A Survey and Conception of the Evaluation Method of the Ability of Civil-Military Integration Development

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Abstract

In order to give full play to the leading position and role of the government in the development of civil-military integration, to improve the degree of integration of strategic planning and to establish a top-level coordination mechanism, it is necessary to evaluate the ability of the development of civil-military integration. Therefore, according to the trend and law of the development of military and civil integration, we should construct a comprehensive evaluation index system of the ability of military and civil integration development from three aspects of breadth, depth and degree of integration, so that we can formulate effective and effective policy guidelines for macro-control and coordination management. To achieve the military and civilian integration planning and management of "state-led, demand traction, resource sharing, benefit-sharing, market operation" benign mechanism.

Keywords

Civil-military integration; development capacity ; evaluation; indicator system.

1. Conceptual definition of the capacity for the development of civil-military integration

The integration of military and civilian affairs means that the modernization of national defense and the armed forces is deeply integrated into the system of economic and social development, comprehensively promoting the integration of the military and the people in various fields, such as economy, science and technology, education, talent, and so on, at a broader and higher level. To a greater extent, the modern construction of national defense and the armed forces has been combined with economic and social development to provide rich resources and sustainable development stamina for the modernization of national defense and the armed forces. It should be said that the integration of the military and the people itself has a macro perspective. The integration of military and civil development at the macro level refers to the integrated and coordinated development of the political, economic, cultural, social and other aspects of the strategy. The surface is mainly focused on the economic level, the military field and civilian field mutual promotion and development; the micro level is mainly based on the integration of military and civilian industrial specific development itself.

In the field of enterprise management, development capacity generally refers to the potential ability of an enterprise to expand its scale and strengthen its strength through its own production activities, also known as growth capacity. Its main investigation includes the growth rate of revenue, the rate of profit growth, and the ratio of technology input. The rate of capital preservation and appreciation, the rate of capital accumulation, and the growth rate of total assets can be used for reference as an evaluation standard for the degree of integration between the military and the people, mainly including two kinds of analytical thinking. The core is the growth rate of enterprise value. The growth

rate of net income is usually used to describe the growth of enterprise value. Similarly, the military and civilian industries can be integrated with their own competitiveness As the basis for judging the overall development degree and development ability of the country's military-civilian integration. Second, the thinking of measuring the development ability by the various factors that affect the change in value, mainly including revenue, assets, net assets, utilization rate of assets, and net income. Accordingly, from the point of view of broad sense of value analysis, the ability of military and civil integration development should include the external effect, that is, the external contribution level to the development of regional economy and society.

2. An overview of the evaluation methods of the ability of military and civilian integration

Drawing lessons from the experience of foreign countries in assessing and developing the development of civil-military integration, as well as exploring and studying the development law of regional military-civil-military integration, we can find the foundation of integration. The fusion depth and fusion effect are most relevant to the work of civil-military integration. However, according to the current research in the field of civil-military integration, especially the quantitative research, the evaluation of development level and development ability is mainly focused on the effect of civil-military integration. That is to say, the contribution of civil-military integration to regional economic and social development is analyzed, which mainly includes two aspects: the analysis of the external effects of military-civilian fusion industry and the analysis of its own competitiveness.

On the one hand, Li Xiangqian and Dai Quansheng used the input-output model to study the regional economic effect of defense science and technology investment. It also analyzed the sensitivity of national defense science and technology departments to the development of regional economy. Dai Dongyang and Wang Jinping (2009), through modeling and analysis, thought that by strengthening the degree of military and civilian integration, the development of local economy can be promoted while the efficiency of military expenditure can also be improved. Through empirical analysis, Li Feng (2009) believed that the integration of military and market resources can produce stronger external economic effects, and the market-oriented mechanism of civil-military integration is more win-win. By using the regional input-output model system (RIMS Ⅱ), Chen Bingfu (2010) analyzed the output multiplier effect, income multiplier effect and employment multiplier effect of defense expenditure in the region. From the point of view of product innovation, this paper put forward the dynamic cooperative model of military and civil fusion industry innovation. Based on C-X theory, Yang Shaoxiang (2014) put forward the dynamic synergy model of military and civilian integration industry innovation from the point of view of product innovation. Zhang Jinle and Zhang Kun Xuan (2014) used FCM fuzzy cognitive map model to analyze the effect of knowledge sharing in the region of military-civilian integration industry. Zhou Binzong (2016) had used VAR to analyze the effect of knowledge sharing in the region of military-civilian integration industry. The model analyzed the dynamic relationship between the typical civil-military fusion industry and manufacturing industry. And the coupling and coordination degree between aerospace manufacturing and electronic communication manufacturing and regional economic development in Shaanxi Province was analyzed respectively. Gu Debin and Fu Yuwei (2015) applied cluster analysis and data envelopment analysis to our country. Based on the complex system coordination degree model, Hu Hongan et al. (2015) analyzed the innovation coordination degree of China's aviation and aerospace industry and economic development.

