clarified first in the research.

The cost concepts involved vary in different disciplines due to the different research perspectives and objects of study. In economics, cost refers to opportunity cost, reflecting the measurable value of the alternative forgone; in accounting, cost refers to the various resource expenditures incurred by a specific cost accounting entity, including labor costs,

tangible asset costs, intangible asset costs, and other costs. Opportunity cost, as it does not involve actual resource expenditures, is not included in accounting, but should be considered as a real factor in managerial decision-making.^[1] In this research project, the term “cost” in higher education mainly refers to “educational cost” in educational finance, with some differences that can be understood from the dimensions of “space” and “time”.

2.1.1 Space: the composition scope of education costs

The concept of educational cost originated in the West in the 1960s. Schultz (1963) was the first to provide a detailed analysis of the definition of educational costs and its components. Chon (1979) classified educational costs into direct costs and indirect costs, and studied the relationship between the benefits and costs of education, education and economic growth, and the cost function of education. As research continues to deepen, the view that educational costs represent the value of resources consumed in school educational services has been widely accepted. This can be manifested as the price that relevant entities pay to purchase educational resources, or as the value sacrifice caused by the investment of resources into education. In fact, this is a broad definition of the category of school education costs, including all resources expended on education^[2].

In this project, the cost of higher education is a narrow category, which refers to the objectified resources consumed by universities to provide educational services. It is typically reflected by specific components and scope of educational costs, but does not include opportunity costs, social costs, etc. From an accounting perspective, the cost of higher education mainly includes personnel costs, service activity costs, and other expenses. However, China is currently promoting the classification reform of public institutions. Universities, as second-class public institutions, should not only strengthen their public welfare attributes but also allocate some resources through market mechanisms. Specific educational service projects conducted by universities can be priced independently, and the corresponding value of resource consumption in educational services fees should be compensated. The resulting educational costs should be deducted from the total cost of higher education. Therefore, in order to further study

the mechanism of financial allocation of educational funds in universities, the cost of higher education should only include the resources consumed related to the public educational services of universities.

2.1.2 Time: efficiency of homework for education cost

Modern accounting can be divided into two major branches: financial accounting and management accounting. Due to different management purposes, they inevitably focus on the efficiency of different cost operations. Financial accounting mainly accounts for the actual costs incurred by an organization for the purpose of inventory valuation, profit determination, and financial statement preparation. Therefore, it focuses on the “past” costs. On the other hand, management accounting serves decision-making and pricing needs by analyzing and predicting the costs that should or may occur in order to achieve certain objectives. It introduces concepts such as target costs and standard costs, thus focusing on “future” costs^[3]. Due to the possibility of unreasonable elements in the actual costs incurred by an organization, from the perspective of management accounting, this project further defines the cost of higher education as the costs incurred by a university to provide educational services for the public good^[4]. It includes two index variables: standard cost per student, which is the standard resource cost to educate one student, and standard total cost, which is the standard total resource cost to educate a certain number of students. The relationship between the two can be expressed as:

$$\text{Standard total Cost} = \text{Standard Unit Cost} \times \text{Planned Number of Students}$$

Cost compensation in universities refers to the education costs incurred by the relevant parties to provide educational services to the university. This involves the subjects, objects, and methods of compensating university costs. This is an important research topic in the theory of sharing educational costs.

2.2 Financial Education Funds in Universities

Higher education financial education funding refers to the various funds actually allocated from the government's fiscal budget for universities to provide educational services, including education operational expenses

(including personnel expenses and general expenses), educational basic infrastructure investment (such as construction of school buildings, purchase of teaching equipment, etc.)^[5]. This is essentially a concept definition method of “appropriation + expenditure”, reflecting the fiscal appropriations obtained by universities in monetary form and the corresponding expenses that should be incurred, as well as the necessary compensation by the government entity for the education costs of universities.

The financial education funds of universities should mainly be used to support universities in carrying out public welfare education services, which is the foundation for the normal operation of public welfare education activities in universities. Due to the non-recoverable nature of these funds, once they are spent, they usually cannot be recovered. Therefore, the fund movement process generally reflects a one-way characteristic, starting from obtaining funds (income) and ending with using funds (expenditure/cost) (refer to Figure 1), unlike profit-making organizations that have a continuous fund circulation process from which they can compensate for the cost of advances and earn corresponding profits.

