

Analysis and Enlightenment of the Defense Resource Allocation Function of American PPBE Process

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Abstract. Taking the US military PPBE process as the research object, the generation and evolution of the system are introduced. The operation process of the system in the four stages of planning, programing, budgeting and execution of the defense resource allocation process is analyzed. The characteristics of strategic traction, demand-led, global overall planning and dynamic adjustment of PPBE process are summarized. On this basis, the guiding ideology and basic principles of China's national conditions, the improvement measures and suggestions are clarified from the top-level planning, operation mechanism and methods, in order to provide theoretical guidance and reference for optimizing China's national defense expenditure resource allocation.

Keywords: PPBE, resource allocation, defense expenditure, supervisory and evaluation, zero-base budget

1 INTRODUCTION

For a long time, the allocation of national defense resources has been the focus of research in the field of national defense economy, and how to establish a systematic resource allocation mechanism and effectively improve the efficiency of national defense resource allocation is the core issue of resource allocation. At present, the academic circles generally believe that among the medium-term basic budget models^[1] commonly used all over the world, the national defense resource allocation model represented by PPBE is more scientific and complete. Its resource allocation system operates efficiently and has considerable benefits. It is a mature model that has been tested and recognized by the practice of the US military and is worthy of our military to learn from.

2 ANALYSIS OF PPBE PROCESS IN THE UNITED STATES

2.1 Generation and evolution of PPBE process

The predecessor of PPBE process was the PPBS system proposed by the famous Rand Company in the United States in the 1950s and implemented under the leadership of Robert

McNamara, the then US Secretary of Defense, that is the "planning, programing and Budgeting" process. After entering the 21st century, considering the inherent defects of PPBS system, such as inability to adapt to the adjustment requirements of national defense and military strategy in the new era and complex and diverse changes in the situation, the US military completed the adjustment and improvement of PPBS in 2005, and the improved system was renamed PPBE, namely "planning, programing, budget and execution" process^[2]. Since then, the PPBE process has played a great regulatory role in the allocation of defense resources of the US military, promoted the practical application of defense and equipment construction management in the overall, systematic, standardized and beneficial aspects, and summarized valuable practical experience^{[3]-[4]}, which has been used to this day.

2.2 Realization of resource allocation function of PPBE process

Starting from the overall and long-term strategic idea of system engineering, PPBE process is a kind of system that relies on the overall goal of national defense and military strategy. Taking into account the medium and long-term planning tasks of national defense construction and the actual needs of annual national defense budget, PPBE considers the priorities of various feasible military projects and makes comprehensive evaluation and ranking under the condition that it does not exceed the overall plate of national defense budget, then forms the optimal allocation scheme of national defense resources among military projects, and effectively supervises the formulation and implementation of the allocation scheme budget. The operation principle^[5] and main stage flow of resource allocation function of PPBE process are shown in Figure 1-4.

In Figure 1, the operation process of PPBE process successively goes through four stages: planning stage, programing stage, budget stage and implementation stage. Figure 2 to 4 respectively reflects the specific operation process of PPBE process in the planning stage, programing stage and budget stage. Considering the relatively simple procedure in the implementation stage, the flow chart of this stage is not drawn separately. The effectiveness of US defense expenditure resource allocation benefits from the joint force of the mechanism in the four stages of PPBE. The organization line, business line and achievement line of each stage are connected, coordinated and verified with each other, which together constitute the main business work content of each stage of the US military PPBE process.

In the planning stage of PPBE, the Deputy Minister of Defense in charge of policy mainly prepares the draft of the joint plan guide according to the national security strategy, national military strategy, four-year defense assessment and other documents, and submits it to the national defense planning and Resources Committee for deliberation and approval and promulgation. Among them, the joint plan guide is the core achievement of this stage, which defines the overall combat capability requirements of the US military in the future and the development order of military projects.

