

Introduction to Defence and Security Economics

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Abstract

This chapter summarizes definitions of the branch of science of national defense economics postulated by different defense economists representing a variety of nations and economic schools. Following parts of this chapter outline research areas of this branch of science with particular attention paid to the German notion of Military Economics and the Czech defense economics school as it developed under the Marxist paradigm, including fundamental changes in the Czech defense-economic thinking after the Velvet Revolution.

Key Words

Allocation, Defense Economics, Defense Resources, Military Economics, Paradigma, Research Area.

1.1 Fundamental Definitions of the Branch of Defense Economics

There is a consensus among defense economics experts in understanding defense economy to be an individual branch of study. According to economists of defense - as e.g. American experts Hitch and Mc Kean – the problems of national defense are economical issues. Ch. Hitch and R. McKean (1960) see the main objective of defense economists' efforts in assisting the decision-making bodies, their advisers and generally all concerned citizens by presenting how the economic analysis can be helpful when selecting the appropriate (efficient and

economical) political procedures and actions. The aspect of economic-efficient allocation and exploitation of resources¹ appears as one of the most important aspects of military problems. Here it is necessary to mention that these problems have been described in the essay *The Theory of Games and Economical Behavior* published in the USA in the year 1944. Since the year 1965 the hitherto analysis of the system of the armed forces became an analysis of systems for the entire armed forces.

The British economist G. Kennedy (1975) starts the first of his texts on the defense economics by a passage describing the “application of economics in defense issues”.² According to H. Kanter (1984) the economics of defense is an “application of economical skills in all defense issues.”³

American economist dealing with economics of national security L. Olvey (1984) from the West Point (USA), together with his colleagues have stated in their outstanding work solving problems of economics of national security that “the essential part of research in the field of the economics of defense is just the application of fundamental economical terms in issues of national security.”⁴

The British author K. Hartley (1991) involves all the aspects of economy of defense and processes of disarmament and peace into the economy of defense (economics of defense). The economics of defense applies economic theory to the sector of defense in a broad sense.⁵

In the scientific task “Concept of the Branch of Study and Proposal of the Postgraduate Study National Defense Economy” (1994) a team of authors from the Military College of the Land Forces in Vyškov stated that “as a branch of study, defense economics describes military-economical relations and contexts of

¹ HITCH, Ch. J., McKEAN, R.N. *The Economics of Defense in the Nuclear Age*. New York: 1960, cited according to publication 1986, p. V.

² KENNEDY, G. *The Economics of Defense*. London: 1975. p. 17.

³ KANTER, H. Defense Economics 1776 to 1983 in *Armed Forces and Society*, 10. No. 3, Spring 1984, p. 427.

⁴ OLVEY, L. D., Golden, J. R., Kelly, R.C. *The Economics of National Security*. New York: 1984. pp. 8–9.

⁵ HARTLEY, K. *The Economics of Defense Policy*. London: 1991, pp. 8-9.

the process of economic provision of defense in all its main phases and spheres – in conditions of market economy – especially in the area of production, allocation and utilization of economic resources supporting military needs in the peace time, in the process of economic mobilization, deployment of war economy and also the provision of the needs of defense by means of combat operations.”⁶

Professor W. Stankiewicz, an outstanding Polish economist dealing with defense economics, from the National Defense Academy in Warsaw discusses (1994) that “the subject of research work within the economics of defense is defense economy in its various types accordant with that part of national economy which satisfies the needs of national defense system both in the peace time and in the time of jeopardy or war.”⁷

In the introductory chapter of the publication entitled “Handbook of Defense Economics” from the year 1995 the American professor T. Sandler and the British professor K. Hartley (1995) define the branch of defense economics as follows: “Defense economics inquires into issues of allocation of resources, distribution of revenues, economic growth and stabilization applied to national security. It also includes a study of impacts of defense expenditures - both from domestic and external perspective – on macroeconomic parameters, e.g. employment rate, produce and growth. The branch of defense economics also has its microeconomic dimension, which is implied in the analyses of industrial basis, program of cooperation, offset, evaluation of military contracts and military acquisition. Defense economics applies theoretic economic instruments in the study of defense and related issues including disarmament and peace.”⁸

The Slovak economist L. Lašček from the Military Academy in Liptovský Mikuláš (Slovak Rep.), who deals with defense economics, defines this discipline

⁶ *Concept of the Branch of Study and Proposal of Postgraduate Study of National Defense Economics*. Vyškov: VVŠ PV, 1994, pp.14-15.

