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The Restructuring and Conversion of the Bulgarian Defense Industry during the Transition Period

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Table of Contents

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Introduction

During the transition period, the Bulgarian defense industry went through serious hardships. Painful transformations still continue and their consequences will be felt for a long time into the future. For this reason, the radical changes in this sensitive sector of the Bulgarian economy, the VPK (*Voenno-Promishlen* Complex, or Military Industrial Complex, MIC), deserve more serious research.

In the past, the VPK was the hen that laid the golden eggs, with its significant contribution to the Bulgarian economy and its important share in national industrial production, export and employment. Today, however, it is a sector with a vague future and many problems. Defense production, export and employment has dropped 5 to 10 times in recent years, with an unfavorable effect on the political and economic environment in Bulgaria.

This paper will analyze the transformation processes in Bulgaria in order to determine which are the most influential factors leading to the sharp decline in the defense industry, and its costs—and benefits in the form of military conversion—to Bulgarian development. Secondly, it will analyze options for the re-deployment of the VPK's infrastructure and potential. It will identify opportunities for the utilization of this gigantic complex for national productivity and assess its potential in future Research and Development (R&D) in Bulgaria.

Several issues will be covered in this paper, as follows:

- a review of the relevant theoretical concepts which inform this study;
- an analysis of the processes involved in restructuring the Bulgarian VPK;
- an analysis of similar processes in other Central and Eastern European Countries (CEECs) as well as in other western countries;
- a clarification of the role of the state;
- a macroframework of the functioning of the VPK and the international environment.

Although the study offers a brief historical review of the development of the Bulgarian VPK in the last century, it concentrates most intensely on the last 10 years, in which the Bulgarian economy and political system have undergone a radical transformation. Because of their similarities with Bulgaria, the experiences of other countries, especially Poland, the Czech Republic, Hungary and the Slovak Republic, were studied in detail in the course of preparing this study. The scope of this paper does not, however, allow for an in-depth presentation of my findings, which will be drawn on only in so far as they illuminate the Bulgarian situation. Although the existing literature focuses most intensely on the problems of the transformation of the Russian VPK, I found that this material was mostly irrelevant for the Bulgarian situation because of the different scope, scale and role of the Russian VPK. For this reason, the use of examples from the Russian experience is limited.

The study draws from several different sources of openly available public information. Few systematic studies of the VPK have been produced in Bulgaria, or anywhere else, despite the size of the problem and its broad impact on the country. This study is, therefore, one of the first attempts to analyze the overall transformation process in the Bulgarian defense industry. Conclusions will be drawn from a presentation of the general problems facing the defense sector and several case studies.

In Section One, I deal with the theoretical background of the defense industry, describe the socialist defense producers, analyze the role of the defense industry in the global changes that followed the end of the Cold War and consider some aspects of the defense industry in other small countries in the region.

An understanding of the historical development of the Bulgarian defense industry is essential because many of the existing problems have their roots in the past. In Section Two, I describe the main stages of the development of the Bulgarian VPK until the end of the Cold War. Special attention is devoted to the VPK's growth in the 1960s and 70s, when Bulgaria, with significant support from the Soviet Union, built a defense industry disproportional to the size of the country. Its production was oriented mainly towards the export market. The initial conditions for restructuring in the beginning of 1990s, in the VPK as well as in the national economy, are also in considered in this chapter.

As the Cold War came to an end, the Bulgarian VPK was entirely owned by the state. It employed 150 to 200 000 people, and boasted a production potential amounting to several hundred million US $. The low demand for defense production, combined with the serious economic crises at the beginning of the transition period after the fall of communism, brought the challenge of restructuring the Bulgarian defense industry into sharp focus. Restructuring any defense industry is a complicated process and includes many issues. These range from the legal aspects of ownership and management, technological, production and product restructuring, layoffs of personnel, changes in arms trade regulations as well as radical changes in overall attitudes toward the defense industry. Alternatives and strategies for the restructuring and adjustment of the defense industry are considered first at the theoretical level in Section 3. Then the chapter presents a discussion of the organizational, production and product restructuring of the Bulgarian VPK during the transition period, stressing the role played by the state and state programs in the restructuring process.

As it is one of the most important aspects of transformation, the privatization of the VPK is considered separately in Section 4. When this process began, the future orientation of State owned enterprises such as the defense industry was limited and vague. The privatization of the Bulgarian VPK was delayed due to a lack of vision about its potential to develop to address different interests in the new era. The process of restructuring the ownership of this sector was clearly shaped by the 1993-1996 moratorium on the privatization of the VPK. Privatization has, in fact, only started in the last 2 years and is dominated by insider buyouts by workers and

management. To analyze the effects of this process, Section Four analyses both the intentions and the real achievements that mark the sensitive process of decentralizing the State.

Section Five deals with the role of the state and discusses state regulations for the development and transformation of the defense industry. This specific sector of the economy is dependent on the activities of state bodies and an institutional and legal framework that was created by the state. As restructuring began, the heavily regulated state-owned defense producers, crippled by the legacies the command economy of the past and their traditional business culture, needed to make swift changes to their framework for operation and to develop a new type of relationship with the state. As a whole, however, the state did not develop or implement a systematic policy for the defense industry, as in many cases the transformation was induced by serious crises. During the transition period, the state began to pay more attention to arms trade regulations but never clearly defined its role as owner, regulator and facilitator of the defense industry, and main purchaser of its products.

Traditionally export oriented, Bulgarian defense producers faced serious difficulties after the end of the Cold War. Sections Six, Seven and Eight present an analysis of the effects of the reduction in Bulgarian arms exports, the radical downsizing of the defense industry's R&D programs and organizations, and the lack of foreign investment and cooperation.

The conversion of the Bulgarian defense industry is the subject matter of Section 9. The results of this conversion are discussed from many different perspectives and are shown to be controversial at best and negative at worst. I argue that conversion is dependent on a number of factors, including the development of appropriate state policies which are relevant to the restructuring and development of the defense industry, especially in regard to the role of the state in the overall framework of this sector's functioning. During the transition period there has been a lack of systematic efforts directed to conversion. However, I shall show, one of the most promising aspects of the overall transformation of the defense industry could be the conversion and employment of its existing potential for civilian purposes.

The main results of the study are discussed in the Conclusion, and possible policy options and measures are presented. The main conclusion is that the transformation of the Bulgarian defense industry is not finished, and that many important changes lie ahead. Appropriate legislation and regulations must be developed, the role of the state in the new market environment and in integration processes must be determined, and the place and the role of the defense industry in the new century must be decided.

Theoretical Background of the Study

In this section, I shall offer some definitions of terms commonly used in describing the defense industry. Some of these include the Defense Industrial Base (DIB),

Defense-Technological Industrial Base (DTIB), Military Industrial Complex (MIC), Defense-Industrial Complex (DIC), or simply, the defense industry. As I have already stated, the term that will be most commonly used in this study is the *Voenno–Promishlen* Complex or VPK.

It is the complexity of the defense industry which has given rise to the need to develop all these different terms, and it is very important to decide which term most accurately describes the subject under discussion. Writing about the United Kingdom, Hartley and Sandler (Sandler, Todd and Hartley, 1995) offer at least seven definitions for the DIB, which address, variously, the key assets of the industry, their importance for national security, the supply side of the market for defense equipment and, finally, the prime contractors who produce military goods for the Ministry of Defence. Some of these definitions have, however, been criticized for being too broad, too vague, too arbitrary and too subjective, and for omitting some important firms and sectors (Sandler, Todd and Hartley, 1995).

With a little imagination we could add some other definitions which have broader implications and scope, and are able to account for the influence of political or historical events. We might then be able to argue that the whole Soviet Union was a military-industrial complex (Wallin, 1994, p.30). Broadening existing definitions in this way has important implications for the development of accurate statistics, also for the preparation of the draft law for the Bulgarian defense industry, and other such practical purposes.

The differences and, sometimes, confusions in the terms used to define the defense industry come about because it is necessary to explain the varying roles of defense producers in different societies, their priorities and prioritization, attitudes toward them, national specifies and their legal framework. Last but not least, the defense industry is very dynamic. It has made vast technological developments in the past few years, creating dual-use goods and technologies. Complicated links have been formed with advanced civilian technologies, with military goods as the end product. The DIB cannot be reduced to a single, homogeneous entity. They supply separate—if related—markets for air, land and sea, and systems are supplied by firms with their own research and development programs.

During the socialist period in Bulgaria, the MIC was given very high priority. Its existence was justified not for economic soundness, but for reasons that were political and ideological. As Grazin observes, "… what makes a MIC a MIC is not the product, technology, and relation to the armed groupings, but the special relation to the state and government. And these relations are political, administrative and economic" (Grazin, p. 154). During the socialist period, the MIC formed part of a very specific economic regime that was aimed, to a certain degree, at eliminating the stress-producing factors of the free market. The access of foreign competitors was limited, a policy of state secrecy was upheld, tariffs were imposed, standardization was not prioritized, and there was little commitment to a long-term, strategic consideration of every project. All of these factors made a specific

contribution to shaping the MIC in former socialist countries. Moreover, the MIC was determined by the doctrine of (prospective) warfare.

The ideologies which underpinned the development of soviet-type MICs are relevant to the problem of conversion today. It is important, therefore, to understand that conversion is not simply about making changes in technology or products, but also implies radical changes in doctrine which will fundamentally alter a MIC. A number of factors—political, military, economic, social and ideological—influence the latter process.

The next problem with defining a MIC stems from the availability of proper and reliable information. Gathering this is a challenge even in developed countries with well established statistical systems. For transition countries, which face rapid institutional and structural changes and are mired in secrecy, the task is very difficult. A lack of accurate information makes it hard to determine the size and potential of the defense industry, the number of its enterprises, the size of the defense work force, the capacity of defense R&D entities and their expenditures, and so on. Much is dependent on the approach to the defense industry and concrete economic conditions. In a well-developed market economy the size of the defense industry's prime contractor or system integrator and its personnel is relatively small, but there are a lot of subcontractors and service companies. In addition, the prime contractor could undertake a lot of other, civilian, activities. However, during the period of socialism, the defense enterprises, and the system of the MIC in general, were established almost as autarchic entities determined by the shortfalls of the centrally planned economy and a high level of preparedness for war. As a result, any one enterprise concentrated on many different kinds of manufacture—from R&D facilities through to raw materials and final production. Some even undertook their own social activities such as the provision of kindergartens and houses.

A similar set of problems accompanies attempts to calculate defense production, exports and imports. Together with the total lack of official information and the usual methodological difficulties with determining current and constant prices, exchange rates, the reliability of sources, and so on, we should not forget that prices in the socialist economy were not market-related. Armament deals frequently came about as a result of political agreements or barters, or were accompanied by different types of compensations and loans. Even when the money costs of these deals are well known, it is difficult to assess the true resource cost of production in the presence of the artificial prices that were established in the trade-offs between former socialist countries, as well as the relatively big proportion of imported parts and details in exported products[1].

When we measure employment figures in the defense industry, we should bear in mind the fact that very often, in a transition period, these only include people who are formally employed. Not infrequently, workers are on unpaid holidays or are idle because of a lack of orders, which is, in fact, hidden unemployment. When they

1 For more details, see Yudit Kiss (1997, p. 5).

do work, the production load is often not full, and so many of them are busy with activities not associated with defense production at all, such as infrastructure and social facilities. In other words, the same workers produce military as well as civilian goods, and the ratio of military to civilian is changing continuously. That enterprises such as these are understood as part of the MIC is, in fact, a hang-over from the past. Even though their present-day production is far removed from defense, they are still counted as MIC enterprises because of their mobilization capacities, their potential deployment into defense production, their ownership by the state and their belonging to ministerial structures in charge of the defense industry.

Many of these enterprises, in spite of their broad cooperation with sectors outside defense, have retained the autarchic approach of the past, their refusal to downscale their work force being one legacy which is unsustainable in the present. Issues such as this, combined with the existing secrecy and still unresolved problems with access to information in Bulgaria, required that I exercise a certain amount of caution in dealing with the available data.

For the purposes of this study, I have defined the Bulgarian MIC (or VPK) as that part of Bulgarian industry which produces military goods. It has an internal network of production, technological links, and a particular regime of state-imposed regulations regarding production, trade, wartime preparedness and access to information. In the transition period, these regulations have very often concerned the ownership of an enterprise and questions related to this issue.

My preference for the term MIC derives from the fact that under the socialist regime, the Bulgarian defense industry was created as a production-technological complex. There were links among the enterprises and their foreign partners, and divisions of labor and functioning were clear. The centrally-planned command economy relied on this setup. The term MIC (VPK) was used in all legal documents concerning defense production, delineating even more clearly that it played a specific part of the Bulgarian industry.

Arms production, while it is based in political and strategic considerations, is nonetheless an industrial activity, and is therefore linked to the question of employment, regional policies, technology and costs, some of them the direct responsibility of the state (Brzoska 1999, p. 140). Arms production requires a well developed industrial and R&D infrastructure, and is difficult in underdeveloped countries. There are five steps necessary for successful arms production, and these steps can be clearly traced in the Bulgarian experience.

- assemble weapon parts sent from another country in your own country;
- begin to build some of the parts in your own country;
- acquire a license to build a weapon designed in another country, using some parts built abroad and some at home;
- build up a research and development capability and design your own weapons;
- build weapons of your own with only a few parts imported from abroad (Brzoska, 1999).

Bulgaria's defense industry stayed in the first 2 stages until WWII, and after the war, moved on to the next stages. The country's experience shows that is always a problem for less developed or small countries to choose whether to produce or to import arms. This question has still not been resolved and there continue to be a lot of arguments, for and against this choice. It is also apparent that a lot of countries continue to produce weapons, without any sound economic reasons for doing so.

Although it is possible to demonstrate some benefits of promoting the arms industry, they are not always uncomplicatedly positive, especially in small countries like Bulgaria, which cannot afford to maintain a defense industry capable of producing a complete range of weaponry. Achieving independence in arms production should not, therefore, be assumed to be an indication of success, especially in the long run. Self-sufficiency is, in the end, a symbolic rather than a real issue. Very often, nonetheless, strong economic interests push the development of the arms industry, especially for export and as a mean to earn revenues in foreign currency, which for many countries is not otherwise possible (Brzoska, 1999), especially because small countries have more fragmented and modest markets and their opportunities are limited[2]. Unlike their counterparts in bigger countries, defense firms in small countries cannot survive on domestic weapons procurement alone. In periods of transition, then, state support for defense production will inevitably decrease, especially in underdeveloped countries, because of IMF and World Bank policies.

The fundamental weaknesses of a relatively small-sized MIC are obvious, including issues such as limited production, diseconomies of scale, and a lack of social flexibility. Preserving independence and effective armament production at the same time is a difficult task. Small countries are, therefore, forced to cooperate internationally, but in order to maintain their independence, must do so with different countries and partners. Unfortunately such cooperation is not sustainable. When limited cooperation can only be maintained on an ad hoc basis (e.g. subcontracting for the production of parts or subsystems in the framework of only one contract), the defense industry in a small country is further weakened.

Self sufficiency is costly, and different nations will have different comparative advantages. They are likely to gain from specialization and international trade. The relatively lower priority of defense after the end of the Cold War and the withdrawal of the state from the defense industry made existing defense companies seriously reconsider the importance of development costs, cost and time overruns, cost trends, economies of scale and learning and the cost penalties of stretching out programs.

2 See Wally Struys, Luc Mampaey and Sandor Balazsy, editors. *EUR 19232 – COST Action A10 – The Hungarian and Belgian Defence Industries: A Bilateral Study*, Luxembourg: Office for Official Publications of the European Communities, 2000.

Particular characteristics of socialist defense enterprises

Although the defense industry in Bulgaria was created by the state, and was traditionally state owned, there are significant differences between the defense industry before WWII and after it, when the centrally-planned command economy and socialist regime were established. These differences are amplified when we compare socialist defense enterprises and defense producers in free market economies. Mo Yamin has observed that:

> ... the fundamental feature of a [defense] firm [is that], first and foremost, it is a source of independent initiative. A market economy, in fact, is simply one in which decisions regarding the production, pricing and marketing of goods and services are made by firms as sources of independent initiative. The productive units of a command economy are clearly not firms in this sense; they are instruments for implementing the initiatives and plans of others rather than their own' (Yamin, 1998, p. 19).

Writing about socialist firms, Kuznetsov argues that many of the functions normally carried out in a western enterprise, such as defining a demand or negotiating with customers, used to be centralized. The defense industry was controlled at the highest levels as the biggest decisions were made to meet the prerogatives of politics (Kuznetsov, 1994, p. 72).

The defense industry in Bulgaria after WWII was an island of illusory prosperity. Arms exports, together with the re-export of Soviet oil, formed some of the pillars of this relatively good welfare state. Salaries were comparatively higher then the average, and were combined with significant additional social benefits. The only requirement was to produce and produce, as the physical allocation of resources was prioritized. In a market of distorted price relations and artificial prices, financial and monetary considerations were in second place, while cost considerations and future development were not on the agenda. The state gave orders to the companies, telling them what to produce, in what quantity, and to whom it should be sold. If there was a need to enlarge production, the enterprise was allowed (and in fact ordered) to take bank loans, as investment decisions were not the prerogative of the enterprise itself.

Furthermore, the fiscal and price system that was set in place left only enough financial resources to an enterprise to cover its operational costs. No enterprise could receive currency revenues from its exports, and if hard currency was needed, it had to be applied for and its necessity proven to special state organs. In fact, the profit-center itself was not located in enterprises themselves but at a higher level in so-called economic unions which were similar to holding structures. Enterprises were considered as production units in only a very narrow sense.

Another specific characteristic of socialism, which was based in strong ideological beliefs, was that there should be continuous economic growth. This policy is reflected in the production plans of defense enterprises. What it lead to was

a situation in which concrete production volume was not directly related to the needs of arms markets or armed forces. It is clear that this was waste of resources and an unsustainable policy.

The next difference between socialist and capitalist enterprises is that, in the market economy, the private entrepreneur calculates into his costs, one way or another, the risk of order cancellation, significant changes in the market, and diverse other possible political and economic dangers and risks. At least, he has in mind that the possibility for conversion exists in the future, and understands that he can, and should, take some measures to address this possibility in advance. In this sense, in free-market economies the interference of the state in the conversion process is not justified, because the state has already reimbursed the expenditures of a private enterprise through the price of the armaments it has procured. Western experience also proves that arms production should be oriented more to the size of the order, rather than to the preservation of running facilities. This permits the functioning of effective production capacities, in accordance with the size of the order and with a clear understanding that every order could be the last defense order, i.e. they are demand-driven.

In the socialist system, by contrast, we had plan-driven production which was not, in most cases, based on concrete orders, but on the "ready-made" principle, especially in the field of small armaments. Socialist enterprises covered only their production costs, as positive revenues (if any) were taken away by the state. Enterprises received investment centrally and were granted high priority, but the very process of investment evaluation was not effective because investment and innovation decisions were not taken by the enterprise's management, but at the level of the state, whose decisions resulted in overcapacity and over-investment. The MIC in Bulgaria was granted such high priority that, by the end of 80s there was gross overinvestment. In addition to the huge production facilities that already existed, several big enterprises in ferrous metallurgy and heavy machine-building were created but not finished. For all these reasons, there is a much bigger reason for the state in former socialist countries to participate in the process of restructuring and conversion.

Historical overview

The Bulgarian defense industry was created soon after the foundation of the new Bulgarian state in 1878, with several small repair shops being inherited from the liberating Russian Army.[3] Until the beginning of WWI, however, there was only one military factory, Sofiiski Arsenal (Sofia Arsenal), located in Sofia, for the production of ammunitions and repair of light armaments. During that period, the Bulgarian

3 Data about Bulgarian defense industry until WWII are based on Petrov, Liudmil. 1999,*Voennata ikonomika na Bulgaria*, 1919-1945 (Bulgaria's military economy, 1919-1945) University Press 'Stopanstvo': Sofia

Army relied mainly on imported military equipment. Bulgaria's industrial base was under-developed, and it was difficult to establish its own defense industry.

After the end of WWI, severe limitations were imposed on Bulgaria in accordance with the Treaty of Neuilly, which dictated the number and the structure of the Bulgarian Armed Forces and Police. The importation of military materials was forbidden, and all surplus armaments, including personal weapons, were confiscated. All enterprises involved in producing or repairing military production, with only one exception, were obliged to switch to civilian products, i.e. to convert. The Bulgarian Air Force and Navy were liquidated, a limitation which was only removed officially in 1938. The sole defense enterprise after WWI was once again the state-owned Sofiiski Arsenal, which enlarged its capacity by undertaking the production of cartridges, and performed test and quality control functions for the Bulgarian Army. There were around 120 full-time and 400 part-time workers. In 1927, the government took a decision to transfer this enterprise to the city of Kazanlak, where a new entity was formed and named the *Darzavna Voenna Fabrika* (State Military Factory). Three years later, a new branch was created in the nearby city of Sopot to produce ammunition, mainly cartridges and powder.

After 1935, with significant German help, the list of products was enlarged to include the production of artillery shells. In fact, the enterprise began to produce all the kinds of ammunitions needed by the Bulgarian Army as well as some parts for heavy weapons. Several military repair factories was established, one for communication equipment in Sofia and a dockyard in Varna at the Black See.

In 1924 Bulgaria established a new factory, *Darzavna Aeroplanna Rabotilnica* (the DAR, or State Airplane Factory) in Sofia for the production of light aircraft for training and reconnaissance. A second airplane factory, *Aero Praga*, (Avia), was build in Kazanlak. In 1930 the Italian company Caproni bought this enterprise and started producing airplanes under their own license. In 1939 a new airplane factory was created in city of Lovech under Polish license. By the end of the 1930s about 10 000 workers, 700 military officers and 1500 civilian clerks were employed in defense industry enterprises, which were considered relatively big ventures for Bulgaria. The development of these industries notwithstanding, import remained the main source of military procurement for the Bulgarian army.

The Defense Industry After WWII

The establishment of the Bulgarian defense industry in the period following the Second World War, similarly to the experience of other Warsaw Pact (WP) countries, was subordinated to 3 conditions (Struys, Mampaey and Balazsy, 2000):

- the same standards in the framework of the WP;
- specialization in the field of small armaments, armored vehicles and electronics;
- balanced imports and exports in the framework of the WP and its bilateral basis.

There were several factors which defined the scope and size of the Bulgarian defense industry: the political-economic regime, military-political coalition links, government programs and policies, the military doctrine and strategy for defense in the framework of the WP, and the organizational structures and operational practices of the Armed Forces. The defense industry was, at macro-level, heavily dependent on an all-embracing political, military, ideological and economic framework. It is important to note that after the end of the Cold War, most of these determinants for the priorities of the defense industry changed suddenly, disappeared altogether, or were too recognized as too vague. This is one of the explanations for defense enterprises' uncertain behavior at the beginning of the transition period.

The Bulgarian defense industry was very closely connected with the Soviet defense industry, as the production of both was export oriented. To a very large degree, defense production was visibly separated as an independent economic system, called the VPK or OPK (*Otbranitelno Industrialen* Complex, or Defense Industrial Complex, DIC), which was an expression of the unity of state defense policy and strategic objectives, and the organizational mechanisms of this specific industrial branch.

Writing about the Soviet defense industry, Julian Cooper observes that resource allocation was not in line with the true resource costs of production (Cooper, 1994, p. 31). This is true for Bulgaria as well. Artificially low prices for the high-quality inputs used by the defense industry resulted in artificially low prices in defense production. Bulgarian enterprises received cheap resources from the Soviet Union, and even at the end of the Cold War, were stockpiled with ready production and components.

Bulgaria's was a centrally planned defense industry, first in terms of the frameworks of the WP, and then at a national level. The division of labor was planned from Moscow, a policy which was extended into Eastern Europe through the WP. Effectively we had an integrated defense industrial complex expending beyond the borders of the Soviet Union, with centralized planning, R&D, imports, exports, production cooperation and administratively imposed prices.

Defense production was a state monopoly as the enterprises were fully state owned, with very high centralization of the overall management, including planning, investment, supply of raw materials and production equipment and trade realization of the production. The production cycle started with centralized planning and financing of R&D and all necessary patents and licenses for production. All of this was expressed in the frameworks of COMECON and subordinated to the strategic needs of the WP.

Immediately after WWII, decisions about the development of the defense industry in Bulgaria were not nationally dominated. Bulgaria, as a defeated country, could not afford to build defense enterprises of its own. Then, after the total political and economic change in the state, including the nationalization of all industrial assets in 1947, there were no dominant economic or group interest in

Bulgaria in favor of such development. The strategic place of Bulgaria in the framework of the WP required, however, the development of a strong defense industry corresponding to the high war-time preparedness and the strategic plans of the WP. By the 1970s, Bulgaria's government was pushing for a more serious development of the defense industry, one that was more nationally dominated, because by this means, Bulgaria found opportunities to earn hard currency from exporting arms.

