

Russian Defense Enterprises on International Markets: Economic and Social Implications *

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This study is devoted to the analysis of economic and social implications of Russian defense enterprises activities on international markets. The analysis includes the scope and forms of these activities, key obstacles to its development, attitudes of directors of defense enterprises to operations on international markets, estimates of their role for the Russian defense industry and its ability to expand cooperation with potential foreign partners.

The study is based on the longitudinal survey of Russian defense industry managers that was carried out in 1995-2003¹⁾. Using sociological surveys for collection of data on industry performance is one of the key methods for the analysis of societies in transition, where illegal “shadow” economic activities are widespread. In addition to the “formal approaches” sociological instruments provide better understanding of these activities and the behavior of industry insiders. In spite of many valuable studies of Russian defense sector (see selected bibliography), few of them used sociological surveys. Our study, based on a broad longitudinal survey of defense enterprise managers complements the literature on the Russian defense industry.

The paper consists of six sections. Section 1 surveys attitude of enterprise directors to foreign

economic activity at various stages of economic transition. Section 2 deals with the methodological issues. Section 3 contains the description of the activities and attitudes of the directors on international markets. Section 4 presents the typology of defense enterprises based on importance of their foreign economic activities. Section 5 discusses internal factors of foreign economic activity of the Russian defense companies. Section 6 summarizes our findings.

1 . Directors' attitudes towards activities on international markets at various stages of Russian economic transition

From the standpoint of understanding of operation of the defense sector firms on international markets, the Russian economic transformation can be divided into two periods²⁾. The first stage was the period between 1992 and the mid-1990s. The principal event during this period was the significant decrease of the state role in defense industry. Between 1991 and 1994, in real terms the funding for defense industry was reduced by 8 times. The military-industrial complex has lost its privileged status and political clout all at once. It was done in the framework of demilitarization of the society and economy that has been proclaimed in Gorbachev-Yeltsin period. The immediate effect was a demand shock — government defense procurements were dramatically reduced but domestic private demand hadn't emerged yet³⁾.

In addition Russian defense industries lost customers and business partners in the former Soviet republics. Due to the collapse of the USSR this demand also slumped: the survey of the directors of Russian defense enterprises conducted in January of 1992 indicated that the break of the business connections with their partners in former Soviet republics was the principal concern of enterprise directors⁴⁾. (Table 1).

Russian defense companies found themselves in dramatically new business environment: traditional suppliers and consumers became inaccessible and production process almost stopped due to the government procurements cutting. And as per directors' opinion government didn't do anything to support defense industry in this situation. On the contrary, official policy of the period included imposition of extra-high taxes, delays with payments, etc. However, at this stage most directors worried less about the slump of the government procurements than about shortages of raw materials, equipment, etc. (See Table 1).

Due to the fact that the remaining state orders for Russian defense enterprises were concentrated in a few elite companies, the rest of the industry was on the threshold of bankruptcy.

Table 1**Major obstacles for operating Russian defense enterprises in 1992 (percentage of survey respondents)***

Major obstacles for the operating of an enterprise	Percentage
Break of the traditional business connections with the partners in the former Soviet republics	80
Lack of rules for contact with enterprises from the former Soviet republics	55
Disturbing actions of the Russian government (establishing of too high taxes, etc.)	45
Shortages of raw materials, equipment, etc.	44
Social tension at the enterprise	22
Slump in the government procurements	18
Lack of government guarantee for sales	7

(*) In this table the directors' answers the question: "What are the major obstacles for the operating of your enterprise at the moment?" Since every respondent could select more than one answer the total is not equal 100 percents.

The other side of the dramatic decrease in the role of the state was the increase of the economic freedom for the defense companies operations. Potentially, they had new economic opportunities to solve their problems. While still waiting for the government support in various forms, enterprise managers started thinking about practical ways of using the new opportunities, which liberalization had provided. We revealed this situation in 1993 in the series of the interviews with the managers of defense R&D institutes: "in the nearest future, if the State does not provide the state orders for military R&D, it is possible to expect the operation of the best Russian military institutes on international markets. And besides, the forms of their activity may change: many of them will try to focus on fulfillment of only foreign orders and can even get a foreign owner. According to one of the respondents: "if in the shortest possible time our problems are not solved by the State - we will sell ourselves to the Chinese⁵⁾".

Managers in defense industry (as well as in the Soviet economy in general) had no experience in marketing their products. They had even less preparation for problems of operating on international markets. In spite of that, entering on international markets became some sort of "universal solution" in the mind of many defense enterprise directors. And during the first part of 1990s many among them attempted to sell civilian and military products to foreign consumers. This happened during the period of relatively "free competition" in the Russian economy, when the government, pre-occupied with the other urgent matters, practiced hands-free approach to the defense enterprises.

The directors ranked the following measures high in their adaptation strategies: learning of the

rules of international markets, finding ways of escaping domestic taxes, searching the ways of operating via offshore zones. Many managers started spontaneous privatization (in spite of the formal prohibition). Among other things, international market activity was a convenient way to save profits gained by means of this informal privatization. In any case at that stage, their motives were short-term and didn't include strategic tasks to win new markets by producing competitive innovative products.