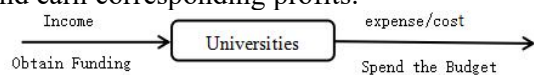


Figure 1. Movement Process of Financial Education Funding in Universities

2.3 Allocation of Financial Education Funds in Universities

The allocation of educational funds can actually be divided into four operational levels: first, determining the total amount of educational funds available for distribution, which is usually measured and reflected based on the country's GDP ratio; second, allocating the total amount of educational funds among various levels and types of education in primary, secondary, and tertiary schools; third, allocating specific educational funds to corresponding categories of schools; and fourth, schools internally dividing and using educational funds. In this project, the allocation of financial education funds in universities belongs to the third level of operation mentioned above, which refers to the distribution of financial funds for higher education among different universities to determine the available financial education funds that each university should obtain. The

allocation of financial education funds in universities involves factors such as subject, object, amount of funds, standards, and results. Among them, the subject of allocation is the government at all levels; the object is the universities under their jurisdiction; the amount of funds refers to the total amount of financial education funds available for distribution to universities; the standard is the basic basis for distributing financial education funds to universities, which can include factors such as the number of students, costs, performance, etc.; the result reflects the available financial education funds allocated to universities.

In strict terms, the allocation and allocation of funds for higher education finance cannot be completely equated, because "allocation" belongs to a category of resource allocation, which then determines the financial education funds available to universities and has important economic consequences for universities, involving relatively complex macro education finance policies; "allocation" belongs to a budget category, reflecting the way in which the various levels of government allocate financial education funds to universities based on the results of "allocation," and is a systematic micro education financial management strategy^[6].

2.4 Mechanism for the Allocation of Financial Education Funds in Colleges and Universities

The term “mechanism” originally comes from Greek, referring to the structure and operation principles of an organization. In this project, it is specifically used to reflect the internal operating mode of the allocation of financial education funds in higher education institutions, i.e., how to distribute the total amount of higher education financial funds to each university based on specific standards to meet their funding needs for providing public educational services.

Currently, “per capita funding” is a common mechanism for the financial education budget allocation in universities, which determines the available financial education funds that universities should allocate based on the per capita funding quota and the number of students enrolled. However, the indicator of “per capita funding” can be analyzed from different levels.

2.4.1 Per capita expenditure

This refers to the monetary funds that a

university has already paid or should pay for a student in providing educational services. It mainly reflects the concept of cash flow and belongs to a type of cash cost. In accounting, it is generally accounted for through the accrual basis of accounting, and non-monetary expenditure for which cash has not been spent is not reflected in this indicator.

2.4.2 Unit cost

This refers to the unit resource consumption that a university has already or should incur in providing educational services and training a student. It mainly reflects various resource consumptions using the concept of economic resource flow, including both monetary and non-monetary resource consumptions, and generally needs to be accounted for on the basis of the accrual accounting system.

2.4.3 Per capita performance

This is a measure of the performance of colleges and universities in providing educational services from the perspective of individual students. It mainly adopts a performance concept, reflecting not only the unit cost of educating students, but also the performance results brought about by it, which can show the correlation between the input and output of colleges and universities. In contrast, per capita expenditure and per capita cost mainly measure the resource input of colleges and universities to students.

For public welfare educational services activities provided by universities, their costs should be reasonably compensated by financial education funds. Moreover, due to the certain fuzziness and difficulty of objective evaluation in the performance of universities measured by output and benefits, this project adopts per capita cost as the core basis for the allocation mechanism of financial education funds in universities.

3. The Theoretical Basis of the Research

3.1 The Organizational Nature of Universities

Many economic theories study the nature of organizational entities in human society, but they are applicable for different purposes. Among them, neoclassical economics is an empirical theory about markets rather than firms, mainly focusing on explaining the way in which market price mechanisms allocate scarce resources and their effectiveness, rather than

investigating the operating rules within firms. Therefore, neoclassical economics views firms as organizational entities that operate independently based on the principle of maximizing value or profit when all contracts can be perfectly and costlessly made and fulfilled, and under the guidance of the "invisible hand" of the market, can effectively achieve scarce resource allocation.