After WWII, the existing but underdeveloped Bulgarian defense industry was seriously restructured with the decisive input of the Soviet Union. Production standards were raised, and the factories in Sopot and Kazanlak and the dockyards in Varna were renovated, while airplane production was canceled. Following tradition, Bulgaria continued to specialize in the production of small armaments and ammunitions, and repair work, relying on the Soviet Union for the procurement of other weapons. This specialization was not accidental. As we shall see, it is repeated several times in the history of the Bulgarian defense industry, and corresponds to the overall framework of Bulgarian economic and political development.

Although extreme caution still surrounds the release of information, it is possible to infer that during the period 1946-1990, the Soviet Union exported defense production to Bulgaria amounting to US $16.7 billion, and for the period 1957-1989, Bulgaria's export was US $11.5 billion.[4] The planning undertaken in the field of military-technical cooperation was all favorable for Bulgaria, which was offered gratuitous donations and low-interest credits, and could barter as a means of partial or full payment for the military equipment it supplied.

Of course, this is only one aspect of the cooperation between Bulgaria and the Soviet Union in the field of defense industry. Some deliveries, such as production equipment for the defense enterprises, were not considered as defense goods. Although this is debatable, the prevailing opinion is that during the period of socialism, in its bilateral relations with the Soviet Union, Bulgaria was a net receiver of resources, products and technologies in exchange for its political loyalty. One of the main advantages to Bulgaria was that many production costs were paid in the local currency (Bulgarian *Leva* or Soviet *Roubles*), while the country received hard currency from its exports. The negative effects in the defense industry, and as whole, were, however, full dependence on Soviet technologies and know-how, and the lack of competitive pressure within Bulgaria's defense production and development became strikingly obvious during the transition period after 1990.

Another feature of the defense sector was that it was surrounded by an extraordinary system of secrecy. A lack of official information and publications, and the secret presence of military or para-military personnel in the enterprises, whose personnel were themselves partly militarized, contributed to this spirit of conspiracy. Today, it is one of the reasons, (common to all former socialist countries) that information about Bulgarian defense production, imports and exports, as well as

4 Duma, 3 May 1997.

defense budgets and expenditures, is not reliable. All the available data are based on rare western publications and comparative studies, but Bulgaria has never received in-depth attention from analysts in the west because of its relatively low importance and the low volume of production.

The Defense Industry in the 1970s and 80s

The fundamentals of the present Bulgarian defense industry were put in place in the late 1960s and throughout the 1970s, when dozens of enterprises were build and modernized with significant Soviet help. These defense enterprises were planned and created exclusively for the production and repair of military technologies (Dimitrov and Ivanov, 1999, p. 91). Bulgaria expanded its production to armored vehicles and military electronics, produced a full range of small armaments and ammunitions, and undertook every aspect of military repair to meet the needs of the Bulgarian Army. Many of the Soviet-supported enterprises began as points of assembly for imported components, but opportunities developed for Bulgarian producers to substitute these with locally-manufactured parts.

In addition to the obvious political-strategic considerations of this form of cooperation with the Soviet Union, there were several economic reasons for Bulgaria to support such a serious investment program. Immediate benefits were seen in the national and regional development of the economy through increased employment and other accompanying benefits. The country's defense production also helped balance bilateral trade relations at COMECON level, and finally, defense export was significant source of hard currency (see Table 1). During the best years of the defense industry—the late 1970s to the mid 80s, Bulgaria successfully reduced its foreign debt.

Table 1 Bulgarian Foreign Debt, 1980-1991[5]

Year	1980	1981	1982	1983	1984	1985	1986	1987	1989	1990	1991
US$	4865	4080	3500	2922	4119	5511	7404	9125	9201	10007	11375

According to Michael Brzoska and Thomas Ohlson, in the late 1970s, in response to an increased demand in the Third World, Bulgaria expanded its production facilities, developing its capacity to produce munitions and small arms of Soviet design.[6] For small countries such as Bulgaria, this production was sustainable only in the context of an international centrally planned economy and the WP, in which the artificial system of low prices was maintained and a network of political agreements existed. Keeping these factors in mind, Jurgen Brauer and Hubert van Tuyil point out that

5 Source: Bulgarian National Bank, 1991. US $ figures are in millions.

6 Michael Brzoska and Thomas Ohlson. Arms Transfers to the Third World, 1971-85 SIPRY, Oxford University Press.

not only the economic impact of Bulgaria's arms industry is unclear, but also the reasons for its existence (Brauer and van Tuyil, 1996, p. 128).

Overall, Bulgaria's defense budget provided a rather mediocre home market for the Bulgarian arms industry. By the 1970s, the industry exported 90-95% of its production (Ivanov, 1998, p. 95). The biggest share of exports (about 40%) went to other socialist countries, as the biggest customer was the Soviet Union. The next largest export market was the Middle East, where at different times Algeria, Egypt, Iran, Iraq, Libya, Syria and Yemen were major customers (SIPRI Yearbooks 1984; Dimitrov, 1998). The last market was sporadic, comprising clients in Third World countries.

The Bulgarian defense industry was limited by two significant factors: its production was determined by Soviet technologies and licenses, and its trade was defined by the dominant East-West block division of power. The development of the defense industry in Bulgaria in the 70s was not subordinated so much to ideas of national independence and security of supply, as to the extraction of additional economic benefits. Brauer and van Tuyil note that, despite its limited role in weapons production, Bulgaria was an arms exporter, although primarily to Third World allies, functioning as a Soviet proxy in this arena (Brauer and van Tuyil, 1996, p. 129). In 1985, Bulgaria ranked 12th in exports among the 39 arms exporting countries. With exports totaling US $400 million, its exports exceeded those of Romania, Hungary and even Yugoslavia. Arms imports, however, were even greater, costing US $675 million. In 1982 and 1984 alone, arms exports were greater than imports.

During the period 1978-88, a positive market situation was observed and accordingly, the defense industry's production capacities were developed through building new plants and modernizing those that already existed (Dimitrov and Ivanov, 1993, p. 94). The driving forces behind this increase in capacity were the increased international demand for arms brought about by the Iran-Iraq conflict, and at home, an increase in the level of war-time reserves for the Bulgarian Armed Forces. In the middle of the 1980s the arms industry represented, at 7%, a significant share of national industrial exports. With a total export volume of around US $500-600 million, it earned 60% of Bulgaria's hard currency.

By the 80s the defense industry held 10% of the country's industrial assets and employed a workforce of 150 000—12 % of its industrial workers, or 3.75 of the total number of employed (Ivanov, 1998, p. 95). Within the frameworks of the WP and COMECON, it enjoyed a high priority because it specialized in several products. It developed relatively big enterprises focused on ferrous and non-ferrous metallurgy. 1980-85 was favorable for Bulgarian arms sales and in that period, a reasonable basis for decisions about the modernization and creation of new production capacities, directed to the production of heavy armored vehicles and tanks, was developed. The building of three big enterprises, two for heavy investment machine-building in the cities of Rousse and Radomir, and one for

ferrous metallurgy around Bourgas, were started in the mid-80s as third-tier suppliers for the defense industry.

Planning processes, state bodies and procedures during socialism

During the socialist period, the defense industry functioned within the framework of a centrally-planned command economy. The main instrument for development was the National Economic Plan (NEP) which had only two dimensions—a one-year plan and a five-year plan. There were two main players in the planning process, the State Planning Committee (SPC) and the Central Committee of the Communist Party (Dimitrov, 1999, p. 71). The SPC was subordinated to the government and was its working organ. In practice, the SPC was an interdepartmental body with very broad control functions and rights in the preparation and implementation of planning. The Central Committee of the Bulgarian Communist Party (BCP) had a very broad and extended organizational structure with many departments and personnel covering all aspects of social life. In practice, this party structure existed as a parallel state structure, but with primacy over state institutions.

The control numbers (limits), imposed by the SPC dictated the aims of future NEPs. There were, in addition, classified detailed enclosures (by every ministry, committee and region) which included plans for military production and resources for 'special' institutions and organizations such as the Ministry of Defense, Ministry of Internal Affairs, Civil Protection Service and some other security services. These classified plans were presented in input terms (material, financial and labor resources). The planning processes of 'special' institutions and organizations were separated from other, relatively more open planning, and were concentrated in 'special' planning bodies in the Ministries. These plans were divided between Ministerial bodies on the basis of their direct involvement in security matters. Only the top state officials and party leaders and 'special' planning department in the SPC had full access to information.

The planning process for security and defense followed the general procedures in broad terms, but in practice were separated from all other planning processes. As noted, there were 'special' planning bodies in every ministry, committee, local authority, some bigger municipalities and in the defense-industrial enterprises. Although these bodies were subordinated to different managerial structures, in practice they had a parallel 'special' structure which allowed for coordination.

The most important of the bodies, the State Defense Committee, included the highest state officials: the Head of State and Secretary-General of the BCP, who chaired it, the Prime Minister, and the Ministers of Defense, Internal Affairs, Finance and others. The Committee approved and issued numerous documents on defense matters, including decrees, directives, and basic directions for the development of the national economy in relation to the needs of the armed forces and national defense. The Committee also approved some documents related to war-time preparedness. All of these documents were classified and never published.

The second group of special bodies included the Ministry of Defense and other ministries with troops in their structures. These worked out their own draft plans (one-year and five-year) and presented them in the 'special' planning bodies of the SPC (in full) and to the Ministry of Finance (for financial resources). Because of the high priority granted to defense, military organizations usually received the resources they needed at the expense of other sectors of the national economy. Proposals coordinated in these Ministries were included in the NEP and were communicated to every ministry or agency without any other information being given.

The next organ was the 'Special' department in the SPC. It was the main coordinating organ in the process of defense planning. It aggregated the draft plans of all the security and defense institutions, the production plans of the defense industry, plans for arms trade (export and import) and so on. The department was within the structures of the SPC but in practice its work was visibly separated from the other departments and access to its database was strictly limited. It participated very actively in all stages of preparing draft plans for the security and defense organizations as well as in the preparation of the war-time NEP. Its responsibilities included providing the required resources for defense in peace and war. It worked out the war-time NEP and other documents and produced all classified enclosures to the NEP.

The defense planning process, in its entirety, was supervised by the Central Committee's 'national and social security' department, and it repeated the national planning process in its non-democratic, non-transparent and party-controlled decision-making. Moreover, there was little discussion within the defense organization in terms of economy and efficiency, situation which was supported by the practice of maintaining artificial, non-market prices. Moreover, most matters were discussed, resolved and imposed from outside the country and were not really domestic decisions. Defense resources decisions were taken first in the WP context (dominated by the Soviet Union) in accordance with the aims and strategy of the coalition. Every country accepted some coalition obligations and after that, at national level, allocated its defense resources in accordance with those obligations.

During the socialist period there was no special legislation for defense enterprises but they were clearly separated from other enterprises in the framework of the planning system. The defense industry in Bulgaria was governed by a party-state committee, which put together task plans and oversaw their fulfillment, including the control of hard currency revenues. At ministerial level, the Ministry of Industry was usually in charge of the defense industry.

The Structure of the Bulgarian MIC

In the socialist period, the Bulgarian MIC consisted of three main groups of enterprises (Ivanov, 1998, p. 95). The first group consisted of third-tier, low-end suppliers, producing raw materials and less processed details. Most of them did not formally belong to the MIC, but their production was designated for the defense

producers. Their production equipment was more universal and as a rule, they were responsible for a bigger share of civilian production than that of defense enterprises. However, all such enterprises were obliged to maintain a capacity for mobilization.

The second group of enterprises produced detailed and more sophisticated subsystems which were directly linked to weapons systems. They were part of the real MIC and were formally recognized through their specific statutes and production planning.

The third group were the final producers, a term which does not correspond fully to the term prime contractor (such a thing did not exist during socialism, when all enterprises performed only limited functions). It is closer to the term system-integrator, because enterprises at this level produced weapon systems that ready for use and for the market. These were the biggest companies of Bulgarian MIC, some of them, such as *VMZ-Sopot* and *Arsenal-Kazanlak*, with personnel of 20 000. By Bulgarian standards, they were huge production complexes, often with 10-15 production plants at one production site, and with vertical and horizontal production integration. These enterprises heavily dominated regional development and also incorporated between 30 to 80 small production entities around them in nearby villages and cities. For the most part, these small production entities were added because they offered local employment opportunities. Their production capacities and programs were totally dependent on those of the main production sites.

The production capabilities were combined-type, with a technological division of labor. The production process was designed for mass production with high levels of technological specialization. The share of production for civilian purposes was relatively small, from 10-15% in 1985, rising to 23% in 1988 and 38% in 1989. However, there is a parallel decrease in absolute terms of defense production, whose most significant years were 1985-86 (Ivanov, 1998). The volume of civilian production increased slightly in the 1980s because of the high levels of specialization within the enterprises, but access to information continued to be very limited. Only companies such as *Electron-Sofia*, *Metalchim-Sopot* and *Kintex* were known to the public and were recognizably defense producers and traders. The real enterprises behind them were known only by numbers, and after they were forced into independence at the beginning of the transition period, they found it extremely difficult to promote their new names and trademarks, especially for civilian production.

The common functioning of the MIC was directed through the NEP, the war-time NEP and the system of central planning. The main function of the enterprises was production, as trade, investment, strategic development and very often R&D were handled outside the enterprises. This production structure was set up to avoid duplication and competition in the framework of the WP, with small exceptions being made in the field of small armaments production. The biggest producers in the third group of enterprises in 1989 were *Metalchim-Sopot*, *Electron Sofia*, *Arsenal-*

Kazanlak, *Beta–Cherven Briag*, *Gama-Gabrovo*, *Niti– Kazanlak*, *Pima-Montana*, *Vidia–Vidin* and the trading companies *Kintex–Sofia* and *GIU- Sofia.*

For many years, these trading companies were the faces of the defense industry in Bulgaria. The GIU (*Glavno ingenerno upravlenie*, or Main engineering department) was created in 1952 within the structure of the Ministry of Foreign Trade. After several transformations throughout the years, in 1977 it was finally established as a separate foreign trade company. This company carried out the export and import of defense production to the WP countries, bought production licenses, developed know-how and trained specialists. According to the intergovernmental agreement (GIU), and after that, Armimex, it was the only holder of Russian arms production licenses in Bulgaria. According to some sources, 95% of all imports for the defense industry were passed through the GIU.[7] The other big trading company, Kintex, was initially created as a department of the GIU, but by 1962 acted as a separate foreign trade company dealing with countries and clients outside the WP.

The final result of several decades of prioritizing the defense industry was, of course, a highly distorted economic structure (Wallin, 1994). Although this conclusion is derived from an educated guess, I conclude that in terms of its personnel, enterprises and assets, the Bulgarian defense industry at the end of the Cold War had increased by 10 to 15 times compared with 1939, before WWII broke out.

According to Ivan Ivanov, former CEO of *Arsenal-Kazanlak* during the best years of the Bulgarian arms industry, exports reached US $750-800 million, and one-third of this was from re-export deals. This is a very important piece of information, because it shows the limits of a defense industry, a fact of which every member of society should be aware. Today, many people believe that the capacity of a MIC is much higher than the present levels allow, an attitude which undermines the development of different kind of policies toward the defense industry and limits changes in societal expectations. To build support for conversion, the real economic situation that comes about in a MIC must be revealed. Yet this task is complicated by ongoing secrecy and the lack of proper policy research.

Brauer and van Tuyil argue that the artificial division of labor imposed by the Soviet Union was not effective, because it was neither relevant to the national comparative advantages of the socialist countries nor committed to promoting mutual gain (Brauer and Hubert van Tuyil, 1996). In their view, if there had been an efficient sharing of arms production duties within the WP, the role of Bulgaria would have been limited to shipbuilding and service and repairs, and the country would have provided an arms export shipping point.

Their observation was born out in an interview with the former deputy minister of defense, Daskalov, who admitted that the Bulgarian MIC had had three main defects. First, it suffered from an overcapacity, because all enterprises were created to function at full volume, according to the war-time requirements of the WP.

7 *Express*, 23 February 1994.

Second, it was highly dependent on the Soviet Union which provided materials, details and components—according to him, around 90% of the steel used for light and heavy armaments, engines for armored vehicles, and airplane repair.[8] Third, Bulgarian R&D focused only on the immediate needs of production and was directed more to the implementation, adaptation and preparation for production, than to fundamental research and new design. Russian production licenses were, and still are, at the foundation of the Bulgarian defense industry. This is the reason why Bulgarian producers, with few exceptions, were not able to create new models of weapons or new products. They lacked both R&D capacity and specific skills, and clients and markets.

At the end of the 1980s, the Bulgarian defense industry represented 6% of national production assets and created about 6.5% of the industrial output. The work force was about 9.5% of the industrial work force, with a high share of the total national export (around 30%), but with only 5% of defense production for the Bulgarian Armed Forces. From 1980-1989, defense production, the work force and assets in the defense industry were doubled. The production structure of the Bulgarian MIC was subordinated to the needs of the WP and existing specialization and labor division between Warsaw Pact countries. The main production lines were as follows:

- anti-aircraft guided missiles and unguided rocket shells
- different types of ammunition including artillery ammunition
- optical, opto-electron devices and laser equipment
- trucks and light-armored vehicles for different purposes
- small arms and artillery systems
- a large variety of propelling powders, cartridges, capsules and fuses
- aviation bombs and aviation equipment
- anti-tank armament (hand-held and stationary launchers)
- navigation radar devices and systems
- communication and radio-communication sets and systems
- chemical and radiochemical reconnaissance devices and systems
- radio devices for reconnaissance and disturbance
- electrochemical batteries (Dimitrov, 1998)

The high priority assigned to defense, compared with other sectors of the economy, was visibly disproportionate and endangered all other forms of development. The hidden and non-democratic systems of management and resource allocation did not allow for corrections in policy, thus impeding overall performance. It is not coincidental that, by the end of the 1980s, all socialist countries faced serious economic difficulties, leading to the events at the end of that decade. Command economies proved that they were not able to allocate national resources in

8 *Trud*, 6 April 1998.

accordance with social needs and priorities (Greenwood, 1997). At the same time, the capacity for the communist leadership to react was very limited because of the inherent unwieldiness of the command economy, whose characteristics are:

- authoritarian, non-democratic decision-making process, distorting priorities and objectives
- non-domestic, externally-imposed decisions on priorities and the allocation of resources, based on international commitments and obligations and not national interests (Dimitrov, 1999, p. 71)

In this political environment, no discussion of the difficulties faced by the VPK in CEECs was permitted (Dimitrov and Ivanov, 1999, p. 79). Nonetheless, the relatively under-developed and closed economies of the CEECs were not, in the long run, able to bear growing imbalances which led to serious economic difficulties, and eventually erupted in political tensions.

Initial Conditions for Transformation

The changes in the Bulgarian economy and defense industry after 1989 were more evolutionary than political changes. State owned defense enterprises were not able, to any great extent, to make changes by themselves because they were so heavily dependent on the common political and economic framework.

The general political and economic situation in the country after 1989 was not very clear. Bulgaria entered the transition period with a serious foreign debt of around US $12 billion, and canceled its debt servicing in March 1990, when a moratorium on foreign debt repayment was announced. The debt caused serious difficulties in the development of foreign economic relations and rendered foreign investment impossible. During the 1990-1994 moratorium, Bulgaria relied basically on IMF credits and technical help, and at the same time carried out a not very successful restrictive economic policy. In the first two to three years of the transition, several successive governments tried to implement the main elements of the process of economic transformation: stabilization (the development of a stable macroeconomic environment), liberalization, privatization (the decentralization of property rights), and a number of institutional reforms labeled as institution building (Hoen, 1998, p. 4).

In the face of unfavorable initial conditions and a lack of change in doctrinal views about many of the aspect of transition, Bulgaria's governments continually postponed the implementation of reforms. Starting in February 1991, the country underwent a "big bang" stabilization and structural reform program. Most prices were liberalized, subsidies to most enterprises were cut, and tight monetary, fiscal and economic policies were adopted. State enterprise managers were given autonomy in decision-making. However, centralized wage setting through union-government bargaining and a high excess wages tax reduced the scope for the restructuring of state enterprises.

In the literature, Bulgaria was called a late reformer, a label it shared with Albania, Macedonia and Romania all of which, unlike the other CEECs, were slow to reform.[9] In reality, the reforms only started properly again in 1997, and Bulgaria's lateness, compared to the other CEECs, was significant, especially when it came to privatization and institution building. While the other early reformers have already returned to the GDP levels of 1989, Bulgaria has not enjoyed this success. Inflation was only reduced drastically by 1998, after the introduction of a currency board. Until then, the rate of inflation was often a three-digit number.

Analyses of the transition period demonstrate the importance of an appropriate approach and model for transformation. Bulgarian society was on the receiving end of vague and often controversial government programs, in which fragmentary reform measures and wishful intentions collided. During the first five to six years of the transition, no clear approach or model for development was in evidence. All that could really be observed were a few elements such as a stabilization program and the beginnings of a process of institution building. Government attention was directed mostly to the preservation of a functional economy, rather than aimed at purposeful market transformation. The declaration of the bankruptcy of certain state enterprises and the institution of appropriate reforms in the banking sector were postponed continuously. The failure to transform the indebtedness of state enterprises into state securities, according to the law for bad credit, contributed significantly to a crisis in the banking sector, which culminated in 1996.

Dinko Dinkov points out that the state failed to restructure the Bulgarian economy in accordance with global tendencies because its national priorities were not clearly expressed.[10] In the new era, one of the most important functions of the state is to support the subjects in its territory, or at least to inform them about global development and to provide the infrastructure for this development. The state plays an important role in developing an international plan in which some of the problems of the international division of labor are discussed. All of these issues need clear recognition of the national interests.

Defense enterprises, in particular, found themselves in a very difficult situation. Their relationships with other former socialist countries were almost nullified, or were very difficult to maintain because of the creation of many new states and the demise of previous intergovernmental structures. The Warsaw Pact was dissolved. Because of embargoes or radical changes in Bulgaria's foreign political orientation, the export markets to Arab and African countries almost dried up. The system of central planning was abandoned, but one could hardly say that the defense enterprises were already participating in a market environment with relevant structures and rules. Defense enterprises had been heavily dependent on military-doctrinal changes in the grand military strategy of Bulgaria, but unfortunately for them, these changes came to a standstill in 1998-1999. Especially in the first years of

9 See Stanley Fisher and Ratna Sahay. "The Transition Economies After Ten Years." IMF Working Paper WP/00/30.

10 *Standart*, 12 June 2000.

the transition period, Bulgarian foreign policy was unclear and there were many debates about national priorities and interests. The polemic involved the future of national security policies: should they be integrated in existing Euro-Atlantic structures, or choose neutrality? The option for a renewal of relations with Russia was considered to be most unlikely.[11]

Unlike the other CEECs, Bulgaria needed a lot of time to come to a national understanding about NATO membership. The first expression of the country's intention to cooperate with and integrate into NATO was announced in a Declaration of the National Assembly in 1993, and the official application for membership was submitted on 17 February 1997. In 1994, Bulgaria joined NATO's Program 'Partnership for Peace' and has actively participated in it ever since.

The defense industry encountered its first problems immediately after the changes in 1989. These included serious indebtedness in regard to existing investment projects, produced but unsold production, underutilized assets and capacities, and specific raw materials. The changes were a real shock for the defense enterprises, because they had missed the right time for adjustment after the first signals of a decrease in demand in 1987-88. At that time, however, it had been unthinkable to reduce production or personnel because of the rules of the socialist command economy, in which continuous growth had to be shown. Many enterprises and their management had, in fact, experienced such growth from the beginning of the 1970s so at first, they considered this decline as a short term phenomenon after many successful years. However, they did not realize that their previous growth had not been reached through an effective use of their assets, but through an overinvestment in the defense industry and significant foreign help in adding newer and newer production facilities.

Important psychological factors also influenced the behavior of the management and workers after the first changes took place. Managers were not experienced enough to work in the new market environment, and the workers had got used to relatively good salaries, social benefits and the protection of their jobs. Both sides were reluctant to embrace change, and so they developed strategies of resistance.

At the same time, at the end of the 1980s, in one of their last-ditch attempts to reform the economy and society, the Bulgarian government and the Communist party had introduced a new system of ownership relations known as 'the state-owner, the work collective-caretaker' system. In propaganda released about this system, one of the implications was that workers would receive the right to elect their directors. This idea contributed significantly to the creation of powerful trade unions in defense enterprises at the beginning of the transition period. All the same, however, the enterprises lost their priority status and were unable to react immediately to the changes in their environment. As Shapir has observed about

11 http://www.nato.int/acad/fellow/96-98/f96-98.htm GEORGIEV Hristo - Individual (.PDF / 430 Kb). "Alternative Security Models of the Republic of Bulgaria and Changes in the Concept of Defence Sufficiency."