⁷ STANKIEWICZ, W. *Ekonomika obrony*. “Defense Economics” Warsaw :1994, p. 19.

⁸ *Handbook of Dfense Economics*. New York: 1995, pp. 3- 4.

in the following way: “National defense economics is a branch of science focused on economic provision for the national defense needs.”⁹

V. Šefčík (1999) from the College of Karel Engliš (from the Military College of Ground Forces in Vyškov at that time understands the branch of defense economics as a system of patterns, processes and relationships generated by economical and political decisions on exploitation and distribution of resources available in national economy for economic provision of needs of the nation in crisis situations and for provision of its military security in the peace time, in the time of a jeopardy and in the time of an armed conflict.¹⁰

The Czech economist M. Krč (2001) from the National Defense University (then from the Military Academy in Brno, Czech Rep.) defines in his publication (2001) “Brief History of Defense Economics”¹¹ the discipline of defense economics as a branch of science seeking for economic regularities that influence national security. Its subject is that sphere of the national economy, which satisfies the needs of a national defense system with respect to potential stages of a crisis and jeopardy of national security including an armed conflict. It covers all the aspects of the security economics and of the process of disarmament and peace.

1.2 Research Areas of Defense Economics

According to facts mentioned above, it is possible to conclude that the definition of defense economics is very broad. Following possible definition is a synthesis of preceding definitions and the subject of study of defense economics can be that part of national economy that satisfies the needs of the state defense system with regard to potential stages of a crisis and jeopardy of the state security including a war conflict. It also includes all the aspects of the security economics

⁹ LAŠČEK, L. *Ekonomické zabezpečenie obrany štátu. In: Spoločnosť, armáda, osobnosť*. Trenčín: SamO 1/99.

¹⁰ ŠEFČÍK, V. *Ekonomika a obrana státu. “Economy and State Defense”*. Praha: 1999, p. 12.

¹¹ KRČ, M. *Nástin dějin ekonomiky obrany. “Brief History of Defence Economics”*. Praha: 2001, p. 191.

and of the processes of the disarmament and peace. The problems of war and peace time economy, arms races and agreements on armament control; economic impacts of defense expenditures on economic development, defense industrial platform, armament acquisition policy, arms trade, military alliance and sharing the defense burden, economic war and terrorism, disarmament and conversion may serve as examples. This topical range can include further areas as budgeting, defense production function, incentive system and performance indicators, issues of training, option between professional army and forces based on general conscription; substitution possibilities, research on internal markets within the armed forces and various forms of organizations and their functioning etc.

Defense economics applies the economic theory to the sector of defense in a broad sense. It includes the defense department, departments participating in economic provision of defense, armed forces, and defense industry with its direct or indirect impacts on domestic or international environment.

Economic problems of defense provision consist in the selection of the appropriate strategy, technology and forces structure by means of which it will be possible to achieve goals stated by defense policy at lowest possible costs with respect to limited resources. It is necessary for politicians as well as for the armed forces to make their decisions on these issues under the pressure of budget limits and with respect to given objectives. So, decision-making bodies will face the consequence of their decisions in the form of costs. However, to be able to fill the target it is necessary for all decision-making bodies to perform economic analysis at all levels.

Complex of economic topics related to defense issues examined since the end of the World War II in advanced industrial countries are very extensive. A partial list of these issues could include following topics:¹²

- Deterrence, war prevention, launching and termination of a conflict.

¹² *Handbook of Defense Economics*. New York: 1995, p. 15.

- Strategic interactions, arms race, armament control.
- Alliance formations, resource allocation and behavior.
- Defense macroeconomic interactions in the time of a war, peace, disarmament and conversion.
- Comparison between the controlled and market economy from the point of view of defense resources.
- Mobilization, post-war restoration.
- Optimization and effectiveness of forces level and structure.
- Exploitation of the capital of labor force: manpower, conscription and voluntarism.
- Military preparedness, strategic materials and policy of defense industry.
- Analysis of supply, acquisition and defense contracts.
- Commercial dependence, export control, trade sanctions and economic warfare.
- Foreign aid, developing economies and the defense in countries of the third world.
- War economy and economic mobilization.
- Impact of military expenditures on macroeconomic and microeconomic development.

