
Small Arms and Light Weapons Production in Eastern, Central, and Southeast Europe

By Yudit Kiss

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Small Arms Survey

Graduate Institute of International Studies

47 Avenue Blanc

1202 Geneva

Switzerland

Phone: + 41 22 908 5777

Fax: + 41 22 732 2738

Email: smallarm@hei.unige.ch

Web site: <http://www.smallarmssurvey.org>

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Contents

About the author	vi
Acknowledgements	vi
Acronyms and abbreviations	vi
Map: Eastern, Central, and Southeast Europe	viii
I. Introduction	1
II. The crisis and partial stabilization of the cold war arms production system	3
III. The main factors behind the defence industry's partial stabilization	5
Economic recovery	5
Changing national defence industry policies	6
IV. Privatization and the role of the state	8
V. Country trajectories	11
Czech Republic and Hungary	11
<i>Czech Republic</i>	11
<i>Hungary</i>	14
Bulgaria and Romania	16
<i>Bulgaria</i>	16
<i>Romania</i>	18
Serbia and Montenegro and Croatia	20
<i>Serbia and Montenegro</i>	20
<i>Croatia</i>	23

VI.	Company trajectories	25	
	Small arms production in the turmoil of transition	26	
	Selected company case studies: success stories	27	
	<i>HS Product</i>	27	
	<i>Arcus Co</i>	28	
	<i>S.C. Cugir</i>	29	
	<i>Sellier & Bellot</i>	31	
	<i>MFS 2000</i>	32	
	Selected company case studies: average trajectories	33	
	<i>Zastava Oružje</i>	34	
	<i>Arsenal Co</i>	35	
VII.	The internationalization of the Eastern, Central, and Southeast European defence industry	37	
	Exports	38	
	Foreign cooperation	43	
VIII.	Conclusion	44	
	Endnotes	48	
	Bibliography	50	
	List of interviews	53	
	Tables		
	Table 1 Main economic indicators for six Eastern, Central, and Southeast European countries, 2002	2	
	Table 2 Real percentage change in GDP of six Eastern, Central, and Southeast European countries, 1990–2003	5	
	Table 3 Defence expenditure in Eastern, Central, and Southeast Europe, 1985–2001	6	
	Table 4 Combined arms exports from the six selected countries, 2000–02 (USD millions)	40	
	Figures		
	Figure 1 Czech small arms exports, 1997–2001	12	
	Figure 2 Hungarian small arms exports, 1997–2002	14	
	Figure 3 Croatian small arms exports, 1997–2002	23	

About the author

A development economist who received her PhD in economics from Budapest University, Yudit Kiss was a visiting research fellow at the Instituto del Posgrado at the Universidad Nacional Autonoma in Mexico City and at the Institute of Development Studies at the University of Sussex in Brighton, UK. Since 1992, she has worked as an independent researcher for various institutions and organizations, including the United Nations University, the World Institute for Development Economic Research (Helsinki), the International Labour Organization, UNRISD, BICC (Bonn), SIPRI (Stockholm), and the Small Arms Survey. A recipient of a MacArthur Foundation grant, she has authored various publications on the topic of the Eastern European economic transition, with a special emphasis on the defence industry.

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vi

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Acronyms and abbreviations

CZK	Czech koruna
EU	European Union
FDI	Foreign direct investment
GDP	Gross domestic product
GNI	Gross national income
HUF	Hungarian forint
JV	Joint venture
MBO	Manager/employee buy-out schemes
NATO	North Atlantic Treaty Organization
R&D	Research and development
WTO	Warsaw Treaty Organization

Map Eastern, Central, and Southeast Europe



I. Introduction

With the accession of ten states to the European Union (EU) in May 2004, Eastern Europe strode firmly into the international spotlight. A few months earlier, Bulgaria and Romania had joined the North Atlantic Treaty Organization (NATO), further extending the membership of Eastern, Central, and Southeast Europe in the alliance. These developments support the region's ongoing policy of integration into the West and its emergence as a socio-political landscape entirely distinct from that imposed by the Warsaw Treaty Organization (WTO) until its demise in 1991. Not surprisingly, these drastic changes are vividly reflected in the national defence industries of the region.

The region's defence industry was a large-scale supplier of small arms and light weapons during the 20th century, and specifically during the WTO's period of influence from 1955 to 1991. In addition to serving the needs of its member countries, the organization allotted small arms and light weapons to a wide range of non-aligned or so-called socialist-oriented countries that sought to solidify their position in the cold war divide.

The dramatic socio-economic transitions that shook the countries of Eastern, Central, and Southeast Europe at the end of the cold war rendered the region's impressive war-production machinery extraneous almost overnight. The early 1990s were characterized by a major economic recession, fundamental political changes, redefined national military and security interests, and, in some cases, the redrawing of national borders. In this context, the defence industry faced an inescapable crisis: its markets, subsidies, and privileges were all but obliterated.

Page 1

It took the defence industry several years to overcome the crisis and to adjust to a fundamentally changed domestic and international system. In so doing, the industry underwent a number of major transformations.

This study seeks answers to the following questions:

- 1) How has the region's defence industry—and specifically small arms and light weapons production—reacted to the dramatic changes that reshaped the international and national agendas of the region after the cold war?
- 2) What role does the defence sector currently play
 - a) in selected countries of Eastern, Central, and Southeast Europe?
 - b) in the worldwide circulation and use of small arms and light weapons?

To answer these questions, this study examines the post-cold war trajectories of the defence industries of six Eastern, Central, and Southeast European countries: Bulgaria, Croatia, the Czech Republic, Hungary, Romania, and Serbia and Montenegro. The focus is on defence industries in their entirety, since developments in small arms and light weapons cannot be analysed in isolation from the wider currents affecting the whole defence sector. The six countries selected for the purpose of this study can be classified into three subgroups.

In the region, the **Czech Republic** and **Hungary** are among the countries that have made the greatest advances in establishing a market economy and a pluralist parliamentary democracy—as evidenced by their 2004 accession to the European Union. In the early 1990s, most of their industrial defence facilities were privatized; the sectors lost most of their privileges and were forced to adapt to the new conditions

of an emerging market economy. Following a marked lull, each defence industry received a new impetus when the countries were invited to join NATO in 1997; both acceded in 1999.

Bulgaria and Romania struggled with continuous economic and political crises throughout most of the 1990s. Fundamental changes concerning the size, profile, and ownership structure of defence-related production were postponed until the late 1990s. Nevertheless, sluggish reform processes within the defence industry and, indeed, the whole military establishment, gave way to an accelerated pace of transition after 2000, largely in response to the two countries' radically altered geopolitical circumstances. Initially, the closing stages of the Yugoslav wars created new opportunities to stabilize the whole South European region. Western countries and institutions were eager to turn to these two relatively stable countries of the region, which were viewed as indispensable building blocks in this stabilization process. The decisive push, however, came after the September 2001 terrorist attacks on the United States, when Bulgaria and Romania became important partners in the 'war on terror' and were consequently catapulted onto the list of NATO candidate countries. Their accession followed in 2004.

The former Yugoslavia was ravaged by internal conflicts and wars from the early 1990s and had largely disintegrated by the mid-1990s. **Croatia** declared independence in 1991, but only managed to consolidate this position in 1995. During the 1990s, economic and political reforms were frozen in Croatia and the Federal Republic of Yugoslavia and the defence industries of both countries were intensely developed and assisted in order to serve the needs of the wars. Shy political and economic reforms were only introduced in Croatia after the death of President Franjo Tudjman in late 1999 and in the Federal Republic of Yugoslavia after Slobodan Milosovic relinquished the presidency in September 2000. Today, both Croatia and **Serbia and Montenegro** are aiming to restructure and develop their respective military-related sectors to regain their lost positions in the defence export market.

Table 1. Main economic indicators for six Eastern, Central, and Southeast European countries, 2002

Countries	Population (millions)	Surface (thousand sq km)	GDP in current USD (billions)	GNI/capita current (USD)	Average wage in 2002 (USD/month)
Bulgaria	7.9	110.9	15.6	1,790	163
Croatia	4.4	56.5	22.4	4,640	816
Czech Republic	10.2	78.9	69.9	5,560	578
Hungary	10.2	93.0	65.8	5,280	599
Romania	22.4	238.4	44.4	1,850	132
Serbia and Montenegro	10.7	102.0	15.6	1,400	122

Sources: for columns 1–5: World Bank (2003); for column 6, Centreurope.org (2003).

This paper is divided into several sections. The first provides an overview of the crisis and subsequent partial consolidation of the cold war arms production system in Eastern, Central, and Southeast Europe. The second examines the main factors contributing to that partial consolidation, including economic recovery, changing government policies, company adjustment efforts, and favourable international conditions. The third section analyses the adjustment strategies of the six countries under review, while the following section presents more detailed typical company trajectories. The final section reviews the recent international integration of the region's defence industry.

II. The crisis and partial stabilization of the cold war arms production system

The WTO played a crucial role in providing arms and establishing systems for the production and distribution of weapons in its member countries, allies, and potential allies worldwide. For member states, defence-related production was one of the pillars of their classical command economy. The needs of the military sector enjoyed priority over other economic considerations. Inputs and subcontractors, the production process, business partners, and sales were meticulously and strictly organized, regulated, and controlled by state agencies, following detailed medium- and long-term plans. The structure and scale of arms production in each country was determined by the requirements of the WTO. According to the Organization's internal division of labour, each country specialized in the development and production of certain branches of manufacture. By and large, production was conducted under Soviet licences, although from the late 1970s onwards, member countries increasingly produced their own adaptations and developments.

Arms production reached a production record in 1987–88 in Eastern, Central, and Southeast Europe. Yet the political and economic transitions of the 1990s brought to the surface the deep structural problems within the sector. The dissolution of elements integral to the system's apparent stability gave way to a spectacular collapse of the defence industry throughout the region.

The demise of the WTO led to an almost immediate loss of the defence industry's large, stable, and lucrative external markets, both among its members and throughout its spheres of influence. In addition, due to the international ban on arms sales to countries including Libya, Iraq, and Syria, the region's arms producers also lost a number of major developing world markets. Consequently, defence-related producers ran into major financial problems, due to the loss of income, the burden of extensive unsold stocks, unfinished production runs, spare parts and unused productive assets.

Their situation was aggravated by internal changes. In the late 1980s and early 1990s, the military was first and foremost associated with the one-party-dominated state socialist system and the Soviet Union-dominated WTO. The new, democratically elected governments of the region—and the population at large—made significant efforts to distance themselves from these structures. Serious attempts were made to democratize and de-politicize the armed forces and to introduce civilian control and transparency in military affairs. In some cases even the very existence of the military establishment and defence industry was called into question. Due to reformulated security needs, and the imperative to modernize, the armed forces went through significant downsizing.

The national governments advocated conversion and sometimes even a complete halt to defence-related production and trade. Yet even if defence-related production was not halted, the evolving economic crisis and political changes forced the military-related sector to adjust to the economic environment and the new, nation-state-based security needs of their respective countries. Defence budgets were cut back, which led to a significant drop in domestic orders. Suffering a major economic recession, the region's governments had very limited resources with which to order new military equipment or to support defence industry companies, even if—as was the case for some governments—they had the political will to do so. State agencies no longer backed the massive promotion and protection of defence industrial companies, leaving them to fend for themselves.

The collapse of the WTO left the armed forces with large stocks of unsold weapons, spare parts and unfinished military production. Due to the drastic drop in internal and external demand, these items remained in storage, thus consuming additional expenses, and representing a further burden on the already stressed company and state budgets. The urge to sell these products in any available market was therefore very strong at both the company and national levels.

As a consequence of all these factors, between 1990 and 1994 arms production in Eastern, Central, and Southeast Europe suffered an unprecedented sharp fall. Output levels dropped to a fraction of the record levels of the late 1980s, most of the companies became insolvent, and there were massive layoffs. Precise data on defence industry output is not readily available, even in retrospect, but estimates suggest that production fell to 10 per cent of its peak level in the former Czechoslovakia and in Hungary, 10–30 per cent in Bulgaria and Romania, and around 50 per cent in Poland. Due to the Balkan wars, the Yugoslav and Croatian defence industries were bolstered, but even here output levels dropped compared to pre-1990 levels.

Data published by the Bonn International Center for Conversion (BICC) shows that between 1986 and 2000, employment in arms production fell from 250,000 to 60,000 in Poland; from 90,000 to 16,000 in Romania; from 30,000 to 18,000 in the Czech Republic; and from 75,000 to 50,000 in Slovakia.¹ In Bulgaria it fell from 30,000 to 5000,² and in Hungary from 30,000 to 2,000 (BICC, 2002, p. 153).

Page 4

From the mid-1990s, several signs began to appear that signalled the end of the general crisis in the region's defence industry. The sector became partially stabilized—some countries succeeded in stopping the fall of output and in striking some important export deals. In each country, a handful of companies managed to overcome their production crises and hence secured their futures, while others succeeded in stabilizing their position and avoided bankruptcy procedures. Compared to the lowest output levels of the early 1990s, output and exports showed a modest increase in the Czech Republic, Hungary, and Slovakia. The other countries in the region still had difficulties in preventing output from dropping and in addressing the organizational mayhem in their respective military sectors.

The relative consolidation of the sector, however, only involved a minor segment of the defence industry. The bulk of the companies were at the edge of bankruptcy. In the best cases they stagnated, but more often they were doomed to sink and sought desperately to be rescued by state organizations.

III. The main factors behind the defence industry's partial stabilization

Several factors led to the relative stabilization of arms production in Eastern, Central, and Southeast Europe. The most important were the economic recovery, changing government policy towards the sector, the companies' own restructuring efforts, and the new international conditions affecting the military-related sector.

Economic recovery

After a first fall in output and increasing economic imbalances in the early 1990s, most countries in the region managed to stabilize their economies by the end of the decade. Economic growth resumed first in Poland and subsequently in the Czech Republic and Hungary. Despite basic structural problems, macroeconomic indicators were relatively positive in Slovakia until the late 1990s. Bulgaria began to show promising signs of recovery from 1998 and even Romania started to reverse downward trends soon after 2000. The Yugoslav economy, however, sank into a deep crisis during the 1990s, while Croatia embarked on a fragile recovery from the late 1990s.

Table 2. Real percentage change in GDP of six Eastern, Central, and Southeast European countries, 1990–2003

	1990	1991	1995	1996	1999	2000	2001	2002
Bulgaria	-9.1	-11.7	2.1	-10.9	2.3	5.4	4.0	3.5
Croatia	-7.1*	-21.1*	6.8	6.0	-0.3	3.7	4.1	3.7
Czech Republic	-1.2**	-11.5**	6.4	3.9	-0.8	3.1	3.3	2.7
Hungary	-3.5	-11.9	1.5	1.3	4.2	5.2	4.0	3.3
Romania	-5.6	-12.9	7.1	3.9	-1.2	1.8	5.3	4.1
Federal Republic of Yugoslavia	–	–	n/a	n/a	n/a	n/a	5.5	4.0

Notes:

* figure for Yugoslavia.