The essence of modern enterprise contract theory posits that an enterprise, as an organizational entity, is the result of contract creation, or that an enterprise is a collection of contract relationships. In fact, most economic entities are merely a legal fiction, serving as a collection of contract relationships among individuals, including enterprises, non-profit organizations, mutual aid organizations, private clubs, government entities, and public enterprises. Following this logic, universities also possess an organizational nature as a collection of contract relationships. Here, "a collection of contract relationships among individuals" refers to all relationships that involve actual interests, including explicit and implicit, explicit and implicit, verbal and oral, long-term and short-term, complete and incomplete contracts. Through specific contract relationships, rational economic agents with different utility preferences and resource endowments are linked to specific expectations and behavioral patterns. These agents provide various resources to universities, such as tangible, financial, professional skills, and labor, according to the "rules of the game" stipulated in the contract, and receive corresponding forms (economic or non-economic), quantities, and timing of rewards from university activities.

From the perspective of the contractual relationship between the government departments and universities, universities generally play multiple roles. For example, as an organization that provides public educational services, they should accept the macro-control and supervision guidance of government departments; as partners of government departments, they need to fulfill the entrusted responsibility of educating students according to the contract, and receive reasonable cost compensation from the government's financial funds; as the contracting party in profit-making organizations, etc.

3.2 Product Attributes of Higher Education

In economics, products can be divided into public goods and private goods, which have differences in terms of providers and funding sources. The theory of public goods was first proposed by the American economist Samuelson (1954)^[7]. According to the usual definition, public goods should have two main characteristics: non-excludability and non-rivalrous consumption. Non-rivalrous consumption refers to the situation where the marginal cost of providing an additional consumer with a good is zero once the good has been produced. Therefore, the consumption of a good by one consumer does not reduce the consumption or use of that good by other consumers, and each consumer can enjoy the entire service brought by the good rather than just a part of it. Non-excludability means that once a good is provided, no one can be excluded from consuming it, or doing so would incur infinite costs. In contrast to public goods, private goods refer to goods with competitive and excludable characteristics, where only those who pay the price can use them, and if the good has been used by someone, others cannot use it simultaneously. The distinction between public goods and private goods lies not in the nature of ownership, but in the fact that the former are goods that can be consumed by a group of people simultaneously, while the latter can provide utility to only one consumer at a time. Therefore, public goods are mainly provided by the government directly or through delegation to other parties, and resources are raised or allocated through fiscal means, as it is not possible to achieve full cost recovery through market mechanisms; private goods, on the other hand, are mainly borne by the consumers themselves^[8].

In terms of product attributes, higher education is both a public good and a private good, or can be considered a quasi-public good. On the one hand, from the perspective of public goods, higher education can cultivate talents for society, accumulate human capital, promote employment and economic development, and generate external economic and social benefits shared by society^[9]. However, in terms of consumption, it cannot exclude any individual. Therefore, the cost of higher education should be reasonably compensated by the government through financial funds. On the other hand, from the perspective of private goods, when the scale of enrollment and educational resources in

universities is limited, an additional person receiving higher education will correspondingly reduce the opportunity for others to receive education, and the students cultivated by universities directly benefit and their gains in employment, income, and career development are exclusive. Therefore, as consumers receiving higher education, individuals should also share a portion of the cost of higher education.

3.3 Sharing the Cost of Higher Education

The theory of sharing the cost of higher education focuses on studying how the costs of higher education are reasonably shared among various parties in society and eventually achieved. This theory was first proposed by D.B. Johnston in 1986. He believes that the costs of higher education include basic teaching costs, research or special activity expenses, student living expenses, opportunity costs, etc. According to the principle of “who benefits, who pays”, the government, students and their families, business groups, and society should each bear the costs. This is mainly because higher education has both non-competitive and exclusive quasi-public goods attributes. In terms of the proportion or share of cost sharing, the state and society as the main beneficiaries should be the main bearers; in terms of the basis of sharing, the principle of ability structure should be followed, with cost-sharing capacity as the main criterion.

Currently, domestic and foreign research results show that the sharing of higher education costs plays a positive role in enhancing the responsibility, competitiveness, innovation, and performance of universities, providing a solid theoretical basis and empirical evidence for the inevitability of its practice. This project mainly focuses on further studying the effective allocation of financial education funds in universities under the basic premise that the proportion or share of higher education cost sharing remains unchanged. Specifically, it explores how the part of higher education costs that government needs to share should be allocated through financial education funds to achieve a fair compensation for universities.