Soviet enterprises, an increase in their input prices could not lead to a reduction of wastage in the short term, because their inefficient use of inputs was linked to previous technological choices which could not be reversed quickly (or only at the very high cost of a complete retooling of the production plants) (Shapir, 1994, p.139). In such circumstances, price liberalization is most likely to lead to a cascading price rise (a kind of mark-up policy) or to a serious problem of indebtedness. Finally, because of their product specialization, high-priority enterprises are very vulnerable to any demand squeeze.

The Restructuring of the Defense Industry

Factors and strategies for conversion

After the end of the Cold War, the defense sector suffered not just a loss in demand, but a loss of coherence, an observation which is true for the whole defense business. Writing about transformation in Russia, Yevgeny Kuznezov says:

> …the transformation of Russia and its military industry is of a…complex nature, it is not just a question of economic, social and political change, it is a question of a true change of mentality for people who used to see themselves as the elite of the system for essentially seventy years. They are experiencing a tremendous psychological shock, the consequences of which we still do not know (Kuznetsov, 1994, p. 67).

Although the Bulgarian defense industry has a shorter history, the situation there is almost identical.

Peter Healey identifies four major drivers for change in former socialist countries: geopolitical change, Europeanization, pressure for economic competitiveness, and pressure for military competitiveness (Healey, 1997). Another factor, observed by Brzoska, is that with the end of the Cold War and a reduction in procurement in most industrialized states, the arms market has become very much a buyers market (Brzoska, 1999, p. 157).

The next factor that caused confusion in the Bulgarian defense industry was its integration into the world economy, or at least, its need to compete within that framework. After price liberalization and the end of foreign trade monopolization in 1991, defense companies, together with other enterprises, faced real competition—but also opportunities (real or fictional) for new partners, markets and innovations. Other factors which will influence them in the future are NATO and EU enlargement process, the identification of a European defense identity, Bulgarian and European procurement policies, and arms trade restrictions.

For a long time, enterprises had sought to reduce their dependence on external supplies. This had enabled them to manage time lags and situations of relative shortage. They always had some buffer stock of materials, and could manage the

details of overcoming temporary shortages. Their relatively big stocks were piled ready for mobilization. During socialism, they tended to autarchic systems, which in some degree helped them at the beginning of the transition period although, in the long run, it impeded their development.

One of the main obstacles in the process of restructuring was the relatively big role played by social facilities in defense enterprises. Big enterprises were self-sufficient social systems: they subsidized their social activities to maintain their levels of production. In case of dismissal, workers lost not only their salary but a substantial package of social benefits including low housing rents, subsidized holidays, and the like. Managers had an interest in keeping these social facilities running within the framework of an enterprise in order to preserve a significant part of their power base. This provided a strong incentive to keep enterprises running without significant changes.

It is possible to delineate strategies for restructuring and enterprises behavior, but this should always be undertaken in the context of achieving overall changes. The behavior of an enterprise and the freedom of its managers were limited at both the macroeconomic and the political level, by many factors. They were not free to implement the needed changes, not only because of a lack of resources, but also because they did not desire change.

In the first place, many of them waited too long to be convinced that change was inevitable and truly irreversible. They had already experienced, in the 1960s and 70s, two periods of relative economic and even political freedom which had been followed by a renewed tightening of the regime. Their passivity, combined with the unstable political situation in the country in the early 1990s, added one or two more years to the recession period which they had already experienced from 1987. When it became clear that the changes were inevitable, questions of the enterprises' ownership emerged. At the same time, questions were raised about the international military-political and strategic orientation of the country, and about participation in defense coalitions and unions. The attitude of the state toward the defense industry and the real needs of the armed forces needed reconsideration. Bulgaria is small country, and should therefore strive to find its new place in the new international environment on its own—in other words, it should try to domesticate its decision-making processes, a problem which did not exist at all in the last 50 years.

Some other countries, such as Czechoslovakia, Poland and Hungary, were much more self determined than Bulgaria, and almost immediately after the changes in 1989, expressed their desire to join NATO. As a result of this decision, their defense industries were able to be re-oriented from the beginning and could maintain their standards, partners, markets, strategic cooperation, joint projects, access to information, R&D and training of personnel and access to foreign capital. All of these things are significantly influenced by the place of the state in the new strategic and political realities that mark the end of the Cold War.

In Bulgaria, there were initially discussions about restructuring the defense industry to respond to the reform of the Armed Forces, but this is still only an idea.

Until 1998-99, Bulgaria had produced no papers on the reform process, and when the main documents concerning national security and defense, the National Security Concept paper (1998), the paper on Military Doctrine (1999), and the Law for the Defense and Armed Forces (1995), were finally prepared, the role of the defense industry was given only a passing mention.

At the beginning of the transition period, there was no clear threat of bankruptcy. Defense enterprises and their management still did not believe that their importance for national security, and their previous prioritization, would change so suddenly. For Bulgaria, the question that was debated most was not to whether to restructure or not, or whether to close or not; the question was whether the very existence of the defense industry could continue to be justified. The decision to close large enterprises is difficult because of sensitive political moments and the regional implications of large-scale unemployment. But other concerns are also evident: first, the transaction costs for finding a new supplier are very high, as are the potential supplier's entry costs, and second, it still remains necessary to preserve mobilization capacity, to some extent. Also, experience in other parts of the world shows that there can be no sustainable development of the defense industry without a big share in a reliable (and protected) domestic market.

Bulgarian defense enterprises are characterized by a high level of vertical integration. Managers are unwilling to split off parts of their enterprise, because they fear that this might interrupt the chain of production. In the past, in the state owned enterprises, there were no incentives for managers to form separate enterprises, because doing so would only reduce their power base. In addition, the revenues from selling off some assets, or separating part of an enterprise, would go to the state budget not the enterprise. The same goes for the social infrastructure of an enterprise: for some which ran their own hostels without significant outside control, providing cheap housing was an important compensation mechanism for the low wages they offered, and also a source of power.

All these conditions meant that the defense industry was often considered as a holy cow or the hen with the golden eggs. Yet at the beginning of the transition period, the question of the restructuring of the defense industry was not on the agenda at all. The WP framework, which had previously kept the defense industry coherent, was not properly re-developed. At the same time, public prejudice about the MIC reduced the level of informative public debate on what to do about it. A lack of proper research and discussions at the highest political level exacerbated this problem. In the new millennium, the correlation between the existence of a national defense industry and a national security agenda is still not well defined. Only further research and new political decisions can alter this situation.

It is clear that restructuring should be considered both at national and sectoral level. In a paper on security sector reform, Nicole Ball discusses possible adjustment strategies for the whole defense sector at national level (Ball, 2000). She mentions the possibility of military budget cuts, military R&D cuts, industrial adjustment strategies including cuts in employment, closure of plants, undertaking non-military

production, internationalization, concentration, arms exports, conversion, demobilization of armed forces, re-integration programs for demobilized personnel, base closure, base adjustment programs, economic effects including regional, sectoral, and macro-economic. All of these strategies were utilized in the Bulgarian case, but except for budget and employment cuts, their common denominator is their postponement until the end of the 1990s.

After 10 years of transition there is an abundance of strategies in CEECs, which have a great deal of experience in defense industry restructuring. It should be noted that to a large degree, these strategies are the consequences of state policies that were carried out at macro and sectoral level. At branch level the behavior of companies can be considered from two perspectives: from the state's point of view, and from the companies' point of view. The element of purposefulness in their restructuring, or in other words, the presence of an initial plan for restructuring is a very important aspect in such an analysis.

From the state's point of view there are generally three options in choosing a strategy for downsizing the defense industry:

- the paternalistic approach
- the market solution and
- the mixed approach (Prunskiene and Altwater, 1996, p. 47)

In my opinion, it is much more important to define the strategy that will be followed right at the beginning of the exercise, and then to pursue that strategy. What does not work is the identification, after many years, of the kind of strategy that has in fact been utilized when you are in the process of doing an autopsy on the defense industry.

As we will see below, however, the Bulgarian state's approach toward the defense industry was never very clear. The main characteristic of its approach was that decisions were only ever taken to postpone the decisions that were needed for real restructuring.

Most of the options open to companies in other circumstances were not available for Bulgarian defense producers, which were state owned, relatively small sized, lacking in market experience, in a delicate financial position, without significant internal markets and heavily dependent on already non-existent foreign markets. Although the expansion of exports was the most lucrative alternative available, and was therefore prioritized, it should be noted that in the long term, expanding arms exports is not a viable alternative for the arms industry as a whole. As Petra Opitz reveals, an orientation towards arms exports will never be as effective and successful as expected. The high cost of market entry and deficiencies in service and spare parts supply exert a significant influence on future marketing opportunities (Opitz, 1994, p. 98). The real problem of restructuring, then, is that those enterprises which survive unchanged because of arms exports will also lose the comparative advantage of adapting at the right time. Given this tendency, we may shortly see the restructuring of the Bulgarian defense industry characterized by

downsizing everywhere—in the defense sector as whole, and at company level in terms of personnel, assets, products, production and capacities.

In an examination of Britain's military aircraft industry after the Cold War, Donald Hislop argues that military markets have particular requirements which have a profound effect on company organization and capabilities, limiting their general relevance, and thus making diversification a difficult and unlikely process (Hislop). The author considers company capabilities and technological capabilities as the most relevant factors which will influence a company's behavior. Organizational capabilities, which are included in the first factor, are relevant mainly for first- and second-tier companies.

It is important to know what type a company is when considering its conversion efforts. Usually first-tier companies are so specialized that civilian production (where it exists) is strictly separated from the military part due to specific requirements of the business environment. Hislop's observations therefore have important implications for Bulgaria, where third-tier companies were purely manufacturing entities. It could be said that even big defense companies were second-tier companies, especially in the beginning. The very system of central planning puts all companies in the position of subcontractors, producing something invented in another company or assembling parts that were produced in a different country. The problem was that after receiving their economic autonomy, second- and third-tier enterprises started to behave like first-tier companies. This was their strategy in an unstable environment. They wanted to have products for sale, and also finished products for their final consumers.

Organizational restructuring and downsizing

The restructuring of the Bulgarian defense industry started in July 1989 when the economic associations 'Metalchim' and 'Electron' were transformed into ten big companies. Later in 1991, these were dissolved to form one hundred and thirty-four separate defense companies. In 1991 the newly established companies were registered according to Commercial Law. In 1993 an idea was put forward for a holding organization of MIC, but it was rejected. The MIC was divided between the then Ministry of Economy and Planning and the Ministry of Industry and Technologies, which had respective special departments in charge of the defense industry. A supervision committee for company restructuring was created by the Council of Ministers.

The state did not participate in the process of restructuring and/or conversion, except through offering short-term tax relief in the beginning for production of civilian products, and state orders for procurement at the beginning of the transition period were insignificant (Dimitrov and Ivanov, 1993, p. 22). The enterprises with a share of defense production that was bigger than 70 % experienced considerable difficulties in transforming.

Ivan Ivanov, former CEO of *Arsenal-Kazanlak* said in an interview in 1997 that defense enterprises, during the transition period, were working at only 25 % of their capacity. At the beginning of the transition period there was some inertia in the production process, a hangover from existing intergovernmental agreements and the reminders of central planning. Furthermore, defense enterprises continued to produce and stockpile their products in the hope that this was only a temporary decline. As a result, after several consecutive years of decline in exports, they were stockpiled with spare parts and components which acted as a buffer at the beginning of the transition period. In 1990 MIC companies, through the trading company GIU, mostly exported their production to the Soviet Union. US $50 million worth of production was exported, but payments were blocked and the enterprises were not able to receive their money. There was no proper scheme for reimbursement, although there were some attempts to address this problem either through payment for former Soviet Union military materials left in Bulgaria after the dissolution of the WP, or through the arrangement for Russian debt repayment to Bulgaria. Meanwhile in March 1992, the GIU was liquidated after a decision by the Council of the Ministers, which made things even more complicated. The GIU's liquidation procedures continued into 1994, without any proper resolution of its debt. In 1993 a new state-owned trading company, Armimex, was established. It received part of the assets of GIU, but is not its successor in the juridical sense. Armimex also become the holder of Russian production licenses given to Bulgaria. For a short period between 1991-93, the Council of Ministers was in charge of the defense enterprises, and after that they were again transferred to the Ministry of Industry.

The problem with collecting payments from exports to the Soviet Union, or equipment leased from 'Bulgarleasing' for mobilization capacity which was delivered before 1989, was never properly solved. According to the practices that were in place at the time, enterprises were obliged to give credit if what they were supplying would maintain their mobilization capacities in accordance with the war-time preparedness of the country (Dimitrov and Ivanov, 1993, p. 22). In fact, this was a state task which was financed through the enterprises. In the years of the centrally planned economy this was not a problem, but after 1989 it increased the burden carried by the enterprises. The situation was worsened when several successive governments postponed finding a solution to the problem.

The financial situation of defense companies was seriously damaged, especially when, in accordance with the economic reforms in the country, their direct budget subsidies were abandoned in 1991. In order to cover their immediate expenses, the companies began to increase their indebtedness to the budget, to suppliers, to the social security system. Predominantly, however, they manipulated their new creditors by exploiting the banking system's imperfections. We should note that until 1995-96, political pressure was placed on some banks which 'encouraged' them to support this practice. While it was mainly state-owned banks which succumbed, they were aided by imperfect banking laws. There were even banks which were

interested in such dealings because they hoped that they would easily buy these enterprises in the end, as their creditors or the state would guarantee their credits anyway.

According to some experts, imported raw materials and components for defense production amounted, in some cases, to 95 % of the whole value of the item produced (Saraidarov, 1995, p. 130).[12] There is, however, no proper research on that topic until today. The situation becomes more complicated when we add to this the costs of R&D, know-how and production licenses. Bulgarian companies had some reserves at the beginning of the transition period because they had stockpiles of armaments and materials which had been produced at low prices. The companies were thus able to consider their production costs as sunk costs that were not very relevant to the real cost and price of the weapons they had in stock, so in the short term, their prices were quite competitive. The sporadic arms deals they were able to arrange contributed to the postponement of serious restructuring and conversion efforts, because enterprises, as exporters, enjoyed a net gain through paying in the local currency, receiving dollars, and profiting from the exchange rate.

As traditional exporters, Bulgarian defense producers had always benefited from the exchange rate and relatively low labor costs. During the transition period there were several intentional devaluations of the national currency as part of macroeconomic policy in order to stimulate export. Also, many enterprises used some raw materials, details and components which had been bought during the socialist period at totally different prices. Even now, after the currency board has imposed conditions, (1 Leva=1 DM), defense enterprises still benefit because their exports are paid for in dollars.

There is almost full consensus in the public that the MIC played a significant role in the Bulgarian economy in the past. Sometimes annual export numbers of US $500 and US $1000 million are cited. The existing public notion of the Bulgarian MIC is that it has enormous immediate potential, and that it is just a matter of time before its potential can be realized again. The media tends to write about 'our wounded arms production ace,' all of which creates very high expectations in Bulgarian society. Unfortunately, their ideals are not supported by a proper analysis about the real level of Bulgarian arms exports and production in the past and at the present moment, when the fundamental factors for the development of the defense industry are very different. Very often, such high expectations help to fuel social conflicts in the enterprises themselves, instead of convincing them to study the real situation in the MIC.

The rhetoric of state officials in regard to the MIC is also recklessly optimistic. They speak freely about the support of the state and the participation of the Bulgarian defense industry in the rearmament of the Bulgarian Army, which sends the wrong signals to producers. The Bulgarian defense budget was traditionally a one-year budget, with very short term horizons, and even in the first six or seven

12 See also *Trud*, 6 April 1998.

years of transition it was regularly not fulfilled. The Ministry of Defense has also regularly prepared draft defense budgets (and draft expenditures for procurement) that are several times higher than the real resources assigned for defense through the approved budget (Dimitrov, 1999, p. 31). Such actions have kept the defense producers in a state of suspense and confusion where they are waiting for the good times in the future.

In all important decisions taken in the past and now, at the highest political level, an opinion that was formed in 1993 has prevailed. This holds that the process of restructuring should not be delayed any longer, but that, at the same time, a significant share of the defense industry should be preserved (Dimitrov and Ivanov, 1993, p. 148).

This policy was not sustainable, and combined with the lack of export and other viable alternatives for survival, it led to serious economic problems and social tensions in defense enterprises. Frequent changes in management exacerbated the situation. Defense enterprises were also considered to be valuable assets for sale, but because of a lack of transparency in the process of privatization, there was a danger that they would be sold improperly through joint-ventures and loss-making deals.

After several big strikes and workers' protests in 1993, the National Assembly created an interim parliamentarian committee to investigate the problems in the defense industry. This was the first decision made by the state concerning the defense industry as a whole system. Until then, the state concentrated its activities only on arms control, and at the same time postponed making important decisions about the ownership and role of the defense industry in the new political and economic environment. It also abandoned some of its most important tasks—for example, the facilitation of international and intergovernmental cooperation, R&D, and education.

As a result of the committee's work in 1993, Parliament decreed a 3- year moratorium on the privatization of the VPK. On one hand, the moratorium played a positive role in stabilizing the MIC to some degree and stopping hidden privatization. But this was a temporary measure, which showed the lack of ideas about how to further develop the VPK. In reality, the moratorium also proved to be the first step in downsizing the Bulgarian defense industry, because only seventy-seven defense producers were on the list of enterprises included in the moratorium. They were enterprises from the second and third tiers. Through an exchange of a minority part in their shares, some of these enterprises were partially consolidated in the holdings companies *Metalchim* and *Electronconsortium*. The third-tier companies from the first group quit the defense business altogether.

Initially, there were plans for the creation of a National Armament company, which was to be state owned and a shareholder in the main enterprises. Its role would be to maintain the state's control, participation in company management and right to hold production licenses. This idea was introduced several times during the transition period, but was never realized. Although the state owned *Metalchim* and *Electronconsortium* held some share in the capital of most defense enterprises, in fact,

the direct owner remained the state, represented by the Ministry of Industry, and later, by the Ministry of Economy.

In 1995, the Ministry of Industry prepared a draft program for the restructuring of the defense industry. It was mentioned that the program should be consistent with the development and needs of the Bulgarian Armed forces. The program envisaged restructuring the enterprises before privatization, as the process of privatization was to be postponed for five to six more years. This document, too, did not move beyond draft form.

After the end of the privatization moratorium, a new concept for restructuring was elaborated which became known as the Dobrev Program after the name of the then Internal minister and Chairman of the Interdepartmental council on the MIC. The program was prepared over a six-month period, in absolute secrecy and without public discussions. According to this document, the number of defense producers had to be reduced from 77 to 22 core producers plus 5 trading companies: *Kintex*, *Armimex*, *Teraton*, *Elmetengineering* and *Kas* Engineering, presumably with full state ownership. The program envisaged separating 50 small production entities and 16 trading, sport and social entities from the remaining defense producers, with privatization following. A new privatization moratorium was planned, as well as some mergers between the enterprises. There were some questions about the fate of the state-owned holdings *Metalchim* and *Electronconsortium*, which possessed between 40 and 60 of the shares in the enterprises, with the remaining part being owned directly by the state.

In the end, however, this program was not started at all, because in the meantime the government of Jean Videnov resigned. Its only successful activity was to pass a decree signed by the Council of Ministers, requiring special permission for the privatization of the core producers and traders (see Appendix 2), which was, *de facto*, a prolongation of the privatization moratorium and a second downsizing of the MIC. Other companies which were not on the list decided, *de facto* and *de jure*, to abandon the defense business altogethers. The long duration of the moratorium period, however, hindered their re-development. The process of their restructuring was made difficult because of a lack of external capital and delayed privatization, a problem which also affected those enterprises which remained defense producers.

Although its effectiveness was lessened in the long term, in the beginning the moratorium played a positive role as the processes of disintegration and plundering were stopped. At the same time, the state showed its commitment to the defense sector. The moratorium also presented an opportunity for a further consideration of defense industry restructuring, although the chance to do this was unfortunately lost. In practice, the decision to restructure every aspect of the MIC was postponed, as it was well known that such a decision would affect both the issue of ownership and, at a higher level, the entire military-political orientation of the country. In describing the situation, we should not speak about a lack of policy, but rather of an excessive and harmful delay in implementing those measures of restructuring which would really have shaped the policies of the defense industry.

Moreover, there was a state prohibition on properly scaling the restructuring of the industry. During the moratorium, defense enterprises had few available options for restructuring: it was difficult to leave the defense business and they were obliged to continue mobilizing their capacity. Changes in ownership, or the participation of foreign partners in their ventures were both impossible, which limited their access to new technologies, markets and investment. Due to their difficult financial situation they were not able to restructure by themselves, an observation which is also relevant for their conversion efforts. All of the uncertainty they faced explains why the enterprises only carried out programs to downsize. This was their only available option while they waited for future changes. They continued to maintain their capacities for defense production, but the situation in the arms markets had changed completely so their previous levels of exports were unreachable. The slight increase in production and export which took place in 1994-95 (see table of exports) came about through state orders or through easy credits. Overall, then, in that year the country saw only an increase in its internal state debt and in companies' indebtedness to the banks.

In 1995 there were twenty-five producers of finished product. R&D work was concentrated in three companies, *Electron-Progress*, *NITI-Kazanlak* and *OELT-Sofia*. At the beginning of the 1980s, in the period of high demand, many defense enterprises had increased their capacities by creating reserves in neighboring cities. But in the period of recession, this policy was a burden since it required additional transport and production costs. The small production entities were also very specialized and narrow, producing only specified details for the larger producers. They did not have their own production programs, and in the end, could do nothing more than contribute additionally to the losses of the enterprises.

In this situation, why did Bulgarian defense companies not sell assets when downsizing? Firstly, in the presence of loose state ownership, weak state control and underdeveloped markets, there was a real danger that assets could be sold too cheaply. Many were suspicious of corruption and unfair deals. Secondly, even if a fair price was offered for the assets, the managers could choose to ignore this option, thus refusing to undertake any real restructuring and diversification as a strategy to ensure their personal survival for a longer period of time. They could periodically reduce their personnel and raise revenues through rents and selling assets, thus managing to pay salaries to their continually diminishing number of personnel, which amounted to a slow liquidation of the enterprise. The implementation of a government regulation requiring permission for the sale of assets or the privatization of subsidiaries was also responsible for failing to stimulate managers to restructure, because in most cases any revenues they raised would only go to the state budget and not to the enterprise.

Some experts think that the existing marketing and management skills were too weak or missing altogether, at the beginning of the period of restructuring (Ivanov, Tzvetkov and Dimitrov, 1998, p. 196). There was a serious gap between Bulgarian and western companies in the field of high technologies, and a lack of proper

cooperation links with more advanced companies. It can safely be assumed that defense industrial cooperation is a decisive factor in the modernization and development of the Bulgarian defense industry. Yet at this point, the country's ties with former Warsaw Pact countries in the field of scientific-technical cooperation had almost ceased, as had the education and training of R&D personnel abroad.

The other CEECs restructured their defense complexes earlier than Bulgaria did, or at least, they separated the core of their defense industry from other enterprises which were not as heavily involved in the defense business, thus permitting a more effective and faster restructuring of both group of enterprises.

At the beginning of 1997, the socialist government of Jean Videnov resigned. The new government of the Union of Democratic Forces, led by Ivan Kostov, started ambitious program for reforms. The restructuring of the defense sector coincided with general efforts to overcome the serious economic crisis in the country. A currency board was introduced in 1997, budget restraints were toughened, and the process of privatization was significantly accelerated. In 1997, Bulgaria officially applied for full NATO membership, so the measures taken by the government in regard to the defense industry were not isolated but part of a general strategy for instituting reform—which once more confirms the key role of the state in transition economies and developing a general framework.

In 1998, the Bulgarian MIC was responsible for 1.5% of national industrial production, and only 1% of this was used by the Bulgarian Army (Ivanov, Tzvetkov and Dimitrov, 1998, p. 196). In the same year, the Council of Ministers accepted a program for restructuring, privatization and state participation in the defense industry. The program included the privatization of all 24 enterprises from the MIC except for five strategic enterprises in which the state maintained the biggest share of 34% (Boneva, 2000, p. 187). These are *Arsenal*, *VMZ*, *Dunarit-Rousse*, *Electron-Progress-Sofia* and *Trema-Tryavna*.

The program for restructuring included a 40% reduction in personnel (with 1998 as the base year). For this reason, a program for alternative employment was prepared (which is, *de facto*, a program for conversion). Many small projects that were unrelated with military production were planned, as the main idea was to separate them later and to privatize these small units for civilian production. About 80 separate small production units and social facilities were separated from the main enterprises and sold immediately, because for the bigger enterprises the privatization procedure is proceeding at a much slower pace.