Many of the troubles of the first period of market liberalization were associated with the problems of inadequate self-estimation, especially with respect to the technological level and competitiveness of both defense and civilian goods. This can be explained by the arms race tradition deeply planted in the directors' mentality and isolation of the defense complex from the world economy, as was true for the Russian economy in general. Almost every director of defense enterprise spoke during the interview about the new products that have "no analogs on international markets", while having no idea about marketing and promoting the innovations on international markets. Many among them had false perceptions of their own productive abilities thinking that their technological level was higher or almost the same as that in Europe and in the USA. They didn't want to spend the time to promote simple and small-sized projects wishing to win the market with absolutely new high-tech innovations. Meanwhile, they wasted time and lost real opportunities to start the successful activities on international markets. In other words, they were "market innocents".

The good sample is an aviation industry that is the most advanced part of the Russian defense sector and the most successful on international markets. The leader of the major R&D institute in this industry in an interview in 2001 argued: "We have almost no innovations in our industry — we are using old Soviet technologies. For ten years there is no technological change. Meantime, the innovation cycle on international markets is five years at the moment. And we are behind by two generations from advanced countries. At the beginning and in the mid-1990s a new cohort of leaders emerged in our industry. Being financial managers, they have no experience of innovation and they don't understand the philosophy of new products developing. Of course, many of them are innocents in terms of international marketing in our industry. They only care for current profits and are fond of stripping assets".

The case in point is the story with the company "Aviaexport". This firm in the Soviet period was authorized for export operations in the realm of aviation industry. After collapse of the USSR in 1992 several dozen million US dollars possessed by different aviation producers were

blocked at the banking account of “Aviaexport” at the “Vnesheconombank”. Most of these funds haven’t come back and the clients from aviation industry even haven’t claimed parts of them. As a result “Aviaexport” invested in some affiliated firms and stole most of these deposits. Only revealed investments in various enterprises were near 20 million US dollars⁶⁾.

Meantime, there is the growing technological and organizational gap between Russian aviation producers and requirements of international markets. So, in one of the “Shanghai group” summits, Presidents of South Korea and leader of Malaysia complained of the low quality and imperfect services of tanks and aircrafts sold by Russia. For example, because of the shortage of spare parts and bad services of eighteen fighters MIG-29 only six are in operation in Malaysia⁷⁾.

To sum up, the first stage of Russian defense industry’s internationalization was negatively affected by the lack of competence and “wrong” aims set by management. International contacts were used as means for wrong ends. This is not surprising therefore that the government soon introduced the ban on free export/import and other activities of defense enterprises on international markets. Complex system of federal control was elaborated, including federal trade-mediator (‘Rosvooruzhenie’, known currently as ‘Rosoboronexport’) and some other institutions, with many formal restrictions for enterprises wanting to sell their military products or enter into joint venturing. Later this complete ban system stimulated shadow activities of the Russian defense enterprises on international markets and pushed many of them into the informal sector of the Russian economy.

The second stage in the development of the Russian defense industry started in mid-1990s and continues to the present moment. There were contradictory changes in foreign operations of defense industries in this period. On the one hand, its activities and sales increased significantly. Between 1994 and 2001 Russian arms export, doubled increasing from \$1.7 billion to \$3.5 billion. In 2001-2004 they doubled again growing to more than \$6 billion⁸⁾. On the other hand, significant stratification proceeded inside Russian defense sector. Only a few enterprises could find a niche for their goods on international markets. Among them are Suhoi, MIG, Irkut, Almaz-Antei, Severnaya Verf’ (Northern Warf), Uralvagonzavod, and some others, most of them producing aircrafts, parts and equipment for aviation. Almost three quarters of Russian export are the goods produced within this industry⁹⁾. Meantime, many of the rest of defense entities who attempted to enter on international markets at the first stage of transition, failed and quitted the international arms market. This group of enterprises, which could compete only on domestic market, very often had outdated technologies and had many other problems. In addition, active

enterprise restructuring has been delayed, thus adding high overheads, low labor productivity, and high social costs to the obsolete technologies and low competence, stressed above. Later on we'll consider in detail current state of stratification of the enterprises' based on their activities on international markets¹⁰⁾.

In general there were two changes in purposes and practices of the directors and its companies at the second stage of economic transition. Firstly, there was specialization — some managers focused on international activities trying to find the room on international markets. Others stopped their attempts to enter these markets and concentrated on the domestic ones. Secondly, having accumulated experience in international marketing directors step by step became more realistic and pragmatic managers. A number of young market-oriented persons replaced outdated “red directors”. Sometimes it was happy choice and enterprises recovered in particular through their international activities. In other words, many of the defense managers at the second stage graduated from the “preparatory class” and learned the principles of market operations.

Another context that is important for this study is the political conditions for business connections between Russian defense sector and foreign partners. Russia has lost the status of super-power and is forced to find new room on the international stage. It means new self-determination in the group of the principal international actors consisting of the USA, EU, China, and outcast states. In spite of many among Russian ruling elite (E. Primakov, V.Zhirinovsky, etc.) who are supporters of the last two actors top leaders decided that Russia has to belong to the West and to cooperate with NATO. Though the relations between Russia and EU are far from perfect¹¹⁾, some declarations and actions of V. Putin, and S. Ivanov (Minister of Defense) show that principal line is to promote partnership with the Western countries. For example, on the eve of the June 2003 summit of “Council Russia-NATO” Mr. Ivanov mentioned that it is possible to develop joint projects of arm development with NATO in the future¹²⁾. Meantime, this line contradicts the Russian ruling class' attitudes: among them only 1/10 think that Russia has to join NATO, 42 percents are neutral and 49 percents are anti-NATO oriented¹³⁾. In these conditions in spite of the fact that top leaders want to rearrange the list of the traditional Soviet enemies and allies and to place traditional enemies among friends, this line cannot be stable. However for the long-term business partnership in the realm of defense sector stability of political conditions is particularly important.