The programing and budgeting stages of PPBE are carried out in parallel. The programing stage focuses on clarifying the medium-term development plan, which covers the basic element needs of human, material and financial resources for the construction and development of US military equipment. In the budget stage, the medium-term plan will be transformed into an exact and executable budget plan, which will be submitted to the National

Committee for approval according to the specified procedures. When the national security situation changes, the budget can be adjusted according to the operation of PPBE.

In the implementation stage of PPBE, it is necessary to conduct phased performance accounting on the budget implementation of each project in the early system every quarter, finding out whether the internal logical relationship between progress, quality and fund consumption in the project implementation is true and reasonable, evaluate whether the national defense resources allocated to each project have brought benefits into play, whether the resource allocation results meet the expectations, and whether the operation of PPBE process deviates from the expectations^[6]. Combined with the analysis conclusion, the operation regulation and control of PPBE process are carried out.

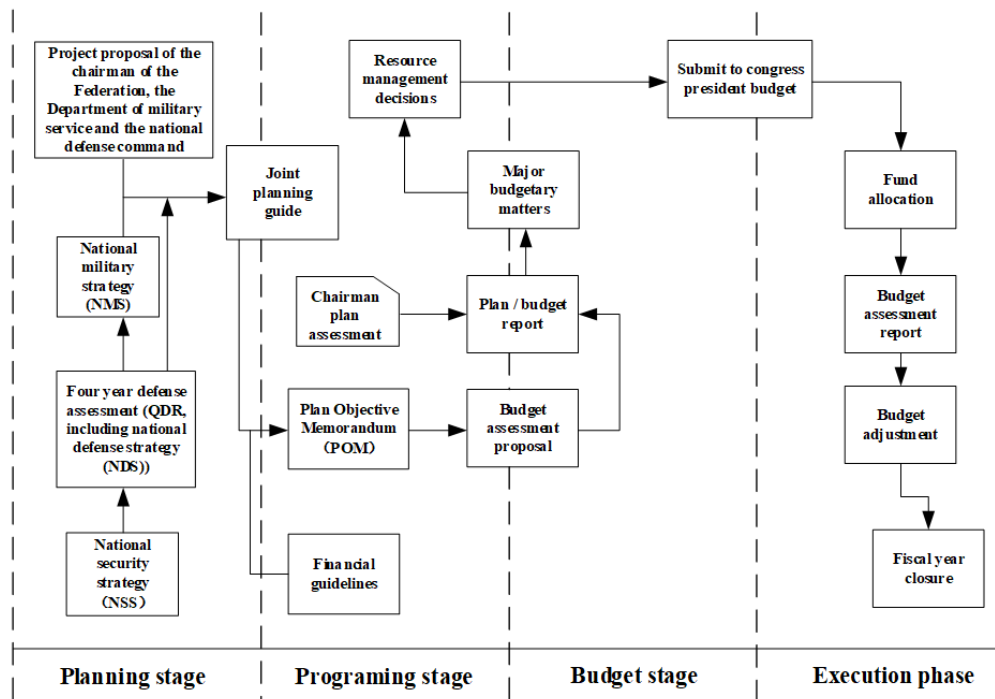


Figure 1 General diagram of PPBE process operation principle

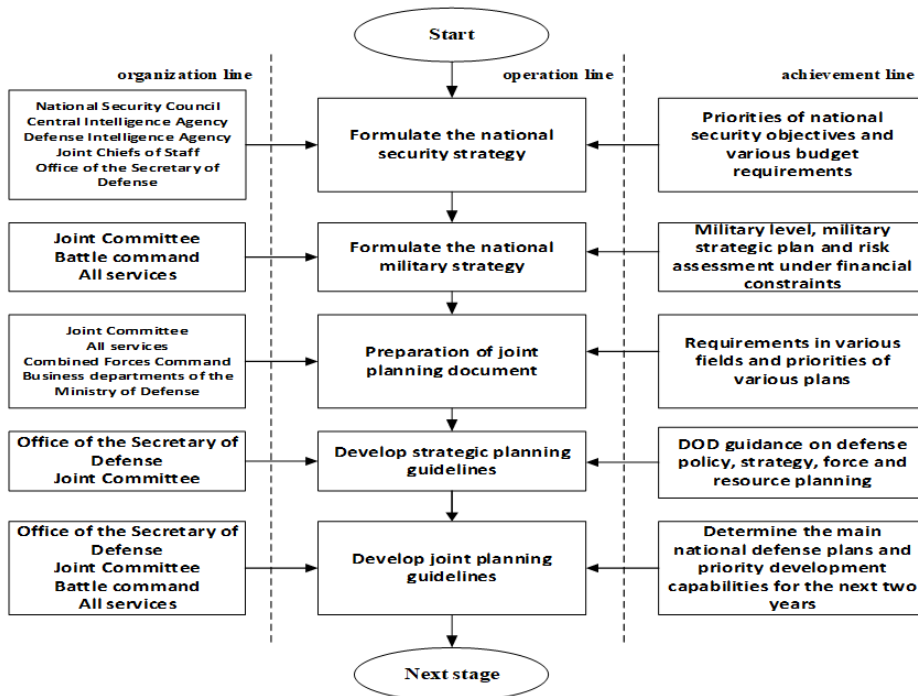


Figure 2 Flow chart of PPBE planning stage

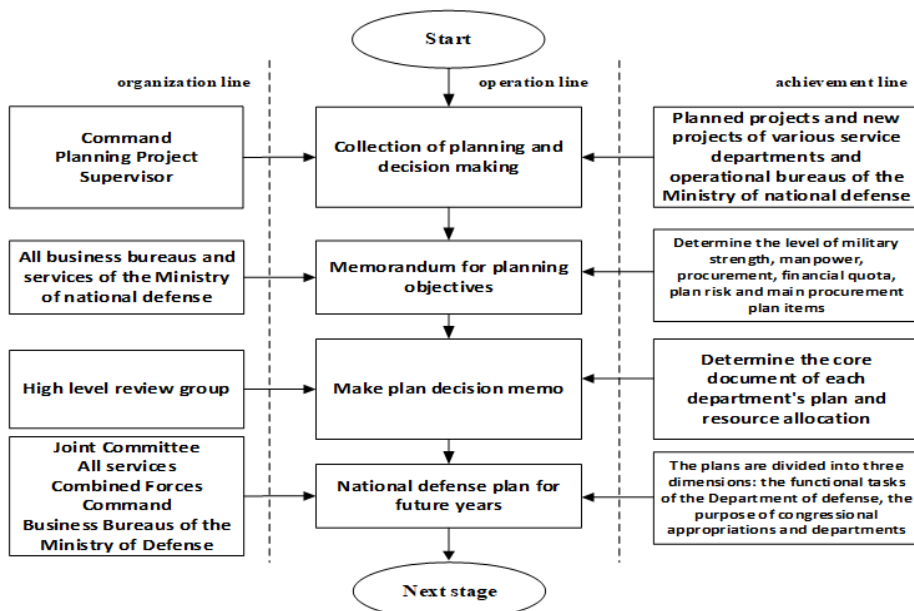


Figure 3 Flow chart of PPBE programming stage

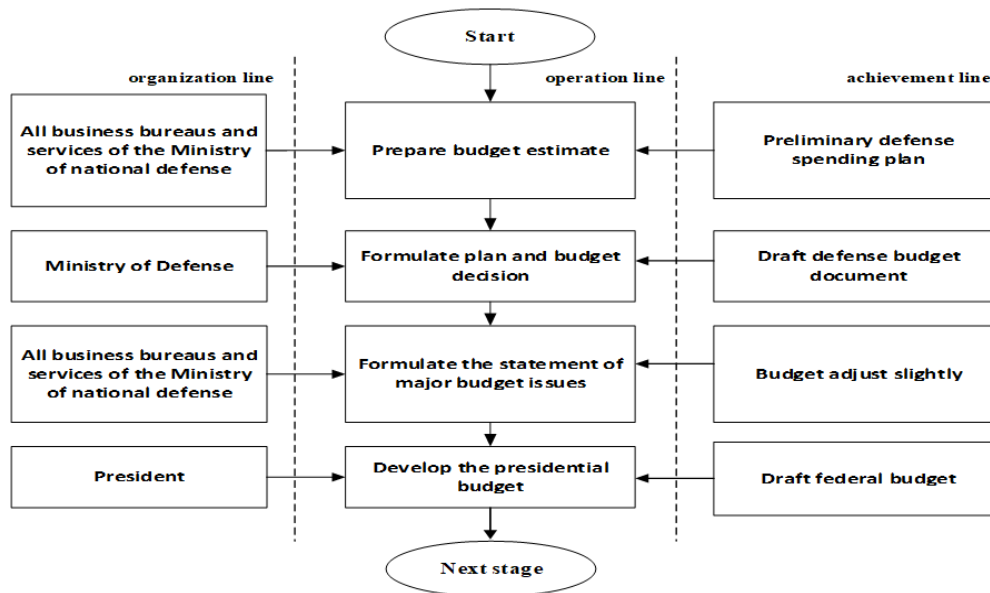


Figure 4 Flow chart of PPBE budget stage

2.3 Mechanism and characteristics analysis of PPBE process

2.3.1 Strategic traction