Product restructuring

The 1998 program envisaged the key production capacities of the defense industry in Bulgaria as follows:[13]

- Capacities for the production of artillery cartridge-cases (from 23 mm to 125 mm), *VMZ-Sopot*, *Pima-Montana*, *Arsenal-Kazanlak*

[13] *Pari* , 2 April 1998.

- Pressing capacities for the processing of cartridge-cases (from 100 to 152 mm), *VMZ-Sopot*, *Dunarit-Rousse*, *Varbanovo KPZ-Tzareva livada*, *Agrotechnika-Karlovo*
- Capacities for the production of cartridges (from 5.44mm to 40 mm), *Arsenal*, *Arkus*
- Technological lines for the mechanical processing of mines and cartridge-cases, *VMZ-Sopot*, *Dunarit-Rousse*, *Trema-Tryavna*
- Capacities for the production of details and assembling of fuses, *VMZ*, *Arkus-Lyaskovets*, *Mechanika I montazi*, *Struma-Sandanski*
- Capacities for cartridge assembling, *VMZ*, *Dunarit*, *Trema*, *Arkus*
- Production of gyroscopes, *Impuls–Gabrovo*
- Capacities for the production of thermoactiv and thermoflexible plastic, *VMZ*, *Opticoelectron-Panagiurischte*, *Dunarit*
- Capacities for processing armored steel, *Beta-Cherven briag*
- Capacities for production of gunpowder and fillers, *Arsenal*, *Dunarit*
- Capacities for the production of artillery systems and small armaments, *Arsenal*, *Leko Ko-Radomir*, *Pima*, *Arkus*
- Capacities for the repair of armament, *Terem-Ministry of Defense*

At the beginning of 1998, these defense companies were in poor financial situation, as the biggest five, with 30% of the MIC work force in them, were put under a special supervision regime of financial isolation, which did not permit new credits and required positive results from their immediate activities until a specified deadline (without payments being made for old credits). These companies were *Arsenal*, *BETA*, *Opticoelectron*, *Pima* and *Eko-el-Pleven*, although the last 2 did not pass this 'test' and were closed down and their assets sold separately. The work force in 1998 was about 5.8 % of the industrial work force. Their average salary began to lag after the country's average salary.

The State Fund for Reconstruction and Development played a role in the restructuring process, giving credits to several MIC enterprises (*BETA*, *Arsenal*, *Trema*, and *Arkus-Lyaskovets*). Its credits were more beneficial than those of bank services and it was not governed as a bank. This allowed for relatively loose conditions, so that enterprises could postpone their payments and use the money for salaries and current expenditures instead of for restructuring and conversion. In 1999, in accordance with the tougher economic and fiscal policies of the government, it was a closed, a move which limited the opportunities for enterprises to take easy credits. For many years, they used tactics such as paying salaries with credits, repaying interest only, or paying old credits with new.

In the field of investment and product innovation, defense producers began to experience serious difficulties. During the first five years of the transition period, investment was frozen, with only a limited number of products being slightly developed, although their production was never implemented because of a lack of financial resources and markets (Ivanov, Tzvetkov and Dimitrov, 1995, p. 202).

There was some discussion about creating a joint fund for the support of new projects and to buy licenses, equipment and tools, but it did not come to anything.

In the 1995 program, some new products were mentioned as ready for production. These included systems for remote mining, laser range-finders, all-weather reconnaissance devices, integrated control systems for artillery fire and systems for radio-electronic warfare. There were unsuccessful attempts to establish an engineering works in the Sudan in 1995. In a 1995 interview,[14] the then secretary of the State Interdepartmental Council on the MIC and war-time preparedness, Ivan Kolev, spoke about 60 new products which would soon have to be developed in cooperation with Russia. These included automated systems for the management of artillery and air fire, radiolocation stations and radio-electronic warfare technology. He pointed out that the total stock of produced and unsold production in 1995 was US $500 million.

New money was also needed for control systems and new research. Although this was formally recognized by state officials, there were no visible steps in to set this funding in place (Pavlov, 1996, p. 12-14). Nonetheless, most of the producers succeeded in creating the capacity for manufacturing weapons with standard NATO calibers in the fields of ammunitions, explosives and small armaments (for example 7.62-mm and 5.45-mm Kalashnikov sub-machineguns), which did not require a serious investment. The production of Kalashnikovs embraced the entire spectrum of standards and ammunitions, but was, nevertheless, an identification of potential, not its realization. There was no money for marketing surveys.[15] Attempts for diversification continued with the production of small arms for hunting and sport, whose design was based on existing military models. Except for this kind of production, efforts for the development of civilian production, which dated back to the 1980s, were very weak and not at all successful.

There was a lack of turnover capital in the VPK and little product innovation. The market had by now begun to demand high precision weapons which Bulgaria does not produce. In addition, the enterprises are so indebted that they are not able to start production even if they have offers.[16] Applications for the Joint Innovation Fund were considered, as some revenue from every arms deal had to be allocated for this fund, but this, too, remained only an idea. At the arms exhibition 'Hemus 98' mostly modernized weapons were shown. Entirely new products were very rare, as some of them had not passed all of the requirements and tests.

The Bulgarian defense industry has continued to use mostly Russian standards and licenses for defense production and a similar quality control system. In 1997-8, the implementation of NATO standards began. In 1997, several companies, among them *Samel-Samokov*, received the first licenses for implementing the quality control system ISO 9000. This was related to the modernization of the produce which started in 1997.

14 *168 Chasa*, no. 27, 1995.
15 *Demokratsia* 18 February 1998.
16 *24 Chasa*, 24 July 1998.Georgi Bozduganov.

Management and personnel restructuring

As socialism came to an end, the management of defense enterprises became increasingly unstable. There were frequent changes to boards of directors, CEOs, and the staff in the special department of the Ministry of Industry. The average 'life expectancy' of managers in the big enterprises was only two to three years, after which they would leave the enterprise altogether. There were several different reasons for this movement. In the first place, there was the bad economic situation in many enterprises, but political appointments, pressure from the trade unions or even obvious economic crimes, all took their toll.

The delay in producing the main documents for the national security field until 1998-9 limited the horizon of defense enterprises, so their decisions were short-term and made mostly to ensure survival. Nevertheless, the lack of clarity about both the ownership and the fate of the industry permitted the broadening of some group interests. Managers of defense enterprises were compelled to balance the interests of governing political parties, trade unions and themselves. None of these groups were interested in real restructuring, so they all contributed to postponing it. The state ownership of enterprises, which was sometimes politically backed, was also a reliable basis for political appointments and sponsorship. The state administration, which was broadly represented through the boards of directors, considered these appointments as an important personal source of revenues: they, too, little incentive to support privatization.

Management was not ultimately interested in the development of effectiveness, profitability and enterprise, firstly, because of individuals' short-term desire to retain the same position, and secondly, because the marginal benefits of improving an enterprise's performance were very small because of state regulations regarding the salaries paid in these enterprises. The replacement of managers was also a dangerous process because this was a lucrative means to make money. There were cases where, through joint ventures with hand-picked private companies acting as fronts for defense enterprises, the former took the profit, and the latter absorbed the losses. The shortcomings in legislation permitted this to happen.

Executive directors had not yet adjusted themselves to subordinate the governance of joint-stock companies to the owner' s interests,[17] a problem which did not only plague the defense industry. Company directors often acted as sole owners or served the interests of their major shareholders.

One aspect of the restructuring process was the gradual demilitarization of enterprises. Existing military personnel were transferred, firstly to positions in the MoD, a step which took them off the payroll of the enterprises, and after that, fully demobilized. Today, there are no military personnel in the defense producers, including *Terem* which is owned by the MoD. At the end of the 1980s, 120 000 were

17 See "Corporate Governance and Control in Bulgaria." Summary Report http://www.csd.bg/cgi/actplan.html#recpaper.

employed in the defense industry, which had dropped by 1995 to 55 000, by 1998 to 44 000, and by 1999 to 38 000 (Ivanov, 1998, p. 88; Radkova, 1998, p.95).

Gerber, in Ivanov, Tsvetkov and Dimitrov, put the question of restructuring in the overall framework of military conversion (Ivanov, Tzvetkov and Dimitrov, 1997, p.214). He pointed out that it is a complicated process and that consultation was not at the necessary level. He argues that the reforms instituted in Bulgaria have to be put in the overall process of establishing a common European defense system and defense industry. Unfortunately, however, this has not been the case. Instead, the restructuring of the industry has mainly been undertaken to fulfill national perspectives.

There is no clear answer to the question. "what is the local value added by the Bulgarian defense industry to its products, or in other words, what is the share of imported parts and materials in Bulgarian exports?" According to some experts, imported raw materials and components in the production of defense goods amounts, in some cases, to 95% of their whole value (Saraidarov, 1995, p.130).[18] Yet even assuming, in the existing state of secrecy, that this fact is well known to the state authorities, no visible steps have been taken to solve it.

What is needed to overcome the existing difficulties is an organized effort by government, enterprises, trade unions and regions with a high concentration of defense enterprises. The new industrial policy, however, is not clear. There is no procurement of new armaments and the resources for military R&D remain drastically limited (Dimitrov and Ivanov, 1993, p. 38).

My main conclusion, then, is that the process of restructuring is not finished yet. The key question to what will now be done is the status of Bulgaria's future membership of NATO and the development of a common European arms market and procurement policy. Until this issue is resolved, it is impossible to argue that the state should abandon the defense business altogether. Although the role played by entrepreneurs and enterprises that have already been privatized is bigger, the state should provide the political framework for the industry, especially in the process of integration.

Privatization

Privatization remains a very important aspect of the restructuring process, and because of this, will be given particular consideration.

In a paper prepared for the IMF, Havrylyshin and McGettigan did extensive research on privatization in transition countries.[19] Their general conclusions are that outsider-dominated firms and those with owner-managers perform much better that those with employee or insider ownership and state-owned enterprises. The latter, in particular, are very reluctant to restructure and to reduce employment. Newly

18 See also *Trud*, 6 April 1998.

19 Havrylyshin, Oleh and Donal McGettigan. *Privatization in Transition Countries: A sampling of the literature*. IMF Working Paper WP/99/6.

created private firms offer the best indicators, and are superior in many respects to the other companies far more dynamic in terms of job creation, investment and capacity utilization. Although these conclusions are based on an observation of companies from different sectors in CEECs, they provide a good starting point for an analysis of the privatization of the defense industry in Bulgaria. The first core defense producer in Bulgaria was sold in 1998 and all of the privatization deals that followed were, without exception, worker-manager buy-outs (with employee insider ownership), or so called RMD privatizations.

Several factors have constrained general privatization in Bulgaria.[20] Firstly, political commitment to privatization has been weak, and numerous changes in the institutional framework have stalled the process. Secondly, inappropriate methods (including lengthy appraisals of enterprises and a top-down, case-by-case approach to their transformation) and inappropriate objectives (focusing on maximizing the selling price and identifying strategic investors), have made privatization extremely difficult even for selected enterprises. Thirdly, factors affecting enterprises, such as ambiguities generated by land restitution, unclear land titles and an overlap in the authorities of institutions, have severely limited the availability of enterprises for privatization. Finally, social attitudes to the defense industry remain opposed to privatization. An interesting sociological survey, produced in June 1998, showed that 58% of Bulgarians supported preserving state ownership of the MIC, whereas those who opted for state withdrawal were only about 6%[21]. Those polled were comparable in terms of age, education and political preferences, so it is clear that this is a very sensitive political question in Bulgaria.

Additional barriers to the economic activity of enterprises, which hinders their development, include macroeconomic instability and uncertainty; a lack of progress on structural reforms, especially in privatizing state enterprises; the failure to strengthen their financial discipline and to reform the banking sector, and inadequate law enforcement of contracts. These constraints also underlie the informal, nontransparent relationship between private and state enterprises, which have proved a significant constraint to reform and have deterred foreign investors because of their non-transparent and exclusionary nature.

There were even more incentives not to privatize. Private companies were set up at the entrance and exit of larger enterprises which were linked to state managers and received all lucrative offers. After that, unfavorable agreements were signed, leading the enterprise to bankruptcy. The participation of state officials on the enterprises' boards of directors as representatives of the owner also delayed the process of privatization, because these people received additional revenues for their participation (which was very often nominal) in the management. In the case of privatization, these easy revenues would dry up. The ruling political party was often supported by the big enterprises by means of advertising in selected media,

20 Report No. 14546-BUL, "Bulgaria Private Sector Assessment." June 28, 1996. Country Operations In Europe and Central Asia Region. Document of the World Bank.

21 *Continent*, 03 June 1998.

politically colored agreements, sponsorship of events, keeping their accounts in selected banks or concluding loan agreements with these banks, and making political appointments in the enterprises. All of these issues profoundly influenced the speed of privatization.

The managers of the state enterprises were interested to keep the enterprise performance close to the zero level (with small profit or losses), first, because of the high tax burden, and second, very good results also are dangerous for the managers because then they could be replaced by another director who will use their own achievements without any effort or potential investor could appear, buying the enterprise without the participation of the director.

The members of a state companies' boards of directors also had little incentive to privatize or insist on better performance, because increased profits meant only a marginal increase in their revenues. In fact, they had the same short-term objectives as executive managers. This factor hindered economic activity, because apart from the bad economic environment itself, managers understood their future only in the vaguest terms. They could easily be replaced by the next political force to take power, and strong trade unions were also a threat since they could change an enterprise's directors too.

In addition to this problem of their vague future, the very process of privatization introduced some additional difficulties. They revealed a hidden struggle between interest groups, which resulted in very long procedures for privatization (one-and-a-half to two years if the process went normally and there were no political changes). During the process of privatization, the selling of assets is forbidden without special permission, so all partners, clients and participants in the process have to wait to see what will happen. None of this can make a positive contribute to an enterprise's success. The privatization moratorium in itself created problems, because while it endured, companies were neither able to attract fresh capital nor to create joint-ventures.

The history of the privatization of the MIC in Bulgaria is, in fact, rather grim. Until 1998 there was no privatization deal for MIC enterprises. The moratorium only postponed reform and presented opportunities to different economic groups to benefit from the weakness in this sector.[22] Bulgaria had to make a choice. Should it continue with already expensive foreign licenses that required additional investments, or sell the enterprises to strategic foreign investors?

The privatization and restructuring of the defense industry eventually began two years ago and, according to the government program of 1998, sixteen of its twenty-two major military plants have already been sold.[23] Without exception, management-worker teams (RMD) won the deals, as the state planned to retain a 34% share in each of the five core defense producers. Three of them are still state owned—*VMZ*, *Dunarit* and *Electron-Progress*, although their privatization also started

22 Georgi Georgiev (in Ivanov, Tzvetkov and Dimitrov, 1997, p. 196).

23 N.a. "Bulgaria reshapes arms industry, seeks markets." Date: 23.06.2000 Source: Reuters SOFIA, June 23.

in 1998. Their huge unused capacity, shrinking markets and a complicated mix of civilian and military production plague the arms plants and makes it difficult to find investors. This explains why RMD privatization is so popular.

RMD has also been popular because it was offered opportunities to pay the nominal price of the deal with state securities, which could be found on the market for 10-20% of their face value, and with installment payment plans over a period of five to ten years. Such factors, combined with managers' opportunities to 'influence' the process and speed of privatization, provided RMD's with considerable opportunities over other potential investors. Because of their difficult financial situation and vague future, interest in the privatization of defense enterprises was not in any case particularly high, so the success of RMD deals was pretty much guaranteed. In almost every privatization procedure, two or three companies bought the relevant information for the deal and expressed interest, but only RMDs applied with an official offer as the only candidate. Although RMD privatization presupposed some element of social justice and implied the almost equal participation of the managers and workers in the ownership of the company, in most cases the privatization process was shaped mainly by the enterprise directors who perceived themselves as the *de facto* owners of the enterprises.

Although privatization is considered a very positive step, and one which, in some cases, made it possible for an enterprise to continue to exist at all, there were also many problems which accompanied the process. It was often a vague and non predictable process: some companies or separate units were excluded from privatization at the last moment, while the role of the state-owned *Metalchim* holding as owner of part of the shares was never clarified. There were also changes in the state organs in charge for the process of privatization. The first enterprises were transferred to the Privatization Agency, then some of them to the Ministry of Industry, then back to the Agency. Some of these changes resulted from frequent changes in the laws for privatization.

One of the procedures for privatization was so-called "pool" privatization. In this instance, a pool of five enterprises, named 'Mashinebuilding-2', was created. It included *Arsenal*, *BETA*, *Trema*, *Pima* and *Agrotechnika-Karlovo*. The enterprises were offered for sale through an investment consultant, who was obliged for 12 months to find clients and to sell the enterprises, as the state Agency for Privatization exercised control over the process. There are also criticisms about the methods and procedures for privatization. It should be noted that these have proved a common problem, not only for the defense industry, but for the whole process of privatization in Bulgaria. Privatization deals were often used to solve social problems, such as retaining a defined number of personnel for a certain period.

The process of privatization included the sale of production sites and units which were separated out from the main site because they were not closely linked, in the technological sense, with military production Unfinished buildings and constructions were also sold in this way. In one instance, it was proposed that the

revenues from privatization should go into restructuring the enterprises themselves through product innovation and new licenses, but this idea was rejected.

The problem of intellectual ownership was never solved properly because all patents, know-how and production licenses belonged to the state, and most of them had been acquired from the Soviet Union in accordance with intergovernmental agreements. The official holder in Bulgaria was the GIU, and later, *Armimex*. Enterprises used the licenses procured by these bodies and were supposed to pay fees and royalties to *Armimex*, which passed them on to the appropriate partner in Russia, mostly *Rosvooruzenie*. It is not clear if Russia will agree to transfer these licenses to third parties (private enterprises), a question which remains one of the problems in Russian-Bulgarian relations. In February 1998, Russian representatives did express an interest in receiving a certain portion of enterprises' shares in exchange for licenses, but nothing came of it.

The average cash price paid for the enterprises varied between US $1 and $3 million, and the opportunity was offered for installment payments over five or ten years. In most cases, the privatization agreement included a guarantee from RMD teams that they would repay the existing debts of the enterprise. In some cases, this proved to be a time bomb. Mo Yamin, considering the companies' behavior in general, has pointed out that "…it is their investment in sunk costs which makes firms responsive to consumers and over time creates market-sustained behavior on the part of consumers" (Yamin, 1998, p. 30). However, the privatization program has in practice meant that the new owners have acquired existing assets at a minimal cost. Their purchase represents, therefore, only a modest commitment from the new owners. It follows, then, that promises regarding future performance cannot be taken at face value. The privatization agreements also include obligations (or promises) from the new owners with regard to investment and the achievement of certain level of business activity, and these promises were also used in bargaining for the reduction of the cash price. As has been general practice in Bulgaria, after a period of time, such promises could be remedied with annexes to the privatization agreement. In the end, then, the business risk taken by new investors is not high, because they do not invest very much. Moreover, should they experience serious losses, they could sell assets (so-called assets stripping) in order to return their initial investment with profit and to abandon the enterprise, without paying its debts. Such practices create risks for both the enterprises and their employment, which was finally taken into account when, at the end of 2000, Parliament largely canceled RMD preferences.

In the opinion of observers, some of the enterprises could be resold to other investors in order to concentrate shares, or because their debts are under consideration, as is the case of *Arkus-Lyaskovets*, *Trema-Tryavna* and *Arsenal*. The Privatization Agency has permitted the assets and shares of such companies to be put up as collateral for credit that the RMD is authorized to draw.[24] There is also the

24 *168 Chasa*, 17 July 1998.

possibility that the state can cancel a deal in case of drastic violations of the privatization agreement.

Because their indebtedness was so great and no interest was shown in them, several enterprises were closed down and sold as separate assets. One of them, *Pima-Montana* was in a bankruptcy procedure which included the sale of ten separate parts of the enterprise; but on the whole, interest in the assets was inconsiderable.[25] In the end, only the production line for explosives was sold to another defense producer, and one production building, which would be used for sewing (dressmaking) production, found a buyer. *Eco-el* and *OMZ* were also closed down. *Beta-Cherven Bryag* was close to closure, but an RMD succeeded in securing the support of the Austrian company *Palfinger* as an official partner, and closed a deal in which the defense business was mostly abandoned.

While the process of MIC privatization is almost at an end, two of the biggest enterprises, *VMZ* and *Dunarit* and the R&D company *Electron-Progress* are still state owned. The process of privatizing them is difficult, although they have been for sale from the beginning and there are RMDs ready to buy them. One of the reasons for the delay in their sale may be that they are still considered to be strategic enterprises. If this is so, the state may be looking for strategic investors for them.

A plan has been mooted for the VMZ to be sold in four separate parts—special production, civilian production, a factory for ball-bearings and a factory for nonstandard equipment production, but this plan depends on the interest of potential investors. In 1999 there was an expression of interest from Russian and Austrian companies, but without results[26]. As a result, on 26 August 2000, the deadline for the completion of the legal review of the VMZ was extended for the third time. Deputy Prime Minister Petur Zhotev promised to find a strategic investor for the Sopot factory, but until now, has had no success.[27]

Privatization does not solve the problems of enterprises by itself. Given this, there is an on-going discussion about more serious control over defense production and arms deals, as one of the alternatives is for the state to issue licenses or concessions for production as well as trade licenses. For potential investors and owners, however, the future continues to be vague because the framework of these changes is not clear. The draft law for the defense industry has not yet been accepted. This problem should be resolved by passing a law with clear requirements for how to obtain these licenses, and a clear elucidation of the obligations of the producers. At the present moment, however, the problem with how to control things post-privatization is becoming ever more serious, as there are no mechanisms in place to force new owners to keep their promises.

As this overview has shown, the process of privatization has, in general, been successful, although there have been some shortcomings. RMDs were given too much power, and they have brought neither fresh capital nor ideas for restructuring,

25 *Capital*, no. 22, 2000.
26 *Sega*, 8 August 2000.
27 *168 Chasa*, 17 July 1998.

as apart from downsizing, other changes have not been explored. There continue to be hidden risks, particularly that some of the enterprises will be not be able to repay their debts so that they will have to be resold to other investors. A legislative framework within which to deal with that question has not yet been arranged. The problem, once again, is one of the state's attitude towards the defense industry. To resolve it, the state must express its views on whether it is possible to sell private defense enterprises to other investors, including foreigners, and if so, how this should be done.

State Policies and Regulations

The importance of state regulations is not in any doubt. In the field of defense industry and trade, the question of state regulations is related to the arms trade, but its scope is in fact not limited only to arms control and trade licenses. The role of the state in transition economies is particularly crucial, not only for those in defense production. Stable state regulations and reliable state institutions are very important factors in the development of a national economy. There are a number of bureaucratic obstacles to overcome and permissions which have to be gained in every economic activity, and if an enterprise is state owned, then there a re more and bigger obstacles to manage.

One challenge, for instance, is overcoming the legacy of a wage ceiling which is determined by the economic results of an enterprise, a practice which does not create positive conditions for the stimulation of better performance. The deregulation of state-controlled salaries, employment and personnel policies, profit distribution and investment, must therefore be prioritized, as must issues such as some personnel being granted special protection against dismissal. Yet very often, privatization agreements include special clauses for protecting existing personnel for some period. These regulations lead to the stagnation of economic growth and the avoidance of risk, and ultimately, maintain the underperformance of an enterprise.

State Defense Industrial Policy: Pros and Cons

The state plays a key and controversial role in transformation. When both traditional administrative governance and economic measures are changed in order to prepare a country for the market economy, state budgets are destabilized and resources for defense are limited. A World Bank study of 1996 shows that political and macroeconomic stability, price and market liberalization, clear and stable ground rules, and freedom from crime and corruption are all essential in promoting economic growth.[28] Macroeconomic stability is vital for the development of an economy, whereas high and variable inflation affects an economy's growth

28 The World Bank, 1996. "From Plan to Market – World Development Report." Washington: The World Bank.

prospects adversely.[29] Thus the role of the state could be divided into two parts: it is responsible for providing the general conditions in which the economy must function, and with regard to the defense industry, it must take concrete steps both in regard to the development of the defense industry and the conversion processes.

In the new era, paradigms have changed dramatically. In the past it was natural to assume that military technologies were superior to civilian ones, and that state support and provision of resources for the military sector was both natural and understandable. The assumption was that these sectors made their own contribution to the overall economic development of a country. Today, however, civilian technologies have taken the lead. This situation demands a reassessment of the role of the state. Should the state support the development of civilian and dual-use technologies, and if so, how can this happen without hindering market forces, and at the same time, securing the development of military technologies?