** figure for Czechoslovakia.

Sources: Centreurope.org (2003); World Bank (2004)

The economic recovery signalled a more stable general economic environment, increased resources, and created slightly more space to manoeuvre for defence-related companies. Whereas states no longer supplied direct and unlimited support, defence-related companies found that they could participate more easily in large-scale state-launched development projects. They could also benefit from the support of local research and development (R&D) programmes and rely more on a stabilized internal banking system or internal enterprise networks.

The transition of Eastern, Central, and Southeast Europe's defence industry to date suggests that economic recovery had a double impact on arms production and sales. On the one hand, it provided new

opportunities for defence industry development and modernization through increased resources. On the other hand, improving economic conditions offered more economic alternatives for individuals, companies, and regions, creating incentives for new types of production. Many companies converted to solely civilian production and most intended to diversify their activity beyond military markets. Even companies that continued defence-related production as their principal activity began to consider civilian production profiles as an opportunity, not as an unnecessary burden, as had often been the case. In an indirect way, economic growth can be viewed as contributing to the reduction of arms production in Eastern, Central, and Southeast Europe.

Changing national defence industry policies

By the mid-1990s, a major change took place in perceptions toward the defence industry and indeed the military sector as a whole in all countries of the region. When the crisis in the defence industry reached its nadir in 1993–94, an increasing number of politicians and economic decision-makers began to question state policies towards the sector in each of the countries under review. They argued that the defence industry deserved to be developed as it still had important export potential. Further neglect of the industry, they predicted, would bring about serious economic, regional, and employment consequences. In response, the region's governments started to take measures designed to facilitate the recovery of the military-related sector.

Page 6

Country	Total defence expenditure (USD in millions)			Defence expenditure per capita (USD)			Defence expenditure as percentage of GDP		
	1985	2001	2002	1985	2001	2002	1985	2001	2002
Bulgaria	1,424	362	378	159	46	48	2.9	2.8	2.5
Czech Republic	2,038*	1,158	1,401	n/a	112	136	n/a	2.1	2.1
Hungary	2,060	902	1083	193	91	110	6.8	1.7	1.8
Poland	21,644	3,436	3,400	582	89	88	20.5	2.0	1.9
Romania	1,204	962	999	53	43	45	1.7	2.5	2.3
Slovakia	2,038*	383	439	n/a	71	81	n/a	2.0	2.0

Note:

* figure for Czechoslovakia.

Source: IISS (2003, pp. 335–36)

Each country embarked upon a different path of consolidation, principally determined by the economic importance of the military sector in the previous system and the nature of the particular socio-economic transition underway since its collapse. The nature and depth of economic reforms, and the stability of the newly introduced political system in each country, was the principal determinant of government policy guidelines concerning the defence industry. External factors had also started to play an increasingly prominent role in these changes since the mid-late 1990s. Aspirations to become members of NATO and the European Union reshaped military procurement and defence industry development policies significantly. Concurrently, the formulation of national security and defence strategies, which in principle were meant to provide a framework for military and defence industry development, lagged far behind.

By the mid-1990s, two markedly different models of defence industry adjustment emerged, one in Slovakia, under the two Meciar governments, and the other in Hungary.³ In Slovakia, defence industry stabilization was principally state-led and inward-oriented. State agencies preserved a pivotal role in coordinating, protecting, and promoting industry. They created major institutional structures to represent and manage the sector, such as the DMD Holding—an umbrella organization established by major ministries, state agencies, and the core defence-related companies. State agencies placed important civilian and military orders in order to keep defence-related companies alive and, when necessary, also provided significant financial support.

In Hungary, by contrast, defence industry stabilization was by and large industry-led and outward-oriented. In the early 1990s, state agencies withdrew spectacularly from the direct management and protection of the sector. Companies were expected to fend for themselves under conditions similar to any other enterprise and without significant state orientation, mediation, or intervention. The state did play a modest role in assisting—mostly indirectly—companies that managed to survive, principally thanks to their own efforts. Since domestic orders were very small in scale, defence industry production was largely export-oriented.

The other countries of the region displayed variations on these two models. Due to the war and its political isolation, the Yugoslav defence industry was geared principally towards the internal market. State agencies played a crucial, direct role in its safeguarding and management. In Romania, state agencies preserved their role as owners and coordinators of defence industry companies. Due to the very low level of domestic demand, the sector was principally export-oriented.

Bulgaria followed a similar path, characterized by strong state interference and the promotion of exports, until the liberalization and privatization of the sector in the late 1990s. In Croatia, following the end of the war, and particularly after the change of political leadership, a conscious decision was taken to liberalize the defence industry and reorient it towards export markets. In contrast, the Czech Republic developed a predominantly private defence sector, but the state plays a crucial role defending and promoting military-related production. While actively pursuing new external markets, both the Czech and Bulgarian governments put special emphasis on placing important domestic orders to maintain their core local defence industrial capacities.

Beyond these general features it is important to highlight the fact that guidelines concerning the defence industry have often changed in each country during the period under review. Such modifications came about in response to frequent changes of government and government policy within election cycles. In countries such as Hungary and Poland, however, government changes have not had a major impact on defence industrial policy, despite the fact that elections have ushered in disparate administrations. In Slovakia and Bulgaria, by contrast, governmental change has resulted in a fundamental transformation of defence industry management. The discrepancy between these states may be partially explained by the relative autonomy enjoyed by the military-related sector in countries such as Hungary, the deep economic and political ties of the sector in the system in Poland, and its still deeply politicized nature in countries such as Bulgaria and Slovakia.

IV. Privatization and the role of the state

Questions concerning the privatization of military-related industrial facilities produced something of a watershed in state defence industrial policy. At the beginning of their transition processes all countries in Eastern, Central, and Southeast Europe had launched major privatization programmes. Due to internal economic and political specifics, the privatization process in some countries came to a halt or was limited to small-scale privatization in the early 1990s. Later it gained momentum to include large-scale production facilities. The privatization of the defence sector, however, was treated with caution, even in countries with radical reforms, such as Poland.

In each country, different privatization strategies and methods were used, from state agency-supervised individual sales to different mass privatization methods. In Hungary, state privatization or asset holding companies managed mostly direct sales on a case-by-case basis, whereas the Czech Republic first used coupon privatization, and then individual sales. These two countries had rapidly and thoroughly privatized their military-related production by the mid-late 1990s.

After a moratorium on privatization of defence industry companies was lifted in Bulgaria, manager or employee buy-out schemes (MBO) were most often used. In Romania the main—and for a long time the only—method of privatization was the creation of joint ventures with foreign investors. Privatization was used as a way of rewarding clientele fidelity under the governments of Milosevic, Tudjman, and Meciar, which meant that, after the changes of leadership, some facilities had to be re-nationalized. The bulk of Yugoslav defence companies are still under collective state ownership, while the proportion of state ownership in Croatia is approximately 50 per cent.

Many defence-related enterprises are only formally privatized since, through a complicated web of cross-ownership, their ultimate owners are still different state agencies or state-owned banks. Another common way of maintaining state-ownership is direct Ministry of Defence ownership—most often in the case of repair facilities. In this way, the military establishment attempts to ensure that local suppliers meet its needs under conditions it is able to control.

In each country there are a few new and small-scale private investments in the sector. Most of these were created with the vestige personnel and equipment of former large-scale defence-related firms.

Privatization is often seen as an inevitable step towards increasing a defence company's profitability and productivity. To date, however, empirical experience shows that without committed management, a genuine in-depth restructuring, and major capital investments, privatization does not yield the desired results. Several cases in the region demonstrate that when new owners are unable to implement genuine improvements, companies are doomed to fail. Examples include the Hungarian MFS (ammunition, Sirok) and DIAG-Army Coop (light and heavy weaponry, Diosgyor); the Czech Vlárske Strojirny (aerial bombs, ammunition, Slavcin); several successor companies of the once outstanding Tesla company (electronics, CR); and the bulk of Bulgarian enterprises, privatized through MBO schemes.

Although private ownership is increasing and decentralization is rather advanced in most countries in the region, the state remains a major actor in the defence-related field. Partial or indirect state ownership is maintained through state-owned banks, privatization, development agencies, or investment funds. State agencies retain an important role in influencing the defence sector, even if they are not

direct owners. States are particularly active in export promotion and control, providing several forms of direct and indirect support such as assisting companies to obtain civilian and military quality certificates; financing sectoral restructuring projects; writing off bad debts; and granting access to credits, special grants, and the like. They finance major military-related R&D projects—many now aimed at producing NATO-compatible products. State agencies play an important role in assuring external cooperation and/or finding export markets for defence industrial companies.

Depending on the nature and depth of economic and political transition, the state agencies in charge have different characteristics and degrees of intervention in each country's military-related sector. In Romania, the structure still evokes the experiences of the past, when the Ministry of Defence or the Ministry of Industry and Trade planned, coordinated and protected the activity of defence-related enterprises. Until the late 1990s, the Bulgarian system functioned similarly.

In Poland and Slovakia, state agencies supervising or managing the defence sector have attempted to implement market efficiency criteria. This is problematic since the state institutions—which often directly or indirectly own shares in defence facilities—have difficulties separating their management and ownership functions.

In the Czech Republic, Hungary, and Poland—the three new NATO members—state agencies acquired a new and important role as mediators of possible modernization projects and their attached offset deals. In order to achieve inter-operability within NATO, the three countries have had to upgrade their national defence systems. Modernization projects include upgrading of fighter aircraft, air defence, and communication systems. The main upgrade systems in these cases are likely to be provided by major Western companies. Nevertheless, East European partners require offsets (generally of 100 per cent) and a significant share of local participation in the promised programmes, and thus at least part of the offsets and cooperation agreements will directly benefit the region's defence industry companies.

In principle the state agencies' mediating roles in procurement, modernization, and offset packages are performed according to the rules of market competition. In reality, however, they reflect a mixture of old-style informal arrangements and classical lobbying. In the Czech Republic, Hungary, and Poland, decisions concerning all important modernization projects were taken amidst fierce political battles and outside of general procurement procedures.

Due to the relatively low technology involved in small arms and light weapons production in Eastern, Central, and Southeast Europe, this sector is generally left out of the large-scale, high-tech modernization projects and thus can only indirectly benefit from offset deals. Yet small arms producers have occasionally managed to connect with programmes that have given them precious new opportunities.

Small arms producers have been granted a window of opportunity in the upgrading of their national armed forces—provided they were able to convince state agencies to rely on local products rather than imports. This was the case during the modernization of personal weapons for the Czech National Police. In April 2000, the Czech cabinet cancelled a CZK 600 million (USD 15.5 million) public tender for the purchase of weapons for the Czech police and placed the order directly at the Česká Zbrojovka company in Uherski Brod. The company committed itself to provide 46,000 CZ P-01 pistols to the police force over a period of four to five years.

The pistol is based on the company's successful CZ-75 design, yet now features completely interchangeable parts, a forged aircraft-grade aluminium body, and a rail to accept sights and laser-aiming

devices. Česká Zbrojovka reports that 'the P-01 is named to convey that this is a new pistol and a new level of quality and reliability' (Česká Zbrojovka, 2002). In 2003, Česká Zbrojovka's P-01 pistol was granted a NATO classification, having passed a number of stringent criteria, including extreme temperature operation, safety, and durability tests (Česká Zbrojovka, 2003).

In changing the original conditions of the tender, the cabinet made use of a new amendment to the law on public tenders, approved by Parliament, that makes it possible to award a contract to a previously selected company if that company guarantees a pre-determined level of quality. Government officials stressed that Česká Zbrojovka produced high-quality weapons, exported massively to the United States, and that the order would save about 250 jobs at the enterprise and its subcontractors. They also underlined that the local contractor would assure the quickest delivery of the weapons, which were urgently needed to reinforce the police in preparation for the September 2000 International Monetary Fund/World Bank Summit in Prague (Bouc, 2000; Bouc and Gonderinger, 2001). This case illustrates that, in addition to increasingly demanding technological requirements, political and social considerations still play an important role in procurement decisions.

V. Country trajectories

Subject to state socialism and the dominance of the WTO, Eastern, Central, and Southeast Europe was artificially homogenized, in large part through the introduction of Soviet-type economic and political models. Distinct national characteristics only began to resurface in the early 1990s, when systemic transformations began. Mirroring unique historical traditions, developments, assets, and policy decisions, these features play a crucial role in each country's choice of defence industrial adjustment models. Comparing the development trajectories of the six selected countries highlights the importance of internal factors in company and national policy decision-making.

The Czech Republic and Hungary

The Czech Republic and Hungary have been among the forerunners of the socio-economic and market-economy transition of East Europe. Following the peaceful break-up of Czechoslovakia, the size, GDP, and even the defence industrial base of the Czech Republic and Hungary grew similar. Both countries had a WTO heritage of relatively advanced defence industries with strong traditions in the spheres of military electronics and telecommunications, with a handful of well-established small arms producers. By the late 1990s both the Czech and the Hungarian defence sectors were almost entirely privatized. Hungary and the Czech Republic became NATO members in 1999, which called for increased defence budgets and accelerated modernization of domestic defence forces.

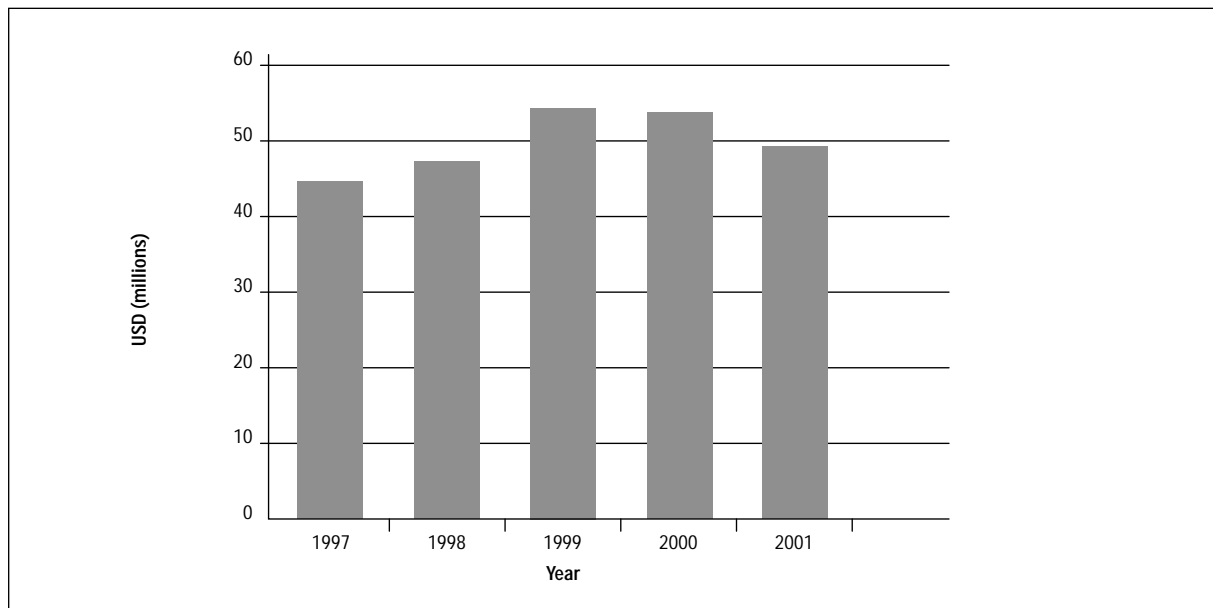
Page 11

The main differences between the two country trajectories lie in their government policies. During the 1990s, the Czech Republic moved slowly from a radically pacifist position—which advocated conversion and the complete halt of the trade in arms—towards an active promotion of the defence industry and arms exports. In Hungary, by contrast, while state authorities provided some occasional assistance to defence-related firms, by and large the state followed a liberal, hands-off policy in its treatment of the defence industry.