2. Sources of data

The principal findings of this paper are based on surveys of managers in the Russian defense

sector that have been carried out in 1995-2003¹⁴). Questionnaires were sent annually to approximately 1000 defense enterprises and addressed to their directors (CEOs). Each questionnaire “Military enterprise in transition to the market system” included 70-100 questions aimed to reflect all major characteristics of enterprise’s performance. The core questions were the same for all surveys allowing for the monitoring of changes. The industrial structure of the sample reflects that in defense sector in general (Table 2).

Table 2
Defense industry structure in general and in the sample, 2003

Industries	In general		Sample	
	%	Rank	%	Rank
Aviation	17	3	21	2
Rockets and Space	6	7	7	7
Electronics	18	2	16	3
Radio and communications	25	1	24	1
Ship building	13	4	10	5
Ammunition and special chemicals	11	5	13	4
Arms	10	6	9	6
Total	100		100	

It is important to stress that the survey did not cover the core elite group of defense enterprises, which are active on international markets. It has focused on the “conventional” majority group. On the one hand, this specific focus reduces the existing parameters of defense industry’s internationalization. On the other hand, however, it helps to understand the problems of the majority of rank and file defense enterprises, which are very rarely approached in other studies. Enterprise managers’ views on barriers to foreign trade and joint venturing provide valuable insights and help explain why the industry in the macroeconomic sense still follows the isolation mode and what opportunities exist for its integration into international markets.

3 . Enterprises activities on international markets

Following questions were put to the directors to understand the level of international activities at their companies:

- “What is the percentage of sales on international markets in the total sales of your enterprise?”
- “What percentage of the total sales of your company comes from markets of different regions of the world?”
- “What are the forms of economic activity your enterprise is engaged on international markets outside former USSR?”

- ・ “What are the obstacles to the foreign economic activity of your enterprise?”

The analysis of the answers is as follows. Within the previous polling in 2001 we have got data that the activity on international markets isn't an important factor of economic growth for most defense entities¹⁵⁾. To verify this conclusion we'll analyze the specific indicators for describing this activity and its structure. Later on we'll consider the empirical types of defense companies having significant variations in size of this activity. We will also examine the outcomes of defense enterprises activity on international markets, as well as major favorable factors and obstacles that they face in this activity.

Table 3

Forms of activity of Russian defense enterprises on international markets, director's estimates in 1995-2003, %

Forms of activity on international markets*	1995	1996	1997	1998	1999	2000	2001	2002	2003
Export of goods	48	55	45	42	40	55	43	43	53
Export of technologies	No data	12	14	11	9	8	4	11	9
Import of equipment	25	20	17	20	14	36	28	33	32
Production in joint ventures	27	15	12	12	9	11	3	9	17
No activities	18	26	37	38	55	27	42	39	30

* Annual column sums aren't equal 100%, because every respondent can report on several kinds of activity

As per data showed in Table 3 most of the defense companies (70%) is involved in activity on international markets. And the percentage of the involved entities has been increasing since 2001. There are no significant changes in the structure of this activity during the last period. Export of military goods dominates while export of technologies is less important — only one of ten enterprises sold technologies abroad. Import of equipment and spares plays a role as an indicator of technological transfer from abroad. This transfer is relatively significant factor that is reflected by the fact that 17% of firms are involved in joint ventures for production and R&D.

This means that there is innovation aspect in the activity on international markets. However it isn't so big at the moment because of relatively insignificant role of this activity in the overall production. As per our data, sales on international markets comprise near 18% of the total sales of Russian defense entities. During last years this percentage was relatively stable and didn't increase. Furthermore this indicator doesn't vary in growing companies compared to the rest of defense entities (see Table 4). There are some differences in the level of foreign economic activity between growing and other entities but these variations are insignificant.

Table 4
Differences between growing and non-growing companies in 2003

Companies that	Share of foreign sales (%)	Share of companies with foreign activities (%)	Share of companies exporting goods	Share of companies exporting technologies
Reported growth of production	18	74	57	8
Didn't report growth	19	60	46	11
All companies	18	70	53	9

This is the evidence of the declining role of the foreign economic activity for most of the Russian defense companies and relative growth of importance of domestic sales. Later we will consider this question in details.

There was no significant change in the percentage of export sales for the defense industry during the last years (Table 5). It means that so far the domestic markets dominate as an operational base for the majority of the Russian defense enterprise.

Table 5
The percentage of sales in the international and domestic markets in total sales since the 2000 (%)

Percentage of sales	2000	2001	2002	2003
On international markets	16	15	19	18
On domestic markets	84	85	81	82
Total	100	100	100	100

Table 6
Regional distribution of export sales of the Russian defense enterprises (percentage)

Regions	Percentage	Percentage (without CIS)
Europe	15	17
USA	6	7
China	27	31
India	23	27
Other countries of South East Asia	9	10
Middle East	4	5
Latin America	0	0
Africa	2	3
CIS (former Soviet republics)	14	-
Total	100	100

One half of the total export sales is concentrated in markets of China and India (or near 60% if one doesn't take into account export to CIS countries), which are the principal partners of the Russian defense entities. The next rank is occupied by the European countries providing one sixth of the total. Almost equal shares of revenues come from markets of the former Soviet republics (Ukraine, Uzbekistan, etc.). Nearly one tenth is provided by countries of South Eastern

Asia (South Korea, etc.). The US, Middle East and Africa together provide less revenues than Europe. And export to Latin America is negligible at less than 1%.