After the World War II, the research of defense economics in advanced industrial countries with its wide empiric basis has developed rather favorably. In this time, the defense included many protective and aggressive activities undertaken by nations and their governments in order to specify, facilitate and preserve their interests in the tangle of other nations. The defense economics must have included impacts of scarcity of resources on the determination of limits for such aggressive or protective activities and also their production. As nations act within the international system of other states and a number of non-governmental

actors the economics of defense has to include interactions between various national states that have always struggled for their security in wider regional and international economies.

The abandonment of historicism in economics - necessary and sure occasionally also turn for requirements of that time – resulted partly in a precise analysis of actual war costs and their political and social implications but also in an analysis of the cold war costs. However, applicable theory of the economic growth has been developed first in 50`s and 60`s – afflicted with something pathetically powerless because the growth-theoretic and growth-political problems of insufficient resources should have been solved, in the best case it would have been the comparative static analysis. Nevertheless, the whole the post-war era has been influenced by a number of case studies, which have consequently served as a basis not only for decisions on the top political levels but at the same time as an important instrument for an abstraction of theoretic conclusions on the basis of an analyzed empiricism. The necessity for the defense theory to perform studies ex post with an abstraction of conclusions ex ante has been approved. Many intellectual instruments dealing with conditions of “mixed economy” – with relationship between the private and public sector in the economy figure in economic discussion. The cost-utility analysis, Pareto optimum and Pareto efficiency, the opportunity costs theory but also the theory and praxis of social indicators in the armed forces belong to this area. In subject it is a continuation of works by Adam Smith, although with different terms and indications. Military expenditures are not considered just as financial expenditures of the state but also their morphological and structural effects are discussed in connection with national economic events.

New branches of science arise dealing with military phenomenon: military sociology, investigation of peace and conflicts, part of the research of aggression in social psychology, political science as political sociology which understands e.g. the amount and structure of expenditures of a state or of certain alliance

defense as a result of intentional political decisions inside a real or just assumed “military-industrial complex” while earlier economics inclined to understand it just as a theory of certain given “data”. In the defense economics itself there is evident besides an ongoing significant inclination to statistics and to analyses of the state (policy) also a stronger connection with the growth theory than ever before: military expenditures are discussed as one of the instruments within the Harrod models whereas the pivotal element is the phenomenon of military technological progress, its pioneer role – similar as once in the J. A. Schumpeter essays – and the distribution of its utility to various sectors inside the economy.

Now, we can try to formulate a brief summary of our treatise of defense economics in advanced industrial countries after the World War II.

From the point of view of the external form, many publications are available, above all those pertaining to Anglo-Saxon literature. Besides a number of hardly comparable monographs a trend towards “case studies” is evident. The case studies represent a result of the scientific division of labor.

Defense economics is directly related – more than in the past decades – to other new sciences, e.g. politics sociology (which includes the analysis of the military-industrial complex), social psychology, and various socio-critical schools. The historical dimension of defense expenditures – once missed out so often – can help to establish a new “scale” for future model theoretic analyses. An analysis of individual elements of the war-economic potential and the issues of implementation of military power form premises for the study of defense economy in the industrial sector.

The dynamisation of the thinking in the field of defense economics has assisted to get over the rigid boundaries of traditional economic literary events and to increase the value of scientific consultations.

In the initial period of the cold war along with the intensification of problems of national security of the USA and further during the cold war the policy requirements have turned from issues of how to win an armed conflict to

issues of how to gain the superiority in a lengthy conflict. The defense economics has developed in several directions under these conditions. On the microeconomic level the operations research has lead to the development of the cost-effectiveness analysis and the cost-utility analysis. Thus the conception that governments – by an efficient use of the economy as a non-military instrument – could influence or support various sorts of strategic goals has soon become a doctrine of national security. The idea that the economy itself is an instrument of defense policy whereas economic principles are determinant for an effective arrangement and application of such instruments has been developed in this period.

Considering that the armed forces utilize the manpower intensively the main problems to solve have been: impacts of recruitment on the economy, budgetary vs. actual economic costs of general conscription, consequences of general conscription for individuals, a comparison of the pension system and a system stimulating further service of volunteers.

Issues of the acquisition process have represented an important area. Questions of the economic mobilization, transition of the production strategic supplies and the preservation of the production base and the dependence on foreign suppliers have been investigated. Further we can find essays on types of weapons systems required within an escalating international conflict. Economics has helped to clarify this issue by applying the ideas of the production theory in the field of defense provision.¹³ Thus the study of an efficient utilization of the capital and manpower condition organizational structures of forces in larger countries as well as studies comparing weapons for several deployments and weapons of one possible deployment, studies comparing reliability and replaceability and issues related to the term of “logistics”.