Czech Republic

The state of the defence industry. Nowadays about 80 companies are engaged in military-related activities in the Czech Republic, although only around 40 are considered significant producers. One-third of these companies are active in small arms production. The defence industry has an annual turnover of about CZK 4–5 billion (USD 149–186 million)—less than 0.5 per cent of the total industrial output. Small arms and light weapons production reached approximately CZK 500 million (USD 19 million) in 2001, nearly 5 per cent of the total defence industry output. Nevertheless, the country exported around USD 50 million in small arms that year, reflecting the existence of large surplus stocks. Although it has dwindle to modest levels in recent years—especially when compared to the records of the late 1980s—the export of Czech military products is still important. In the late 1980s, the then Czechoslovakia sold about USD 700 million worth of arms yearly, but in 2001 the country reportedly only exported a value of USD 68 million (*Prague Pravo*, 2002). Figure 1 reflects both the declared exports of the Czech Republic and other countries' declared imports from the Czech Republic. The discrepancy between 68 million and the reflected 49 million is clear, yet both figures remain at least 10 per cent below 1980s export values.

Figure 1 Czech small arms exports, 1997–2001



Sources: UN Comtrade (2004): Customs codes 930100 (military weapons), 9302 (revolvers and pistols), 930320 (shotguns), 930330 (sporting and hunting rifles), 930510 (parts and accessories of revolvers and pistols), 930521 (shotgun barrels), 930529 (parts and accessories of shotguns or rifles), 930590 (parts and accessories of military weapons), 930621 (shotgun cartridges), 930630 (small arms ammunition)

The Czech Republic's 80 military-related companies employ nearly 7,000 people. In 2001, 60 per cent of defence industrial output was destined for the national armed forces (CTK, 2001). Czech institutions or private investors privately own most of the defence-related companies. There are a few important foreign investments in the sector, such as the Aero Vodochody-Boeing joint venture, or the purchase of the Tatra heavy-duty truck company by US-based Truck International. The Ministry of Defence maintains a restricted number of companies under its management, specializing principally in repairs and services (Soukup and Hlavicka, 2002).⁴

Defence industrial policy. In the early 1990s, the Czechoslovak cabinet, composed of prominent figures of the former political opposition, such as Vaclav Havel, Jiri Dienstbier, and Jaroslav Sabata, distinguished itself with a radical liberal and pacifist position. It advocated a thorough, partially state-financed conversion of defence industrial facilities. Furthermore, it curbed defence-related exports and introduced a principally laissez-faire industrial policy, implemented in the military-related sector as well as in the rest of the economy. Approximately 90 per cent of the Czech defence industry was in private hands by the late 1990s. Nonetheless, the state also preserved the 'golden share' in several companies, maintaining influence through state-owned banks and intervening actively whenever the sector's perceived needs were not met.

From the mid-1990s, however, the Czech government again started to support the military industry more actively, first primarily through export promotion and, by the end of the decade, with a wide array of active state support and participation in the defence-related sector. The assistance included important measures on both the demand and supply side: a strategic cooperation agreement with defence industry companies and their representative organizations, intensive export promotion, the placement of significant orders with domestic producers, and the reestablishment of state ownership in certain cases, in addition to a wide array of indirect means of support. In 2002, for example, the government decided to buy back the privatized division of Synthesia (explosives, ammunition, Pardubice)—producer of the Semtex explosive—in order to guarantee the security and survival of the company's military-related activity.

At present the Czech government is aiming to orient the defence industry towards high-tech projects, for example in the fields of avionics, electronics, communication, and radar technology. While these developments may contribute to the modernization of the domestic armed forces, they are also attractive exports and desirable in international cooperation projects. The avionics sector in particular has been the key element of Czech defence industrial policy. In 1999, the Czech government decided to sponsor the restructuring project of Aero Vodochody (aviation, Odolena Voda), one of the country's major defence-related producers, which had encountered serious difficulties. Government agencies intervened in the forging of a joint venture with the US company Boeing. The agencies provided state guarantees for the large-scale credit necessary to accomplish the deal and committed themselves to ordering L-159 planes, thus assuring the necessary minimum of orders indispensable to the new company's survival.

A few small arms projects fall within the Czech government's plans to promote a high-tech industry. Companies that are in some way related to the Aero Vodochody project can hope to benefit from some form of government assistance. Such is the case with the Zbrojovka Vsetin-Indet company (small arms, Vsetin), which expanded its production lines of small arms, including pistols and sniper rifles, to develop the 20 mm Plamen cannon pod for the Aero Vodochody/Boeing L-159 aircraft. Other small arms producers attempt to benefit more indirectly from intensifying business contacts and military cooperation with Western countries. Policske Strojirny (ammunition, Policska), a major ammunition producer, won a Finnish armed forces tender to convert fighting ammunition into training ammunition. (While the company met the terms of the contract successfully, the Finnish military did not place any follow-up orders, principally due to Policske Strojirny's backlog.⁵)

The prospects of the rest of the Czech military industry are limited by the low level of domestic orders—other than the L-159—and fierce international competition. For some years, orders from the Ministry of the Interior and other armed security forces could partially fill the vacuum left by the drastic reduction of army orders—as in the above-mentioned case of Česká Zbrojovka. Once the weaponry of these agencies has been modernized, however, limited demand in the domestic market is likely to have serious consequences, pushing some companies towards conversion or leading them to seek international cooperation.⁶

Small arms and light weapons production. Small arms production seems to have stabilized as has that of the rest of the defence industry. Having survived some closures and bankruptcies, the remaining small arms companies are likely to preserve their position in the field. The major ammunition producers are likely to survive and seem to have stable future prospects. Sellier & Bellot, for instance, is successful thanks to its forward-looking strategic management, while Synthesia may still require some state intervention.⁷

Despite their evident difficulties, companies such as Policska Strojirny are also likely to make it, thanks to their perseverance and a number of state orders, state assistance, and foreign demand. In the field of personal weapons production, production profiles are similar at companies such as Česká Zbrojovka, Zbrojovka Brno (small arms, Brno), and Zbrojovka Vsetin-Indet. The same is true of some other, small-scale private firms that were recently established close to important weapons production centres—including Brno and Uhersky Brod—and that now intend to enter the market.⁸ These companies are likely to compete against each other, in addition to their Eastern European counterparts, both in the domestic and international market. The results of this competition are likely to shape the future of small arms production in the Czech Republic.

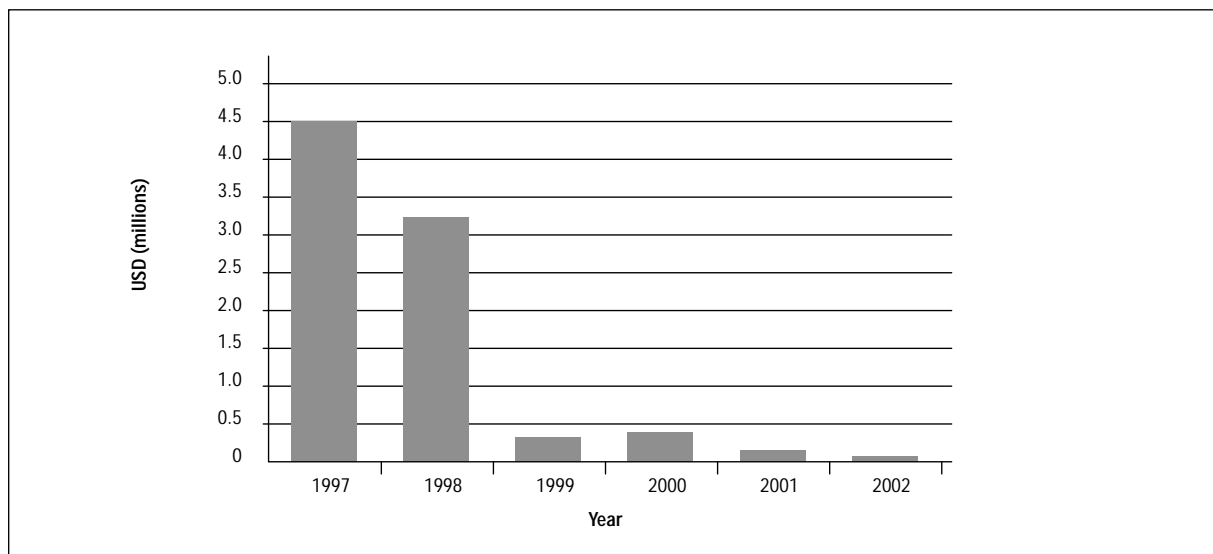
Due to the reduction and restructuring of the Czech armed forces, army stockpiles abound with weapons and ammunition produced by the Czech defence industry. Specialized agencies of the Ministry of Industry and Trade are authorized to sell the majority of these stocks, and the above-mentioned Czech export data indicates that such sales may already have taken place.

Hungary

The state of the defence industry. In 2002, the Hungarian defence sector employed about 1,600 people. A total of 58 companies were registered as defence-related producers, although only 12–15 companies were involved in producing the bulk of output and export. In the past, about 70 per cent of Hungarian military production was devoted to telecommunications and other relatively high-tech equipment; today this sector only represents 33 per cent of the total output. In contrast, small arms and ammunition reportedly constitute 50 per cent of the output.⁹

In 2002 the total Hungarian defence industry output was valued at HUF 10 billion (USD 47 million), and about one-third was exported. Hungarian small arms export figures are rather difficult to compare with those of other Eastern European countries, as sports and hunting weapons, for example, are included in the same category as military weapons. Small arms reportedly represent about HUF 500 million (USD 2.3 million) of Hungary's military-related exports—about 10,000 pieces—and yet the information reported to the United Nations Commercial Trade database is far lower from 1998 onwards. The main markets for Hungarian exports are the United States and Germany, although it is likely that a large amount of the weaponry sold first on US markets is resold to other destinations, principally in Latin America.¹⁰

Figure 2 Hungarian small arms exports, 1997–2002



Sources: UN Comtrade (2004): Customs codes 930100 (military weapons), 9302 (revolvers and pistols), 930320 (shotguns), 930330 (sporting and hunting rifles), 930510 (parts and accessories of revolvers and pistols), 930521 (shotgun barrels), 930529 (parts and accessories of shotguns or rifles), 930590 (parts and accessories of military weapons), 930621 (shotgun cartridges), 930630 (small arms ammunition)

Defence industrial policy. In the early years of the transition, after some initial hesitation, the bulk of defence-related firms in Hungary were sold—a symbol of radical economic liberalization. Various state agencies—notably the Ministry of Economics, Ministry of Defence, and ÁPV Rt., Hungary's privatization and state holding company—retained the majority of shares in a handful of companies. By the late 1990s, however, these too were offered for sale in a last wave of privatization. At this writing, only companies that were impossible to sell or that were created or preserved by the Ministry of Defence remain state-owned.

In contrast to that of the Czech Republic, Hungary's defence industrial policy has remained neutral since systemic changes took hold in the early 1990s. State agencies continued to maintain a low profile, and refrained from the intense promotion of certain defence projects or companies. Defence industry policy consisted principally of assisting those companies that had managed to survive thanks to their own efforts.

Government agencies predominantly use indirect means of help, such as providing access to credits, partial debt-forgiveness, assistance in obtaining quality certificates, introduction of NATO standards, financing R&D, organizing exhibitions, and, crucially, representing defence-related companies' interests in offset deals.

During the Warsaw Pact period, parallel production capacities were established in practically every Hungarian defence-related industrial branch. The turbulent 1990s brought crisis, changes in patterns of ownership, and other economic changes, which led to a type of natural selection process in the sector. By the end of the decade, only a few—and sometimes only one—company within each defence-related branch managed to survive.

Domestic demand for Hungarian defence industry output remains low. Since the early 1990s, the Hungarian armed forces have undergone a large-scale modernization programme expected to continue until 2015, if not beyond. Nevertheless, while representatives in charge of the sector at the Hungarian Ministry of Economic Affairs suggest increased budgets will allow for a three-fold increase in military procurement in the next years, the implementation of these programmes is rather slow. *Jane's Defence Weekly* finds that the Hungarian government envisages spending around 1.71 per cent of its GDP on defence in 2004; 1.76 per cent in 2005; and 1.81 per cent annually in 2006–2015 (*Jane's Defence Weekly*, 2003b). This level of spending does not depart significantly from 2001 and 2002 trends (IISS, 2002).

The first stage of the modernization package involved the reduction, reorganization, and modernization of the armed forces. The second stage involved the launch of improvement programmes for communications and heavy weapons. Most of these changes and related investments had only a minor, indirect impact on domestic small arms producers, including offset deals. Producers of small arms and light weapons hope to receive important domestic orders during the third stage of armed forces modernization, as it entails the upgrading of soldiers' personal equipment.

Small arms and light weapons production. Since the conversion of Danuvia (small arms, Budapest), a once world famous small arms producer, only one important arms maker has survived: Fégarmy (small arms, Budapest). There are several minor companies, including Batori Epszol (handguns, Nyirbátor), Inno-Coop (mines, fuses, Hajduboszormény), and MOM Vizmerestechikai Rt. (rifles and sniper rifles, Mátészalka). These companies have either attempted to produce within a niche market or to expand within the small arms sector.

In the production of explosives since the demise of EMV, the only significant survivor is Nitrokemia Rt. (explosives, Fuzfo-Gyartelep), a company whose survival owes a great deal to state interventions.¹¹ The company also benefits from the scaling down of production that is environmentally unsound by Western producers, thus allowing the gunpowder and explosives produced by the company to find important export markets.