Thus, at present export revenues of the majority of enterprises in the Russian defense sector primarily depend on Asian markets. Operations on markets of advanced countries (USA and Europe) are relatively minor and provide around one fifth of the total export revenues. If we consider data on country distribution of arms export generated by the Rosoboronexport¹⁶⁾ (84% was the percentage of the major Russian Asian partners in 2004), we can strengthen this conclusion.

The expansion of the Russian defense enterprises on foreign markets encounters significant obstacles. Table 7 presents some of these obstacles as identified by polled managers.

Table 7
Obstacles to the foreign economic activities (director's estimate)*

Obstacles	Percentage
Russian government doesn't support promotion of our production on international markets	50
Weakness in the states' mediator (Rosoboronexport) operations	45
Bureaucratic barriers for export existing in Russia	40
Low competitiveness of our products on international markets	29
Low competence of managers marketing products on international markets	29
Lack of interest from potential consumers because Russia has lost the status of superpower	20
Political pressure of competitors on potential consumers	17
Bureaucratic barriers for import in countries-consumers	8
There are no obstacles	3

* Since every respondent could select more than one answer the total is not equal 100 percents.

The fact that almost every firm meets some barriers in its foreign economic activity is not surprising. However, above answers show that such obstacles to operating on international markets as political pressure of competitors or trade barriers in importing countries are not considered as problems by the majority of managers. Only minor part of the surveyed directors mentioned these as "principal" troubles. Instead, managers focus on low quality of their products, incompetence in marketing and problems coming from operations of the Russian government and its bodies.

4 . Variation in the activities on international markets: typology of defense companies

To study variation in the activities of defense enterprises on international markets, and the changing role of these activities we made a classification of defense entities based on the degree

of their involvement in foreign operations. Three groups of enterprises were distinguished:

Group 1. Internationally oriented — most of sales are on international markets.

Group 2. Foreign economic activity is secondary — international sales is a minor part of total sales.

Group 3. Domestically oriented enterprises — no sales on international markets.

The profiles of these three groups of companies are as follows.

Group 1. Internationally oriented defense entities — 17% of the total number of enterprises. Almost 2/3 of their sales (including both sales of products and technologies) are on foreign markets (Table 8). The structure of the production specialization of these entities is approximately the same as in general, although the average percentage of civilian production is only 20% compared to 46% for all enterprises.

Table 8

Profile of enterprises based on their performance on international markets

Defense companies	Share of the type in the total number of companies (%)	Share of foreign sales in total sales for each group (%)	Share of companies exporting goods (%)	Share of companies exporting technologies (%)
Internationally oriented	17	64	95	21
With secondary foreign economic activity	51	14	75	12
Domestically oriented	32	0	0	0
In general, total	100	18	54	10
Variations are statistically significant (+)/ aren't significant (-)		+	*	*

* Since the respondent could choose more than one answer to this question it was not possible to determine statistical significance.

Thus, this group consists of defense companies oriented to export military goods and technologies that is the core of their foreign economic activity. Import of equipment and joint venturing is carried out by them on relatively insignificant scale. Most of their sales (85%) are in the developing countries — China, India, other countries of SEA and Middle East —, while activity on markets of advanced countries (USA and EU) is insignificant at about only 1/10 of total sales.

Table 8: extension 1

Defense companies	Share of companies importing equipment (%)	Share of companies involved in joint venturing (%)	Percentage of sales in Europe and in the US (%)	Percentage of sales in China, India, other countries of SEA and Middle East (%)
Internationally oriented	37	16	11	85
With secondary foreign economic activity	48	29	24	56
Domestically oriented	0	0	0	0
In general, total	31	17	21	63
Variations are statistically significant (+)/ aren't significant (-)	*	*	-	+

* Since the respondent could choose more than one answer to this question it was not possible to determine statistical significance.

Table 8: extension 2

Defense companies that	Share of the companies with growth of production (%)	Share of the companies with outdated technologies (%)	Percentage of the new civilian goods in the overall production (%)	Percentage of the new military goods in the overall production (%)
Internationally oriented	58	26	30	30
With secondary foreign economic activity	78	46	35	22
Domestically oriented	61	69	38	26
In general, total	69	50	35	25
Variations are statistically significant (+)/ aren't significant (-)	+		-	-

Table 8: extension 3

Defense companies	Share of companies making new investments (%)	Size of the new investments (millions US dollars)	Balance of overdue debts (thousand rubles per employee)	Annual output per employee (thousand rubles)
Internationally oriented	50	2.1	40	279
With secondary foreign economic activity	50	1.3	-8	165
Domestically oriented	22	1.5	-8	135
In general, total	41	1.5	2	176
Variations are statistically significant (+)/ aren't significant (-)	+	-	+	+