State intervention involves selective intercessions to correct market failures and imperfections, and includes support for restructuring at the sectoral and enterprise level, the development of technological capacities, the development of human resources, and selective institutional support. The state intervenes in the defense production process because it pays for the products and would thus like to control the costs. It would like to ensure the high quality of military goods, and because of changes in the deadlines for production, as well as variable results, requirements and production volumes, must recognize that both sides need to coordinate their efforts. Quality control measures are very often imposed by intergovernmental agreements, and this is an essential factor in those deals that are intended to produce exports. The state also needs to receive information about the industrial potential of defense companies in order to plan for national war-time preparedness. The state regulates and observes security measures in defense companies because it must guarantee this type of control at the highest level. At the same time, state intervention should not be limitless. It is much better that "...state security institutions should neither own nor have other economic or financial interests in commercial enterprises" (Ball, 2000, p. 14).

Governments and leaders in transition and developing economies must sell reform to their people.[30] They must have a clear vision of where the state is going and must communicate this by convincing people that the pain of transition will be worthwhile—that there will, in time, be far more winners than losers. They also need to assure people that there is a need for a defense-industrial policy. They need to make it clear that, even though more of the enterprises are now private, the state has not lost its obligations. In the first place, the government has to know the

29 "Privatization in Transition Countries: A sampling of the literature." Oleh Havrylyshin and Donal McGettigan. IMF Working Paper WP/99/6.

30 Peter Sutcliffe. "NATO Economic Colloquium 1998: Some issues pertaining to Government Functions and Failures in Transition and Developing Economies." Economics Directorate, NATO http://www.nato.int/docu/colloq/1998/34-sut.pdf, p.289.

potential of its defense industry in case of military threat. Secondly, if these enterprises get into trouble, any workers that they lay off immediately become the clients of the state labor offices and need unemployment benefits. Finally. the successful restructuring of an enterprises requires high-level information in advance, which must be provided by the state. This information should encompass issues such as integration, future expenditure, procurement policies, the regulation of the arms trade and etc.., and also delineate opportunities and priorities for civilian production. Without such a macro framework, the defense industry cannot be expected to properly plan its activities.

In the case of Bulgaria, it is hardly possible to speak about a defense industrial policy at all. A better description may be that the attitude of the state toward the defense industry is one which is both controversial and ambiguous. The defense industry has only received signals which are unclear, and often it has received no formal support at all beyond a verbal recognition of the problems of preserving state ownership which has been expressed, from time-to-time, by state officials. The strategic importance of defense enterprises, ideas about their development, the need for arms exhibitions organized by the MoD, and the country's ambitions with regard to international production integration have long been debated All the same, however, privatization has been postponed, investment opportunities for restructuring and conversion have been limited, defense enterprises have been treated in exactly the same way as civilian enterprises when it comes to taxes and subsidies, no systematic policy measures for the support of the defense industry have been put in place, defense production and arms control regulations remain vague, and sustainable efforts for the promotion of international cooperation and the integration of Bulgarian defense industry with foreign partners have not been forthcoming.

Defense enterprises are not kept abreast of government decisions: for example, an announcement, during the visit of the Ukrainian prime minister, that Bulgaria would allow Ukrainian companies to participate in the privatization of the MIC, came as a complete surprise. It remains unclear which other countries and companies have also received permission to participate in the privatization process, and in fact, the whole framework of the process remains vague.

"The defense industry is a complicated sector that mirrors the problems of transition and of the society at large. We were not wise enough to protect the military-industrial complex from these shocks, but perhaps that was preordained," a state official said in a newspaper interview in 1996 (Pavlov, 1996, pp. 12-14). His statement forces the question, is a lack of any defense industrial policy actually some kind of policy? In my opinion, this may be true for most western countries and even for some Baltic states. In countries like The Netherlands, governments have very clearly told their defense producers that they are responsible for evaluating the risks in the development of their products by themselves, and must make their own forecasts with regards to the arms markets. These governments declare that they will buy weapons at market prices, without granting any preference to national

producers. In other countries such clear policies may not have been put in place, but many issues are implicitly clear and governments assume that producers understand that.

To a very large degree, then, the determinants of defense expenditures in western countries are implicit, including their attitude toward defense producers. NATO membership means that national defense industrial policy is determined, to a large degree, by the existing environment and can be easily foreseen because commitments, market economies, democratic governments, and democratic, transparent and long-term-oriented security defense policies are in place, as are the procedures for defining the Europeanization of the defense industry.

By contrast, it should be noted that for many CEECs, including Bulgaria, these determinants are not clear (or at least they were not clear for a long time). The environment in which defense producers in these countries work is vague and undecided. Moreover, from time to time defense producers have received signals that the MIC is a top priority, that the current bad situation is a temporary phenomenon, and that the MIC is Bulgaria's ultimate hope for overcoming the current economic crisis. Defense producers have seen the annual MoD draft budgets, which are unrealistically high but create the illusion that—even if not this year—there will eventually be an improvement and orders for production will finally come. The prolonging of their expectations has done little more than delay the restructuring of the defense industry and conversion efforts as well. While western producers are well aware that state subsidies are difficult or even impossible in the market economy and have established principles for spending budget allocations, eastern producers got used to state control during socialism, and have, in fact, seen little change in the present since, in Bulgaria at least, the cost of utilities, energy and transport remain subsidized.

The argument that the lack of a defense industrial policy is also a kind of policy, in my opinion, is only valid if it is stated clearly at the beginning of the transition period that there will be no defense industrial policy. And if this is the case, it should be declared by the responsible state bodies. We may be able now, at the beginning of the twenty-first century, to get a clearer picture of the situation in regard to national security and to understand how the contribution of the Euroatlantic integration process is significant, that was not true at the beginning of the transition period. At the beginning of the 1990s, many security parameters were too vague and there was no institutionalization of foreign relations such as we now have through the PfP, the Membership Action Plan (MAP), bilateral cooperation, the EU integration process and many others. So from a military and political point of view, it was possible to justify this type of indecisive policy. The problem is, however, that for ten years, government has given the wrong signals to the defense industry, speaking about its importance and preparing ambitious programs for its restructuring. What this shows is that we have not deliberately lacked a defense industrial policy, but have a failed defense industrial policy.

Most CEECs have similar elements in their attitude toward the defense industry (Pruskiene and Altwater, 1996, p. 49). These are:

- budget policy, which includes a reduction in the defense budget which supports a reduction in demand as well as the cancellation of subsidies;
- legal regulations, which is seen in the creation of an institutional framework for the future functioning of the industry
- export supporting policy, such as co-financing exhibitions
- the institutionalization of external contacts
- a concentration on production
- debt reduction
- commersionalization and
- compensation in the case of losses

Countries which aspire to membership of NATO have tried to restructure their defense industries in a way that will allow them to join both NATO and the European Union (Struys, Luc Mampaey, Sandor Balazsy, 2000).

Government Regulations and State Bodies

Several government regulations and a set of legislative documents related to arms trade control are directly linked to decisions made in the Bulgarian MIC: about organizational restructuring, the privatization moratorium and participation in government programs. It should be noted, however, that government efforts have mostly focused on the field of arms control regulation.

At the beginning of the transition period, in its efforts to assert itself, the Government's policies were aimed at a complete break with the Communist past[31]. In 1991, the Council of Ministers issued Regulations No. 13 of 12 February 1991, which focus on state control of the arms trade, military technologies and equipment. A licensing authority was also created, called the Governmental Commission for Arms Trade Control. Later in 1991, the Commission was transformed into an Interdepartmental council which was subordinated to the Council of Ministers. It was created to oversee the production and trade of military equipment and technology. This council also was also in charge of mobilization preparedness. The Minister of Defense headed this Committee at first, but later it was headed by the Prime Minister or Deputy Prime Minister. The council included representatives at deputy minister level who had an established relationship with the defense industry. A double-license regime was established for arms trading, as the Council was in charge of licenses.

With its proclamation of Regulation 54 in 1991, the Council of Ministers reorganized big associations and companies as part of the process of de-

31 Nickolay Mladenov. "The Emerging Non-Proliferation Export Control Policy of Bulgaria After 1990." http://www.nato.int/acad/fellow/97-99/f97-99.htm

monopolization and de-concentration. Defense companies were also included in these measures.

At the end of 1992, the Government passed Regulation 114, on Bulgaria's dual-use export controls. This regulation stipulated controls over the import, export, re-export and transport of goods, materials, technologies, equipment and services that have a possible dual-use for the creation of nuclear, chemical, biological and other weapons of mass destruction.

On the 8th of November 1995, the Bulgarian National Assembly accepted the Law on the Control of Foreign Trade Activity in Arms and Dual-Use Goods and Technologies.[32] The law confirmed the already-established double-license regime for arms traders. Only trading companies which hold more than a 50% Bulgarian share may receive two time-limited licenses—a general license for trade and a second one for every separate deal. Two licensing authorities were created under this law: the already-mentioned interdepartmental council, which was subordinated to the Council of Ministers and usually headed by the Deputy Prime Minister and which gives general licenses; and a special committee within the structure of Ministry of Trade (later in the Ministry of Economics), which is responsible for the individual licenses. Bulgaria also joined the Wassenaar Agreements and ratified several international agreements for non-proliferation.

There was a proposal to establish a National Arms company as a holding structure which would deal directly with defense enterprises. Under this agreement, the Ministry of Industry would play a dual role, but it came to nothing, as did an idea to develop a National Agency for managing defense research.

The role of the Interdepartmental council had changed significantly during the transition period. Created in the beginning as a licensing authority with limited control over the arms trade, from 1994-96 it was more seriously developed. The council were given more functions and obligations, including the formulation of, and direct participation in, the national defense industrial policy and a coordinating role in the arms trade. For a short period, the council played the role of principal of the enterprises and was involved in top management appointments. Its task of mobilization preparedness became clearer. According to the former secretary of the council, it was through this body that military technical cooperation and relations with Russia were reestablished in 1995 (Pavlov, 1996, pp. 12-14). A system of state orders was promoted, and talks about cooperation with Ukraine, India and other traditional partners as well as with western countries, were carried out. The Council took an active part in the discussion of a program for modernizing defense industry production up to the year 2010, in conformance with the Bulgarian Army's requirements for new types of weapons.

Its role was significantly decreased after 1996-97 when its personnel and functions were reduced. Its position became vaguer after the enforcement of the new Law for State Administration (1999), in which such councils no longer existed.

32 *State Gazette* no.102, 1995.

There would, in any case, have been corresponding changes in the Law for arms trade if there had been changes in the council. At present, the council deals routinely with general licensing procedures but is not actively involved in the formation and execution of defense industry policy. The fact that the first serious program for restructuring was prepared and introduced by the Interdepartmental council in 1996, is indicative of the changes it has undergone.

In the analogous program of 1998, the Ministry of Industry was already the leading institution, a role it also played in the preparation of the draft bill for the defense industry in 1999. The Interdepartmental Council played only a minimal part in these issues. The status of the organ in charge of the MIC in the Ministry of Industry was also reduced, from main department in the Ministry, to department, to sub-department. Neither the interdepartmental council nor the organ in the Ministry of Industry were actively involved in the process of privatization, which was carried out by the Privatization Agency and a privatization department in the Ministry as the bigger deals were observed and controlled directly by the Council of Ministers.

For several consecutive years, from 1998-2000, MIC enterprises that had been included on the list for privatization were put into a special permission regime when they came up for sale, as the decision to do this was the prerogatives of the Council of Ministers. Their special treatment did not mean any special approach to their privatization, but was an indication that more caution was being exercised in the privatization process. Enterprises were put up for sale according to a common order which was defined by the Law for Privatization, as in rare cases potential buyers had to fulfill requirements about access to information. The difficult financial situation of the enterprises, the lack of access to real information about them, their vague future in regard of their licenses and the arms control regime, RMD preferences, the enormous power of the state to influence their future are likely to have predetermined the poor interest that was shown in them and the domination of RMDs which came about as a result.

Only the 1998 program for restructuring of 1998 was actually put into practice in any meaningful way. All programs prior to this only postponed inevitable decisions and delayed real restructuring. Until 1997-98, the central question of ownership and the political orientation of the country were not solved properly.

I have already made mention of the decision of Parliament, on 6 July 1993, to impose a three-year moratorium on the privatization of MIC companies and trading firms. This decision also included other proposals, most of which were not fulfilled. A new parliamentary committee was created to deal with the problems of the defense industry and war-time preparedness. The Parliament proposed that the Council of Ministers find a solution to the enterprises' debts, which were collected in the course of mobilizing their capacities. Other proposals included the creation of an interdepartmental state organ in charge of the VPK which would be subordinated to the Council of Ministers, and up to the end of 1993, the drafts for a Military Doctrine and National Security Concept were to be submitted to Parliament for consideration. The parliamentarian decision was, in principle, that it

would be the task of the Council of Ministers to define which of the enterprises should be included in the list of MIC. The privatization moratorium expired without any answers being given to the questions of ownership and national strategic orientation.

In 1997, the government of Ivan Kostov issued its 'Program 2001' in which it stated that one of aims was the "... restructuring of the MIC and preparation for the privatization of enterprises with the involvement of foreign investors, in accordance with the orientation of the state toward Euroatlantic structures."[33] This was the first political document which clearly expressed the government's political will and its vision for the fate of the MIC. The Program of 1998 and the steps which were then taken to privatize the industry were the result of the intentions stated in this document.

The role of the state in regard to war-time preparedness was also controversial. The industry's mobilization capacities, and the credits it was granted for them, impacted negatively on them. In 1993, a substantial part of the companies' credits for mobilization capacities were rearranged as state liabilities, but this decision was already too late. At the same time, mobilization capacities and reserves were more clearly separated and physically preserved as far as possible, a job for which the state took responsibility. This measure offered, however, little relief for the companies because the assets which were separated were in fact their most unusable assets, and it was clear that they had no potential usefulness in peace time. Existing plans for the mobilization capacities of the assets that were left were maintained in recognition of their dual character as both mobilization and production capacities.[34] In 1995 there were a lot of enterprises which were only formally associated with the VPK, a fact which hindered their privatization. The problem with the mobilization preparedness of these private enterprises remains unresolved, despite the insertion of special clauses into their privatization agreements which oblige them to continue to keep their assigned war-time production plans.

Immediately after the start of economic reforms in 1991, the practice of budget subsidies was abandoned. Bulgaria does not subsidy its defense industry, although there are arguments that until 1996, budget constraints were minimal and enterprises that suffered a loss were in fact subsidized through the inefficient state banking sector. This practice was also rejected after late reforms were introduced by the government of Ivan Kostov in 1997. Nevertheless, the intention of the state to invest in arms production remained. In 1998, in his answer to a question in parliament, the deputy prime minister Alexander Bozkov stated that the state would invest around US $14 million in *VMZ-Sopot*.[35] In a similar statement, the Prime Minister Ivan Kostov said that until 2001, there would be an investment of around US $30 million in the VPK. One explanation for these plans is that they allow for the state to restructure some problematic enterprises in advance, and then to

33 Government Program 2001. www.government.bg

34 Anonymous interview, September 2000.

35 *Standart*, 11 July 1998.

privatize them. It should be noted that except for the restructuring and canceling of some enterprises' debts, there were no special programs for restructuring before privatization.

At the end of 1990s, the attitude of the state and state officials had also changed. In his opening speech at the weapons exhibition 'Hemus 2000,' the defense minister Boyko Noev stated that the new military doctrine would enforce new requirements on the defense industry as new changes are inevitable.[36] The defense ministry would protect and support the Bulgarian defense industry, but producers would also have to take their share of the responsibility by taking advantage of Bulgaria's Euroatlantic policies. He said that the state would, in future, concentrate its efforts on R&D, arms licenses, governance of the state share in the enterprises, arms control, international military technical and defense industrial cooperation and state certification quality control systems.

The Deputy Minister of the Economy, Levon Hampartzoumian, was put in charge of the defense industry. He declared that "the priority for this industry is its realignment with Bulgaria's political priorities...which means NATO standards. There is no doubt that the Bulgarian defense industry cannot reach the output and sale volumes of the mid-1980s because reality has changed." [37] Bulgaria still sells mostly to markets seeking Russian-model weapons, he observed. Shifting to markets using NATO-standard weapons was one solution to this habit, and another was conversion to the production of civilian goods.

With the Decree of the Council of Ministers of 2000, the biggest state enterprises (about 159 of them), were placed under systematic observation by a special Consultative council. The enterprises were obliged to send the Council financial and accounting information every three months, as well as any additional information about their situation that might be required by the council. Several state owned defense producers are included on this list.

The Role of the MoD

From the beginning of 2001, program budgeting has been implemented in the Ministry of Defense, which has provided more stability in the production planning of defense companies. Program budgeting provides information for assessing the efficiency with which defense ministries use resources and offers important indicators about future defense spending.

Bulgaria's internal market has traditionally been very small. At the beginning of the restructuring period, as a result of different agreements which arranged what would happen to agreements reached under the Warsaw Pact and with the Soviet Union, the Bulgarian Armed Forces received different military materials and spare parts that had been stockpiled in Bulgaria. At the same time, the size of the mobilization reserves was reduced several times, which added new resources to the

36 BTA, 1 June 2000.

37 N.a. "Bulgaria reshapes arms industry, seeks markets." Source: Reuters SOFIA, June 23 2000.

Army for free. There was no need for new orders to the defense industry. Although insignificantly, the size of the Army was also reduced up until 1998, and its activity and training were seriously curtailed, which also meant that the number of orders diminished. Expenditures for procurement and investment were cut drastically.

During the transition, the defense industry's share in the defense budget was reduced to between five and eight percent, which in absolute terms means about € 10-15 million, which money was allocated mainly for spare parts. In fact, the defense budget was used only for salaries, food and current expenditures. Technical repairs were carried out by *Terem*, a company owned by the Ministry of Defense which was organized, until 1999, along the lines of a military arsenal. The Ministry of Defense often failed to pay or delayed payments to *Terem*, which relied increasingly on its revenues from civilian production and the repair of foreign military equipment a factor that also downsized the scope of the internal defense market.

In the defense enterprises, a parallel military system for quality control was built as a structure of the MoD. The system embraced all arms producers, as controls were instituted from the development of initial ideas in R&D institutes to the transfer of goods to the final client. This system controlled all military production for the MoD, as well as for the export market. This type of control was included in export agreements as a guarantee of the involvement of the state. However, for a long time after the changes were instituted, this system for quality control existed without radical changes to its size, tasks and personnel, and it's mere existence contributed to the impression that the state was still committed to the MIC to the same degree as before.

The Ministry of Defense was involved in several export arms deals with dubious results (the so-called Albanian and Yemen deals) where excessive armaments were sold. In some cases, the Ministry played a competitive role in the defense enterprises, but state regulations were also a problem because the Ministry considered excess armaments and materials as sunk costs and could sell them at any price, creating distortions in the market. Recently, information surfaced about the export of pistols to the USA at lower prices than the producer *Arsenal* was charging.[38]

Today in Bulgaria, the state's involvement in and relationship with the defense industry continues; and it should continue in the future. The problem with the introduction of a concession regime for arms production should be solved promptly. There is an opportunity in the current legislation for such production to remain the monopoly of the state. Efforts to reform the legislative field should also continue, and should include the regulation of ownership changes in the defense industry, the regulation of transfers of advanced technologies, arms trade regulations, the regulation of foreign military technical cooperation, and legislation in the field of procurement and offset. A new law for crisis management has been

38 Duma, 02 June 2000.

expected for two years already, which is supposed to solve the problems of war-time preparedness and mobilization capacities—issues which are currently regulated by old laws. In the final stages of the privatization of the MIC, the state should define how it proposes to manage its shares in some strategic enterprises. The state should also play a decisive role in the process of Europeanizing the defense industry within the overall framework of European integration, where the concept of this integration is not clear. Until now, the term 'European defense industry' has only included Western Europe. With the development of a common European defense system, there might be a political framework for the integration of CEEC defense industries.

The Arms trade

The decline in defense expenditures and expenditures for arms trade has developed some new elements. In the first place, there are changes in the structure of the demand when new modern weapon systems are requested. The arms race, which began in the 1970s and grew throughout the 1980s, saturated the market in all countries. The drastic reduction in expenditures for new weapons and the imposition of limitations according to the CFE treaty has only reinforced this tendency. Next, most developing countries and other big Bulgarian clients such as Iran, Iraq, India and others have succeeded in building their own capacities, at least for production of some basic weapon systems, and in some cases, are now capable of producing even more complicated systems. Their efforts are now directed to the modernization and improvement of their existing MIC, as well to its further development. The demand, in other words, is for more complicated systems, and licenses and patents for their production. Some of these producers are now starting to look towards the export market as well.

Many international conflicts have lost their intensity, and, in the presence of improved international relations between the UN and the international community, arms embargoes are now imposed with greater speed. The solvency of potential clients has also been reduced as a result of continued conflicts and poor economic situations in warring societies. Today, opportunities for credit or financial help for arms deliveries have been drastically reduced.

In the new arms market there is a demand for armaments with the newest technological features provided by advanced electronics and optics, C4I systems, the repair and delivery of spare parts, the modernization of existing equipment, the transfer of new technologies and know-how, technical help and the training of specialists, engineering, consultancy and construction. The deals of the past have been replaced with more complicated agreements, including the training of specialists, the provision of teaching personnel in military schools and the enlargement of the services provided alongside the main delivery of arms. Most of the producers have succeeded in implementing weapons production based on NATO and WP standards.

The delivery of armaments in the past was carried out on the basis of bilateral intergovernmental agreements, as intergovernmental committees for military and technical cooperation were created in order to coordinate arms deliveries from Bulgaria. Now, although some of these agreements and committees exist *de jure*, *de facto* they are not working. In the past, state credits played a significant role in the promotion of arms deals and exports were made possible by firms' credits. Deals were carried out only through GIU and *Kintex*, and were controlled by the Ministry of Foreign Trade in coordination with the Ministry of Defense. All information about arms deals was classified, as is stated in Articles Five, Eleven, Twelve and Twenty Three of the list of facts, information and other things subject to state secrecy in Bulgaria.

At the beginning of the 1990s about ten companies received general licenses for trade. These included several trading companies, several big producers and the MoD and Ministry of Interior as well. This practice created negative conditions for competition because they were trying to determine prices for exactly similar products made by similar producers. The companies were further hampered by a lack of marketing skills and advertising, too few stable markets, contacts, trading specialists and departments, and difficulties in accomplishing package deals.

There continues to be strong competition for the export market. About fifty Bulgarian companies now have permission licenses for the arms trade, whereas at the beginning of the transition process their number was between two and five. Licenses were given to the main arms producers and to many private companies, some of which had no trading experience. An interesting point is that the initial traders (*Kintex* and *Armimex*) have continued to hold the lion's share of the export market, as the producers depend on these companies very much. Very often, however, their interests are contradictory: the trading companies, for instance, could be interested in re-exporting foreign production. They might also not increase their economic activity too much, because their already marginal revenues would diminish further, again because of state regulations of their salaries and other incomes. At the same time, enterprises are not able to sell their production directly, using their own trading subsidiaries, despite their initial optimism that these would develop. In 1998, the entire management of the big state-owned trading companies was changed because of the poor financial results that had been achieved.

At that time, there were no state orders for defense enterprises, but if the armed forces had implemented the budgets as scheduled, then the defense enterprises would at least have known what their prospects were. As it was, the relative share of their sales in the internal market was still about 5%. The main characteristics of the external markets were a non-committal attitude and a scarcity of agreements at state level for cooperation in trade and defense production. The four state owned trade companies were criticized for the lack of new markets and business opportunities. They competed among themselves, mainly through price reduction, which led to smaller profit margins.

In the mid 90s, Bulgaria hoped to reestablish its links and markets with both traditional clients and Russia, Ukraine, Poland, and Hungary, and after the removal of the embargo, with Serbia and Macedonia. Plans were made for closer cooperation with the United States, France, England and Germany. These plans were, however, only realized to a small extent. The strongly Euroatlantic orientation of the country means that one potential market still remains Western Europe, which might provide a markets for the subcontracting of components and materials. At present, the only real markets are in Africa and India. In 1999, Bulgaria exported arms to these regions amounting to US $100-120 million.[39]

R&D and Innovations

Four recent statements reflect commonly-held opinions about the state of Bulgarian defense R&D. Speaking about the defense industry in 1997, Ivan Kolev, the former secretary of the interdepartmental council which was subordinated to the Council of Ministers, stated:

> The liberalization [of the arms control regime] is an important but not a definitive condition. Last year we did not introduce new products and were not able to create joint ventures with the East or the West. There was no foreign investment.[40]

In a 1998 article, Simeon Petkovski, the former deputy minister of defense, observed that "...in the last 4-5 years approximately two thirds of R&D projects were developed by private firms, which took risks and self-financed their expenditures in advance in the hopes that the MoD would buy their products."[41] Nevertheless, bureaucracy and a lack of vision about how to further the development of the MIC began to spoil concrete future joint production from about 1995. Similarly, Georgi Bozduganov, the former secretary of the Governmental Commission for Arms Trade Control admitted that "during the last ten to eleven years, not even one new license for new products has been adopted."[42]:

Finally, after the closure of specialized scientific units and R&D institutes in the MIC in 1990-1991, Georgi Bozduganov said that there was no chance that new products and technologies would be developed.[43]. According to him, the state-owned trading company *Teraton* had, by then, already received orders for products which Bulgarian enterprises would not be able to produce.