¹³ *Handbook for Defense Economics*. New York: 1995, p. 28 - 29.

1.3 German Military Economics

When trying to define the defense economics in the German interpretation it is necessary for preserving the objectivity to mention two assumptions: the first one is the fact of finishing with results of “Wehrwirtschaftslehre” from the days of Nazism, the second one is the pressure of the Anglo-Saxon economics.

Intellectual efforts have been considerably concentrated on microeconomic problems that have been reflected in a development of an original military economics titled the Theory of Economic Serviceability of Troops (Betriebswirtschaftslehre der Streitkräfte). Later a new term - Military Economics/Militärökonomie) has been used.

The German military economics incorporates both the elements of public economics and also elements of business economics. Its fundamentals are very complex though it is based on traditions of German thinking related to the economy. The military economics is a dogma of economics in military matters. The economy inside the military itself plus overall economic connections represents the military economics.

The economic provision of military actions and responses is crucial in studies of G. Kirchhoff (1986).¹⁴ German theoreticians representing the military economics aimed their attention at microeconomic issues of the armed forces behavior.¹⁵ This aiming has been oriented from the very beginning towards a discussion of interior business problems of the armed forces. Mainly the tactical-economic deployment of forces, costs and calculations of effectiveness of the armed forces action, economically efficient organization and organizational flexibility, theory of economic decisions in conditions of a military organization belong to these interior business problems.

¹⁴ An outstanding German expert of military economics, vice chairman of the Association of Military Economics in the Federal Republic of Germany, research worker of the Research Institute of Military Economics.

¹⁵ KIRCHHOFF, G. *Handbuch zur Ökonomie der Verteidigungspolitik*. Regensburg: 1986, p. 534.

According to German authors, the military economics is an interdisciplinary science in the group of economic sciences. The army is the object of research for disciplines of economic sciences and for further special economically oriented disciplines like history of military economy, psychology of military economy, pedagogy of military economy, economics of military education and military economic geography. We can presume that such a summary of macroeconomic and microeconomic facts and issues in the military - and in connection with cognition – is meaningful because a comprehensive opinion can be derived from a rational reduction.

The theory of military economics emphasizes that nowadays it can be important for military to define the economic science as a scientific cognitive object.

When refusing the category of defense economics, German authors emphasize that the military economics means also an economic examination of military goals from the overall economic point of view and thus from the macroeconomic point of view.

Organizational structures and internal business dynamic processes are interesting for military-economic research.

In the Federal Republic of Germany the military economics has been essentially based on the Bundeswehr economic behavior (armed forces including the Bundeswehr management) and parallels between the science of the business economy and the armed forces.

The Bundeswehr expresses its connection with the business economic thinking by acting in public as an economic business which has to – because of permanent reduction of its funding – start to think economically and by the fact that about one quarter of graduates from colleges of the Bundeswehr have been educated as business economists. At the present time the percentage of military expenditures on GDP comes - in case of Germany - just to 1.3 % (2001).

Primarily, the research work of J. Gerbera¹⁶ from the 60's is used to consider the armed forces to be an economic business. Gerber has stated in one of his many articles: "The armed forces are bodies which a nation or several nations have established to ensure their vital order. So, the armed forces represent a special type of enterprises that we understand according to the purpose of their deployment." May every enterprise be divided to four basic elements, which will be further indivisible: property (in armed forces armament and equipment), capital, manpower and organization. At the same time the organization may serve for combination of remaining three elements that should perform their basic functions. "According to their mission the armed forces should belong to enterprises of services because their task is to prepare and be ready for defense."

An innovative and to a great extent revealing essay by J. Gerber "Introduction of Principles of Rational and Economic Thinking in the Armed Forces" – works with a system of axioms from which the propositions are derived where spatial linkages of our world are formed satisfactorily. "The armed forces can be understood as the oldest big business, they are the oldest place for institutional operationally-economic actions and commanders of troops have been, are and always will be economic administrators."

It is necessary for all areas, all activities and for every situation of the armed forces to perform a cost-utility analysis, however, no military commander can be just an economist. Nowadays, the science of the operating economy has been fully integrated in institutions of the Bundeswehr; there exist courses of study of operational-economic issues at academies and universities of the Bundeswehr. An increasing number of economically educated personnel are active in the sphere of the logistics, planning, costs calculation, organization and armament planning.

¹⁶ Retired major general, titular chairman of the Association of Military Economics, founder of the scientific discipline logistics in the Bundeswehr (1962).