The early military demand capability generation mode of the US military is a typical "chimney" generation mode. Under this demand capability generation mode, all services of the US military go their own way and only consider their own interests and demands from the perspective of their own services. Therefore, the demands are static, isolated, partial and one-sided, and lack of overall consideration of the allocation of national defense resources under the overall national security strategy of the US military. As a result, there are many "chimneys" of various needs, and the resource allocation cannot achieve the overall optimization. PPBE process provides a new demand generation mode from "national security strategy - military security strategy - military capability requirements", which can closely focus on the overall objectives and basic directions of the US national security strategy and the US military security strategy, and ensure that the proposed military capability requirements can always be consistent with and adapt to the national defense and military security strategy.

2.3.2 Demand dominance

Demand dominance is a very prominent feature of the US military PPBE process. This is because the content requirements of developing "joint combat capability" in PPBE process are internally consistent with the military construction goal of the US military to achieve "multiple combat capabilities". Through the effective operation of PPBE process, the military mission requirements of all links and levels of US national defense and military construction are closely connected through the systematic procedures of planning, programing, budget and implementation. This will enable the US military to consciously and directionally tilt towards

the goal of improving the US military's "joint combat capability" in the process of national defense resource allocation, and ensure that the national defense resource allocation can provide financial support services for the overall combat capability requirements, combat intent and combat deployment of the US combat command.

2.3.3 Overall planning