In the Warsaw Pact, roles were strictly assigned, and the development of new materials, new technologies and future-oriented research was concentrated in the Soviet Union (Gindev in Ivanov, Tzvetkov and Dimitrov, 1998, p. 196). The

39 *Demokratsia*, 31 May 2000. For details, see Appendixes.
40 *24 Chasa*, 8 March 1997.
41 *Continent*, 1 June 1998.
42 *24 Chasa*, 24 July 1998 Georgi Bozduganov.
43 *24 Chasa*, 24 July 1998 Georgi Bozduganov.

Bulgarian defense industry received a relatively large share of foreign licenses. This development strategy was beneficial to Bulgaria at the time, both because it saved national resources and because the licenses were received almost for free. At the same time, though, secrecy in the defense industry and the awarding of licenses disallowed the efficient utilization of national scientific potential In the long term, then, the development of Bulgarian technological policy was compromised, a situation which was exacerbated when socialism suddenly came to an end.

The Bulgarian defense industry's lack of preparedness was fairly commonly echoed in the CEECs, where, in contrast to policies that had been followed in the West, product and technology development were carried out mainly in external institutions such as the branch research institutes (Bitzer, 2000, 16-17). Research capacities inside the production units were small because their task was seen to be limited to production, so the links between R&D institutions and the production sectors remained weak. Because the main focus of universities and institutions of higher education was education alone; only a small amount of research was carried out by them (Bitzer, 2000).

The concrete development of new products and technologies was assigned to branch research institutes and bureaus of design, with all research results produced in the military industrial complex remaining secret. Access to information by the public and by scientists and engineers in other fields was either controlled or prevented altogether. The imposition of special military standards and specifications, and the severe limitations imposed on access to information effectively prevented any spillover of research into civil society. Then, with the collapse of socialism, both national production and innovation structures and the established COMECON production and innovation structures collapsed. Increasing international competition forced emerging enterprises to use state-of-the-art technologies which were not readily available in Eastern Europe (Bitzer, 2000).

General Andreev, the official formerly in charge of defense R&D observed that, in the past, the Bulgarian MIC had concentrated about 20% of the country's R&D potential on the defense industry (Andreev in Dimitrov, Ivanov and Petrova, 1990, p. 246). During the transition period, the efforts of the managers were directed mostly to ensuring the survival of existing production lines. They were concerned only with having something to produce, and paid little attention to the development of company strategy and technological improvements and did not, therefore, use their R&D potential. Scientific research was slow and ineffective, and because the results of R&D are not tangible and immediate, research units were among the first 'victims' of restructuring and personnel reduction. In the past, defense enterprises had been innovative but focused on the development of flexibility, reducing the impact of low quality inputs, making good use of existing capacities by finding new uses for equipment, and so on. Scientific units in the defense industry had also concentrated their efforts on adapting foreign licenses and technologies.

Until 1990, the Soviet Union presented more than 2000 licenses to other countries,[44] of which Bulgaria received about 670.[45] Most of them have expired, but defense enterprises continue to use them. At the moment there are about fifteen active (operative) licenses, all of which will expire between 2003 and 2005. After this, Bulgarian licensee and producers will be in a difficult position because most of them have already been privatized.

Until privatization came about, the problem of license expiry was only vaguely attended to, even though licensing questions were, and still are, one of the bilateral problems between Bulgaria and Russia. It remains unclear who has to pay for licenses—the state or *Armimex* as their formal holder. This question has become further complicated by the fact that after the privatization of the majority of the defense enterprises, the state's share in *Armimex* fell below 30%. In practice, therefore, *Armimex* is already a private company.

Bulgaria defense R&D has traditionally been conducted by three main branches: MoD institutes (financed directly through the MoDs budget), specialized defense research institutes in the structures of defense producers, and civilian research and academic units at the universities and the Bulgarian Academy of Science. Academic research was not particularly well developed even during the Cold War, and although the situation is difficult to assess with any accuracy, it should be assumed that after the changes its role has diminished even more because of a lack of budget resources which used to provide its main source of funding.

There were several specialized defense research institutes—at *NITI-Kazanlak*, *OELT-Sofia*, *Arkus-Lyaskovets*, *VMZ-Sopot*, *Dunarit-Rousse*, *Electron-Progress-Sofia* and *VNTI* and there was an institute for special optics at Sofia which specialized in electronics, mechanical engineering, optics, lasers and explosives. R&D institutes at all these plants employed several thousand people.

All research conducted for the defense industry was subordinated to the needs of the Warsaw Pact and export markets, and today, most defense companies have maintained only a minimal capability for carrying out research, focusing mostly on the technological support of their production lines. At present there are only two specialized defense R&D organizations: *NITI-Kazanlak*, which specializes in mechanical engineering, and *Electron-Progress-Sofia*, which conducts R&D on electronics. There are no more than five hundred personnel in these institutes. All other R&D organizations were either closed, or abandoned defense research altogether.

During the transition period, industrial R&D organizations received no subsidies from the budget. Although they had previously had their own scientific councils and had developed structures which permitted the continued scientific development of their personnel, the situation had now changed dramatically. Most of the cadres left and there are no longer any council or an inflow of new scientists. In the past, the big defense enterprises had been able to provide scholarships for

44 *Krasnaya Zvezda*, 22 April 2000.
45 *Sega*, 22 June 2000.

education in Bulgarian universities as well in the Soviet Union at Leningrad, Tula, and Moscow, but these were now canceled (Radev in Ivanov, Tzvetkov and Dimitrov, 1999, p. 202). The defense industry no longer supports those who want to study for a PhD, and the institutes which remain are directing fewer and fewer of their resources towards research functions. For the most part, they are no longer directly involved with research, but focus on assessment, coordination, technological support and even their own small-series production. Furthermore, existing regulations hinder the participation of private companies in the process of creating new defense products.

The MoD's regulations governing military science are old, obsolete and excessively bureaucratic: the management system for R&D in the MoD that was in place until 1999 had 10 hierarchical levels, which made the research process very difficult. By 1995, no surveys had been conducted to assess the need for new military equipment and armaments (Saraidarov in Ivanov, Tzvetkov and Dimitrov, 1995, p. 130). The budgeting and financing systems for R&D in the MoD had not been clarified, and there were on-going problems with material and technical supplies for R&D infrastructure. MoD research units had only enough money to cover salaries, and opportunities for the units to deliver services to organizations outside the MoD were severely restricted.

At the beginning of 1999, the Bulgarian MoD had five R&D organizations at its disposal. These were almost unchanged during the transition period, although their resources for research were severely limited. In 1999 they were consolidated into an Institute for Advanced Defense Studies (IADS) and the number of research staff was reduced to several dozen, which has critically decreased its capacity to conduct independent research. After the closure of the Military-Technical council in the MoD in 1999, there is no body in the Ministry in charge of R&D, although plans have been mooted to transfer this activity to the MoD directorate on defense planning.

The national management of military research has been considered from many angles. One idea was to establish a National Agency for the management of defense research, but this came to nothing. Other proposals included the creation of a special bank for the MIC which would offer preferential credits to arms producers, or the creation of a revolving fund with which to support effective projects. In the end, two funds were created by the Ministry of Industry for the promotion of new projects. These are the State fund for Structural and Technological Policy, which was established in the Ministry of Industry in the 1980s to increase state governance of defense, and was moved to the Ministry of Education, Science, and Technology in the 1990s. With this change, the MoD's role in R&D became secondary. Around 1% of the defense budget was devoted to R&D, but a significant share of this money was intended for salaries and infrastructural expenses, not for real research.

According to von Hirschhausen, national science and technology systems have not played an important role in the restructuring of industrial sectors or enterprises in Eastern Europe in the last decade (von Hirschhausen, 2000). Without a national

strategy or systematic efforts to promote R&D there is, and will continue to be a serious lag in the field of new defense technologies, which could, paradoxically, hinder Bulgaria's ambitions to join NATO, which is not interested in weak coalition partners.

The situation with private R&D companies is also very difficult, because the MoD does not pay for any research they conduct. They are forced to self-finance their research and experimental models in the hopes that the MoD will somehow find resources to support them. In general, however, private R&D companies have been able to remain fairly flexible: two of the most popular new products, the carbine 'Bakalov" and the gas-revolver 'Bulforce', were created by private researchers working in garage-like conditions.

About 90% of Bulgarian defense production is based on Russian licenses which are owned by *Rosvooruzenie*.[46] The part of the licenses which was paid for in the 1980s has already expired, after which only partial payments, or no payments at all, have been made. One proposal for resolving the debate about existing license agreements was for the unpaid fees for Russian licenses to be swapped as part of the resolution of Russia's debt to Bulgaria, but this plan was not realized. Bulgarian representatives also argued that many of the licenses had not been followed properly in the last few years as the latest modernizations and changes in construction were never delivered to Bulgarian producers. From time to time, the debate about licenses is revisited, and it is not clear whether this problem will be settled at interstate or inter-company level.

There was also a proposal that unpaid obligations should be exchanged for property in defense enterprises, but this, too, came to nothing. No-one seems to know now whether new private owners will want to keep these licenses going. A final problem is that state secrecy has continued into the new era, and it is not clear how foreign companies will cope with this issue.

There is a need for a thorough review of the mostly state-owned defense licenses, patents and technologies which are currently available in Bulgaria because the danger exists that they could soon become obsolete or unusable if no interested buyers come forward. This problem should be regulated under the laws for the arms trade and/or in any future laws for the defense industry.

Foreign cooperation

"*Gruman-Nortrop* has expressed an interest in the privatization of the VPK." "Joint production between *General Dynamics* and *Beta-Cherven Briag*." "Italian companies buying Bulgarian defense enterprises." These headlines are often seen in Bulgarian newspapers, but unfortunately, they are untrue. There were also newspaper reports about expressions of interest from the Russian *Izevsk* factories and a Dutch company which did not receive the privatization memoranda because of problems with access to secret information and security clearances.

46 *Capital*, no. 7, 1999.

After transition began, one strategy for defense companies was to cooperate with foreign partners for either defense or civilian production, but Bulgarian companies have not succeeded in realizing this dream. The headlines quoted above, then, are just a record of unfulfilled intentions. Indeed, most information about expressions of foreign interest in Bulgarian companies for the purposes of setting up joint ventures or private companies is just rumors or exaggerated hopes. Sometimes, all the same, these rumors have been used by the MIC for its own reasons.

Because Bulgaria is still, to some extent, dependent on Russian supplies, during the socialist government of Jean Videnov (1994-1997), the topic of reestablishing relations between Bulgaria and Russia resurfaced on many occasions. Several ideas for joint ventures between Bulgarian and Russian enterprises were mooted, and a joint Bulgarian-Russian trading company was proposed.[47] The Russian company *Promishlenie Mashinyi* expressed an interest in participating in the privatization of *Arsenal-Kazanlak*, but in the end, no offer was made.[48]

The most serious attempt at cooperation came in 1995, when Russia offered to sell MiG airplanes to Bulgaria, as Russia had secured a special US $450 million loan with no repayments scheduled until 2001. The loan was guaranteed by the Russian government and the MiG producer *MAPO* was its recipient. It was planned that about US $50 million would be invested in modernization and purchasing new equipment for one of the biggest airplane repairing factories in Bulgaria, *Georgi Benkovski-Plovdiv*, which is part of the *Terem* company. Until then, the factory had repaired only the MiG 21 and the MiG 23. After modernization, the factory was going to be able to repair the MiG 29, and also to became the regional center for the repair of similar airplanes. For a number of different reasons such as the price of the airplanes, the credit conditions and investment in the factory in Plovdiv, as well as a lack of guarantees from the Russians that orders for repair would definitely be secured, the deal was never concluded. At the end of 1996 and the beginning of 1997, there was also an offer for delivery of the SU-25. After 1997, a new government came to power and the political and economic situation in Bulgaria began to develop in a different direction. New agreements with international financial institutions did not permit the finalization of the deal and it was canceled. A proposal to repair Greek-owned BMP1 (armored vehicles) made by Russian producers were discussed in 1997, but again, without result.

The next direction in which to develop cooperation was with western countries. In an interview with Reuters in October 1997, a Bulgarian official spoke about expressions of interest from Western firms in the privatization of the VPK. He mentioned Lockheed as well as firms from Israel, Germany, Russia, Greece and Turkey. [49] When the Ministry of Defense declared its intentions to purchase US $58 million worth of communication equipment for the Bulgarian Army (PIKIS

47 *Pari*, 24 February 1997.
48 *Capital* no.31, 1999.
49 Reuters (October 1997)

project), several foreign companies expressed their interest in the privatization of Bulgarian firms which could become future partners in this project. But soon after *Marcony* won and signed the deal, their interest in it disappeared. Georgi Bozduganov also spoke of an agreement that had been prepared for the joint production of antitank missiles between General Dynamics and *Beta-Cherven briag* but this project has never been realized.[50]

In 1998, *Finmekanika-Italy* expressed an interest in the joint production of military and civilian products. Alesandro Chinkuegrani, one of the directors in *Finmekanika* responsible for its operations in Eastern Europe, mentioned that they had established contacts with Bulgarian MIC companies, but it seemed that it was impossible to make a real business plan.[51] When the Bulgarian MoD declared its priorities in the modernization of the Armed Forces for the purposes of NATO membership, the company realized that there were better real chances of making deals in the field of military communications and radars. Several preliminary agreements for future cooperation were concluded with the Bulgarian companies *Cherno more-Varna*, *Electron-Progress* and *Terem* (for repairs). *Finmekanika* considers the Bulgarian market to be very narrow, and although the country has specialists and manufacturing traditions, the big barrier to cooperation is that too few people speak English.

The media was also informed about expressions of interest from the Israeli concern Elbit Systems Ltd in the modernization and replacement of the avionics of Bulgaria's MiG- 21 and MiG- 23 in order for them to become interoperable according to NATO standards.[52] Elbit proposed a barter deal: Bulgaria could pay with airplanes which the Israelis would sell to third countries. There were plans for the modernization of the military repair factory in Plovdiv, which would then undertake the repair of airplanes and airplane engines.

In February 1998, according to Alexander Bozkov, then Minister of Industry, *Grumman Northrop* had expressed an interest in providing supplies to the Bulgarian Army, repairing Bulgarian technology to NATO standards, and embarking on joint production ventures and privatization deals.

There is also a market for the repair of Russian-made airplanes in order to bring them up to NATO standards, and in 1998 there was also an expression of interest from Ukraine in joint production and arms deals as well as research. 2000 saw negotiations between the MoD and DaimlerChrysler with regard to the repair, according to NATO standards, of Bulgarian airplanes, especially the MiG-29. Bulgarian participation in this task was proposed. [53]

50 *24 Chasa*, 24 July, 1998. Georgi Bozduganov.
51 *Standart*, 4 February, 1998.
52 *Banker*, 12 June, 2000.
53 *Standart*, 8 June, 2000.

The Conversion of Bulgaria's Defense Industry

The term 'conversion' is used to describe the process of transformation or transition from one condition to another (Hansel in Dimitrov, Ivanov and Petrova, 1990, p. 246). In the context of disarmament, the term 'conversion' means transformation from arms production to civilian production, although it has, in the past, been used to describe the transformation of civilian enterprises to suit military needs in the process of mobilization.

Today, conversion always has a positive connotation that is related to peacebuilding and peace dividends. It is mostly used to describe processes of demilitarization, especially a change in the proportion of civilian and military production and the limitation of the latter. The process of conversion could be an important aspect of the overall restructuring of a defense industry if it is linked with the utilization of excess MIC resources. The conversion process can also be designed in such a way that existing defense industrial potential is preserved to some degree.

An even more challenging process is described by the term 'reconversion' a term which, according to Werner Hansel, means that a former defense producer has turned from civilian production back to defense production (Hansel in Dimitrov, Ivanov and Petrova, 1990, p. 246). It is difficult to know how to define such a process when civilian enterprises without defense traditions start to produce military production, or important dual-use components intended for military production, or to put a name to what happens when a defense producer cancels its existing defense production and starts producing even more sophisticated weapons. Also under discussion is the existence of different degrees of conversion which vary between total conversion and a continuation of arms production, where concrete limits often become blurred.

It is also important to understand what is included in the scope of conversion. More and more, the opinion prevails that "the conversion of a defense industry must be viewed in terms of an implicit transformation of society, and not in terms of the explicit conversion of the industry from guns to butter or tanks to buses" (Coen and Ward, 1998, p. 393). In other words, conversion implies not only a change in concrete products and clients, but also in the basic framework (economic and legislative), in which the present defense producers are functioning. From this perspective, Coen and Ward consider a regime's ideology and government structure, as well as individual enterprises, as valid foci for an analysis of the conversion process. As Grazin has observed: "the real or ultimate 'conversion' of an MIC is a procedure of breaking up the constituent formative linkage of it to the state and to the state's doctrinal component. ….[C]onversion now turns out to be an economic-structural rather than an engineering-technical and simply finance-supporting problem" (Grazin, 1997, p. 167).

Such interpretations of conversion are very important, because the main participants in the conversion process are implicated as well as the roles they play. Defense producers, in this broader definition, are not the only actors in the play.

Conversion is usually induced or compelled by quantum changes in the economy, political structure and social needs of a country, not preplanned (Yang, 1997, p.450). Even if it was not anticipated, however, the conversion process itself can be carefully planned as the experience of many countries shows. In this section, I shall focus mainly on defense industrial conversion.

On one side of the conversion equation lies the reduction of military expenditures at the macro level, because of global changes and a re-ordering of priorities. This change in the macro framework then leads to changes at the micro-level, at which the need for effective and readily-available defense resources is lessened. While both micro-and macro-level changes lead to conversion at first, they also induce improvements in the defense industry. Conversion, in other words, is not only a mechanical reflection of a reduction in defense expenditures. It also includes the reallocation of resources in order to increase effectiveness.

Writing about Bulgaria, Dimitrov and Ivanov point out that conversion which comes about as a result of the better utilization of market forces contributes to speeding up the development of the economy as a whole, a process which, in the end, also supports the development of the defense industry (Dimitrov and Ivanov, 1993, p.83). In this sense, the defense industry will become more effective: while there will be a transfer of defense technologies to the civilian sector, the opposite will also be true. This circulation of ideas is also likely to be relevant for the development of company cultures, management styles, R&D, and so on.

The simultaneous conversion of military organizations, military production, and military personnel is a long, slow process (Coen and Ward, 1998, p. 386). Not only is there a physical transformation, but a psychological one, too. Existing research suggests that it takes between two and five years for the first evidence of successful conversion to be visible, and this only occurs with concomitant investment in the civilian sector.

The general conditions and industrial framework for conversion are, therefore, quite different in western and eastern countries (Pruskiene and Altwater, 1996, p. 95). The main difference in the conversion processes that have taken place in the West and in CEECs is that in the latter countries, arms producers had to restructure (and partly privatize) in a catastrophic economic situation characterized by high inflation, negative growth rates, insecure legal provisions, and a period of market orientation adjustments. Obviously, it is easier to find more civilian businesses in a growing economy than when an economy is struggling or in an outright recession (Gonchar and Wulf, 1998, p. 362). The task of finding alternative uses for resources that are released in the conversion process represents the broadest challenge of conversion (Hartley, 1997, p. 84). In this sense, then, disarmament and conversion are about the economics of change and adjustment.

While these are not new problems, the main difference in how these processes were undertaken was seen in the role played by the state. All markets are characterized by uncertainty, but the uncertainties in defense markets in CEECs resulted from the fact that decisions were made by governments, which were their sole customers (Hartley, 1997, p. 85). Cuts in defense spending resulted in significant changes in the defense industry which experienced job losses, plant closures, changes in its supplier networks, conversion, diversification, and mergers. Most industries needed time to adjust to these upheavals. As Zverev has observed, when conversion began, enterprises had to go through two processes of transformation simultaneously: they had to move from military to civil production, and from working within the well-known system of a planned economy to a completely unknown market economy (Zverev, 1998, p. 398).

For specialist defense firms that were wholly dependent on defense business, direct conversion was technically difficult, costly and probably not worthwhile. For such enterprises, the plant, equipment, managers, and work force are highly specific to defense production and their skills and capacities are nontransferable—at least at a reasonable cost (Sandler and Hartley, 1995, p. 295). This was, however, only one of the problems hindering successful conversion. Others include inadequate expenditure for new equipment and retraining, entry costs, profitability, and changes in production. Top managers, representing the real assets of the old system, did not perceive themselves as potential pupils or recipients of advice (Pruskiene and Altwater, 1996, p. 114). In conjunction with a systematic overrating of the market value of their assets, they failed to develop a realistic approach to international cooperation and to take the required step of restructuring in order to enter new high-tech markets.

Among the obstacles which especially impacted on military factories on their way to reconstruction was their lack of experience in marketing the new products which they were developing for sale. They were often unable to prepare adequate business plans or to establish fruitful contacts with foreign investors (Pruskiene and Altwater, 1996, p. 34).

The Role of the State in the Conversion Process

Both the failure of conversion projects and the backlash in public perceptions of these projects highlight the need for a more integrated approach which takes into account national and international decisions related to security (Laurance and Wulf, 1995, p. 5). States make decisions to reduce military expenditures and shrink military activities primarily as a result of short-term budgetary concerns and constraints flowing from poor economic conditions, rather than as a result of changes in security policies. Financial constraints have, however, led to the institution of policies which do not effectively manage the drawdown (Gonchar and Wulf, 1998, p. 6). To counter this, there is a need for a more functional and institutional linking of the economic, social and security elements of the conversion process among

states, and between states and evolving international security and economic systems. Accordingly, the conversion effort must in some way be related to the security concerns of states within which the conversion actually occurs. In the long run, conversion is necessarily tied to the perception of threats to national security, and so global security factors must be integrated into conversion efforts (Gonchar and Wulf, 1998, p. 6).

At present, the role of the state is being reconsidered: in the past, it seemed almost natural that military technologies would receive top priority, and that the state would provide help and subsidies to support them. Today, civilian technologies more often take the leading role, and there are questions about the role of the state: should it support the development of civilian and dual-use technologies without direct interference in the market, and should it, at the same time, provide resources for the development of military technologies? The 1960s and 1970s concept of a spin-off from military to civil production is now obsolete (Opitz, 1994, p. 90).

In all types of economies, there is a potential role for public policies in assisting conversion, in either its narrow or broad interpretations (Sandler and Hartley, 1995, p. 300). Where conversion cannot be left to market forces alone, it can be assisted by the necessary instruments of economic and social policy. In the Bulgarian case, conversion undertaken in the West has not been studied enough. Conversion could only be realized because the size of the VPK had already been drastically reduced. To continue, we need more information and an answer to the question of whether public policy should favor defense firms and workers, and if so, why (Sandler and Hartley, 1995, p. 301)?

In addition to a stabilization policy, three forms of structural policy should be implemented to direct the labor market, regional policy and the restructuring of the separate enterprises. Preconditions for the beginning of conversion are political decisions to disarm and/or the implementation of changes in the military potential of the state, which should also define the new limiting conditions. The problem in former socialist countries, however, is that so far almost all thinking about conversion has been undertaken by people within the defense industry itself, and they are, for understandable reasons, unable to develop a broader concept of this activity (Sandler and Hartley, 1995, p. 285).

There are several policy-relevant questions which have to be addressed before conversion is begun: which industries, regions and localities are especially vulnerable to cuts in defense spending? Which kinds of labor and skills will be released by the armed forces and defense industries? How marketable are the labor and capital resources which are released (Sandler and Hartley, 1995, p. 285)? Four issues then have to be taken into account in the development of appropriate public policies for assisting the reallocation of resources, conversion, retraining and retooling.

Sandler and Hartley propose that the ultimate test is posed by the capital market on which defense plants will be offered for sale and probably bought by firms which believe they can find a profitable use for their new assets (Sandler and Hartley, 1995, p. 295). This observation appears at first to be applicable to the

Bulgarian situation, but in fact, considering that there were not even buyers interested in civilian enterprises, it proved to be unfeasible. The state, then, has had to organize the privatization process, and to liberate defense enterprises from all the obligations they inherited from the socialist period.

The conversion process needs proper management, including an assessment of resources available for alternative use and the accompanying costs for freeing these, a consideration of the available incentive structures as well as the decision-making process concerning the best ways of using them (or abstaining from using them), the amount that can be invested in the transition process and ultimately, an evaluation of the success or failure of conversion efforts. Finally, conversion should be done at the appropriate time. There is a so-called time window which opens almost immediately after global changes but closes after a few years have passed. If opportunities for conversion are not used in time, they will simply disappear.[54]

Closing down, rather than conversion, may be the only solution if an enterprise is too narrowly specialized technologically and its future markets expectations are poor or even medium (Shapir, 1994, p. 113). But, as plants are generally quite big, this could create serious regional unemployment problems. The development of new infrastructure to attract new investors and the provision of tax relief incentives are therefore necessary. Also, the question of mobilization preparedness is one of the obstacles to the conversion of the defense industry (Cooper, 1994, p. 45).