Table 8: extension 4

Defense companies	Share of civilian goods in total production (%)	Share of companies under the influence of criminals (%)	Average monthly wages (rubles)	Share of employees not intended to strike (%)
Internationally oriented	20	18	6681	90
With secondary foreign economic activity	53	22	4832	67
Domestically oriented	49	24	4488	72
In general, total	46	22	5024	73
Variations are statistically significant (+)/ aren't significant (-)	+	-	+	-

Table 8: extension 5

Defense companies	Share of companies, where directors expected positive changes in the future (%)
Internationally oriented	67
With secondary foreign economic activity	57
Domestically oriented	47
In general, total	56
Variations are statistically significant (+)/ aren't significant (-)	-

Though share of the new military goods in this group is slightly higher than in average, it isn't exceeding 30%. However, they possess relatively advanced technologies (only ^{1/4} of the polled directors reported working with outdated technologies that is significantly lower than on average). They are operating efficiently in comparison to other types of companies — balance of overdue debts is positive and annual output per employee is relatively high.

Nevertheless, big percentage among them (1/5) experience influence of criminals that is close to the average level among all the companies polled. In addition relatively often they suffer from criminal influence while carrying out foreign activities. Of all surveyed directors in this group 12% specified this, while companies from the other group do not mention this at all. That indicates certain criminalization of the international economic activity of defense companies, which creates a risk of arms getting into the hands of international criminal groups, terrorists or irresponsible political regimes. This situation should be a concern of official bodies domestically and internationally in order to elaborate multilateral measures to decriminalize foreign economic activity of defense entities.

Relatively high efficiency of the foreign economic activity of these companies provides them slightly higher level of social indicators, first of all higher wages. Meantime, as per director estimates, their firms still face many social problems — from one fifth to a half of directors mentioned problems with first aid service, food, workplace conditions, etc. that is the same that within the other types.

To sum up, internationally oriented group of enterprises export arms and technologies primarily to developing countries. They enjoy relatively high technological level with efficient economic operations that provide them relative social stability. However, their investments are low and innovation activity is insufficient. As a result only 2/3 among their directors expect that their enterprises have positive prospects in the future.

Group 2. Defense companies where foreign economic activity is secondary — more than a half of the polled entities. The percentage of sales on international markets for these firms is only 14%, which is little bit less than on average. On the one hand, this means that foreign economic activity isn't so important for them because this activity does not provide key contribution to the economic and social situation at enterprises. On the other hand, based on the analysis of the structure of their foreign economic activity one can conclude that their activity on international markets may play important role for their future. In contrast with the first type of firms, these entities have big import procurements of the advanced technologies on markets of US and EU (two times higher than in type one). This means that foreign economic activity for these firms is primarily a source for technological development. Additionally, half of these firms made investments, a ratio similar to that of the more wealthy enterprises of type one.

The majority among companies of type two exports goods though scale of the transactions is not big. Nevertheless, they are oriented towards diversification of production and towards sales on domestic market of civilian goods (53% of the total production) using foreign markets as an impetus for technological development. This strategy might represent the best path for economic development as these firms demonstrate the highest incidence of growth — 78% among them reported increasing production. Among companies of the first type this ratio is 58%. Companies of the second type also possessed higher percentage of new civilian goods in total production compared with the first type — 35% versus 30%; simultaneously type two is showing the lowest percentage of the new military goods (22% versus 30% for type one). Obviously, they aim to win domestic market by means of producing the new civilian goods and moving away from the military production.

In general their productivity isn't high — their output per employee is at the average level, while their balance of overdue debts is negative. Social situation at these enterprises isn't good — low wages, high social tension. Therefore, we can conclude that companies of the second type will continue to experience problems in the nearest future. However, taking into account that most of them showed growth of production and undertook technological innovation and investments, they have a chance to reach relative prosperity in long-term perspective.

Group 3. Domestically oriented enterprises — one third of the total. Among them almost two thirds showed growth of production. Meantime, they use outdated technologies — more than two third reported so. But being fully concentrated on the domestic market they have the highest percentage of the new civilian goods in the total production, which is the indicator of active policy on the domestic civilian market. However, only less than one quarter of them is investing, they have a very low output per one employee and a negative balance of overdue debts. As a result, they have a difficult social situation and negative estimates of their perspectives. Even a slight change in macroeconomic situation will make these companies first candidates for bankruptcy.

5 . Internal factors of foreign economic activity of the Russian defense companies

Generally speaking factors that favor or prevent foreign economic activity of defense enterprises can be separated into two groups: external and internal. External factors reflect conditions of the world arms markets and socioeconomic system in Russia. For example, government arms export policy, relations between defense entities and “Rosoboronexport”, laws regulating intellectual property rights, etc. While acknowledging importance of these factors we will not consider them in this paper as they should be a subject of a separate study. We will focus on the factors internal to the defense entities and determined by their characteristics, some of which favorable and some unfavorable for international economic activity.

Data presented in Table 9 indicates that size of the company, measured by the number of employees is a positive factor of foreign economic activity. It is essential because big companies have more funds to get over barriers to enter international markets. Costs needed to enter international market are particularly high in Russia because of geographical factors. However, in the era of globalization the role of this factor is becoming less important and facts of successful foreign economic activities of medium and small companies are known in Russia too.

There is any link between percentage of entities included in holdings and foreign activities (though it is not statistically significant). Possibly the link is double-sided, as more successful enterprises are more likely to be included into holdings.