Adhering to the idea of overall planning, PPBE regards the allocation of national defense resources as a comprehensive systematic project at the national level, and ensures that the allocation of national defense resources is unified and centralized in the process of planning, programing, budget and implementation. PPBE process focuses on the overall work of US national defense and military construction, distinguishes the importance, urgency and functional balance of various military construction projects, organically coordinates the military construction projects of various services, strengthens the project unified management and overall coordination through macro-control, ensures the consistency of the pace of military task construction at the military level, and reduces the repeated and inefficient allocation of defense resources.

2.3.4 Dynamic adjustment

In terms of working procedures of PPBE process, there are obvious differences between budget years and non-budget years, that is, the special budget management mode of "rolling in every two years". In the budget year, the national defense budget plan for the next two years is formulated. In the non-budget year, the national defense budget plan is adjusted according to the budget implementation of the previous year, the quality of task completion, the change of national security situation, the adjustment of military task objectives, etc. In this process, the budget adjustment has always maintained the long-term consistency with the overall objective of the US military strategy. The budget adjustment process is dynamic, timely and objective, so as to ensure the effective control of the resource allocation structure and fund flow direction of national defense expenditure, and ensure that the annual national defense budget fluctuates within a reasonable range. At the same time, based on the idea of zero-base budget, PPBE process can review and evaluate new projects and historical projects on the same platform and conditions every year, dynamically adjust the development priority of projects, and adjust and restructure the resource allocation scheme of national defense expenditure.