In ammunition production, the two important companies, MFS 2000 and Nike-Fiocchi, owe their survival primarily to their management's determination and to external contacts gained through their restructuring efforts.¹²

Bulgaria and Romania

Bulgaria and Romania had delayed and often distorted socio-economic transitions during the 1990s. Economic recovery and political stabilization was slow, which was reflected in the state of the defence industry. Major restructuring and privatization programmes were frozen, while at the same time the governments of Bulgaria and Romania lacked sufficient resources to place large-scale orders with defence-related companies or assist in their adjustment process. The result was a long period of suffering for the industry.

In the early 1990s, the deep economic and political difficulties of the two countries produced poor policy options, which inadvertently contributed to the long-term problems afflicting military-related production. Bulgaria intended to 'solve' its defence industry crisis with an aggressive sales policy that put the country on the black list of arms export control and human rights organizations (HRW, 1999). Romania tried to postpone the inevitable restructuring of its ailing military-related industry through internal administrative reorganization. The country not only accepted foreign cooperation but also promoted it, particularly in the aviation sector, in the hopes that these external contacts would energize the sector without further structural changes.

As noted, political and economic changes were accelerated with Kostunica's rise to power and the events of 11 September 2001. Milosevic's removal made possible a relative stabilization of the Balkans, with countries soon seeking to join NATO. This dynamic later allowed the Bush administration to recruit friendly nations in the region to provide logistical and other military support in the 'war on terror'. From the late 1990s, in preparation for a possible NATO invitation, Bulgaria and Romania took important measures to accelerate the modernization of their national defence forces, tighten arms trade regulations, and reshape defence industrial facilities. At this stage, defence industrial policy became markedly different in the two countries: Bulgaria opted for wide-scale privatization of its military-related facilities, while Romania intended to restructure them via modernized bureaucratic control.

Bulgaria

The state of the defence industry. By 2000, the Bulgarian defence industry output had fallen to approximately USD 100 million per annum, around 10 per cent of its record production levels reached in 1984–85. The industry employs around 30,000 workers, but this figure is expected to fall. Of the almost 60 Bulgarian companies engaged in defence-related activities, about 30 constitute the core of the sector. Five of these—Arcus JSC, Arsenal JSC, NITI JSC, VMZ, and Samel-90—are important small arms producers, with a combined employment of around 12,000 staff (Dimitrov, 2002; CSD and Saferworld, 2004). Bulgaria's arms exports represent around 1.5 to 2 per cent of total exports, and in 2001, arms exports rose to more than USD 200 million, thanks to the identification of new markets in India, Pakistan, and China. Figures for 2002 indicate that small arms exports were around USD 30 million.¹³

Small arms account for about 30 per cent of the Bulgarian defence industry output, with ammunition representing nearly 30 per cent of the small arms output. Yet only 10 per cent of the industry's existing productive capacities are used at present. The mostly dual-purpose facilities have much larger idle capacities for military-related production lines than for civilian ones. The national armed forces buy approximately USD 8–10 million in military equipment per year and the rest is exported. Although the defence budget has been increased to 2.9 per cent of the GDP, most of it is absorbed in personnel and maintenance costs.¹⁴

Defence industrial policy. In the past, Bulgaria's defence industrial policy was largely informed by the fact that the defence industry was a major engine for development, with significant exports. Most companies in the sector were heavy industrial giants, employing several thousands of people. These companies were the principal employers in their regions and provided a large array of economic, infrastructural, and social services. In some cases whole towns, such as Kazanlak, developed around the arms industry. Yet Bulgaria was not at the forefront of the economic and political changes that reshaped Eastern Europe, thereby providing new development opportunities. For most of the 1990s, Bulgaria was not even considered a potential NATO or European Union candidate. Furthermore, it was to suffer serious economic losses and insecurity during the Yugoslav wars.¹⁵

Reform of the military sector was consequently handled with extreme caution. In general, privatization was enacted somewhat hesitantly in all industries, but defence industry privatization was considered a particularly risky economic and political issue. Between 1993 and 1997, a moratorium was in place on defence industry privatization in Bulgaria. Subsequently, Ivan Kostov's reform-minded government, which had taken office in 1997, issued a special decree on the restructuring and privatization of the defence industry in March 1998. Within five years, the bulk of Bulgarian defence firms had been privatized through MBOs.

In 2002, two of the 25 core defence industrial companies were bankrupt and had ceased production; another 18 had been privatized, which meant that the percentage of shares in private hands now exceeded those owned by the state. Four companies (Arsenal, Dunarit, Trema, and VMZ, all in small arms production) remained state-owned, under Ministry of Economy supervision. The fifth one, Terem, which specializes in military repair, is under Ministry of Defense supervision. Nonetheless, these four companies account for a significant share of Bulgaria's defence industrial output, export, and employment. Current government plans envision the privatization of these enterprises through a gradual process of decentralization and the subsequent sale of decentralized, individual units. The state is expected to retain a 34 per cent share and a right of veto if the new owners propose a change of profile.

The radical changes in ownership structure did not fundamentally improve the state of the ailing Bulgarian defence industry. Since the new owners—an assortment of managers, employees, trade partners, and local banks—were usually unable to invest heavily and push for radical company restructuring, the majority of the enterprises continued, and indeed continue, to suffer from a lack of orders and capital. They are often unable to pay their overhead costs and frequently their employees' salaries.

Finding new markets is another crucial problem for Bulgarian defence-related companies. In the 1990s, domestic military-related demand decreased considerably and traditional export markets were lost. Throughout the 1990s, in a bid to save the industry and provide the country with indispensable hard currency earnings, Bulgaria pursued a hazardous arms export policy. The country sold large amounts of weapons—principally cheap small arms that ranged from handguns and assault rifles to anti-tank mines and ammunition—to conflict areas. Destinations included the former Yugoslavia and several African, Asian, and Latin American countries. Hard currency earnings might have relieved some budgetary tensions, but the industry's problems were evidently not solved. A chronic absence of the means to address the fundamental problems of the sector at the end contributed to their aggravation.

In the period immediately before and after Bulgaria's accession to NATO and other important international institutions, the government made major efforts to strengthen control over weapons-related issues and specifically over arms exports. The results are quite promising. Apart from occasional infringements,

the country by and large managed to regulate the export of weapons. This radical change of policy, from permissiveness to rigor, came as a surprise to most of the companies. Many company managers considered their companies abandoned by their supervising authorities. This feeling was reinforced by the fact that the Ministry of Economic Affairs, the institution in charge of the sector, was reorganized and staff were concentrated at the arms trade department, rather than the production department, as had been the case previously.¹⁶

The change of government policy signalled a new and often insurmountable obstacle for many companies. Transactions in the grey and black markets became considerably more risky than in the past. Most defence-related companies had to come to terms with the idea that, in order to survive, they had to find new sources of revenue, primarily by increasing their civilian production, finding subcontracting work, or exploiting opportunities for cooperation.

Small arms and light weapons production. The state of small arms and light weapons production mirrors the general state of the Bulgarian defence industry. One successful, privately owned company, Arcus (small arms, Lyaskovets), has managed to survive the challenging 1990s to secure its position both in the domestic and international markets. Arsenal (small arms, ammunition, Kazanlak) and VMZ (light weapons, ammunition, Sopot), the two largest companies and successors to Bulgaria's former heavy industrial giants, are doing their best to cope with the new environment but are facing many difficulties. Arsenal appears to have more dynamism and initiative than VMZ. The former has long exported products to India—Bulgaria's biggest client—and recently announced it will equip the new Iraqi army with small arms and light weapons. In contrast, VMZ benefits largely from continuous state help. In 2000, the company experienced net losses of 20 million euros (CSD and Saferworld, 2004). While the 2002 sale of the company's ball bearings firm to the Swedish SKF brought major resources to the enterprise, it remains to be seen whether management can capitalize on this opportunity.¹⁷

Other companies, such as Dunarit (ammunition and explosives, Russe), NITI (small arms and ammunition, Kazanlak), Montaz i Mechanika (recently operating under the name of Mechanics and Assembly Co, fuses and hand grenades, Sevlievo) continue to struggle, attempting to broaden their civilian production. Pima (ammunition and small arm parts, Montana) is in the process of liquidation; Arcus has purchased a number of its premises.¹⁸

Romania

The state of the defence industry. In the late 1980s, the defence industry included more than 100 companies, employed nearly 200,000 workers, and was among the principal growth industries and exporters. From the onset of the political changes, the sector suffered major setbacks. Output has fallen to approximately 10 per cent of the 1989 records. The dramatic decrease in production led to a serious employment problem. In 2001, the industry officially employed 80,000 people, though the large majority was practically unemployed, rarely going to work or performing any productive activities. To resolve this situation, and despite the protests of workers and trade unions, the aim of Romanian decision-makers was to cut the workforce to about 18,500 by 2004. Most of the laid-off workers already receive compensation from state sources. At present Ministry of Defence orders only absorb five per cent of the industry's output. Arms exports suffered similarly large losses. Prior to 1989, Romania exported weapons worth some USD 500–800 million per year; in 2000 and 2002, however, annual exports stood at roughly USD 30 million and USD 40 million, respectively. Most arms sales take place through Romtehnika, a state-owned specialized arms export company (Tudor, 2001; Rompress, 2002).

Defence industrial policy. Much like Bulgaria, Romania struggled with a particularly heavy defence industrial heritage when political changes started in the early 1990s. During the state socialist period, particularly under Nicolae Ceaucescu's leadership, the Romanian defence industry was forcefully developed to provide a large-scale and comprehensive arms production base, independent of both the WTO system and the Western world. From the early 1990s onwards the sector began to sink into a deep crisis. Political decision-makers intended to rescue it, but owing to the lack of significant resources and feasible restructuring strategies, they by and large blocked the sector's prospects for development. The industry continues to struggle with the problems of technological backwardness, inefficiency, a lack of funds (often simply for maintenance), a notable absence of development and new investments, and a dire lack of markets. State agencies provided near continuous support to the ailing enterprises, but until recently, changes were only partially perceptible.

The government also blocked the privatization of defence-related productive facilities in the hopes that improved, more efficient state management would be able to introduce necessary changes in companies. During the 1990s, the defence industry went through several major institutional reorganizations, all of which were intended to increase the industry's efficiency. Results were modest. At the same time, government agencies actively encouraged the creation of joint ventures in some selected segments of the industry, first in the aviation sector—in particular with Israeli firms—and later, gradually, in the rest of the industry.

In 2000, the government agreed to yet another major institutional reorganization in the defence industry, without, however, altering the predominant structure of state ownership. The 16 most important defence-related companies were transferred from Ministry of Defence supervision to the Ministry of Industry and Resources. This move is expected to improve the sector's performance by separating state sellers and buyers. The core defence-related companies were reorganized under the umbrella of Romarm, a state-owned company that functions like a holding. The majority of firms that were not placed under Romarm were transferred to the privatization agency and, in principle, can be privatized and even exit the defence sector.

Similar to Czech defence industrial policy, Romania's policy emphasized the development of the aviation sector, which absorbs a large proportion of defence expenditure. In this sector the government was most active in promoting the creation of joint ventures (JVs) or cooperation agreements with Western companies. In the field of small arms and light weapons production, the few foreign cooperation deals or JVs concern principally civilian production.

Another major direction for Romania's present defence industrial policy is export promotion. To compensate for the low level of domestic demand and to re-launch lucrative arms exports, state agencies selected a wide range of products with good prospects and export potential in order to promote them. Artillery and infantry weapons and ammunition are among the selected items.¹⁹

In the run-up to NATO membership, the Romanian government approved 25 projects to upgrade and modernize the national armed forces. These projects are financed by credits, granted by the government, and managed by Romtehnika, the country's most important arms trade company. Due to the elevated costs of modernization programmes and the fall of exports, there is a serious imbalance in Romania's arms trade—with imports of USD 200–300 million per year versus exports of around USD 40 million—that is likely to cause budgetary tensions. At present, an offset policy is under consideration that would conceivably help domestic producers to benefit from these large-scale investments.²⁰

Small arms and light weapons production. **The Romarm National Company s.a.** (Bucharest), the core of Romania's defence industry, unites 15 producers and an R&D institute. Romarm's firms produce a wide range of arms, including pistols, sub-machine guns, and machine guns from 5.45 mm to 14.5 mm, in both WTO and NATO calibres; ammunition in WTO calibres of 5.45 mm to 14.5 mm and NATO calibres of 5.56 mm to 9 mm; and light weapons, including mortars and recoilless rifles (Romarm, 2004). Seventy per cent of Romarm's output is military-related and 65 per cent is sold on the domestic market. In 2002, the company employed some 29,000 people.²¹ All companies are dual-purpose and the joint goal of the government and Romarm is to increase the future share of civilian production to about 70 per cent. At present fewer than 10 per cent of the company's military-related productive capacities are utilized.

The most important small arms-producing companies—Cugir (Cugir), Carfil (Brasov), Mija-Ilfov (Caragiale), and Sadu-Bumbesti (Bumbesti)—belong to the Romarm holding, which guarantees their survival.

Serbia and Montenegro and Croatia

Serbia and Montenegro and Croatia share the heritage of the former Yugoslavia, where the defence industry played a major role, both as a significant hard currency earner and as one of the pillars of the political and economic system. Defence-related production facilities were concentrated primarily in the territory of contemporary Serbia and Montenegro and Bosnia and Herzegovina. Serbia and Montenegro and Croatia were immersed in war throughout most of the 1990s, and subsequent to the wars' conclusion, both had to re-adjust their economic and political structures within the new national borders. Under the leadership of Presidents Milosevic and Tudjman, necessary political and economic reforms were frozen for almost a decade. As a consequence of the wars, defence budgets were elevated and the defence industry was robustly supported by the state in both countries, without, however, any significant pressure to restructure or increase efficiency.

Serbia and Montenegro

The state of the defence industry. Reports had claimed that NATO's bombing campaign in the spring of 1999 destroyed or damaged most production and R&D facilities of the defence sector. After the fall of Milosevic, when information became more easily available, it became evident that this information was inaccurate. Indeed, despite serious damages, all military-related companies were operational by 2001 and the sector still employed about 20,000 people (Bogunovic, 2001).²²

Thirteen years of war, economic and political crisis, and a UN arms embargo and financial sanctions did much to erode the comparative advantages of the once significant defence-related production sector.²³ Today Serbia and Montenegro's large-scale facilities need urgent reform to adjust to altered economic and political conditions. At present the defence industry displays symptoms of decline. Its fundamental structural problems reflect the difficulties of a pre-conversion situation, a post-war economic crisis and rehabilitation, and the challenges of re-integration after a violent territorial break-up.