3.4 Public Finance for Education Equity and Efficiency

Fairness and efficiency are a contradictory but interdependent organic unity, and the priority

and balance of the two have always been a topic of continuous discussion and debate in various disciplines such as economics and sociology.

In economics, fairness refers to the characteristic of the fair distribution of economic outcomes among members of society, that is, the relative equality of income distribution. It requires that the income gap among members of society should not be too large, ensuring the basic living needs of the members. Therefore, it can be inferred that in the allocation of financial education funds in universities, the principle of fairness should be implemented to ensure that the available financial education funds obtained by universities can guarantee the normal conduct of public welfare educational activities, and the differences between universities should not be too large. However, this project believes that another important manifestation of the principle of fairness should be the rationality of the financial education fund allocation mechanism in universities, that is, the basis standards for allocating financial education funds to universities must be objective and transparent.

Efficiency is also a category of economics, referring to the effective allocation and use of scarce resources. Any resource is relatively scarce, and only through effective allocation can greater benefits be obtained. The essence of educational financial efficiency is also a kind of production efficiency in economic terms, which requires obtaining the maximum educational output and benefits with the minimum financial education expenditure or education costs. Applying the efficiency principle in the allocation of financial education funds in universities means investing limited financial education funds in the most effectively used universities. This not only can play the regulatory function of the government at the macro level, but also can guide universities to continuously optimize management decision-making at the micro level and reduce the cost of running schools.

4. The Rationality of the Basic Financial Education Funding Allocation Mechanism for Compensating the Costs of Higher Education Institutions

4.1 The Relationship between the Cost of

Higher Education and the Investment in Financial Education Funds

From the perspective of accounting, the cost of higher education and the investment in financial education funding are two closely related basic categories, with significant differences between the two, but also a certain amount of quantitative conversion relationship.

In this research project, the cost of higher education is defined as various objectified resources consumed in relation to the teaching services provided by universities. For these incurred costs, it is usually accounted for using the concepts of economic resource flow and responsibility accounting in financial accounting, reflecting the economic resources outflow or reduced service capacity caused by universities providing educational services, including monetary fund expenditure, depreciation of fixed assets, amortization of intangible assets, and other non-monetary expenses. The financial education funds invested by universities are the financial appropriations that universities obtain in monetary form based on annual budgets, and they are generally accounted for using the concepts of cash flow and cash basis budget accounting, reflecting the cash inflows and outflows incurred by universities in carrying out educational activities. The monetary funds paid for university financial education funds investment are recorded as corresponding expenses in budget accounting, but in financial accounting, they need to be allocated to current education costs or recognized as assets based on their benefit periods. The value of these assets is amortized and allocated to the cost of higher education over the benefit period using certain methods^[10]. Therefore, this determines that the cost of higher education and the investment of financial education funds by universities will not be equal in a specific accounting period, as there may be quantity differences caused by adopting two different accounting recognition bases, meaning that the financial education funds paid by universities may not necessarily become education costs in the accounting period.

The relationship between the cost of higher education and the input of financial education funds is shown in Figure 2. It can be seen that the input of financial education funds is the most important source of income for universities, which will be converted into a

portion of the cost of higher education in a certain way and period. On the other hand, the cost of education associated with the public welfare education services of universities should be the basic basis for the allocation of financial education funds.

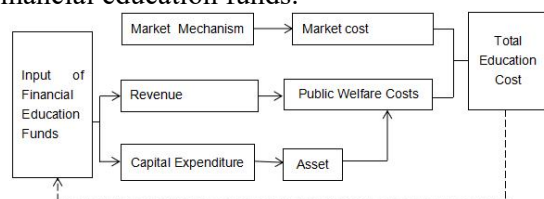


Figure 2. The Correlation between the Cost of Higher Education and the Financial Investment in Education

4.2 Comparative Advantages of the Basic Financial Education Funding Allocation Mechanism for Higher Education Cost Compensation

Compared to the per capita expenditure index, the per capita cost, as the core foundation of the financial education funding allocation mechanism in universities, has certain comparative advantages. Therefore, based on the premise of compensating for the cost of university education, optimizing and reforming the financial education funding allocation mechanism in universities is more reasonable.