3 ENLIGHTENMENT TO CHINA'S NATIONAL DEFENSE EXPENDITURE RESOURCE ALLOCATION

The scientificity and practicability of PPBE process have been fully tested in the allocation of defense resources of the US military in the past 15 years. However, in view of the obvious differences between China's actual military situation and national defense construction system and the US military, we need to reorganize our thinking and dialectically analyze the advantages and applicability of PPBE process when learning PPBE process, and form a set of theories and application achievements of overall allocation of national defense resources with Chinese characteristics.

3.1 Guiding ideology of China's national defense expenditure resource allocation

Taking the overall planning of economic construction and national defense construction as the basic criteria and improving the military economic benefits of national defense resource allocation as the goal, the design is carried out according to the general idea of "military strategy leads military capability requirements, military capability requirements lead military mission projects, and military mission projects generate resource allocation schemes". Establish and improve the operation mechanism of national defense expenditure resource allocation, select scientific and reasonable methods for calculating the scale and optimizing the structure of national defense expenditure resources, adjust institutions, clarify responsibilities and straighten out relations, and accelerate the construction of a resource allocation management system with Chinese characteristics as the core of "planning, programing, budget and execution system".

3.2 Guiding principles for the allocation of national defense resources in China

3.2.1 Adhere to the principle of centralization, unity and strategic overall planning.

The allocation of national defense expenditure resources is a strategic project that affects the improvement of the overall quality level of our army's core military capability and equipment construction. We must carry out high-level command and top-level layout at the level of the large system of China's national defense construction. It is necessary to establish a set of leadership and management institutions of the Central Military Commission with highly centralized power and strong and efficient operation, establish and improve supporting operation mechanisms and laws and regulations, ensure the overall relationship between the scale of national defense expenditure and the structure of national defense expenditure in the allocation of national defense expenditure resources, and constantly optimize the efficiency level of national defense expenditure resource allocation.

3.2.2 Adhere to the principle of strategic traction and demand dominance

Strategic traction and demand dominance are the aspects that our army needs to pay continuous attention to in the process of national defense resource allocation. Specifically, in the process of allocating China's defense expenditure resources, we should fundamentally follow the strategic policy of China's long-term construction and development of national defense and the army, and give play to its leading role in the demand for military capability. On this basis, further decompose the military capability requirements into specific executable military task projects and implement them into the national defense project budget, so as to ensure that the military requirements are always in a firm leading position and have a firm voice in the whole process of national defense resource allocation.

3.2.3 Adhere to the principle of highlighting key points and comprehensive balance.

The tasks of national defense construction are numerous, and the amount of national defense expenditure resources is restricted by the national financial resources. Therefore, there is an inherent and unavoidable contradiction between supply and demand in the national defense expenditure resources allocation^[7]. Only through investigation, we can comprehensively sort out the actual situation of military construction, clarify the advantageous projects and weak links of military construction, highlight the key and difficult tasks of national defense and

military construction, and balance the containment relationship between key military projects, general military projects, main strategic directions and secondary strategic directions. On this basis, we can gather and tilt the limited resources to the direction of the fastest improvement of military combat effectiveness in the process of national defense resource allocation, and alleviate the contradiction between supply and demand of national defense resources to the greatest extent.