1.4 Defense-Economic Thinking within the Marxist Paradigm, including Czechoslovakia

That thought developed under the influence of the analysis of the Soviet war economy and the difficulties that the Soviet Union encountered at the beginning of the war.¹⁷ That is also why much attention was devoted to the issues of war economy. Another powerful factor influencing the investigation of war economy was ideology and the communist party propaganda. The excessive emphasis on the normative aspects of the inquiry was very often combined with apology. War economics was understood as a scientific discipline dealing with economic problems from the point of view of war.¹⁸ This problem is described in publication “Brief History of Defence Economics” (2001).

The discipline sought to formulate the principles of implementing various models of war economy and to discover the laws governing their behaviour. There were two basic trends in war economics with respect to its research orientation: (1) a wide category of problems ranging from the question of the state (coalition) potential to the question of war requirements; and (2) principles of the implementation of war economy systems and the laws of their functioning. At the same time, war economics examined the general economic problems in connection with war. The first group of problems included such research topics as peacetime preparation for war economy, military-economic potential, economic potential, economic mobilisation, war reproduction, distribution of supplies in various models of war economy, etc. Among the problems in the second group were: principles of stocks creation, alternative ways of the transition of industry to war production, principles of rational regulation of consumption,

¹⁷ *Voprosy v ekonomike sovremennoj vojně*. Moskow: 1951; LAGOVSKIJ, A.N. *Strategija i ekonomika*. Moskow: 1957; VOZNĚSENSKI, A. A. *Válečné hospodářství SSSR za velké vlastenecké války*. Praha: 1949.

¹⁸ KRČ, M. *Nástin dějin ekonomiky obrany*. "Brief History of Defence Economics". Praha: 2001, p. 156.

methods of dealing with lack of skilled manpower, transition of agricultural production to war production, etc.

War economics addressed the problems bearing on war both in peacetime and in wartime. This was justified by the assumption that many of the processes of adapting the economy to the needs of war were of long-term nature, and, could not therefore, be properly addressed only shortly before the outbreak of the war conflict. The nature of many of these problems required, according to the doctrine of war economics, that they be addressed already during peacetime. Among such issues were, to give just a couple of examples, local defence problems and matters connected with transport and infrastructure. War economics had an interdisciplinary character.¹⁹ The huge economic burden of war, the changed conditions of economic life, growing role of the state, unnatural relationships in areas of production and distribution, all those led to considerable deformations in the functioning of the economic laws that were transformed into sorts of hybrids that, because of their stochastic character, were very difficult to predict. This situation, combined with fears of new problems yet unknown in the area, tainted the expectations of the researchers at that time. Neither political economy, nor other economic sciences investigating peacetime economy, was able to address successfully the above-described problems, and thus the attention of many researchers turned to war economics.

Different models of defence economy could not be governed by the same laws, since their scope was limited by historically variable conditions. With changing socio-historical conditions, the manifestation of some of the laws was in various ways distorted, other laws ceased to operate at all, and, at the same time, entirely new laws, characteristic of war economy, emerged. With its subject matter, war economics overlapped with many affiliated disciplines, for example with the so called sector economic sciences – especially economics of industry,

¹⁹ KRČ, M. *Nástin dějin ekonomiky obrany. "Brief History of Defence Economics"*. Praha: 2001, p. 157.

agriculture, transport, trade and international economic relations. The economics of international relations was used to formulate theses and propositions that were then applied in economic processes within the socialist military coalition. In addition to that, military economics had many points of contact with the so-called military science, especially with the military strategy and the armed forces economics. It used general research methods to analyse war related problems of industry, including arms and defence industry.

The basic method of research in war economics was the method of dialectical and historical materialism. That method allowed war economics to put the studied phenomena in evolutionary context and to take account of their qualitative changes. It also made it possible to view phenomena from varying perspectives given by dialectical opposites such as diachrony – synchrony, whole – part, static – dynamic, praxis – theory. Among the main research methods of war economics was economic analysis.²⁰ That analysis enabled the researchers to investigate the relationships and mutual influence between various economic processes and phenomena. Depending on the character of studied problems, the researches preferred dynamic or static analysis. Static analysis enabled them to reconstruct the picture of the investigated phenomenon (for example the size of stocks in the whole country) at a particular point of time. Dynamic analysis, on the other hand, allowed them to follow the evolutionary trajectory of the phenomenon in time and to uncover their causes. War economics often used statistical research methods. Another research tool that was introduced into the methodological arsenal of war economics was the systems method. Because of the important role played in war economics by past experience, it also made use of historical method. The knowledge and understanding of the past and present status of the investigated systems formed a basis for theoretical generalization and

²⁰ KRČ, M. *Nástin dějin ekonomiky obrany. "Brief History of Defence Economics"*. Praha: 2001, p. 158.

enabled the researches to make prediction. The prognostic function of war economics was regarded as very important from practical point of view.