Table 9
Socioeconomic indicators and international economic activity of defense enterprises

Defense companies	Size of company - number of employees	Share of companies included in holdings (%)	Share of companies with expanded state order (%)	Share of state-owned companies (%)
Internationally oriented	3891	42	53	37
With secondary foreign economic activity	3017	20	42	55
Domestically oriented	893	23	39	61
In general, total	2467	27	45	42
Variations are statistically significant (+)/ aren't significant (-)	+	-	-	+

Table 9: extension

Defense companies	Share of companies estimated by polled managers as "capitalist" entities	Share of "shadow owners" among directors (%)
Internationally oriented	11	0
With secondary foreign economic activity	35	18
Domestically oriented	3	11
In general, total	22	11
Variations are statistically significant (+)/ aren't significant (-)	+	-

There is a slight positive connection between foreign economic activity and state orders, but this link is statistically insignificant.

Ownership type plays important role - among companies with large-scale international economic activity only one third are state-owned. Most of them are joint-stock companies with state participation. Obviously, in today's Russia this legal form provides necessary operational flexibility, while keeping state influence in strategic decision-making.

Unexpectedly statistically significant link was revealed between international economic activity and directors' estimate of his company as a "capitalist" enterprise. The peak of this estimate is found in the second type — entities where international economic activity is secondary, but growing with the highest speed.

Polled directors answered the question: "Do you think, is it possible to call your enterprise

“capitalist?”. Of polled managers 21% answered ‘yes’, 76% ‘no’, and 3% had no opinion. Then we asked them to motivate their opinion about “capitalist” status of their companies, directors first of all outlined that their entities are operating within market networks; capital (part of capital) is in the hands of private owners; their firms are forced to survive without state support and theoretically could go bankrupt. Explaining “non-capitalist” status, they said that most capital is in the hand of the state; principal decisions are made with state participation; and significant part of the orders is provided by the state.

These estimates reflect the somewhat vague status of defense companies during the era of transition. Some of the directors cannot determine their status at all, and among others there is no unified view of their position. This situation is explained by unsettled status of property rights. Directors of the most of state-owned companies estimated their status as “non-capitalist”. But only half of managers of joint-stock companies without state participation described their enterprises as capitalist. Most internationally active companies are joint-stock companies with state participation and operating under relatively strict government control. Understandably, their managers reported their firms as “non-capitalist”. Companies of type 2 where foreign economic activity is secondary aren’t operating under strict government control. They have more freedom in daily operations and their managers estimated their companies as “capitalist”. In addition, the domestically oriented companies being generally in a weaker economic position have no resources and opportunities to enjoy economic freedom. Thus their managers report on dependency from the state that is incompatible with the status of a “capitalist” enterprise.

To find out if international economic activity of a defense firm is connected to the status of the director we have studied a link between the level of internationalization of company’s operations and its leader’s position. Namely whether the director is officially registered as an owner (one of the proprietors), considers himself a “shadow owner” (actual proprietor but not registered), or a hired manager. Among all of the polled directors 11% are the official owners; 13% are the shadow owners, and 76% are the hired managers. Our analysis revealed that the intermediate, vague status of the “shadow owner” prevents international economic activity — among the leaders of the internationally-oriented companies there was nobody with this status. Obviously, to be successful on international arm markets it is necessary for the leader of the defense company to have the clear status, be an official owner or a hired manager.

Among factors of the international economic activity the level of the technology plays special role. It is clear that technologically advanced companies have more chances to win on highly

competitive international markets.

There is a statistically significant difference between internationally and domestically oriented companies: the percentage of entities with outdated technologies is two times higher at the enterprises operating only on domestic market (see Table 8, extension 2).

In general the majority of the Russian defense enterprises have relatively backward technology, which is partly the legacy of the Soviet system. Furthermore, in spite of being more advanced than other sectors of the Soviet economy, in the transition period the defense sector suffered from technological degradation. During the period from 1991 to the beginning of 2000s the loss of technological potential was near 2/5. In other words, more than one-third technologies as well as skilled personnel, proper equipment, were wasted. Probably, a large part of these lost technologies had no the real market value. However, some of these technologies (as was reported in the course of our informal interviews with experts and managers) could be utilized in civilian production such as in electronics, instrument-making industry and metalworking. Similar estimation of current technological level was offered by the polled managers (see Table 10). Thus in 2003 more than a half of the Russian defense enterprises were not technologically competitive even on the domestic market. These estimates are better than the earlier ones, which is probably a result of investment made in the end of 1990s and beginning of 2000s during the period of rapid economic growth in defense industry and in economy in general. However, one needs further evidences that this indicates a recovery trend rather than a chance fluctuation.

Table 10
Technological level of the Russian defense enterprises, directors estimates, 1995-2003 (%)

Technological level	1995	1996	1997	1998	1999	2000	2001	2002	2003
Competitive on international markets	9	8	5	3	3	2	2	2	2
Competitive only on domestic market	62	58	60	55	46	45	42	34	47
Outdated	29	34	35	42	51	53	56	64	51
Total	100	100	100	100	100	100	100	100	100

The outdated technological structure of the Russian industry prevents most enterprises from competing successfully on international markets. Importantly, defense industry managers understand the necessity to innovate in order to survive in the market system. This is evident from their answers to the question: "What are the factors of your enterprise success in the market?" in 1997-2003 (Table 11).