3.2.4 Adhere to the principle of scientific management and efficiency.

Whether the efficiency of national defense resource allocation can be maximized depends on the optimization design of national defense resource allocation scheme in the early stage and the whole stage management of the implementation of national defense resource allocation scheme in the later stage. In the early stage, it is necessary to give full play to the cross integration advantages of multi-disciplinary fields such as economy, management, military, society and operational research, and form a set of systematic procedures and methods for the integration and overall allocation of national defense resources with advanced theories, perfect means and complete functions; In the later stage, we should strengthen process management, clarify the project supervision nodes and requirements, check whether the budget implementation matches the project quality and progress, and carry out financial acceptance of completed projects to evaluate the use efficiency of national defense expenditures.

3.3 Countermeasures and suggestions on the allocation of national defense resources in China

3.3.1 Pay attention to strengthening the top-level planning and design of China's defense expenditure resource allocation, improve the overall ability of resource allocation.

First, strengthen the connection between planning, programing, budget and implementation. On the one hand, when calculating the overall demand scale of annual national defense expenditure, we should consider it from the perspective of the overall situation of national and military construction, break the limitations of the services themselves, strengthen information construction, improve the information sharing level of various departments within the army, straighten out the resource coordination channels, eliminate duplicate needs, merge similar needs, check the omissions and blind spots in the overall planning of national defense expenditure resources, and prevent the distortion in the calculation of the overall scale of national defense expenditure resources; On the other hand, by combing the construction progress and budget implementation rate data of major military defense projects of all services and arms in the previous year, strengthen the collection and mastery of information such as the coverage and support degree of defense resources, find the structural imbalance points in the process of overseas defense resource allocation, and analyze the causes of structural imbalance. On this basis, we will comprehensively formulate the overall adjustment plan and implementation measures for the allocation of national defense resources, dynamically adjust the annual national defense budget, ensure that the national defense budget is consistent with the strategy between national defense plan and program, and promote the real benefits of the allocation of national defense resources.

The second is to systematically optimize the layout of existing defense resources. Within the scope of the whole army, we should find out the historical precipitation funds of all services

and arms, turn in the redundant precipitation funds in time and in full according to the management channels, and give full play to the benefits of precipitation funds for the second time. Adhere to the viewpoint of dynamic development, coordinate the historical fund stock and annual fund increment, pay attention to the fund guarantee and fund utilization efficiency of major project construction, carry out macro-control on national defense resources, tighten the decision-making procedures for national defense resource allocation, scientifically calculate the fund demand, strive to correct the problems of fragmentation and self-reliance in national defense resource allocation^[8], and scientifically demonstrate the scale and structure of annual national defense expenditure, so as to provide sufficient basis for formulating the annual national defense budget; In view of the coexistence of surplus funds and shortage of funds in some units within the army, we should optimize and adjust them locally, improve the imbalance of fund distribution structure, and reduce the repeated allocation, multi head allocation and inefficient allocation of funds and resources. The troops at all levels shall make urgent plans, formulate the annual comprehensive budget of the unit as a whole, and implement it in strict accordance with the plan. For projects with slow progress and low benefits, carry out necessity demonstration, eliminate unnecessary construction projects, concentrate advantageous funds on key construction fields, and resolve the contradiction of fund structure. Troops at all levels should take measures according to local conditions to make full use of social resources for projects with strong military civilian versatility, prevent "large and comprehensive" military construction and save a lot of unnecessary expenses.

3.3.2 We will strive to improve the operating mechanism of China's defense expenditure resource allocation and improve the ability of resource allocation to operate smoothly.

At present, China still lacks an effective operation mechanism for the allocation of national defense resources, and the allocation of resources is quite arbitrary. In the links of demand assessment, comprehensive decision-making, demonstration review, implementation management, supervision and evaluation necessary for the allocation of resources, there is an obvious gap between the scientific, normative and organizational rigor and the PPBE process of the US Army, which needs to be made up by further strengthening the construction of corresponding mechanisms.

First, strive to improve the comprehensive decision-making mechanism. The basis is to strictly control the budget and strengthen the audit of national defense budget preparation. The financial departments at all levels of the military must carry out national defense budget preparation in accordance with the requirements and methods of zero-base budget. The budget plans that do not meet the requirements of zero-base budget will not be approved, and a zero-base budget management system guided by the objective needs of national defense construction will be truly established.