Pre-conversion situation. Whereas economic and political change reshaped Eastern and Central Europe during the 1990s, the former Yugoslavia witnessed a decade of war that exhausted its military-industrial system, preventing its crucial restructuring so that production might continue on a mass scale. By the late 1990s, Yugoslav defense-related companies faced problems similar to those tackled by of their eastern counterparts almost a decade earlier: loss of traditional export markets, outdated production lines and

technology, and an acute lack of management and marketing skills. During the 1990s, due to the abrupt loss of external markets and relative economic isolation as a result of the embargo, military-related output had catered to the resource-poor internal market and illegal markets.

Serbia and Montenegro's companies often lack sufficient income to finance their everyday operation. While they have no resources for new investments, R&D, or restructuring, there is an urgent need to address their technological backwardness and inefficiency to prevent further decay. Many companies are still under collective social ownership and most privatized companies have been sold through crony privatization under the leadership of Milosevic. The ownership structure prevalent in the sector needs to be revised in order to create proper conditions for enterprise development. The bulk of the companies did not go through the necessary 'overhaul' process common to most Eastern European defence firms. Organizational and management structures are unchanged, and companies are overstaffed and continue to fulfil a wide range of productive and social functions that are not directly related to their core activity.

Despite its poor state, the Serbian and Montenegrin defence industry does have some development assets. In their precarious, but protected, position, the companies have been able to preserve at least part of their strong and versatile traditions, technology, and workforce. The defence industrial base and workforce is familiar with using and developing both Eastern and Western European licenses and technologies, and it has experience in cooperation. Unlike cold-war Romania, which intended to create a completely self-sufficient defence industry, independent of the East as well as the West, the former Yugoslavia tried to integrate elements of the two, producing both WTO and NATO-type weaponry. On this basis, they have the potential to develop hybrid systems, which are compatible with both WTO and NATO standards—one of the most promising development possibilities for Eastern European defence companies.

Due to its privileged status, and a general lack of structural reforms in the former Yugoslavia (and later in Serbia and Montenegro), the sector has preserved a high level of coherence. Its core workforce did not disperse to other, more lucrative sectors, as was usually the case in other Eastern European countries. Most other Eastern European defence companies that were subjected to permanently changing government policy guidelines, hectic ownership changes, and the frenetic pace of economic transition lost these important development assets in the 1990s. Compared to the rest of the economy, where innovation, investment, and maintenance have been notably absent since 1989, the defence production base remained relatively well preserved. In contrast to what was the case in some other Eastern European countries, the industry's technological level was relatively high in the late 1980s. Even in its current neglected state, it may yield some comparative advantages.

Post-war economic crisis and rehabilitation period. In late 2000, when Vojislav Kostunica replaced Milosevic, the country's economy was in ruins. GDP was around 50 per cent of 1989 levels, industrial production below 40 per cent, and exports slightly more than 60 per cent. Inflation was around 120 per cent, foreign debt reached USD 14 billion, and the predicted state budget and current account deficits were extremely high. Official unemployment stood at 27 per cent, but non-official sources cited around 50 per cent. The share of the grey economy was estimated at 50 per cent. The new administration has made efforts to reform the economy and clear the society of the heritage of the Milosevic system, but by late 2003, most of these plans had stalled (IMF, 2001; ICG, 2001 and 2003).

Under these circumstances, economic activity often slips into the grey and black markets. Military-related production, in principle, lost its main *raison d'être* with the end of the nearly continuous wars of the 1990s. At present, the industry is confronted with the constraints of a crisis-stricken economy

and the fact that the already stretched state budget is to reflect new priorities. The country has pressing reconstruction needs that require a significant reallocation of resources towards civilian targets.

The defence industry will only be able to receive further state assistance if it manages to present itself as a major development industry with considerable export potential. Since the departure of Milosevic and the beginning of economic and political consolidation, the Serbian and Montenegrin defence industry has multiplied its efforts to re-establish trade and cooperative links with Western partners. Foreign investments and external markets, however, are still scarce.

Post-disintegration period. The former Yugoslav defence industry fractured with the disintegration of the country. The consequent losses of production and missing links in the production process are considerable. In some cases, the remaining facilities are sufficient to meet the needs of the armed forces, since before the wars there were important over-capacities in the former Yugoslavia. In other cases, however, the loss of inputs from former member states meant that capacities established on the territory of the present Serbia and Montenegro had to be extended to be able to complete the production cycle. The whole sector has had to be reorganized according to the country's new borders and adjusted to its new security needs.

Defence industrial policy. Due to the armed conflicts and the arms embargo imposed on the former Yugoslavia of Milosevic, the defence industry was practically the only economic sector that received continuous state support. Most of the limited central budget resources were concentrated here. The continuous state assistance, however, did not involve incentives to carry out major restructuring and modernization projects.

Page 22

The still rather volatile security situation, and its presumed export potential, offers a rationale for preserving a defence industry of scale. At present, the defence industrial guidelines aim at self-sufficiency, to meet the needs of the national defence forces, and at promoting exports with which to earn hard currency. Both Ministry officials and company managers agree that the country's defence industry will only survive if it is able to muster considerable external resources and markets.

Following Milosevic's arrest and the country's hasty political rehabilitation, there were some illusions that external resources would arrive in the form of 'compensation' provided by the international community for the embargo imposed on Yugoslavia and the NATO bombing in the spring of 1999.²⁴ Later it became evident that foreign direct investment (FDI) and cooperation would have to be attracted and promoted, in addition to an active search for new markets. Defence-related firms and trade companies launched a rather bold and aggressive campaign to regain their lost positions on the world's arms market. Recent moves to intensify cooperation with Israel suggest that Serbia and Montenegro intends to follow the path broken by the Israeli–Romanian military cooperation, in revamping and privatizing at least some of the defence production base, upgrading and converting existing platforms to NATO standards, and seeking joint external markets.²⁵

Despite some important signs of consolidation, the situation in Serbia and Montenegro is still rather volatile and the country represents a major risk factor from the perspective of uncontrolled small arms and light weapons proliferation. Serbia and Montenegro's active involvement in arming such countries under UN embargo, such as Saddam Hussein's Iraq and Charles Taylor's Liberia, shows with a disturbing clarity that, until facilitating socio-economic structures are dismantled, illicit arms deals are likely to continue (ICG, 2002; Kusovac, 2003).

Since the country is still far from receiving an invitation to join NATO or the EU, external economic and political pressure to respect international agreements would be less effective than in candidate

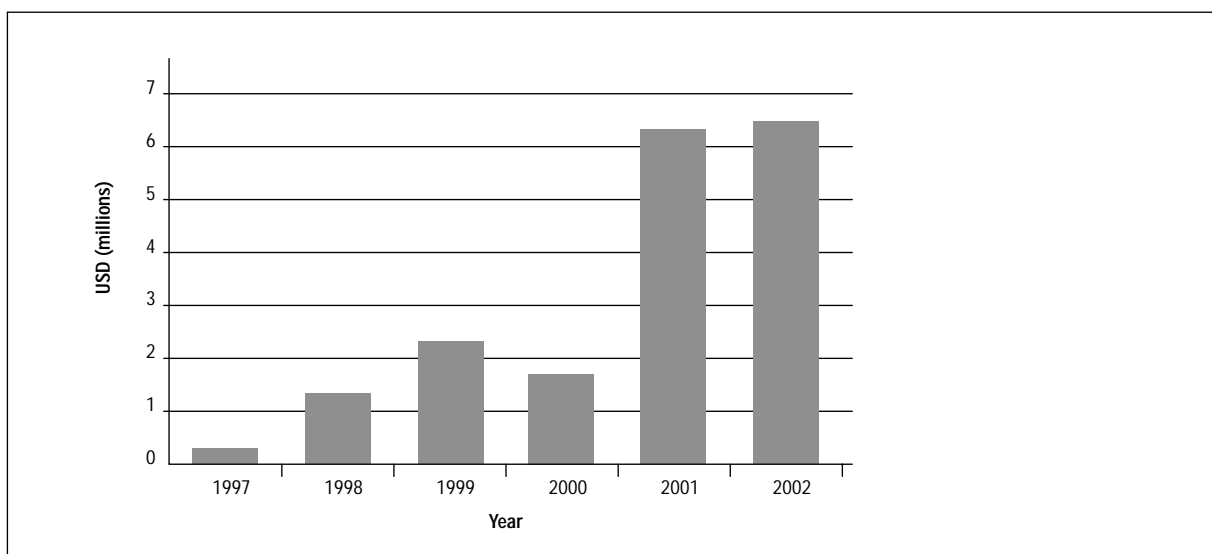
countries. Company management or traders will feel less inhibited about targeting illicit or suspicious markets. This precarious condition is exacerbated by the insecurity that still characterizes the Balkan region, the fact that economic stabilization is slow, and unabated resorting to shady informal power networks created during the war years. All the while, a large number of small arms and light weapons are still circulating in the country.

Small arms and light weapons production. The most important small arms producers are Zastava Oružje (small arms and light weapons, Kragujevac), Prvi Partizan (ammunition, Uzice), Krusik (artillery ammunition, Valjevo), and Prva Iskra (ammunition, Baric). Despite serious difficulties concerning resources, workforce, and markets, Zastava is likely to continue producing arms thanks to a number of state orders, financial help, and the fact that, even during the worst years of war and crisis, development was continuous. Prvi Partizan benefits from its position as a unique supplier of ammunition for the armed forces. The fate of the other companies is more difficult to forecast and depends very much on the success of the country's export promotion campaign.

Croatia

The state of the defence industry. In 1991 Croatian defence industries comprised approximately 7 per cent of the former Yugoslav defence industrial base, mostly in the field of heavy weapons and naval systems production. When war broke out, many engineers, workers, and constructors, employed by the Yugoslav defence industry in other parts of the former federation, returned home, taking with them blueprints and know-how. The industry also benefited from the fact that an important military-related R&D institute, Ruder Boskovic, was situated in Zagreb. This was to become the base of independent Croatia's defence industry. Companies with a purely civilian profile switched to military-related production and new small-scale companies emerged to cater to the hastily organized Croatian national defence forces. By 1992, 62 defence-related firms had contracts with the Ministry of Defence, among them eight small arms producers.²⁶

Figure 3 Croatian small arms exports, 1997–2002



Source: UN Comtrade (2004): Customs codes 930100 (military weapons), 9302 (revolvers and pistols), 930320 (shotguns), 930330 (sporting and hunting rifles), 930510 (parts and accessories of revolvers and pistols), 930521 (shotgun barrels), 930529 (parts and accessories of shotguns or rifles), 930590 (parts and accessories of military weapons), 930621 (shotgun cartridges), 930630 (small arms ammunition)

When the war ended in Croatia, and particularly when the reform-oriented government of Stjepan Mesic replaced the Tudjman cabinet, the active promotion and protection of the defence industry came to an end. The defence budget was cut back significantly and the Ministry of Defence placed increased emphasis on regular production and quality. In the new, more liberal and market-oriented system, defence-related companies were no longer sheltered. Companies were expected to struggle for survival like their civilian counterparts. In a relatively narrow defence industrial base, only a handful of enterprises managed to make the transition, while many had to close down, switch entirely to civilian production or stagnate, due to a lack of orders, markets, and resources.

In 2002, about 25 companies had the potential to produce for the military, with a total of 1,500 people in direct employment. Compared to 1993, the height of the war effort, defence industry output dropped to 15 per cent. Yet most of the productive capacities developed during the war still exist in the form of cold capacities. At present more than 53 per cent of military-related companies are private, with state-owned banks, privatization funds, investment companies, and ministries owning the rest. Most arms exports are organized through the state-owned company, R.H. Allen, although several producers have their own export licences.²⁷

Defence industrial policy. As part of the war effort, approximately 15 per cent of the state budget was spent directly on defence. After the end of the war, the unconditional support previously provided to the defence industry came to an end. At present, Croatia intends to promote its domestic defence industry, principally with the aim of gaining crucial export possibilities. The government plans to place some orders with companies and supports military-related R&D, but it relies mostly on indirect methods, such as export promotion and the facilitation of foreign cooperation in the sector, to stimulate the industry. The radical reduction of national defence forces puts extreme burdens on the state budget and limits further the resources available for defence-related production.²⁸

Small arms and light weapons production. Croatia's small arms producers include: HS Product (small arms, Karlovac), Arka (artillery munitions, Karlovac), and Atir (rocket systems, Zagreb). As of 2002, the Elmech Razvoj ammunition producer company (Budinscina) had reportedly completed its conversion to civilian production. The most important survivor of Croatian small arms production is undoubtedly the HS Product company, an unexpected success story.²⁹

VI. Company trajectories

The rapid collapse of the traditional command economy and the WTO-based political system was an unexpected shock to defence-related companies all over Eastern Europe. During the subsequent years of transition, particularly in the first period, when state agencies withdrew massively from the active management and protection of the sector, company managers were subject to a painful learning process. For the first time since their establishment as military-related producers, they were exposed to the same economic realities as their civilian counterparts. A large number of the military-related companies were unable to handle this challenge—many companies became insolvent, some were forced to close down, and others shifted to civilian production. Defence industry adjustment turned out to be a rather selective process.

The companies that remained in the defence-related field had to downsize significantly: reducing workforces, reducing the scope of their activity and output, and often their company premises as well. They had to introduce new management methods and learn new production and marketing techniques. They also had to introduce new—NATO-compatible—military standards and had to make efforts to get quality certificates as a precondition of external contact building. The usually large-scale, dual-purpose production facilities were decentralized, with former branch companies or departments becoming independent enterprises. There were many changes of ownership, from genuine privatization to pure commercialization.

Company trajectories differ principally as a result of the various adjustment strategies chosen by company management. Thanks to the general economic liberalization and the state's relative withdrawal from direct intervention in economic management, companies have enjoyed increased autonomy since the onset of systemic changes. Management commitment and creativity became principal factors in enterprise success or failure. Specific national contexts are reflected in company adjustment efforts, thus the potential and constraints are quite different for a Bulgarian, a Czech, or a Serbian firm.

Enterprise adjustment efforts also differed according to whether they targeted domestic or foreign markets. Some companies aimed to become distinguished or exclusive domestic suppliers. Others focused mainly on external markets or partners. If a company could count on relatively stable domestic demand—even if relatively modest—this assured the minimum security and income necessary to stay in business. Since direct subventions and financial aid were radically curtailed, or terminated, placing orders was a key method employed by governments to save strategically important companies.

If domestic markets were too narrow or difficult to reach, companies retained the option to search actively for foreign partners. FDI, or other forms of partnership with foreign capital, would finance the inevitable restructuring or new investments that the company itself could not cover. Foreign cooperation also assured markets, either in the country of origin of the partners or third markets. Once a company had an important foreign business connection, it was often able to gain access to a number of domestic resources and orders.

Usually companies were not left completely 'alone', even in Hungary, where the state withdrew the most radically from intervention in the defence field. Company efforts were often complemented and reinforced by measures taken by the state. Companies would engage in restructuring, cost reductions, reorganizations, and marketing. State agencies would eventually place some orders, relieve certain financial burdens, and mediate some export deals.