Table 11**Factors of the enterprises' success in 1997-2003 (director's estimate, %)**

Enterprise can achieve success by means of	Years					
	1997		1998		2003	
	%	rank	%	rank	%	rank
Productive innovation	65	1	80	1	82	1
Support from the federal government, state procurements	61	2	20	11	47	3
Marketing: seeking for the new customers, research of the market demand, etc.	49	3	52	2	51	2
Export of the arms	33	4	25	5	40	4
Restructuring of the management	28	5	26	4	25	6
Lay-off the "superfluous" employees	27	6	24	6	20	7
Domestic investor	27	7	36	3	35	5
Foreign investor	20	8	24	7	13	9
Conversion of military production	17	9	21	9	5	11
Support from the local government	11	10	20	10	8	10
Banking loans	10	11	22	8	14	8

* Since every respondent could choose more than one answer, the row sums may not be equal 100%

There are some interesting changes in the managerial philosophy of the polled directors, presented in Table 11. The principal factor of success as per their opinion is productive innovation. The percentage of managers mentioning it has been constantly increasing. The role of a domestic investor has increased, while that of a foreign investor stayed approximately the same. This can be interpreted as one of the proofs of relatively decreasing role of international markets for most of defense entities. One can also observe lack of a clear trend in the estimation of the role of federal government, which went down dramatically in 1998 but recovered in later years.

The highest rank during the analyzed period was occupied by innovation factor: production of new goods. Managers desire to innovate, and contrary to the Soviet era they do not face old bureaucratic obstacles to innovation. However there are new restrictions for their innovation activity, the principal among them being the lack of the capital. And as a result, in spite of innovative ambitions of managers, there is a shortage of innovations in the Russian industry: as per official statistics, the percentage of innovative industrial enterprises is 75 times lower in Russia than in Western Europe and 15 times lower than that it was in the USSR¹⁷⁾. As per our own data, this rate is 13 times lower in Russia in comparison with Western Europe and three times lower than it was in the USSR.

The non-market factors of success (such as support from the federal and local authorities) have

less weight compared to the market ones (innovation, marketing, conversion, etc.). This speaks of significant transformation of the mentality of managers of the Russian industrial enterprises. However without corresponding transformation of economic institutions these changes in the minds of executives cannot yet result in fundamental renewal of existing technological base.

6. In conclusion

In the period of transition, development of the Russian defense enterprises activities on international markets demonstrated contradictory trends. On the one hand, during this period, industry leaders accumulated valuable knowledge and experience regarding operations on international markets. They became more pragmatic and oriented to innovate. Some of the enterprises made managerial and technological restructuring to focus their activities on market demand and to provide profitable operations. They could enter international markets and become globally operating post-Soviet companies enjoying economic freedom without daily direct control by state bodies. Though these entities strongly depend on a few customers (primarily from Asian countries) they have some knowledge of the international marketing and now are actively developing projects on diversification aimed to weaken this dependency, in particular by means of new civilian production.

On the other hand, there was a lack of institutional changes favorable to innovation in the Russian defense sector. And a big percentage among defense entities couldn't complete the necessary restructuring. As a result, now many enterprises in the Russian defense sector can be described as 'intermediate entities', something between a Soviet enterprise and a capitalist firm. There is the vagueness of property rights when it is unclear who is a real owner of the company and the names of real owners are often unknown to the managers, state bodies and the public. Inside and outside such 'intermediate entity' is the network of informal (shadow) relations based on personal contracts, which often are more important than formal norms. These entities are closed and often strongly resist to disclosure of information to the potential investors. And the last (but not least), there is a distortion of aims of such enterprise's operations — often economic efficiency isn't so important for it because it can win competition using non-economic (for example, political and criminal) tools. As a result, most of these enterprises continue to suffer from outdated technology and can not produce new competitive products.

To overcome this contradiction the restructuring strategy in the Russian defense sector should involve new approaches. One of these approaches could consist of closer technological and investment cooperation with foreign partners from highly developed countries. Such cooperation

should help to implement the “soft program” of retiring the ineffective parts of the defense sector while simultaneously generating new clusters of production competitive on international markets. This pragmatic approach would be useful for both sides in spite of existing political contradictions and disagreements.

NOTES

*This paper is part of the longitudinal study of the Russian defense enterprises conducted by the Institute of Population Studies, Russian Academy of Sciences and League for Support Defense Enterprises in cooperation with The University of Louisville.