Second, strive to improve the demonstration review mechanism. The allocation of national defense resources should be studied at the strategic level of national defense construction, not just as a logistics support problem. We should fully absorb local forces and rely on third-party strategic research institutions to carry out the auxiliary work of demonstration and review of national defense resource allocation. For example, Rand Company, the most famous private research institution in the United States, is a comprehensive think tank studying politics, military, economy, science and technology, society and other aspects. It has participated in the strategic planning and project demonstration of the United States for a long time and has made

many groundbreaking achievements. It should be noted that when introducing a third-party strategic research institution, due to the high density of national and military secrets, it should strengthen its qualification examination and supervise its confidentiality and security management throughout the process.

Third, strive to improve the implementation and management mechanism. In terms of the allocation of national defense resources, the laws and regulations of the budget are not strong. Some units misinterpret the relationship between the seriousness and flexibility of the use of funds, exaggerate the demand for flexibility, undermine the bottom line requirements of seriousness, infringe on the interests of the state and the army, and cause huge economic losses to national defense construction. Therefore, we should give full play to the fund management function of the military financial department, focus on whether the content of the planning and programing is consistent with the content of the budget at the beginning of the year, and whether the budget at the beginning of the year is consistent with the actual expenditure of funds, and strictly control the reimbursement of funds. Troops at all levels should also strengthen the financial discipline education of their subordinates, enhance the sense of responsibility of subordinates to spend money in accordance with regulations, and form a clean and healthy atmosphere of integrity and self-discipline.

3.3.3 Gradually improve the methods and means of China's national defense expenditure resource allocation, and improve the scientific management efficiency of resource allocation.

First, vigorously implement the zero-base budgeting method. At this stage, although some units ostensibly prepare the annual budget according to the format requirements of "zero-base budget", the traditional "cake cutting" allocation is still used in the budget preparation process. First determine the total amount of funds in the current year, and then carry out extensive and simple segmentation according to the approximate proportion of funds of each unit in previous years, which cannot achieve the effect of national defense resource allocation. Therefore, if we want to effectively implement the zero-base budgeting method, we need to adhere to a multi-pronged approach from the aspects of policy, system and supervision, continue to pay attention to and implement it. Once the demonstration effect is formed, we can break the existing interest pattern and form an overall optimization of the allocation of national defense resources.

Second, vigorously introduce scientific and advanced simulation calculation and quantitative analysis methods. All kinds of institutions and personnel engaged in the allocation of national defense resources should be encouraged to establish operational simulation laboratories that simulate the allocation of national defense resources, and actively carry out research on quantitative analysis methods^{[9]-[10]}. Through the real simulation of the national defense resource allocation environment, the simulation analysis and empirical verification of the allocation of defense expenditure resources are carried out under high-precision conditions. It is conducive to gradually realizing the precise management and regulation and control of the allocation of national defense expenditure resources, improving the seriousness and standardization of resource allocation, and providing powerful technical tools for improving the practical work of resource allocation.

Third, the comprehensive use of modern econometric analysis methods. The traditional resource allocation methods do not pay enough attention to modern econometric methods. Modern econometrics can analyze the time series characteristics of the defense expenditure and conduct causal analysis and regression modeling, which is conducive to systematic thinking on the formation mechanism and allocation mechanism of defense expenditure resources, so as to break through the technical bottleneck in the research of defense expenditure resource allocation.

4 CONCLUSION

This article introduced the history and operation process of PPBE in the United States, and summarized the characteristics of PPBE process from four aspects. On this basis, the enlightenment of PPBE process to the allocation of national defense expenditure resources in China was summarized, and improvement measures and suggestions were clarified from three aspects, which can provide theoretical guidance and reference for optimizing China's national defense expenditure resource allocation.

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