The per capita cost is a true reflection of the resources consumed by higher education institutions. Allocating financial education funds to universities based on this can better compensate for the public education costs incurred by universities under a certain ratio or share of education cost. Moreover, this can also provide a plausible basis for universities to set new tuition fees.

The information on per capita cost is more realistic and objective, which can avoid the manipulateness of the timing of per capita expenditure, making the allocation of higher education financial education funds fairer and more transparent. 2019 was the "first year" of government accounting reform in China. Universities began to implement new government accounting standards, providing a regulatory basis and guarantee for strengthening internal cost accounting and providing per capita cost information for universities.

The information on per capita cost is more comprehensive, as it takes into account various factors such as the cost items, cost range, and cost structure involved in the public service

education provided by universities. On the other hand, per capita expenditure only involves cash payment factors, leading to the financial allocation of education funds in universities being influenced by a single policy parameter.

The average cost per student is more guiding, which is beneficial for the government to play its macroeconomic regulation function, as this indicator is the standard average cost set by government departments based on the actual cost of higher education institutions, excluding unreasonable components, and requires a certain effort from universities to achieve. This helps promote universities to strengthen cost management and improve the effectiveness of resource utilization.

5. Conclusion

The fiscal education fund allocation mechanism for higher education institutions based on cost compensation, which centers on the "per-student cost", demonstrates significant theoretical rationality and practical advantages. This mechanism emphasizes that fiscal education funds should primarily compensate for the reasonable resource expenditures incurred by universities in providing public welfare education services, reflecting the responsibility of the government, as the main beneficiary, under the principle of higher education cost-sharing.

Compared to the traditional "per-student expenditure" indicator, the "per-student cost" more comprehensively and accurately reflects the resource investment required for universities to cultivate students. It includes non-cash costs (such as depreciation of fixed assets and amortization of intangible assets), thereby enhancing the fairness, transparency, and objectivity of fund allocation. At the same time, using the standard per-student cost as the basis for allocation helps leverage the government's macro-control function, guiding universities to optimize resource allocation, strengthen cost management, and improve fund utilization efficiency, thus promoting high-quality and sustainable development of higher education.

The reform of the government accounting system provides an institutional foundation and technical support for universities to conduct cost accounting and generate reliable per-student cost information, creating

favorable conditions for constructing and implementing a cost compensation-based fiscal education fund allocation mechanism. Therefore, promoting the transition of the fiscal education fund allocation mechanism for higher education institutions from an “input-oriented” approach to a “cost compensation-oriented” approach is not only an inherent requirement for improving the efficiency of fiscal fund usage but also a critical path for refining the higher education governance system and advancing educational equity and efficiency.

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References

- [1] Government Accounting System Compilation and Review Committee. Practical Guide to Accounting Treatment for Major Government Accounting System Operations and Matters (2025 Edition). Posts & Telecom Press, 2025.
- [2] Tao Huiping. Integrated Budget Management in Public Institutions—Accounting, Costing and Practice. China Financial & Economic Publishing House, 2024.
- [3] Wang Bing. Cost Management Accounting. China Economic Publishing House, 2024.
- [4] Huang Qingshan, Guo Rui. Research on Higher Education Cost Accounting under the Government Accounting System. *Friends of Accounting*, 2019(05): 91-94.
- [5] Hu Zhanshuo. A Study on Tuition Adjustment in China's Public Universities from the Perspective of Cost-Sharing. Huazhong University of Science and Technology Press, 2025.
- [6] Tian Zhenxun. Research on the Cost-Sharing Mechanism and Budget Allocation System Reform in Higher Vocational Education. Wuhan: Wuhan University Press, 2017.
- [7] Jensen M.C., Meckling W.H. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 1976, 3(4): 305-360.
- [8] Ping Xinqiao. Eighteen Lectures on Microeconomics. Beijing: Peking University Press, 2001.
- [9] King R. A., Swanson A. D., Sweetland S. R. Education Finance: Efficiency, Equity, and Performance (3rd ed.). Beijing: China Renmin University Press, 2009.
- [10] Tang Yipeng. Adequacy, Equity and Convergence of Higher Education Finance in China. *Heilongjiang Researches on Higher Education*, 2019(10): 71-74.