On the other hand, there are more researches on the competitiveness of the military-civilian fusion industry in China. On the basis of taking the military industry management system as the input factor, Wu Qingzhang (2007) analyzed the operational efficiency of China's listed military enterprises from the angle of input and output efficiency by using the super-efficiency DEA model, and explored how to improve the management efficiency of the listed military enterprises in China.Ma Qidong (2009) analyzed the performance evaluation principles of China's listed military enterprises by using the balanced Scorecard (BSCS), and established a fuzzy performance evaluation model. The feasibility

and reliability of the evaluation process were demonstrated by empirical analysis. Based on the GEMS model, Zeng Li et al (2012) constructed the evaluation method of the competitiveness of the military and civil fusion industry cluster, and makes a concrete analysis of the Hunan military and civilian special material industry cluster. Zhang Xu et al(2013) adopted the stochastic frontier method (SFAA) to analyze the technical efficiency of listed military enterprises. Research showed that most of the listed military enterprises in China have non-technical efficiency. Zhang Yong et al. (2014) used data envelopment analysis to analyze the efficiency of some military-civilian integration enterprises in the western region. Hu Hong'an (2014) was constructed based on the environment, knowledge and market competitiveness index system, and analysis of China's 20 provinces and the eastern and Western aerospace industry clusters competitiveness using the method of Grey Association. Sun Chao (2014) analyzed the financial indexes of 45 listed military enterprises in China in 2012 by using factor analysis, and obtains four factors, namely, growth ability, solvency, profitability and operation ability. Liu Min (2016) produced by DEA-Malmquist index method for comparative analysis of the 16 listed military enterprises that the "army" enterprises. The operating efficiency of the state-owned military enterprises is better than that of the state-owned military enterprises, and the inefficiency of the enterprises is due to the technical retrogression, while the state-owned military enterprises have problems in both the technical efficiency and the technological progress.

3. The design of development level and capability evaluation system of military and civilian integration

This paper holds that the evaluation of the ability of military and civil integration development should be able to accurately grasp the three aspects of fusion breadth, depth and degree of integration, and its specific system indexes and evaluation methods mainly correspond to the fusion foundation, the fusion depth and the fusion effect.

First, the development of civil military integration. Evaluation of the breadth breadth is related to the development of civil military integration field. Due to the special nature of national defense and army building, may not require all of its aspects of social and economic construction as a whole, which determines the characteristics of China walk a path of development of civil military integration has its specific practice areas and key areas. At present, civil military integration has been extended to the economy, science and technology, education, personnel and logistical support. In this regard, can direct measurement and evaluation from the distribution characteristics of civil military integration, mainly through the industry concentration, the Herfindahl-Hirshman index (HHI) and N index, the Gini coefficient of civil military integration industry, Industry Association Degree and other industrial cluster distribution indicators to reflect the specific.

Second, evaluation of the depth of development of civil-military integration. Depth is the level, benefits and achievements of civil-military integration development. At present, civil-military integration industries are mainly distributed in transportation, information, and strategic material reserves, which are closely related to national defense and military construction. Infrastructure areas such as municipalities, especially in key economic areas, major infrastructure, major industrial facilities and clusters. The depth of civil-military integration development is usually directly reflected by the competitiveness of civil-military integration industries. On the one hand, it is necessary to consider comprehensively the factors affecting the competitiveness of the military-civilian integration industry, including environmental competitiveness and knowledge. On the other hand, it is necessary to analyze the production efficiency of the military-civilian integration of various industries and regions. The specific measurement of efficiency involves indicators of scale such as the number of enterprises, the total output value, the number of employees, the number of scientific and technological institutions.And the indicators about the scale of input such as the investment in fixed assets, expenditure on new product development, the expenditure absorbed by the introduction of technological transformation, R&D expenditure intensity (R&D/Industrial income), R&D personnel intensity (R&D personnel/Regional industrial population) etc., and so on. There are also output

indicators such as the index of industrial employment (number of industry employed/total number of regional employment), output value of new products, industrial export, profit and tax rate (total industrial profit and tax/gross industrial output value), patent application number,etc.

Third, evaluation of the degree of integration between the military and the civilian. To carry out the great strategy of military-civilian integration, it is necessary to integrate the military and civilian resources and improve the integration of the development of the military-civilian dual development, and vigorously improve the integration between the military-civilian and the civil-military. It is necessary to ensure an organic combination of maximizing economic benefits and meeting national defence needs, to achieve military-local sharing in infrastructure, and to provide effective support and services for military construction and economic development. On the one hand, the evaluation of fusion degree needs to judge the level of integration of military and civil fusion industry relative to economic development according to the degree of synergy between military and civil fusion industry, including the use of coordinated coupling analysis, composite system coordination analysis and other methods. The investment, production and innovation ability of the industry, as well as the level of capital input, infrastructure construction and consumption in the region, are analyzed at the development stage. On the other hand, the evaluation system also measures the comprehensive economic effects of the military-civilian integration industry. In order to reflect the ability of coordinated development within the civil-military fusion industry and its ability to utilize the resources in the region, the paper mainly analyzes the spillover effect and the investment multiplier effect of the military-civilian fusion industry.

4. Conclusion

In order to advance the grand strategy of military-civilian integration, we need to grasp the actual development level of civil-military integration and make effective adjustments according to the national strategy and the needs of social and economic development. In view of this, we must construct and improve the evaluation system of the ability of military-civilian integration development. The actual situation of military and civil fusion development can be accurately grasped from many aspects, such as development breadth, development depth and development integration degree, so as to form a benign interaction between military and civil fusion industry and social economy, and provide a scientific decision-making reference for the overall planning of the country.

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