Small arms production in the turmoil of transition

In their struggle for survival, small arms and light weapons producers in general followed the same patterns as all other defence-related companies in Eastern, Central, and Southeast Europe. Due to their individual positions within the defence industry, however, they display some differences. Since most small arms items constitute the personal equipment of soldiers, the production of small arms was protected by state agencies, at least to meet minimum domestic demand, even when other branches of military-related production were neglected. This of course often meant simply that production facilities could not close down. More often, however, it assured a steady, although modest, level of state demand—assistance that, in the long run, was sufficient to keep companies above water.

Concurrently, there were significant differences between small arms producers and ammunition producers. Specifically, in the early stage of transition, weapons producers fared far better than ammunition and explosive producers, primarily because small arms production is less capital-, technology-, and space-intensive than ammunition production. Small arms production had some organizational advantages as well. In the past, military-related units had formed well-defined, separate departments or companies within large-scale, dual-purpose enterprises, which meant that, when reorganization and decentralization processes commenced in the early 1990s, these units became independent much more easily than ammunition facilities.

Ammunition facilities, by contrast, were usually integrated parts of large-scale state-owned chemical companies, with strong vertical integration. Consequently, it proved more difficult for them to gain autonomy and survive during the period of transition. Large premises and a dependence on considerable raw materials also rendered them more vulnerable than their counterparts. In Hungary, for example, two large, relatively modern ammunition producers—Eszak-Magyarországi Vegyiművek and Mechanikai Művek—went bankrupt and were liquidated because a long and complicated process of reorganization and decentralization, preceding their privatization, absorbed all their assets to the extent that no prospective buyer was willing to purchase them.

In the first half of the 1990s, at the nadir of defence industry recession, conversion or the simple maintenance of production capacities was a more complex challenge for ammunition producers than for small arms manufacturers. The production facilities of the latter were smaller and more manageable. Furthermore, technological processes were far more flexible, being more labour- than material-intensive. The bulk of these companies survived thanks to switching to sport and hunting weapons production. These new civilian profiles, at the same time, were not particularly distant from military production, which enabled the maintenance of a reservoir of know-how and technology, to be stored during the meagre years of defence-related orders, and reactivated when companies returned to military-related projects.

For ammunition producers, however, it was more difficult to find alternative, civilian uses for existing production capacities, with the exception of fireworks and industrial explosives. Conversion projects were often just an ‘alibi’ that had nothing to do with the original profile of the company. Many ammunition producers took up household machine production, for example, simply because they could make use of their relatively unskilled female workforce and large empty premises and storage facilities. This profile, however, did not induce companies to implement major improvements in their production and organization structures. Thus, these new forms of production could not benefit from the original, military-related production culture and, furthermore, did not contribute to such production when companies returned to it.

When defence industrial recovery began to take effect, small arms producers appeared more successful in finding both old and new export niches, a key reason for their survival. In the mid-1990s, several small arms producers could be numbered among the successful. These included the Hungarian Fégarmy and the Czech Česká Zbrojovka, which, among other successes, enjoyed increased exports of pistols to the United States. It appears, however, that their boom was largely due to technological achievements and markets inherited from the old system. At the turn of the century, however, both companies seem to have begun running out of steam. They are having difficulties finding new development trajectories, securing their market positions, and competing with new competitors eager to take their place. At this writing, Česká Zbrojovka is continuing its production thanks to large-scale state orders, while Fégarmy is stagnating.

The few ammunition producers that managed to survive the first turbulent decade of transitions, such as the Czech Sellier & Bellot and the Hungarian MFS 2000, seem to have learnt the tough lessons of adjustment and established themselves as important players both in the domestic and international markets.

International cooperation projects or joint ventures tend to concentrate on large-scale and high- (or higher-) technology military development projects, including aircraft, heavy weaponry, communications, and optical instruments. Yet there are some examples of international cooperation in small arms production that also follow the general patterns of the renewed Eastern European defence sector—identifying market niches, upgrading equipment to NATO standards, and creating hybrid systems that utilize both Western and Eastern components.

Selected company case studies: success stories

In general, the key to success in small arms and military-related production was either for companies to secure state orders, even on a small scale, or to find relatively stable export markets or foreign partners. Companies that managed to gain one or both of these elements had a good chance of surviving. Only these companies could hope to overcome their everyday liquidity problems, secure investments, receive technology transfers, carry on R&D activity, and envisage long-term development strategies. Companies that carried out in-depth restructuring projects prior or during partnership with a strategic domestic or foreign partner had a good basis for success. Others simply relied on luck or connections in the local or international context and were able to postpone downsizing and restructuring for a while.

HS Product

One of the most unusual success stories of the region is that of **HS Product**³⁰ (small arms, Karlovac, Croatia). The enterprise was originally part of a large heavy industrial complex, IM Metal, based in the city of Karlovac. During the war of independence (1991–95), one workshop began producing small arms based on the knowledge and skills of its engineers. Following independence and defence industry privatization, two former company managers bought the small workshop, renamed Hrvatski Samokres or Croatian Pistol (HS), and launched a new product, PHP (which stands for ‘first Croatian pistol’ in Croatian), for the newly organized Croatian national armed forces.

Later, a number of new models were developed, including the HS-95 9 mm pistol. In 1999 the company presented the HS-2000 9 mm model, intended for police and military markets, which made use of lightweight polymers and proved to be a success on the world market (Gander and Cutshaw, 2003). In 2001, the company’s name was changed to HS Product and the company concluded a contract with

the US-based Springfield Company, which markets the HS-2000 on the US market under the brand name XD (extreme duty). The XD comes in a variety of sizes and calibres, including a sub-compact (16 cm in length) 9 mm or .40 S&W model, and a 20 cm tactical model, chambered for 9 mm, .40 S&W, and .357 SIG. The XD was named 'handgun of the year' by the magazine *American Rifleman* in 2003 (Springfield, 2004).

In 1992, the company employed 30–40 workers, but by 2002 the staff had grown to around 200 and there were plans to increase the payroll with a further 50 persons. The workforce is highly qualified; a highly motivated, young leadership taught management, organization, and marketing skills on the job. Output has grown consistently since 1991. HS Product is an exclusive supplier of the national defence and security forces, but since domestic demand is relatively low and exports have grown rapidly, 90 per cent of the output was exported by 2002. Making use of the firm's excess production capacities, the company also produces spare parts for Croatian assembly companies, but this only represents approximately one per cent of output.

The case of HS Product demonstrates how successful defence-related production can evolve rapidly from scratch and without the production assets and traditions that are usually considered indispensable for this type of activity. Furthermore it also shows that the major asset of the Eastern European defence industry is still its human capital—the R&D workshops, the strong teams where engineers and highly qualified workers work together, and the accumulated know-how, creativity, and versatility that were bound to develop under the conditions of an economy characterized by shortage. All these factors represent unique and precious assets in the Eastern European defence sector. The dispersion of this human capital is both the greatest loss and the greatest danger stemming from the collapse of the arms production system. That is, the capital could have been used for creative civilian projects; instead, it now poses a grave danger in that it could cause much harm if employed for less than noble purposes.

HS Product is also an example of how the best firms of the region are part of an 'invisible' integration into the globalizing defence industry. It appears that even the most successful products are marketed under foreign trademarks, and by established Western trade companies. The Croatian company's name is visible on the product itself, but is smaller than the foreign brand name. In the case of subcontractors, and the subcontractors of subcontractors, participation in globalizing production networks is even less visible and more difficult to trace.

Arcus Co

The Bulgarian **Arcus Co**³¹ (small arms, ammunition, Liaskovetz, Bulgaria) is also an unusual success story, since its growth has taken place in the context of an economy with major structural difficulties, a depressed defence industrial sector, and in the wake of an MBO-type privatization. Arcus was established 40 years ago to produce fuses for Bulgaria and the allied countries of the Warsaw Treaty. Its military-related profile was gradually extended and at present it includes the production of ammunition (30 and 40 mm spin-stabilized grenades, and 60, 81, 82, and 120 mm mortar bombs), small arms (9 mm semi-automatic pistols, .38, .357, and 9 mm revolvers, 40 mm stand-alone and under-barrelled grenade launchers, and an 82 mm mortar), and a wide array of fuses (Arcus, 2004). Civilian production lines—hydraulic device components, drill parts, and parts for the automobile industry—were introduced after 1990, when the company management recognized the inevitable reduction of military-related demand.

Arcus was privatized in 1996 through a management-employee buy-out scheme. The former managers knew the company and its development potential well. They reacted promptly to changes in the economic

environment. Following the buy-out, they quickly identified the company's desirable development trajectories and created several stable profiles that provided the necessary resources to continue R&D. They simultaneously adapted new products and marketing. In 1997 Arcus obtained the ISO 9001 quality certificate (from a British company) and an AQAP-110 certificate, issued by the Ministry of Defence.

Arcus started to develop NATO calibre firearms in the mid-1990s, as a response to a tender of the Bulgarian Ministry of Defence. As the company did not receive the state's financial support necessary to accomplish the project, it used its own resources, know-how, and R&D to develop a series of 9 mm semi-automatic pistols. The weapons were introduced in service with the Bulgarian army and at present they are also sold in small quantities outside the country, including a minor market niche for civilian handguns in the US and Western European markets. The company's major Eastern European competitors in the field of small arms are Fégarmy and Česká Zbrojovka.

In 1988, the company had a workforce of 3,400 employees; in 2002 it employed 2,600 persons, of whom around 120 were engineers working on research and development (Arcus, 2002). Output suffered a major fall in the early 1990s, but reached the equivalent of USD 20 million by 2000 and an annual turnover of USD 35–40 million since 2000 (Arcus, 2004). The share of military-related production is 60 per cent and 95 per cent of output is exported.

Arcus is a rare success story in the regional context, since its MBO-type privatization has led to a successful restructuring. With very limited resources and state assistance, the company's success was mostly due to the perseverance and expertise of the management and workforce. The management insisted on pursuing a long-term development strategy, including intensive market research and ongoing R&D projects from the early 1990s and even during the worst years of the crisis. The company is dynamic, flexible, and characterized by the ability and desire to learn.³²

S.C. Cugir

The case of **S.C. Cugir s.a.**³³ (Cugir, Romania) is also a relative success, demonstrating how a company is able to struggle with a particularly heavy military heritage in an economy with serious unresolved problems. It is also an example of how company and state efforts to save, and eventually restructure, a company can be successfully combined. Cugir is part of the Romarm holding, and the fact that it remained under the state umbrella appears to be both an advantage and a disadvantage. While multiple layers of decision-making and dependence on Romarm create limitations, at the same time the state is able to provide vital resources and promote the company in case of need.

The company was established in 1799 as a heavy metal factory, with important defence-related production that was introduced by the Skoda Works unit before the Second World War. Weapon production ceased during the war and in the immediate post-war years, but was re-launched in the 1960s, in response to President Ceausescu's initiative, characterized by the slogan, 'The whole population must be armed.' In the 1980s, when Romania was one of the world's foremost military producers, Cugir was among the leading companies. Record production levels were achieved during the Iraq–Iran War, when arms worth USD 1.2 billion were exported to both sides. In 1989, the company employed around 16,000 workers, a figure that now stands at around 6,000. At present, the company has four productive units; two separate factories produce arms and ammunition, one produces machine tools, and another household electric goods, including washing and sewing machines.

Arms and ammunition production still represents 60 per cent of the company's total output, even though output has decreased significantly since the mid-1980s. Sixty-five per cent of the production is exported, but the bulk of military-related items are sold domestically, principally to the Ministries of Defence and Interior. The company's most profitable branch is ammunition production. Originally ammunition production was based on Soviet licences. In 1995, the government had decided that military-related producers would have to switch to producing NATO-standard ordnance and subsequently assisted companies in achieving this goal through the allocation of credits and credit guarantees, and by facilitating access to indispensable documentation. The company now produces NATO-standard ammunition from 5.56 mm to 9 mm, in addition to former WTO-standard ammunition 5.45 mm to 14.5 mm (Romarm, 2004).

Since military-related demand has diminished significantly, the military-related units of the company have also attempted to diversify their activity, producing sport and hunting weapons and other goods for the civilian market. Making use of its dual-purpose machinery, the arms factory produces spare parts for Mercedes cars (Germany) and roller blades for the Salomon Company (France). Cugir has a well-trained, dedicated workforce (in a region with approximately 20 per cent unemployment), relatively modern equipment, and a very decisive management is committed to the company's survival.

The company has obtained an ISO 9001 quality certificate (issued by Thuv Rheinland), a military quality certificate (issued by the Romanian Ministry of Defence), and quality certificates from the Israeli Elbit and German Mercedes companies. There is a wide range of international cooperation in civil products, including with such companies as Meister (Germany) for machine tools; Elbit for components and spare parts; General Motors (United States) for wheels; and Mercedes and Daimler-Chrysler for car components. There are negotiations with Ford to create a subassembly unit to produce car parts, with the objective of expanding further into the Russian market.

In the field of ammunition production there is cooperation with the Belgian FN Herstal company and Israel's IMI, with the aim of achieving a ten-year cooperation agreement. Cooperation with Western firms—there are no Eastern cooperation partners—serves not only as an important source of revenue, accounting for about 30 per cent of the company's income, but also an invaluable learning experience.

In early 2004 the Romanian government decided to divide Cugir into two 'commercial societies' under Romarm. This restructuring presupposes the separation of military and civilian activities and the decentralization of management, in order to create multiple profit centres and to increase the capacities of civilian production. Fabrica de Arme Cugir (Arms Factory Cugir) and SC Uzina Mecanica Cugir (Mechanical Factory Cugir) will both concentrate on weapons and ammunition production, with secondary production of electrical tools, household appliances, and related products. Romarm, and hence the Romanian state, remains the sole shareholder of the two new entities, which, however, are allowed under Romanian law to associate or constitute other commercial societies with Romanian or foreign persons (Dan and Etves, 2004).

Some other successful adjustment cases, such as those of MFS 2000 and Sellier & Bellot, are also impressive, but slightly less unusual, given the more advantageous general economic environment in which they took place.

Sellier & Bellot

Sellier & Bellot³⁴ (Vlasim, Czech Republic), a company established in 1825, produces both military and civilian (sporting and hunting) ammunition. Until 1989, the company's main profile was producing military cartridges for the Czechoslovak armed forces. The company's products include military small arms ammunition, shotgun shells for competitive shooting and hunting, pistol and revolver cartridges, rim-fire cartridges, blasting products, and cartridge components. At present only 20 per cent of the output is destined for military markets; the remainder is civilian, although there may be cases whereby independent trading companies resell Sellier & Bellot's civilian products on the military market.