Stable and dynamic internal markets are an absolute precondition for a supply side approach to work, but supply adjustment cannot be achieved by market means alone. Some form of coordination between demand and supply policies also has to be achieved (Shapir, 1994, p. 119).

The different participants in the process of conversion have, in fact, different objectives. In the assessment of such processes, it is important to identify the leading interest and from that, to determine the main objectives and expected results. All of this reflects on the mechanisms that are then set in place to accomplish conversion, and defines the choice of conversion strategies, i.e. the way of achieving these objectives.

The state could have different objectives in conversion, and they may not coincide with the objectives of defense producers. The picture is also complicated by the fact that economic structures are much less flexible than economic institutions (Shapir, 1994, p. 138). When a country switches to a market economy, because of the very speed of some institutional reforms (cuts in budget expenditures, for instance, can be implemented overnight, and so can a price reform), it can be difficult to promote a progressive change in an enterprises' behavior, as mainstream economics expect. Instead, what can result are destructive effects. What are the incentives for a still state-owned enterprise to restructure, when the environment is not clear in regard of privatization, political and military integration and defense policy?

54 Interview with Peter Koch-Sembdner, Director of Defence Conversion, Ministry of Economics, Transportation, Agriculture and Viniculcure. The German State Rheinland-Pfalz, October 2000.

In former socialist countries, most defense enterprises had adopted a defensive position, maintaining their work force even at minimum wage levels and with reduced working hours. Sometimes military production has been continued in Russia even in the absence of government orders. Managers are fighting to keep the status quo and have looked for allies in their workers and trade unions. All of them have asked for state help, even when the state has been unable, for many reasons, to provide subsidies. This has led to many a dead-lock situation, where restructuring is simply not on the agenda. All participants have looked at and elaborated their own survival strategy, and often these strategies are mutually exclusive and disallow restructuring and conversion.

Peter Lock has written about the political illusions that can shroud the process of conversion, in particular, the idea that the valuable resources hitherto absorbed by the military sector can be directly converted into concerns that address civilian welfare (Lock, 1997, p. 125). While this principle is true, a more important issue to attend to is that these resources cannot be converted directly, immediately and without incurring some costs. The problem with conversion lies here: what are its costs, and when will they have to be met? Conversion cannot be asserted as an alternative before these questions are answered.

The failures of conversion could be explained by the fact that it is very often overloaded with high expectations and controversial objectives, failing to address which can lead to embarrassment and disappointment. It is very difficult to maintain levels of employment, the profitability of an enterprise, its industrial potential and readiness for defense production, and so on. Defense enterprises, which have to restructure with conversion as one of their options, are loaded with additional tasks, unlike enterprises that work purely in a market environment. They are not free to sell their unused assets, to reduce personnel and to close their non-productive or inefficient parts. Being state-owned, they are inflexible. Furthermore, state enterprises and their managers have not had any substantial stimulus for radical restructuring, including conversion, because their marginal benefits would be minimal. In the presence of all the other negative factors that are characteristic in transition economies, such as a lack of reliable social structures and flexible labor markets, defense enterprises have paid a high price.

Donald Hislop observes that maintaining employment levels or re-using facilities is seen as a social, rather than an economic goal which is likely to require long term investment, careful planning and significant adaptation (Hislop, 1997, p. 585). Therefore, it is unlikely to be in the narrow economic interest of the companies to pursue this strategy. Plant conversion is usually very difficult and in general, the released labor resources and assets are applied in entirely different contexts.

If the state would at least take responsibility for the labor resources without engaging the enterprises with this issue, then it could define its conversion objectives as follows (Hartley, 1997, p. 92):

- to use conversion as part of the establishment of a just and lasting peaceful order
- to use conversion as part of process of making the defense industry more efficient and ensuring that it provides the maximum contribution to the national technology base

Conversion is a by-product in the process of achieving the second objective, and as the process of improving the defense industry leads to improvements in national security and the national economy, it should not be a controversial issue. It is possible when peace and disarmament are considered as long-term and sustainable, and it also become largely irreversible in such circumstances. When shrinking defense markets and expenditures are considered as a temporary or short-term tendency, however, planning is directed toward the utilization of temporarily free assets and labor and a high level of readiness for defense production is maintained. This approach narrows both the scope of conversion, and the very process of restructuring the defense industry. Once again, then, stress must be placed on the importance of understanding the economic and political framework in which defense enterprises are run, especially those that are state enterprises.

Joseph H. Yang describes several areas at enterprise level in which improvements in the conversion process are made possible (Yang, 1997, p. 449). These are:

- an increase in the efficiency of resource utilization (measure of return on capital investment and personnel utilization)
- process improvement, which refers to the improvement of existing practices in design, manufacturing and service procedures
- customer contents, which refers to market shares and the development of new and more profitable markets

According to him, several criteria could be used for measuring of the merits of the conversion projects (Yang, 1997, p. 41): do they maintain full employment of original personnel? Do they continue to employ facilities to their fullest extent? Are profits and growth potential maintained? Is the market value of the business maintained?

The criteria of Westinghouse, which formed the focus of Yang's study, was simply to maintain profit and growth potential. It is interesting to ask whether a state-owned company would set out its priorities in the same way.

The Background of Companies Slated for Conversion in Bulgaria

The socialist defense enterprise maintained production regardless of whether there was any profit or not. The old ways of determining price structures, as well as the practice of budget subsidies permitted an enterprise to show end results that were not necessarily a true reflection of the situation in the market. The state offered subsidies but could also take away any profits, transferring these to other, unrelated

enterprises. Big economic associations such as *Electron* and *Metalchim* also played a role in this kind of resource allocation. Separate enterprises, then, were not able to accumulate resources or to invest these resources somewhere else in case of a crisis. It was not even possible to plan investments without proper permission, and it was always possible to receive bank loans from a chosen state bank if things went wrong. Enterprises were only a small element of the centrally-planned economy and they did not have their own resources by means of which to become independent. When the transition began, these enterprises were still state owned, with all the limitations respective to this status, i.e., on the sale of assets, the attraction of investors, embarkation on joint-ventures and the reduction of personnel.

Civilian production was planned as a buffer so that production assets and the labor force would still be kept busy if there was a slight reduction in demand. It was, however, kept separate from the technologies implemented in defense production. Civilian production lines were subordinated to the needs of arms production, even though their products would have easily been sold in socialist countries, where there was a chronic lack of consumer goods.

At the end of the 1980s, conversion was understood not only as finding new civilian uses for formerly military resources, but also as a means to use the military sector, which was seen as the only functioning and efficiently working sector of the economy, for developing modern civil production lines. Conversion was understood in a very specific sense, namely, as a process of taking the existing factories and organizations in the defense industry, reducing their military work, and directly switching their released capacities and human resources to civil production. Plant-based conversion was the name of the game (Cooper, 1994, p.40).

The lack of proper military doctrine immediately after the changes in 1989 also contributed to the problem of defining the scope and content of defense industry restructuring and conversion. Bulgaria, in fact, did not have its own national military doctrine. All defense efforts were subordinated to the Warsaw Pact's military doctrine, which was dominated by the Soviet Union. After the dissolution of the WP, Bulgaria had to domesticate and democratize its national security system, a process which was not, unfortunately done very successfully.

In the former Soviet Union, disarmament and conversion were started in an attempt to solve economic problems (Opitz, 1997, p. 89). Conversion was intended to overcome the stagnation and backwardness of the whole economy—it was put forward as a "magic bullet" for modernizing the country's industry, but it was never organically developed to suit the needs of the industry and the country. In Bulgaria, too, conversion was an imported concept, something obligatory for defense producers, who until then had only known success.

At the beginning of the transition process, many enterprises simply did not know whether they would be needed for military production in the future. Nor did they know whether they would be required to retain their capacity and potential for mobilization in the event of an emergency. The legislative basis was vague and financial support for preparedness almost disappeared, so the factories themselves

have to fund the retention of their mobilization capabilities. There were a lot of additional problems, including a lack of marketing experience and skills in serving a civilian market and an inability to design and produce for a civilian market at competitive prices. Finally, military budgets and defense industries were reduced many more times bigger than in the West.

David Greenwood, writing about restructuring in the East versus adjustment in the West, makes the following points (Greenwood, 1997): the East was dealing with old management methods, outdated managers, old layout and equipment, and low productivity, none of which problems had to be faced in the West.

Even though efforts have been made to attract it, Western investment has stopped at present. The success of conversion, however, depends heavily on the creation of opportunities for attracting foreign capital. This was impossible at the beginning of the transition period due to high budget deficits, high inflation, a lack of guarantees for investors, a moratorium on foreign debt payments and a moratorium on VPK privatization. The failure could also be explained for another reason: the initial pressure for conversion in the mid 1980s came in a period when defense enterprises were booming and investment for their expansion was already underway.

Defense enterprises in the socialist period were similar to military arsenals in their organizational form. They were state owned and subject to bureaucratic procedures, although they did not have to cope with difficulties with banks and accumulated indebtedness. Subsequently, they have discovered that it is hardly possible to compensate for the drop in military demand through an increase in civilian production. Instead, they are trying to work out how to smooth the process of downsizing, rather than undertake conversion.[55] The question remains, though, who will manage this downsizing—government or corporate structures. Conversion is a secondary point.

Disarmament pre-supposes a real process of reducing opposing forces, without reference to massive stocks of weapons, but with the idea of establishing a lasting peace in which to overcome the ideological, political and religious differences that sometimes lead to armed crises (Fontanel, 1996, p. 146). This is the situation most favorable to true disarmament. It is not, however, entirely relevant to Bulgaria, because at the beginning of the 1990s, after the dissolution of the WP, there was some confusion. Indeed, there was a security vacuum at first, and then new and immediate threats to national security—Greece and Turkey preserved and even increased their armaments together with CFE cascading and modernization. NATO continued to exist, and Yugoslavia disintegrated with all that resulted from that event. So it is hardly possible to speak about significant disarmament and a serious process of conversion at the beginning of the transition period, and this is one of

55 Panel discussion. "Restructuring the defence technology and industrial base." *The Post-Soviet Military industrial complex*. Proceedings of a FOA symposium, Stockholm, 1994, the Swedish National Defense Research Establishment, ed. by Lars B. Wallin.

the reasons for Bulgaria's reluctance in restructuring its MIC and reforming its armed forces.

There were not many enterprises with innate potential for R&D and the development of civilian production. Most defense producers were very narrowly specialized in defense technologies, which limited their opportunities, and as a result, conversion activities were partial and the completion of this process has been continuously delayed. Because of past failures, managers have also been very cautious about it, while state organs do not dare to insist on conversion because they are unable to allocate any resources for its completion.

Conversion in the 1990s

It is difficult to describe conversion as a process when systematic efforts and an integrated approach are missing. There were hopes that conversion in the East would become easier because of big deficits in the market, but in fact, it coincided with market liberalization, after which clients' preferences were directed to high-quality imported goods. It should not be forgotten that most of these goods were imported half illegally, without payment of custom duties, a situation which was facilitated by corruption in the customs department and a lack of state control. Such imports were, unsurprisingly, very competitive. The whole process, however, once again stressed the importance of the role of the state and appropriate state institutions in regulating and controlling the functions of the market.

The present process of conversion is often compared with similar processes that took place after the end of WWII, but from this perspective, one of the explanations for the slow and unsatisfactory reaction of defense producers in CEES, and Bulgaria in particular, is that they did not feel the real shock that usually comes at the end of a war, when it is absolutely clear that there must be conversion. Indeed, the main shock that defense producers have faced in the contemporary era has been economic, not political. The need for conversion has not been fully recognized or understood as an important issue for many CEECs. There are no clear political decisions about conversion, and even though it was introduced in the mid 1980s, we still cannot say that the problems associated with it are solved, especially if we consider all its aspects.

Bulgaria has not undergone much post WWII conversion because the scope of its defense industry was not significant. Instead, the country has experienced a postwar development of its defense industry. This phenomenon has led to a particular type of conservatism in people's thinking and behavior, and has underpinned the expectation that conversion is a temporary phenomenon. In the 1980s, conversion was considered as a simple exchange of defense products with civilian ones, i.e. a process of product change. The main objective was the preservation and development of existing defense producers and their potential for arms production was as significant as their ability for fast re-conversion because the direct objective was the utilization of temporarily free capacities, including raw

materials, assets and labor. Until then, 5-15% of their capacities were utilized for civilian production, which they used to balance their production workload in times of temporary reductions of demand. At the beginning of the 1980s, there were also plans to start and exploit new capacities.

The defense industry in Bulgaria has no significant advantages over the rest of the country's industries. All technological innovations have been executed using the resources of the industries themselves, and they have not been substantive because decisions about more radical changes were taken at higher levels, a practice which continued into the 1990s. Conversion was considered mainly as a narrow production-organizational problem, restricted to issues such as plant conversion, although many experiments were started, especially for the creation of civilian products. Again, these were restricted by insufficient R&D potential. Even though some of the enterprises included dozens of civilian products on their production lists, the real results of heir experiments were modest. In many cases, they had the potential for production alone, but could conduct no market tests or see their ideas through to the production stage.

When production assets are highly concentrated, with a high level of capital and a large number of employees, large-scale serial production becomes necessary. The Bulgarian market cannot, however, absorb large quantities of goods. At the same time, obstacles against downsizing persist which makes new production ineffective. New losses have accumulated because enterprises have relatively high fixed costs, and because most of them have directed their efforts to the internal market for lack of experience in the foreign markets from which they were, to some degree, more isolated than were civilian enterprises.

Two strategies for conversion were implemented, but very cautiously. The intention behind the first one, product diversification, was to embark on civilian production using existing production lines and equipment. If this succeeds, then the recombination of production lines and organization is implemented. The second strategy is the acquisition of new equipment and technologies, including the organization of new production lines, facilities and entities. This usually happens when an enterprise has external (foreign) partners and can implement more radical changes in its production profile. In such cases, a new plant is created for civilian production. This plant is not independent, and at company level, civilian and military production are united.

These are attempts to implement conversion at the company level. There are several possible objectives for undertaking them, including the financing of military production through the revenues brought in by civilian products, and the redirection and preservation of the labor force to preserve capacity for military production. It should be noted that the plants for civilian production use the existing production infrastructure of the enterprise.

The existing traditional company culture is hindering the enterprises' adjustments. The managers are not prepared for change—most of directors have a technical education and very few indeed are qualified economists—the tasks

through which military production is continued are still in force, as is the preservation of mobilization capacities. Enterprises have not been able to sell their excess assets, firstly because of a lack of vision about privatization, and later, because of the privatization moratorium which was prolonged until 1997.

Conversion officially began in 1989 with the Government program on conversion. This was neither published nor discussed, but was one of the last reminders of the planned economy. In this plan, there were seven directions for the development of civilian production. The share of civilian production in 1989 was 30.6%, the preplanned share for 1990 was 65,3% and in 1995, 82% (Dimitrov and Ivanov, 1993, p. 97). However these aims were not achieved. Among the problems that were encountered were a sharp deficit in resources for new conversion projects, a lack of information about required military capacities at a time when opportunities for import were reduced, and a lack of clarity about whether there would be a need for re-conversion.

The next program for conversion was accepted in 1990.[56] The program was very short and lacked additional resources for the restructuring of enterprises as the question of the financing of mobilization capacities was only partly solved. This document mostly offered recommendations to enterprises and their creditors, the state banks. In the elaborated program for conversion, the volume and new production structures were classified, and expenditures and inter-branch links were not published. Many of the experts recognized their lack of theoretical expertise on conversion. The program for conversion did not include the MoD and other ministries' requirements and needs for defense production, which are both important factors in conversion policies. This problem was not solved for a long time.

For short period (1990-91), there was some tax relief for companies. These were, however, only partly accepted, and were soon canceled. They included a reduction of taxes on any profits accrued (the enterprises work, anyway, without profits), some rescheduling of debts for investments connected with mobilization capacities, and providing resources for the preservation and conservation of unused production assets for military products. There were discussions about a special law for conversion which were not realized, as well as an idea about the creation of a temporary coordination center for conversion (subordinated to the Ministry of Economy or to the Council of Ministers), but this, too, was never realized.

In the absence of broader initiatives, the companies started a modest program of restructuring in the form of the consolidation of workshops and the release of redundant production assets, especially from the main production site; but these were of very small scope. At the beginning of this period there was no privatization at all—only a transfer of assets from one state enterprise to another. At the beginning (1989-90), a steering committee was created, subordinated to the Ministry

56 PMS 54/1990, *State Gazette* No. 45, 1990.

of Economy and Planning, which later was transformed into a Coordination council headed by the deputy Prime Minister. This council disappeared in 1991.

The conversion program was undertaken more with an eye to the technological opportunities than through surveys of the market (Porozanov in Ivanov, Tzvetkov and Dimitrov, 1995, p. 202). It was believed that it would be more effective to direct innovations to new military products than to civilian ones. Conversion was, then, considered to be a well-grounded combination between defense and military production with the latter prevailing. The relative share of civilian production in 1988 was 23%, and by 1990 it was already 60% (Hekimov in Dimitrov, Ivanov and Petrova, 1990, p. 246). According to available information, however, in 1988 the reduction of defense production was 23% and the planned level of defense production for 1990 was 25% of the 1988 level, which means four times the reduction. So the slight relative increase in civilian production in fact was artificial, compared to the significant decrease in defense production.

An interdepartmental council was established in 1993 to deal with the development of the defense industry and mobilization capacities, but conversion was not part of its mandate. All the same, there was an insignificant defense industrial policy. If there were any activities from the state, they were usually short-term, not directed by a systematic plan, and indeed, usually induced by some crisis situation in the MIC, including strikes, serious protests and social tensions.

In 1994-96 it became clear that understanding conversion in a narrow sense as the utilization of temporary free resources, was irrelevant. More and more, it was recognized that conversion is a part of the bigger process of restructuring an entire economy. It was recognized that conversion could be successful if the framework of ownership, defense coalitions, arms trade regulations, defense expenditures and the role of the state were all clarified.

There were several well-known conversion projects, including *Namko-Bulgaria* for the production of Ford-Pony which was a joint venture between *Terem* and the Greek branch of Ford. The project included the transfer of used equipment from Greece to one of the military repair factories in Bulgaria, thus using some assets and personnel in Bulgaria. Rover bought a former military workshop in Varna and installed production equipment for the assembly of the Rover-Maestro. Both projects were unsuccessful. Nevertheless, positive experiences in the field of conversion in Bulgaria are still connected with cooperation with foreign companies as the experiences of *Samel* and *VMZ* show.

Military and civilian production has been successfully linked, especially in *VMZ-Sopot* where, as Angel Piskov has remarked, conversion was executed mainly with internal resources. It has, however, been difficult to separate civilian and military production, especially in big enterprises such as *Arsenal* and *VMZ*, because they use technologically interwoven processes.

Early on, it was recognized that conversion, apart from its political dimensions, also includes the challenges of economic restructuring and the effective utilization of the additional resources. While the state would continue with strict arms controls,

it would not be able to support enterprises directly through budget subsidies or through offering soft budget constraints to heavily indebted big defense enterprises. Yet as Piskov says, "with their own resources alone, the companies are not able to perform miracles."[57] The enterprises have been isolated and some did not take bank loans for years, working with their own financial resources because of the high inflation rate, the unstable banking system and the imposition of poor conditions under which to obtain credit. Finally, local authorities had insignificant opportunities to influence the process of restructuring and conversion, especially industrial conversion.

Daskalov noted in 1998 that most of the failures in conversion could be explained by the fact that the enterprises found it difficult to create their own new civilian products.[58] They got used to doing everything by themselves—from R&D to the final production and realization of new lines. As a result, they were not able to use cheaper variants that were available elsewhere, or to reduce costs. The potential of most enterprises was also used for the production of low-technology goods, just to save jobs and not to lose high-technology skills. There was a 'wild' diversification, especially at the beginning of transition when the enterprises tried to produce as broad a range of products as possible. For example *VMZ* produces bicycles, sports shoes, furniture, vacuum cleaners, ball-bearings and nonstandard equipment.[59] This is clearly a short-term strategy for survival and not the basis for a long-term strategy for development.

At present, conversion is not on the agenda at all. The managers and state officials that I interviewed clearly stated that there is no conversion in Bulgaria, and further, that there are no intentions to institute it, or to review existing government programs.[60] Conversion is not even considered as a serious alternative in the periodic crises that arise in the big defense producers such as *VMZ* and *Arsenal*. In the absence of a coordinating body on conversion, it is not clear what the situation is with the 1998 program for alternative employment. Of course, many activities there could be labeled as conversion, and in fact they are truly examples of conversion, for example, the separation and privatization of small workshops and production entities. But again, these represent short-term steps that have been directed mostly to smoothing the process of privatization.

What next?

If we look at conversion very narrowly, from the viewpoint of so-called VPK enterprises, then the results are not good. Albeit with a few exceptions, there are no real examples of successful plant conversion. Even those enterprises which have abandoned the defense business altogether did not call it conversion but survival, or

57 *Novinar*, 11 February, 1998.
58 *Trud*, 6 April 1998.
59 *Demokratsia*, 18 February 1998.
60 Anonymous interviews, September 2000.

the inevitable result of their negative development and downsizing. If we broaden our understanding of conversion, then we could observe something interesting: a reduction from 134 enterprises at the beginning of the transition process to 77 in 1994, and then to only 22-24 defense producers in 2000. Even these remaining defense producers also have a civilian production amounting to 30-40% of their total production. In fact, then, the biggest part of the Bulgarian VPK has been converted (maybe not effectively), and has even officially given up the defense industry altogether.

The question now is what are the options and future problems? The available options must be considered while bearing in mind the fact that the opportunity for radical change is already passing, and the feasibility for big investments and state funds for conversion is small. Several variants for conversion programs exist:

- short business classes for middle level managers abroad, supported by the government
- long term educational programs for top-managers
- programs targeted to vulnerable enterprises and regions that have been most affected by the reduction of the defense industry. These could be the Sopot, Karlovo and Kazanlak regions. These programs should include sending young engineers from the West to help producers to improve their products (at a very low cost), and to help create contacts and improve know-how. There have been some experiments in this field at the Martin Tank Plant in the Slovak Republic, in the St. Petersburg region and through organizations such as BICC, Germany and SWENESKO, Sweden, where many additional organizations, NGOs and foreign consultants were involved

There is a crying need for debate and research on the real expenditures of arms producers in Bulgaria. The country is not represented in the EU program "COST A10 on Defense Industry Restructuring and Conversion", while reports and participation in international forums are almost non-existent. Research on conversion, in the sense of what to do and how, has been neglected while plant conversion has dominated. Consultancy services are rare. There is no special state body in charge of conversion and only a few research organizations deal with conversion, such as the Department of National and Regional Security at the University of National and World Economy and the Institute for the Development of Industry.

Questions remain about the form that Western help should take. Should there be big investment projects, or should more modest technical assistance be offered separately from investment loans and industrial cooperation? Help should be provided not by grandiose projects and massive investment, but with unglamorous plant-level technical assistance which is not only focused on plant conversion.

There is a need for some kind of industrial policy to expedite conversion (Shapir, 1994, p. 132). Such a policy is clearly not to be confused with central planning. It should be thought of as a set of goals and rules enabling the

coordination of local decision-making, without interfering with decision implementation. Investment programs have to be prepared to cope with regional depressions induced by closing down or severely downsizing enterprises. There is some local experience available, for example, in the work of the World Bank in Bulgaria in regard of the restructuring of Bulgarian industry and the institution of FESAL credits.

New industrial policies would also have to produce clear rules and guidelines for international cooperation, thus providing a stable environment (Shapir, 1994, p. 133). Foreign investors need to know the priorities of the government and their own rights. This task cannot be left to regional authorities. Western expertise is available through Western aid agencies, but these must move away from financing studies to direct support for implementation programs (Kennaway, 1994, p. 156). Another route is to use unpaid volunteers as consultants, usually people retired from jobs in industry. Most NATO countries have such organizations, for instance, the British Executive Service Overseas. A similar one in Bonn, Germany is the Senior Experten Service (SES).[61] A third option is to attract Western firms to collaborate through normal commercial relations rather than through fashionable joint venture projects (Kennaway, 1994, p. 156).

Defense industries can make essential contributions to the improvement of the national economy. Initially very little money is needed to effect this change: the essential ingredient is a change of mentality (Kennaway, 1994, p. 158). It does not matter that most Bulgarian VPK enterprises are already private—their mentality and level of knowledge are the same as in the state enterprises.