- 1) Prof. R. Ryvkina, Dr. V. Vitebsky, Dr. Yu. Simagin, and the authors of this paper developed the questionnaire for this survey, organization was provided by the League of the Defense Enterprises.
- 2) There are many different views on the course of transition in Russia. See, for example, ; T. Gustafson, *Capitalism Russian-Style*, Cambridge University Press, 1999; A. Aslund, *Building Capitalism: The Transformation of the Former Soviet Bloc*, Cambridge University Press, 2001; T. Graham, Jr., *Russia's Decline and Uncertain Recovery*. Washington D.C., Carnegie Endowment for International Peace, 2002.; M. Goldman. *The Piratization of Russia: Russian Reforms Goes Awry*, Taylor and Francis, 2003; OECD Economic Surveys: Russian Federation, Paris: OECD, 2004.
- 3) For a recent comprehensive survey of Russian defense industry transition from Soviet to Post-Soviet period see: C. Davis. Country Survey XVI, The Defence Sector in the economy of a Declining Superpower: Soviet Union and Russia, 1965-2001, *Defence and Peace Economics*, 2002, Vol. 13(3), pp. 145-177
- 4) This survey was headed by Prof. V. Kossov, Prof. R. Ryvkina and one of the authors within the Russian Center for Public Opinion Research and Center “Kontur” by the order of the Russian Government. 312 directors were polled in all major regions of Russia.
- 5) L.Kosals, R. Ryvkina, Yu. Simagin, *Military R&D Institutes in Changing Russia*, Mimeo, Moscow, ICRET, 1993 was presented to the Ministry of Science and Technological Policy of Russian Federation (in Russian)
- 6) See: A. Kuznetsov, P. Voloshin, “Missing debts”, *Novaya gazeta*, No 16, March 7, 2002 (A. Kuznetsov, P. Voloshin, *Kak dolgi sygrali v “chernyi yashik”*)
- 7) “Russia sells weapons of low quality” (*Rossia prodaet nekachestvennoe oruzhie*), *Presscenter.ru*, January 11, 2002, <http://www.presscenter.ru/index.php?ch=2&id=139747>
- 8) “Russian export of arms was US\$4.5 billions” (*Rossia eksportirovala v 2002 godu vooruzhenii na 4.5 mlrd.*), *Gazeta.ru*, 18.02.2003, <http://www.gazeta.ru/busnews.shtml?235912#235912>; SIPRI Yearbook 2005. Armaments, Disarmament and International Security. Oxford University Press. 2005. Rosoboronexport generated lower estimation of export in the beginning of 2000s: in 2002 - 4.5 billion, in 2003 - 5.4 billion, in 2004 - 5.1 billion and in 2005 it will be approximately the same that in 2004 (Rosoboronexport: export of arms in 2005 will exceed 5 billion, August 18, 2005,

<http://www.gazeta.ru/lenta.shtml?423957#423957>).

- 9) As per estimate of M.Dmitriev in his speech to representative of Russian defense sector (see: "About export of arms" (Eshe raz ob eksporte voruzhenii), 25.02.2003, <http://www.presscenter.ru/index.php?ch=1&id=184150>).
- 10) For technical aspects of weapon systems produced for export by the Russian defense enterprises see, for example: A. Sanchez-Andres. Arms Exports and Restructuring in the Russian Defence Industry. *Europe-Asia Studies*, Vol. 56, No. 5, July 2004, 687-706
- 11) See about developments and problems in EU-Russia relations: J.Gower, EU-Russia Relations and the EU Enlargement in Eastern Europe: Integration or Isolation?, *Perspectives on European Politics and Society*, 2000; C.Hamilton, Russia's European Integration: Escapism and Realities," Working Paper, London: Stockholm School of Economic and CEPR, 2002; M.Emerson, *The Elephant and the Bear: The European Union, Russia and Their Near Abroads*, Brussels: Centre for European Policy Studies, 2001; R. Baldwin, J. F. Francis, and R. Portes, The Costs and Benefits of EU Enlargement in Eastern Europe, *Economic Policy*, 1997; H.Haukkala, *Towards a Union of Dimensions: The Effects of EU Enlargement in Eastern Europe on the Northern Dimension*, FIIA Report, No. 2, Helsinki: Finnish Institute of International Affairs, 2002; J.Perovic, *Coming Closer or Drifting Apart? EU-Russia Partnership and EU Enlargement in Eastern Europe*, Center for Security Studies and Conflict Research, Swiss Federal Institute of Technology, Zurich, 2003
- 12) See: "Russia ready to develop arms together with NATO" (Rossia gotova razrabatyvat' oruzhie vmeste s NATO), 13.06.2003, <http://lenta.ru/world/2003/06/13/weapons/>
- 13) See: L. Kosals, Russia's Elite Attitudes to the NATO Enlargement: Sociological Analysis, NATO-EAPC Research Fellowship Final Report, <http://www.nato.int/acad/fellow/99-01/kosals.pdf>
- 14) Prof. R. Ryvkina, Dr. V. Vitebsky, Dr. Yu. Simagin, and the authors of this paper developed the questionnaire for this survey, organization was provided by the League of the Defense Enterprises.
- 15) V.Vitebsky, O.Kollenikova, M.Kuztentsov, R.Ryvkina, Yu.Simagin, U.Uvitskaya, *Defense Enterprises of Russia: 1995-2001* (Obironnye predpriatia Rossii: 1995-2001), Moscow, Institute for Socioeconomic Problems of Population (ISEPP), 2002, p. 158, p. 43
- 16) As per data generated by Rosoboronexport the three major foreign consumers of the Russian arms in 2004 were the following Asian countries: China (45% of the total arms export); India (35%), and Vietnam (4%) - Major Russian partners at the international market of arm trade, August 18, 2005, <http://www.grani.ru/Economy/m.93618.html>. The difference between our data and information provided by the Rosoboronexport is because we concentrated at the regular defense entities excluding the biggest state owned companies focused mostly on China/India contacts under political patronage of Kremlin. Export of the regular defense entities is less controlled by the federal authorities and more depends on economic (market) considerations.
- 17) See calculations in: L.Kosals. "Social Mechanism for Innovation: Comparative Analysis of Soviet and Post-Soviet Periods", *Economics in Current Russia (Ekonomicheskaya Nauka Sovremennoi Rossii)*, No. 3-4, 2000

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