War economics worked out or took over from other disciplines and adapted for its own purposes many theoretical concepts and categories that were generalizations of economic phenomena and processes. The most important categories of war economics included the concept of war-economic potential, which was used to express the connection between the military power and the economic possibilities of the state. The full understanding of that concept presupposed the acquaintance with a number of other concepts of war economics such as military power, arms production, potential stocks, etc. Another important category of war economics was the concept of economic mobilization. The definition of that concept referred back to such auxiliary concept as material stocks, war deployment, transfiguration, etc.

War economics also used many concepts that had already been in use in other disciplines. War economics very often appropriated them by adjoining suitable adjectives to them, turning them thereby into more specific concepts. To give just a few examples, one can name such concepts as strategic raw materials, war potential of war labor, or war social production. There were also many concepts (e.g. allocation, stocks, conversion) that, after they had been taken over by war economics from other disciplines, retained their old names unchanged while changing slightly their meanings in adaptation to the specific conceptual environment of war economics.

War-economic potential was defined as the capability of the economy of the state (coalition) to provide products and services during economic mobilization and war. It was closely linked to the concept of social production force used in political economy, which referred to the production potential of the society. Even though the two concepts were closely linked, they were not identical. The differences between them reflected mainly the differences between the war aim and the peace aim of the economy. The economic transition associated

with the change of the aim of the economy from peace to war was so radical that many authors spoke of a transformation of the whole economy from peace economy to war economy.

1.5 Research Areas of the Czech School of Defense Economics

The economics of defense research in current conditions of the Czech armed forces should focus on the following topics relating to the issue of the efficient resource use:

- How to introduce economic accounts as a means of control in the armed forces;
- How to make use of flexible accounting on all levels of command;
- How to apply the operational analysis for multicriteria decision-making in the activities of the military professional;
- Carrying out of a comparative-descriptive study of the use of the cost-benefit analysis in the armed forces sector;
- Theoretical preparation of the operational economic research into the costs of military activities in the sector of the armed forces;
- Investigation of mutual relations between costs and benefits;
- Theoretical definition of the cost-benefit analysis in the military sector;
- Analysis of cost effectiveness in the sector of defense;
- Theoretical clarification of the analysis of cost effectiveness and utility;
- Controlling as a means for ensuring the economy of the use of resources in the armed forces.

The research into the above topics should contribute to the realization of the requirement that the armed forces should be approached as an economic enterprise and their management should respect the principle of economy.

Flexible accounting is a necessary condition for the introduction of business economics and its criteria into the armed forces. The assignment of the responsibility for cost-benefit relationship should promote more efficient use of resources in the armed forces. It should help the armed forces to perform in conditions of decreasing resources and assuming responsibilities for new tasks. The cost-performance projects should confirm the possibility to apply the principles of the economic management in the military system. Special attention should be given to potential areas of conflict with other systems control such as the system of personnel control, military rules of conduct, respect for military hierarchy etc. It is necessary to find means of coping with the systematic unpredictability of the military budget as an account incomes and outlays. Further elimination of uneconomic behavior will probably be only possible through even stronger pressures on the socio-economic system. The evaluation of behavior from the point of view of the principle of economy should be incorporated into the carrier evaluation system. The quantification of military activities should lead to rational ways of meeting military objectives.

Conclusion

On the basis of the study of development of the defense economics and military economics we have come to the conclusion that both these scientific disciplines are based on the application of economic instruments to the defense sector. The research work shifts from the macroeconomic to microeconomic level also in the defense economics. The study of economic problems of defense provision is based on case studies. Development trends and tendencies and consequent recommendations for the practice of troops are analyzed in these case studies. It is necessary to perform the cost-utility analysis in all areas, for all activities and for every situation of the armed forces. The development of defense economy within the pre-1990 Marxist paradigm did not create sufficient

conditions for the efficient allocation of resources in sector of defense. This shows how different the development of the military economy within the pre-1990 Marxist paradigm was, and how much work is there left for Czech economist dealing with defense economics to complete.

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