Eighty-five per cent of the company's production is exported, principally to the United States, Germany, and other Western European countries. The company owns 21 trademarks registered in 75 countries throughout the world (Sellier & Bellot, 2004). The majority of buyers are new partners, identified through the company's extensive marketing activity. Sellier & Bellot has its own trading company in Prague.

Sellier & Bellot was one of the few enterprises that managed to handle the difficult years of transition relatively smoothly. Civilian production lines—packaging machines, special-purpose machinery for the company's own production needs, and sport and hunting ammunition—were introduced from the very beginning of the 1990s. Even during the years of low military demand, however, military-related R&D was also nearly continuous. Sellier & Bellot has its own R&D department and enough resources to finance research. As a result, practically each year a new product is introduced; in 2001, for example, the company launched a non-toxic primer, which does not contain heavy metal. The company has also participated in the development ammunition for weapons mounted on the Czech L-159 aircraft—a project run and financed by the Ministry of Industry and Trade.

Page 31

The company's success is reflected in the number of certificates and awards received. For example, in 1998, Sellier & Bellot received the ISO 9001 quality certificate, and in 2000 the company received a German award for its pistol and revolver cartridges. Both the Czech and Slovak Olympic teams use Sellier & Bellot cartridges in competition. Beyond commercial links they have important cooperation with some US and Western European companies—they produce, among others, the headstamp for US Winchester revolvers. Since having received a NATO supplier certificate from the Ministry of Industry and Trade, Sellier & Bellot intends to participate in NATO tenders for special calibres.

Following a decrease in the early 1990s, output started to increase and, in 2001, it reached CZK 1.2 billion (USD 32 million), with the production of around 464,000 cartridges (Sellier & Bellot, 2004). At present, the company uses about 75 per cent of its productive capacities and the management foresees a further increase in output. The product structure has changed fundamentally since the 1980s and the company is now able to produce a very large range of products, including a range of sporting ammunition for the US market from .22 calibre to .300 Win Mag. In the mid-1980s Sellier & Bellot employed approximately 4,000 people; by 2003, it employed only 1,400 workers. The company's majority owner is a Czech institutional investor.

Sellier & Bellot owes its success to its unusually flexible reaction to the hectic changes that characterized Eastern, Central, and Southeast Europe in the last 15 years. In the early 1990s, the company shifted rapidly to civilian production, successfully mobilizing government resources and its own assets. From the first signs of economic opening and market liberalization, the company launched intense marketing, to replace markets it had lost.

Military-related R&D was continuous, even if occasionally financed uniquely from the company's own reserves. When defence-related demand resurged, the switch back to military production was relatively smooth. Sellier & Bellot is also a rare example of endogenous development, as no foreign sources were mobilized for its survival. The company is completely Czech-owned and most cooperative partners and inputs are domestic. Even though Sellier & Bellot enjoys flourishing external trade relations, the present management does not foresee the company entering into deeper productive cooperation links with its business partners, nor expending its activity through JVs, as the majority of defence-related companies in the region have done.

MFS 2000

MFS 2000 Magyar Loszergyarto Rt.³⁵ (Sirok, Hungary) was originally a branch of Matravideki Femmuvek, a large-scale heavy industrial complex in the north of Hungary. The mother company was decentralized in the early 1990s and its different production profiles reorganized into independent companies that were privatized individually. The company underwent a somewhat hectic period during most of the 1990s, which included several changes of ownership and major financial and market losses. In 1997, in a bid to save the company, the Hungarian state-owned asset managing company, ÁPV Rt., bought the firm back from a private Canadian owner.

At the end of 1999, the company was sold to a Hungarian investment company, Innoterv, which specialized in infrastructural projects, yet had no experience in military-related production. Innoterv purchased the company because it considered that, with Hungary's joining NATO, important NATO markets were likely to become available. The new owner also took into consideration the fact that, following the crisis and subsequent reorganizations of the Hungarian defence industry during the 1990s, MFS remained the only ammunition producer in the country.

Innoterv retained most of the former managerial team but named a new general manager, a trained economist, and decided to carry out a thorough modernization programme, placing emphasis on high-quality production and active marketing. The company subsequently obtained an ISO 9001 quality certificate (from Thuv Rheinland) and the AQAP 110 certificate from the Hungarian Ministry of Defence.

MFS 2000 now produces pistol ammunition including 7.65 mm Browning, 9 mm Browning short, 9 mm Makarov, 9 mm Parabellum, .38 special, .40 S&W, and .45 Auto. Rifle ammunition includes 7.62 x 39 mm, 7.62 x 54R, 7 x 64 mm, .308 Winchester, .03-06, and .315 (Detex, 2002).

By 2000, MFS 2000 was producing around 33 million pieces of ammunition, and by 2001 and 2002 production had reached around 35 million pieces. In 2001 sales reached HUF 1.1 billion (USD 3.9 million) and profitability increased to 6–8 per cent, a unique result in Hungarian military-related production. Approximately 80 per cent of productive capacity is utilized, which is also a rare feature in the defence-related sector in the region. At present, MFS 2000 is among the 10 top small-calibre ammunition producers in the world, thanks to high quality and favourable pricing.

In 2002, the company employed around 250 people. Eighty-five per cent of the output is military-related; the rest consists of hunting and blank ammunition. Domestic demand represents 30 per cent of the company's orders, which is less than expected, due to budgetary constraints, but expanding export activity is able to compensate for this low level. MFS 2000 exports its products all over the world, and principal trade partners include Austria, Germany, Italy, the United States, and Venezuela. Among its

new partners are Israel, Lebanon, and Turkey. MFS 2000's main competitors are the Chinese and Russian producers, whose comparable products are of a lower quality, but sold cheaper.

Since the company lacked sizeable capital resources for new investments, developments were accomplished through international cooperation. The company participated in an international development project with Finland, Germany, Norway, and Sweden to create a new type of ammunition. In 2001, MFS 2000 created a joint venture with the Austrian Hirtenberger Patronen Beteiligungs GmbH on the premises of the Hungarian partner. The purpose of the JV is to modernize ammunition-producing machinery and use the renewed technology to increase the present output of the mother company. The company's own research team, together with the HTI, the Ministry of Defence's Institute of Military Technology, elaborated a new method for recycling old ammunition to refresh the stocks of the national armed forces.

MFS 2000 owes its survival to well-timed state interventions and some state orders, where it has enjoyed the status of an exclusive supplier. Many other companies in such a position have used their status of exclusive supplier to postpone in-depth changes, in the hope that state agencies will bail them out if a genuine crisis threatens. The new owners of the company, however, pushed through major restructuring and new investments, and created a strategic partnership that seems to assure resources, orders, and markets for the foreseeable future.

MFS 2000's last change of ownership was no more than a financial investment, which is still a rather unusual phenomenon in the military-related sector, but is likely to find resonance in the future. The investor company, which had no previous experience in the military-related field, was motivated by the country's new geo-political situation as a NATO member, and the company's unique supplier status. It was also driven by the conviction that the region's comparative advantages, specifically the well-trained and cheap workforce, are likely to erode following accession to the European Union.

With accession, institutional investors are likely to penetrate into the defence-related sector in Eastern, Central, and Southeast Europe to a much larger extent than in the past. The possible multiplication of such cases demonstrates how the political-security links attached to military-related production are loosening up gradually in the region, thanks to political-economic transition. Simultaneously, defence industrial enterprises, managed as sheer profit-producing units, may create unrestrained supply, representing a danger from the perspective of uncontrolled proliferation.

The example of MFS 2000 is another illustration of how the region's firms participate in the globalization of the defence industry at the 'bottom end'. The Austrian Hirtenberger Company had a vested interest in making MFS 2000 a cooperation partner, instead of a competitor. Further, it stood to gain from transferring some of its functional yet aging, technology to the East, where environmental considerations and legislation are still much looser than in the West.

Selected company case studies: average trajectories

The cases described above represent only a small sample of the defence-related firms in Eastern, Central, and Southeast Europe. Only around 10 per cent of these companies can be considered successful in economic terms. In addition, success is still rather tentative in the region. A successful company can quickly become bankrupt, due to the fragility of economic institutions, the deep structural problems under which most defence-related companies still suffer, and the unpredictability of markets. Around

60 per cent of companies struggle through their difficulties, without, however, enjoying very promising prospects, while at least 30 per cent teeter on the edge of the bankruptcy. The following cases are representative of an average defence industry firm in contemporary Eastern, Central, and Southeast Europe.

Zastava Oružje

Zastava Oružje (Kragujevac, Serbia and Montenegro) is the oldest military plant in the territory of the former Yugoslavia. It was founded in 1853 by the Serbian state to produce cannon. During the 1960s, when military-related demand was relatively low, the company launched civilian cars, tools, and machinery production and transferred its heavy weaponry production to Travnik, in Bosnia. From the early 1990s, in the framework of a conversion project, sports and hunting weapons were introduced. At present the company's main products are small arms. While 92 per cent of the company's output was military-related in the late 1980s, the share is now around 40 per cent.

Weapons produced include a range of bolt-action and semi-automatic rifles aimed at the hunting market, available in a wide variety of calibres, from .22 to .458 Win Mag; double-barrelled and pump-action shotguns in 12- and 16-gauge; a range of semi-automatic pistols of varying calibres, including the M-57, M-70, and CZ-99; and revolvers from .22 to .44 Magnum (Zastava, 2004a). The company also produces a wide variety of military weapons, including a number of Kalashnikov-derivative assault rifles, two of which are chambered for NATO 7.62 mm and 5.56 mm ammunition. Sniper rifles in 7.62 mm, anti-materiel rifles in 12.7 mm, machine guns of 7.62 mm and 12.7 mm, and 30 mm automatic grenade launchers are also produced (Zastava, 2004b).

Page 34

Zastava Oružje belongs to Zastava Works, a large group of heavy industrial companies. It is a completely state-owned holding that shares an industrial estate with several other Zastava branch companies, including the famous car maker. During the NATO bombing in 1999, several parts of the industrial estate were destroyed, but the weapons-producing facilities remained unscathed.

Due to a lack of demand and resources, at present the company only uses around 33 per cent of its productive capacity. There have been no new investments in the last ten years and the company's financial situation is so fragile that it is often unable to pay service bills. Despite its precarious state, in the last few years the company has managed to develop some new weapons, for example an advanced version of a police revolver (based on a US design) and a 30 mm automatic grenade launcher.

Between 1975 and 1990, the 'golden age' of the Yugoslav defence industry, the company exported its products all over the world and employed around 9,000 people. Since then, both foreign and domestic markets have shrunk dramatically, and the number of employees has dropped to about 4,500. The main customers remain the Ministry of Defence and the police. The company management is dedicated to recovering lost markets, including ones that have been seized by Czech firms during the last ten years. Of the rest of the workforce, around 40 per cent are on the payroll yet do not actually work. Even though the company pays their social security contributions, these people are unlikely to be re-employed by Zastava Oružje (Zastava, 2001).

From the late 1980s, Zastava Oružje became caught in the trap of artificially high demand created by a permanent state of war, continued state interventions, protection and strict supervision, and isolation from world markets. This extraordinary situation may have contributed, in large part, to the management's preoccupation with gaining assistance from above or outside. If the Yugoslav government was increasingly less able to bail out the ailing company, Western countries 'should feel morally

obliged to repair the destruction they caused with the embargo and the bombing', as one company manager put it. Since the expected foreign aid had not arrived by early 2000, the company management had pinned its hopes on active export promotion.

Arsenal Co

Arsenal Co³⁶ (Kazanlak, Bulgaria) was a company typical of the state socialist period—a heavy industrial giant, with an integrated vertical production cycle designed to assure undisturbed military production. Arsenal is most famous for its AK-47 and AK-74 assault rifles, but also produces a Shipka 9 mm sub-machine gun, and RPK-74 and MG-M1 light machine guns in 5.45 mm and 7.62 mm, respectively (Gander and Cutshaw, 2003). The company also produces various RPG-7 grenade launchers (Small Arms Survey, 2004). Most of these weapons are variations on Soviet-licensed weapons.

From the mid-1990s Arsenal developed a new, NATO-standard 5.56 x 45 mm Kalashnikov assault rifle, the AKS-N, which was tested and accepted by the Bulgarian Ministry of Defence, although no major orders were placed for it. Civilian production includes processed metal products, tools, and machinery for the production and use of mechanical power.

At present 80 per cent of Arsenal's output remains military-related, although the company management intends to increase the share of civilian production. Around 90 per cent of output is sold abroad, with military goods sold in Asia, Africa, and the Middle East, and a small niche market for carbines in the United States. Civilian goods are sold principally in Eastern Europe, Italy, Turkey, and Norway. According to its accounts, the company is profitable, but this is mostly due to the favourable exchange rate and the fact that the company's enormous unsold stocks are taken into consideration at amortized prices. In 1999, a large part of the company's debts to the state was cancelled, which also improved Arsenal's financial situation.

Arsenal 2000 AD, the management-employee company, currently owns slightly more than 50 per cent of the company's assets. Arsenal belongs to a group of five strategic companies that the state desires to keep; 34 per cent of its shares are to remain in long-term state-ownership. Arsenal was formerly the main employer in the town of Kazanlak, a city of 25 square miles, and the surrounding region (Brunwasser, 2002). At the height of its productivity, in the mid-1980s, the company employed around 20,000 workers, together with its branch enterprises. In 1997, when the economic reform programme commenced, it still had more than 10,000 employees. Now it has only around 4,500, in a region where unemployment is 20 per cent.

Arsenal is a rather typical example of the region's defence industrial firms. The company's options have been restricted by the unfavourable economic and political circumstances of the country. The management has tried various strategies to improve the company's situation, including some rather unusual propositions, such as the swapping of WTO-standard weapons used by the Bulgarian armed forces for the company's NATO-standard ones. In 2001, the company's general manager, Nikolay Ibushev, proposed that the Ministry of Defence provide the company with its outdated weapons, which Arsenal subsequently intended to sell on international markets. The revenues of the transactions would have been used to produce new, NATO-standard weaponry for the national armed forces. The proposal, which was eventually dropped, intended to compensate for the lack of demand and resources for the large-scale production of NATO-compatible arms that the company had developed.³⁷

To date, none of the company's projects was able to address its core problems. The company still has an ambiguous ownership structure: it is still in majority state-ownership, but some divisions are privatized and others are waiting to be sold. It also maintains a large-scale, undivided industrial estate, with several social institutions, the maintenance of which absorbs enormous resources. Arsenal lacks stable markets and strategic partners, and despite serious mainstreaming, still assures a whole range of social and safety services, which are costly, difficult to manage, but also difficult to abandon. For the time being, large sales and state assistance are helping the company along, but its position remains precarious. The genuine long-term strategies and dynamism, and the resources to carry through changes, are sorely lacking.