Conversion is too important to be left only to the influence of market forces. Industrial policies, per se, are not a panacea. Most depend on being properly elaborated and implemented, and there is a need for people responsible for overseeing these issues. At present, however, there are few incentives for state bureaucrats to prepare long term programs for restructuring and conversion which will influence the lives of thousands of people and concern assets worth millions, and this situation is worsened by the fact that there has been continued political instability during the transition period.

In Bulgaria, there is a potential danger in asking for foreign help with the conversion process: firstly, many managers would feel threatened by more competent and knowledgeable foreign experts, whose appearance would be seen as a direct recognition that managers are unable to cope with the situation. Secondly, there would be huge problems with state secrecy and access to information. Thirdly, there would be problems with language and cultural differences. To overcome these issues, both sides need high levels of motivation, and in my opinion, Bulgarian conditions demand the institution of a step-by-step policy. This approach includes initial contacts with a foreign partner with potential for joint business projects, and subsequent help in negotiations and preparation for the business venture. In this

61 http://www.ses-bonn.de

way, mutual trust could be built, and expert consultants would be allowed a long-term engagement. Then, step by step, the potential partners could establish mutual confidence and educate themselves about the joint business. The consistent commitment of the state institutions and institutionalization to these joint activities is also an important factor for their success.

The exchange of students and young specialists for small projects through the universities also could be successfully undertaken. In any case, the opportunity costs of failure are very low and the potential benefits are significant.

There are many problems with the potential to hinder the process of collaboration, which include poor communications, language barriers, the geographical remoteness of Bulgaria, and visa problems. All of these issues make for difficult business planning and discourage the investment of foreign entrepreneurs To some degree, potential foreign partners have to be educated and acquainted with the situation in the country, especially the different business culture and environment there.

As one option, I recommend a complete separation of civilian and military production, especially in those state enterprises which remain. This will accelerate their privatization and could lead to faster growth in the separated entities, which would more effectively utilize the released labor force. At present, there is a hidden process of subsidization between civilian and arms production and vice versa, depending on which is more successful at the moment, but the final general results of this practice are not encouraging.

The creation of national and regional funds for conversion, with the state budget, EU programs and arms export revenues as possible contributors to these funds, is another option. In practice, there are funds which exist on a membership basis and include all the major military defense enterprises of the region. The experience accumulated through the management of funds by the Ministry of Industry and Ministry of Education could be successfully drawn on in conversion. These funds act as revolving funds so that there is an opportunity to receive funding through privatization. Although similar funds have failed in the defense industry because of a lack of financing and successful projects, defense managers are positive about this idea (Cronberg, 1996, p. 121). For the first time, defense enterprises from the region have formed a forum where they can meet each other, talk about common problems, and potentially find common projects. This helps promote the civilianization of the defense industry, especially when civilian enterprises are included in the fund. All of these regional and interregional cooperations contribute more information about the market and market opportunities. The participation of the local authorities is especially important, since these are very often potential clients for civilian projects, and at the same time, are able to successfully lobby for their financing.

There are a lot of obstacles for investment, but one of the solutions for overcoming these is to facilitate regular contact between business and government. The OECD has proposed the idea of appointing a 'business' ombudsman who will

be able to promote questions and problems at a high level. There is existing experience in Bulgaria with this approach, which has been used by big investors such as Metro and Cable Bulgaria. The same tactic could be applied to conversion in sensitive regions of the country. Other useful measures are reinforcing the role of the Agency for Foreign Investment through presentations, additional information, promoting contact and the use of systems to facilitate communication and dialogue between businesses and the administration by means of which to create a workable consultative and problem solving process.

Conclusion: Future Options and Future Problems in the Bulgarian Defense Industry

The state has at his disposal four ways to influence already-privatized defense enterprises. The first way is through the laws for privatization, where, as part of their privatization agreement, the new owners are obliged to keep up the former mobilization capacities of the company they purchase. However, it is not possible for this clause to be prolonged for a long period because the state does not provide sufficient resources to keep these capacities and reserves in full readiness, and besides, the new mechanism for changes in mobilization preparedness is not yet clear and the draft Law for crises has not been accepted.

The renewing of their mobilization reserves and obligation to maintain their mobilization capacities through relatively open procedures at a commercial basis is the second way for the state to maintain its influence. This approach allows for the minimization of costs and at the same time, keeps mobilization capacities at reasonable levels.

The third way is through the state policy of maintaining production licenses and patents, including existing and future international agreements in that field. The final mechanism for influence is through maintaining traditional regulations on the arms trade. One of the variants of the draft law for the defense industry even foresees a regime of special registration for defense producers, plus trade licenses and security requirements.

At present the market is saturated and many new competitors have emerged. The likely return from arms exports is not great, particularly in terms of opportunity costs. Nowadays, importing countries want low prices, without political implications, which limits the possible offsets and sharpens the question of enterprise debt repayments. The postponement of debts and other soft budget constraints used, in the past, to subsidize exports as well as maintaining the low or subsidized price of other resources such as labor or energy.

The possible changes that could lead to the further restructuring of the defense industry, including through conversion, need to have a clear legislative and organizational framework and to be consistent and transparent, thus ensuring accountability. This framework should include a declaration of the values underlying government actions, and draft guidelines by which reforms will be made. At present,

it is still not clear what the state will do with its remaining minor shares in most VPK enterprises.

The need for a state defense industrial policy comes from the fact that there is nobody to substitute the state in interstate relations, in the facilitation of defense R&D cooperation, in international projects, in setting tariffs and tariffs policies, in the process of arranging the conditions for membership in political-military and economic alliances, in developing arms trade regulations, in defining the processes for access to information (including foreign countries), in establishing the definition and change of ownership rights, especially for transition countries and in the field of intellectual ownership, and finally, in the field of the procurement policy of the MoD, which presupposes some mobilization capacities. All of these are direct obligations of the state. The need for regional and/or industrial policies also reinforces the role of the state in the process of conversion.

The government has to answer to a series of questions which will determine the future of VPK enterprises. These questions include such issue as, what is the procurement policy for the next few years? What is the state's share in defense R&D? What are the possible limits to the participation of Bulgarian companies? Are there any priorities for the development of the Bulgarian defense industry and/or conversion? What will government policy toward defense companies and the future framework of military reform be?

There are preparations for changes in the laws for arms trade control as at present, only original documents have to presented. The new law will allow for tight control over the end-users, dictate that arms brokers have be licensed, and make provision for increased sanctions as well as criminal prosecution.[62]

The state's intentions and form of participation in the process of mobilization preparedness still have to be clearly expressed (Dimitrov and Ivanov, 1993, p. 68). The key question remains, then, the clarification of the role and the tasks of the state in securing the peacetime, mobilization, war-time and demobilization balance of resources.

Social responsibility needs to be removed from the enterprises in order to clearly separate civilian and defense production, and through privatization, to separate production and non-production infrastructure. Problems with intellectual property, classified information and foreign production licenses should not be dealt with by the enterprises. There is a need for political decisions including the encouragement of foreign investment in regions with a high concentration of former defense producers, the organization of relevant conversion programs with pre-accession funds and finally, the provision of consultancy and support for the development of small and medium enterprises. At present defense producers, although they also produce civilian goods, are not eligible for such programs, which sharpens the question of the separation of civilian and arms production.

62 *Kapital,* no.24, 2000.

Hartley and Sandler have shown the connection between program defense budgeting and equipment choices and their implications for a nation's defense industry (Sandler and Hartley, 1995). The implementation of a program approach would allow for cost-benefit analysis, thus providing important information, but at the same time has serious implications for the development of the defense industry. Defense procurement agencies try to reduce life-cycle costs and to consider armament available for buying off-the-shelf. Thus defense producers have to adapt to this kind of behavior. In recognition of this, the Bulgarian MoD started to implement such a program in the middle of 2000.

The prognosis about the future development of the defense industry includes an opinion that it will be less-well funded than in the past (Gummet, 1997, p. 36). Production runs will be shorter and international collaboration and/or advanced manufacturing methods will be encouraged in order to keep prices within reach. The industry will be increasingly internationalized, making national control of technological assets more difficult. Defense production is increasingly managed as a small part of the work of large, technologically dynamic companies, whose main competencies and markets lie elsewhere. The demand for new military products could, at present, be satisfied by the use of existing civilian-driven technological developments.

Peter Lock argues that "the preservation of national defense sectors for the sake of sovereignty will not only be costly, but it will also lead to the production of more and more 'second-rate' military equipment" (Lock, 1997, p. 133). The delay in developing national and international cooperation and in the utilization of military technologies for civilian purposes can only result in the process of aging military technologies in the presence of a fast developing civilian sector. In such a case, the possible market value of military technologies will evaporate.

Obviously, the question of the integration and cooperation of all defense industries in CEECs cannot be postponed any longer At present, innovation transfer occurs only through the procurement of modern weapons and through cooperation and integration in the production of such weapons. Yet while most of these countries are not able to produce or buy these weapons, they have to be effective allies within NATO and Europe, interoperable with more advanced countries. Some balance needs to be found. Without the internationalization of the defense industry which is needed if the current Euroatlantic coalition choice is to be followed, the further development of the Bulgarian VPK is impossible.

The problem with the Europeanization of the CEEC's defense producers cannot be avoided any longer. After all, potential EU members will be accepted together with their defense industries. Ideally, then, the process of conversion and integration should start right away. CEEC's defense enterprises are now excluded from integration processes and are not, in general, eligible for European programs. It would be better for the EU and potential members to preserve at least a minimum defense industrial potential. In addition to the increased competitiveness that this would bring, there are some other arguments for this course of action.

Relying only on foreign supplies would make CEECs reluctant to modernize their armed forces and would decrease their contribution to European security. It is already obvious that some of these countries would try to be free loaders in regard to the defense expenditures of the EU and NATO. At the same time, however, from the perspective of their contribution to international security, it is the EU and NATO which are in some respect free-loading, since they are waiting for CEECs to transform and restructure their defense industries by themselves. The delay in cooperation and integration between Western and Eastern defense industries, the lack of financing and programs for conversion and the vague framework of the future CESP have all brought about additional costs—both in real terms and in the sense of lost opportunities—for CEECs. Yet at the same time, they have already been included in many negotiations and accession processes which limit their opportunities for arms exports outside of the EU and NATO. Thus they are contributing to international security, whether intentionally or not. Many of these limitations are self-imposed and result from a reorientation toward European markets, expectations that this will become necessary, or just good behavior in the accession process. Whatever the reason, CEECs pay a high price for their contribution, especially when it is measured against the downsizing of defense industries, unemployment and the effects of the shrinking arms markets. These are the opportunity costs for transition countries, the price they pay for limiting their arms exports.

By contrast, of course, developed countries have to pay a great deal for humanitarian help, economic reconstruction and the maintenance of military forces elsewhere in the world. Recovering these costs could be the foundation for coordinated EU and NATO programs on conversion. Cooperation in defense production is also needed because it allows for the transfer of production and military technologies to less developed countries in the EU area, increasing their interoperability.

In the absence of defense industry cooperation, and without access to Western markets, CEECs have very limited opportunities to develop their defense industries. One option, which is also very limited, is for them to increase their internal supply and to apply export-substitution policies, but this leads to autarchy and decreases the quality of defense products. It also does not favor the ideal of a United Europe. The other option is to increase exports, but when we consider the very limited size of the world's armament markets, the only opportunity this opens is to sell arms to suspicious African and Asian regimes, thus contributing to regional instability and conflicts. All in all, CEECs have almost reached their minimal defense industrial potential, and any further reductions or closures without any visible benefits or offsets, will be very difficult. Economic factors are important at both national and sub-national level now. For many defense enterprises, the defense business is their only viable alternative. Bulgaria does not have any special political or geo-strategic interests in arms production. Decisions for the optimization of the defense industry have thus to be made from an economic perspective, and with economic measures

and incentives in mind. What this points to is that, in the future, the participation of CEECs (including Bulgaria) in European defense projects will be necessary. It will facilitate their integration into a common European security order and will reduce their production costs, which will be distributed over longer production runs.

As we have seen, after the end of the Cold War, Bulgaria's defense industry passed through a painful process of downsizing the tremendous overcapacity that was inherited from the socialist period. Although drastic reductions took place during the transition period and restructuring efforts have been made, there are many steps ahead in the process of transforming the Bulgarian VPK and in furthering the effective utilization of its assets. Many additional efforts are needed to achieve this goal, including programs for the enterprises and the involvement of national state institutions in the process of Europeanizing the defense industry.

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Appendixes

Appendix 1: Enterprises in the Bulgarian Defense industrial complex[63]

Beta JSC (Joint Stock Company), Cherven Briag
Electron-Progress JSC, Sofia
Mechanic and Assembly JSC, Sevlievo
Samel-90 JSC, Samokov
Trema JSC, Tryavna
Varbanovo KPZ, Zareva Livada
LOT JSC, Sofia
Arsenal JSC, Kazanlak
Pima JSC, Montana (closed)
Tcherno more JSC, Varna
Impuls JSC, Gabrovo
ECOEL JSC, Pleven (closed)
NITI JSC, Kazanlak
VMZ JSC, Sopot
Mussala JSC, Samokov
Opticoelectron JSC, Panagiurischte
Arkus Co. JSC, Lyaskovets
Dunarit JSC, Rousse
Strouma-S JSC, Sandanski
Bitova Electronika JSC, Veliko Tarnovo
Pirel JSC, Gotse Delchev
Metalic JSC, Gabene
Institute of Advanced Industrial Technologies (closed)
OMZ JSC, Sofia
TEREM JSC, which was recently created as separate company, should be added to these enterprises. It includes about twelve military repair factories, and is owned by the Ministry of Defence.

The following case studies of the core Bulgarian defense producers offer the best insight into the current situation in the MIC.

Samel-Samokov

One of the most successful enterprise, in 1997 Samel-Samokov employed around 700 people. It was one of the first enterprises in Bulgaria to receive quality certificate ISO 9001, which improved its image and helped it gain foreign markets. Product modernization started in 1997. In the last few years, however, orders for military production have been drastically reduced, and today the proportion of civilian production is about 90%. The enterprise produce military electronics, radios

63 Source: Privatization Agency of Bulgaria.

and electronic jammers for electronic warfare, as well as civilian electronics, collective systems for cable and satellite and TV broadcasting, spare parts for car alarms, satellite receivers and security systems. Its focus on electronics has helped most significantly in the conversion process. The company has established partnership with firms from Belgium, The Netherlands, Britain and Germany, mostly in civilian production. In the field of military electronics, it has contacts with the US company Racal, providing supplies for the Bulgarian Army. The same director has headed the company since 1990, which is rare in the Bulgarian VPK.

VMZ-Sopot

This is the biggest defense producer, and among the biggest enterprises in Bulgaria. In the 1980s it employed around 25 000 people. It is a traditional producer of artillery cartridge-cases, from 23 mm to 125 mm, undertakes mechanical processing of mines and cartridge-cases, produces details and assembles fuses, has the capacity for cartridge assembly, and produces thermoactiv and thermoflexible plastic, anti tank rockets and mobile air missiles

The production lines for missiles were built in 1985-6. At the end of the 1980s, the company developed the capacity to produce sport shoes, parts for refrigerators, bicycles, razors, gas bottles and car spares.[64] The production list also includes ball-bearings and nonstandard equipment.

The civilian production of VMZ is around 15 %, but most of its assets are idle and it is losing ground. Compensation still comes from the defense deals. The government promised to invest around 30 million Bulgarian Leva (DM) in VMZ, but it is not clear if this has happened, and it is better to assume not. Foreign investors did express interest in the company, but they faced problems with management, uncertain ownership of the land and some assets, intellectual property rights and foreign licenses, a weak market position, and finally, the huge amount of money which has to be invested for restructuring.

In 2000, the government did set up an interdepartmental group to prepare a strategy for the privatization of VMZ-Sopot.[65] It will keep a 34% share in VMZ-Sopot and the amount of shares to be put up for sale will be made public after all restitution claims are assessed The intentions are to sell the company to a strategic investor since there is existing RMD, but it should be supported by a solid foreign partner. Budgetary obligations in 2000 were around 40 million Bulgarian Leva. The company is short of turnover capital: according to unofficial information, VMZ's debt totals 68 million Bulgarian Leva and the value of its fixed tangible assets is 110 million Bulgarian Leva.

There is an idea that VMZ should be sold in four separate parts, special production, civilian production, a factory for ball-bearings and a factory for nonstandard equipment production, but this plan depends on interest of potential

64 *Banker,* 2 May 2000.
65 *BTA* 31 March, 2000.

investors. In 1999, there was an expression of interest from Russian and Austrian companies, but no positive results ensued.[66] In the same year, six separate parts for civilian production were sold out of the main production site, mostly to RMD in the field of woodworking, construction and dressmaking.

In 1998, there were 13 000 employees at VMZ - Sopot, including 140 small production units in 44 neighboring towns and villages.[67] There was, however, hidden unemployment: the workers were not busy with orders all the time, there were delays with the payment of wages, and many of the production assets were idle or underused.

VMZ owes the state budget and social security around 70 million Bulgarian Leva (about 65% of its tangible assets). There are continuing problems with the repayment of this debt, which has led to bank accounts being blocked by the tax administration. This has created further problems with the financing of production and access to fresh resources and investment loans. As a result, about two or three products in the defense produces have been dropped, and three to four civilian products.

Workers protest regularly and increasing social tensions have led to a blockade of the main road linking Sofia to the Black See Port of Bourgas.[68] From August until October 2000, the workers did not receive their salaries, They are owed about 3 million Bulgarian Leva.

Dunarit-Rousse

In the past few years Dunarit began a successful program for production based on NATO standards.[69] Established in 1903 for the production of fuses and explosives for military and civilian purposes, the enterprise now has capacities for the mechanical processing of mines and cartridge-cases, cartridge assembly, the production of thermoactiv and thermoflexible plastic and the production of gunpowder and fillers. A special line for land-mine destruction was created according to the anti-land-mine Convention, which Bulgaria ratified. In the last year 10 000 mines have been destroyed. In addition to this, instruments and fire-brigade equipment is produced, but these form a minor part of the company's production.

Dunarit has established contacts with the Turkish company Barutsan. The decision for its privatization was made in 1998, but the privatization procedure has been slow even though the Dunarit-2000 RMD is in place, making its sale possible at any time. In 2000, around 1000 workers were employed at this company.

66 *Sega,* 8 August, 2000.
67 *Zemia,* 18 February, 1998.
68 Reuters 12 April, 2000.
69 *Demokratsia,* 15 June, 2000.

Arsenal-Kazanlak

Arsenal, the famous Kalashnikov producer, has capacities for the production of artillery cartridge-cases from 23 mm to 125 mm, cartridges from 5.44mm to 40 mm, artillery systems and small armaments, gunpowder and fillers. The production of the Kalashnikov embraces the entire spectrum of standards and ammunitions, but its potential is not being realized. Among its other products are munitions for hunting and sport, the submachine gun Shipka and the pistol Makarov. Civilian production includes hunting guns based on the Kalashnikov, anti hailstorm missiles and metal-processing tools and machines.

Arsenal is situated in Kazanlak, where the population is around 70 000. In the 1980s there were 22 000 workers at Arsenal. In 1998, before its privatization, there were around ten thousand.[70]. The reduction of personnel has created serious unemployment problems because VMZ is also situated in the same region.

Arsenal was among the first MIC enterprises to be privatized. According to its privatization agreement, the number of workers will be reduced from 9 500 to 6 200 in 2002.[71] Novinar reports that they have already been reduced to 6 400, as 3 400 workers are employed in part-time contracts.[72]

Although the Agency for Privatization canceled about 50 % of the company's debt in the process of privatization, its obligation is still around 90 million Bulgarian Leva. There are no resources for buying new licenses.

Arkus-Lyaskovets

After its privatization, Arkus succeeded in repaying most of its obligations, although 3,4 million Bulgarian Leva were left to social security.

Defense production was concentrated and in order to close the production circle, the enterprise bought separate parts of other military producers for the production of spare parts.[73] They also received ISO 9001 and began production based on NATO standards. The enterprise possesses capacities for the production of details and assembling of fuses, capacities for cartridge assembling, the production of cartridges from 5.44mm to 40 mm, the production of artillery systems and small armaments including the Arkus and Makarov pistols and the Arkus Revolver and Gasrevolver. Its civilian production includes parts for washing machines and other equipment. In the last year the company has faced problems with produced but unsold goods, which has made its access to new credits difficult. The number of employees in 1997 was 2 400, which was reduced to 1 000 in 2000 after significant lay-offs following privatization. RMD also won the privatization deal.

70 *Sega Journal,* 4 August, 1998.
71 *Pari,* 24 July, 2000.
72 *Novinar,* 24 July, 2000.
73 *Pari,* 16 October, 2000.

Terem

The military repair factory Terem possesses around 30% of the assets of the defense industry.[74] It owns 12 enterprise, among them ARZ G.Benkovski in Plovdiv, Flotski Arsenal in Varna and Han Krum in Targoviste. Terem has the capacity and specializes in the repair of airplanes, ships, armored vehicles, tanks, communication and ammunition. With a few exceptions, they secure the entire needs of the Bulgarian Armed Forces and have some reserve capacities. Nevertheless, their financial situation is not good. In 1999, Terem was registered as a share company with 100% state ownership and the MoD as its principal. There were some plans for the privatization of some of the plants or of the whole company, but until now, no strategy for privatization has been developed. Meanwhile Terem has received licenses for the arms trade as it has very good capacities to repair Soviet-designed military equipment, especially airplanes.

Almost ten years ago, the military repair factories were separated as production entities, but continued to work as military arsenals in the structure of the MoD without being registered according to commercial laws. During that period, they were militarized and inflexible, staying in the command chain of the MoD. It was not clear when and how they would be privatized, and they were dependent on the Ministry in matters of salary levels, proper payment and especially, personnel policy.

In 1992, the repair factories had stored a lot of spare parts and raw materials as well as tools for non-standard production equipment, which raised their costs and spoiled their financial results. The repair companies recognized that it was difficult to produce civilian goods: because they were not truly independent, they lacked marketing research and international cooperation.

They tried to produce motor vehicle components and units, cargo and tourist trailers for passenger cars, agricultural machinery, machine tools, garage equipment, and etc. In the case of most of these products, they had only the capacity for production but could not embark on real production. As a result, they looked for international cooperation, especially for the realization of their products. In the middle of the 1990s, TEREM was demilitarized. Now it employs between 5000 and 10000 people. Its privatization was postponed in 2000 and the concept for its privatization is still not clear.

74 *Capital*, 24 February, 2000.

Appendix 2: Bulgarian arms export (1989-1999)US $ (million)

Source	Sega[75]	Trud[76]	24 Chasa[77]	Capital[78]	Reporter 7[79]	Investizii[80]	24 Chasa[81]	24 Chasa[82]	Sega[83]	24 Chasa[84]	Demokratsia[85]
Year											
1989	800										
1990											
1991											
1992											
1993								70-80			
1994	220	220						230			
1995	140	140		0	210					160	
1996	80	100			160				80		
1997			160								
1998						100	80				
1999											100-120

75 in Bulgarian, 20-26 March, 1997.
76 in Bulgarian, January, 1997.
77 in Bulgarian, 9 April, 1997.
78 in Bulgarian, 14-20 July, 1997.
79 in Bulgarian, 31 July -6 August,1997.
80 Investizii (in Bulgarian) 1 April, 1998.
81 in Bulgarian, 25 August, 1999.
82 in Bulgarian, 29 July, 1995.
83 in Bulgarian, 4 August, 1999 and Standart (in Bulgarian) 25 August, 1999.
84 in Bulgarian, 9 April, 1997.
85 31 May, 2000.

Appendix 3: Bulgaria's Arms Transfer Deliveries and Total Trade, 1987-1997

Source: www.state.gov/www.global/arms/bureau_ac/wmeat98/wmeat98.html

Year	**Arms Imports**		**Arms Exports US $ million**		**Total Imports US $ million**		**Total Exports US$ million**		**Imports Total %**	**Exports Total %**
	current	constant 1997	current	constant 1997	current	constant 1997	current	constant 1997		
1987	700	915	600	784	17060	22290	16660	21770	4.1	3.6
1988	400	506	430	543	20980	26520	20350	25720	1.9	2.1
1989	290	353	240	292	14970	18220	16040	19520	1.9	1.5
1990	675	790	80	94	4710	5516	8400	9837	14.3	1.0
1991	0	0	110	125	2537	2874	3225	3653	0	3.4
1992	0	0	120	133	4468	4953	3922	4348	0	3.1
1993	5	5	80	86	4766	5146	3728	4025	0.1	2.1
1994	0	0	80	85	4194	4435	3994	4224	0	2.0
1995	5	5	140	145	5657	5858	5354	5544	0.1	2.6
1996	160	163	110	112	5015	5099	4833	4914	3.2	2.3
1997	10		120	120	4916	4916	4924	4924	0.2	2.4