The large majority of defence-related companies in Eastern, Central, and Southeast Europe have to struggle for survival and are often on the edge of bankruptcy. Their principal problems are the chronic lack of domestic orders, difficulties in accessing foreign markets, and serious shortages of cash to cover both their everyday needs and the new investments needed to modernize their equipment and production processes. In some cases the lack of resources becomes so acute that companies can only meet their most pressing payments needs. Other obligations, such as social security contributions, taxes, and even wages, are postponed until the situation becomes untenable.

To reduce overhead costs, companies are often obliged to reduce working time, which, in some cases, involves sending personnel home, with reduced or non-existent wages. Unemployment and unpaid arrears are typical symptoms of the defence sector's problems and have been a cause of workers' protests in recent years in Bulgaria, Poland, Romania, and Slovakia. A typical form of state help in these cases is the writing off of accumulated debts or financing arrears and severance payments from other state budget headings.

In general, whatever their form of ownership, companies continue to receive modest state orders and financial help, which are perceived as an expedient until the companies are able to resolve their problems, usually by finding an important foreign partner. Since foreign investors are rather selective in the region, the bulk of companies continue to wait, unable to initiate a thorough restructuring process on their own.

Defence industry companies that were unable to adjust to the new environment represent an important risk factor in contemporary Eastern, Central, and Southeast Europe. They have large unsold stocks, serious financial difficulties, and gloomy prospects. They are a serious economic burden for state budgets and have the potential to create important social and regional tensions. Such companies are also a fertile ground for illicit activity; in order to avoid liquidation, company management or representatives are sometimes eager to raise resources through uncontrolled sales or cooperation with dubious partners. National governments and international agencies should urgently target these crisis-stricken companies, offering them feasible alternatives to military-related production.

VII. The internationalization of the Eastern, Central, and Southeast European defence industry

The relative stabilization of the defence industry and changes in national defence industrial policies occurred simultaneously, and were influenced greatly by the new international conditions affecting the states of the region at the end of the cold war. In the past, the external relations of the defence sector were shaped by the needs of the Warsaw Pact, and principally by the Soviet Union. After the crisis, however, defence industrial companies had to reorganize their international relations, including their entire foreign trade networks.

Intensifying institutional integration processes in the region's states facilitated market reorientation of the defence industry. From 1995 onwards, a number of states in the region began participating in the NATO 'Partnership for Peace' programme, became members of the Organisation for Economic Co-operation and Development, were invited to NATO, or commenced negotiations concerning accession to the European Union. In this new internationalization process NATO played a crucial role. Membership in the Alliance became perceived as an indispensable precondition of the further institutional integration of Eastern, Central, and Southeast Europe into Western political structures. The armed forces and defence industries of the candidate countries thus became principal actors in the process of integration, which gave them a new *raison d'être* and legitimation.

Page 37

The new international functions and potential of the military sector had considerable consequences at home. On becoming members of NATO, the Czech Republic, Hungary, and Poland all pledged to increase their defence budgets to the average level of member countries, namely to about 2–2.5 per cent of the GDP. Even though personnel costs and maintenance absorb a significant part of these increased defence budgets, and it is, for the most part, foreign firms that finance modernization projects, R&D and procurement budgets have also grown significantly, particularly in comparison to the early 1990s. Increased military procurement and development budgets brought many new opportunities for defence-related firms in the region. After years of minimal, or non-existent, local orders, companies could count again on increasing domestic demand.

Even if modest, renewed state orders were lifesaving for companies in desperate need of cash and market outlets. Furthermore, arming the region's armed forces offered international showcases for products of the region's companies.

Another window of opportunity for these defence producers appeared in the form of large-scale modernization programmes announced by their respective militaries. Although Western companies, with some exceptions, were the principal providers of new military equipment, domestic producers had a chance to participate in modernization programmes by cooperating with them. Again, the opportunities turned out to be much more modest than originally expected, but undoubtedly provided new orders, possibilities for cooperation and new sources of revenue. Thus, foreign policy had a direct impact on domestic production, which, in turn, made it possible to strengthen the international presence of the region's military sector.

The pull-effect of a possible NATO invitation became tangible even in countries that were not selected for the first round of admission to the Alliance. In the hopes of securing an invitation, the governments of Bulgaria, Romania, and Slovakia increased their defence budgets long before negotiations

concerning accession commenced. Even countries such as Croatia, whose admission might be distant, began to reorganize their military system more according to NATO requirements. The most dynamic companies in each country either anticipated possible movements along NATO membership lines, or simply hoped to target NATO-related markets.

Most of these dynamic companies had started to develop NATO-standard equipment by the mid-1990s, on the knowledge that any state joining NATO would have to fulfil the requirement for interoperability of the principal equipment used by NATO forces (NATO, 2001). As small arms are the most common varieties of weapon in a country's armed forces, this has been a key area of change for the defence-related producers of Eastern, Central, and Southeast Europe. Formerly, most assault rifles from the region employed either the 7.62 x 39 mm cartridge, as used in the Kalashnikov AK-47 and AKM and derivatives, or the 5.45 x 39.5 mm cartridge as employed in the AK-74. Bids to secure sales in the future have led companies to re-engineer existing designs to accommodate NATO-standard cartridges. The Romarm Model 97, Arsenal's AKS-N, and Česká Zbrojovka's CZ-2000, are all based, to lesser and greater degrees, on the Kalashnikov design, yet are now chambered for the 5.56 x 45 mm standard NATO round (Gander and Cutshaw, 2003).

Another undoubtedly positive impact of the new internationalization of the region's defence industry and military sector has been the introduction of international codes of conduct and regulations on the arms trade. Aspirations to join the Euro-Atlantic institutions, and new possibilities that have opened up with the Bush administration's 'war on terror', have further increased the need for more efficient implementation of these regulations. The region's countries have thus revised their respective legislations, institutional systems, and practices and taken important measures to bring them closer in line with international norms.³⁸ The changes have been spectacular in countries such as Bulgaria and Romania, but are more timid in Serbia and Montenegro, for example. Continued pressure from NATO and the European Union should have a beneficial effect on arms trade regulation in the states of the region.

Exports

From the mid-1990s, defence firms in Eastern, Central, and Southeast Europe began to recover from the sudden collapse of the WTO system. Firms began to search for new export markets and new potential business partners. In the space of some years they were obliged to switch from a Warsaw Treaty Organization-based production and trade system to a NATO-based one—from a principally Eastern-based network to a Western one. As a result of decades of economic and political isolation during the cold war, companies had little knowledge of the actors and functioning of this new market, let alone its language. The challenge was serious, but so were the stakes: defence-related producers were aware that their oversized, outward-oriented sector would not survive without external resources and business opportunities.

The WTO was based on the military needs of the former Soviet Union; production capacities in the member countries were organized or established to satisfy these needs. Satellite countries' national defence industries had a purpose from the very genesis of the system and were designed solely to serve that purpose. The principal characteristics of their functioning were organized at the government level, and based on long-term planning. Demand was, by and large, fixed. In stark contrast, demand in the NATO-related markets is far more dispersed and erratic. Production and cooperation links are created at the company level and the whole system has its specific rules and rituals.

In addition, the Western European market is itself in transition. On the one hand, it is ravaged by fierce competition between US- and Western European-based companies and also between firms within Europe. On the other hand, the often-invisible cooperation, production, and ownership networks between the same companies make the movements of this market even more difficult to follow, particularly for naive newcomers.

Some of the outstanding producers of the region have managed to find market niches in the United States or Western Europe, but very few, if any, can claim to be stable NATO suppliers. In the best of cases, such firms are suppliers to the suppliers, located in the third or fourth tier of production networks, with small-scale entries. Even this involvement, however, may well be an overly expensive economic exercise. Since it is difficult to reach an economy of scale at this level of production, the investments made in order to meet NATO standards might well appear too costly when compared to the benefits gained.

It is worthwhile to note that one of the major NATO-related markets of the Eastern defence producers is Turkey, at the periphery of the Alliance. The domestic defence industrial base and the military needs of this country seem to have more affinity with those offered by the region than with other member countries.

The structure of the region's small arms supply is also telling. In assessing the composition of Turkish–Eastern European military trade, for example, it is still possible to discern traces of production and division of labour patterns of the former WTO. Since the end of the cold war, Turkey has imported large quantities of small arms, light weapons, and ammunition from most countries in Eastern, Central, and Southeast Europe. The country purchased grenades, ammunition, and mines from Albania (in 1996–97, when the massive looting of army deposits took place); similar ordnance and small arms ammunition from Bosnia and Herzegovina (from 1998); pistols from the Czech Republic; ammunition and cartridges from Hungary; grenades, ammunition, and mines from Romania; and various military weapons from Poland and Croatia (NISAT, 2003).

In the former WTO member countries, military-related facilities were complementary or parallel, and most often both. Complementary facilities assured the technical dominance of the Soviet productive system, which usually owned the licenses and often preserved the right of final assembly. Parallel facilities were established for security reasons, in case one of the allies failed to fulfil its functions or was endangered. The residual, parallel production capacities that survived in the region's countries have turned former allied countries into competitors. The complementary nature of their production base, in principle, could serve as a basis for cooperation. Political divergences among the region's countries, however, have prevented them from benefiting from this historical heritage for the time being.

Since Western European markets turned out to be much less welcoming than expected, Eastern, Central, and Southeast European defence producers turned towards developing world markets. At the beginning of the 1990s this market shift mirrored the sheer desperation of crisis-stricken defence producers—they were ready to sell weapons in large quantities, even at depressed prices, to generate revenue. Unfortunately, this meant that they often sold weapons to conflict areas and participated in illicit deals. Bulgaria and Romania were particularly noted as actors in this type of activity. Since the prospect of accession to NATO has appeared, however, regulations concerning the arms trade have become much stricter and their implementation much more effective in all candidate countries.

Developing world markets, nonetheless, still feature as the first and most promising choice for military producers of Eastern, Central, and Southeast Europe. African countries such as Algeria, Angola, Congo, and Yemen; Asian countries, including India, Indonesia, Malaysia, Myanmar, and Pakistan; and Latin

American states, such as Colombia and Peru, appeared on the buyers' list. Catering to these markets, however, presents important economic and political difficulties. Geographic distance and the consequent shipping complications significantly increase the cost of transaction, which in principle should be reflected in the prices of products. Since competition for these markets is extremely fierce, however, it is unlikely that producers in Eastern, Central, and Southeast Europe are in a position to increase their prices significantly. This casts some doubts on the economic rationale of this market option.

The other problem is of a more political nature. Some of the important buyers of weapons produced in Eastern, Central, and Southeast Europe are politically problematic states, such as Algeria, Malaysia, and Pakistan. Arms exports to these countries have the potential to contribute to political repression or increasing regional insecurity. India and Pakistan, while progressively more engaged in dialogue, have been locked into a militarized standoff for many years and are among the major military trade partners of Eastern, Central, and Southeast European countries. Such militarization evokes memories of the 1980s Iran–Iraq conflict, as the build-up to the war, and the war itself, created large-scale demand for military supplies, contributing to the 'golden age' of the Eastern European defence industry. Some defence industry actors still have fond memories of those lucrative years, which may explain companies' eagerness to create solid positions on the Indian subcontinent.

Extensive intra-Eastern European arms production and trade networks disintegrated with the fall of the political systems that created them. Intra-regional military-related trade is a fraction of what it used to be under the Warsaw Pact and is mostly limited to raw materials and spare parts rather than finished products. Due to parallel production profiles, Eastern European defence producers still compete on the international market. The Romanian Cugir Company, the Czech Česká Zbrojovka, the Hungarian Fégarmy, and the Bulgarian Arsenal often offer similar products of similar quality to the same buyers.

Table 4. Combined arms exports from the six selected countries, 2000–02 (USD millions)

Country	Year		
Bulgaria	40–100	200	90
Croatia	n/a	n/a	n/a
Czech Republic	100	68	n/a
Hungary	17	n/a	n/a
Romania	38	25	60
Serbia and Montenegro	n/a	n/a	n/a

Sources: Bulgaria: Sabeva (2002); Jane's Defense Weekly (2002). Czech Republic: for 2000, Saferworld (2002); for 2001, MTI (2002); for 2002, Financial Times (2003). Hungary: Saferworld (2002). Romania: Ancesiac (2002); Jane's Defence Weekly (2003a)

In analysing export figures of the region's countries it must be recognized that, beyond the aggregate figures, there is a limited group of companies that are able to export significant quantities of their products to legal, established foreign markets. As indicated before, firms that managed to weather transformation, and to carry out radical shifts in markets and business partners, represent a tiny minority. Most of the companies, which are far from reaching these external markets, are likely to multiply their efforts to lobby for domestic orders, or may feel obliged to look for outlets in a less controlled and less demanding

environment. A consequence of this is that, despite significantly improved control over the arms trade in Eastern, Central, and Southeast Europe, there is still an economic incentive to embrace dubious markets.

The gap between the few restructured, successful firms and the producers who still suffer from unresolved problems of transition is widening due to the realities of the uneven playing field: an unbalanced selection process and uneven opportunities offered by external markets. This split might create serious economic and political tensions between the domestic companies and the local political establishment.

The London-based International Institute for Strategic Studies finds that between 1992 and 1998, the Czech Republic exported arms worth USD 200 million–1 billion; Bulgaria USD 100–200 million; Poland, Romania, and Slovakia USD 50–100 million; and Hungary USD 10–50 million (IISS, 1999). Even though arms exports from the region show a relative increase since 1998, in terms of global production and trade, the share of small arms and light weapons production and exports is relatively modest.

Nevertheless, it should be noted that due to the enormous numbers of surplus weapons circulating in the world since the end of the cold war, and the relative ease with which small arms can be recycled and modernized, markets are suppliers' markets. This dynamic suggests depressed prices. Relatively modest export values hide important quantities of exported weapons. In 2000, for example, Bulgaria exported USD 13 million worth of AK-47 assault rifles to India—a total of 100,000 weapons (NISAT, 2003). This data reflects both the price relations and the potential security threat that aggregate arms trade figures conceal. In addition, since small arms and light weapons produced in the region often end up in the hands of oppressive regimes, criminal groups, or illegitimate weapon holders, their human, political, social, and economic impact is far more important than general output and export figures would suggest.

Export data is rather volatile, because the scales are relatively modest and the deals are difficult to foresee. One substantial contract can completely change the defence export status of a country. In 1997 the Czech truck maker, Tatra Kopřivnice, struck a deal with the United Arab Emirates to provide 1,100 T-815 military trucks. The company became the largest Central European arms exporter of the year. Some years later the company went bankrupt and was repurchased, restructured and again offered for sale. In a similar case, thanks to a successful deal to supply ammunition to the Turkish police, MFS became one of the largest Hungarian arms exporters in 1998, only to go bankrupt a year later. The instability of export performance demonstrates the fragility of companies—often that of the whole military-related sector—and the volatility of the world's traditional arms export markets.

An additional difficulty with attaining precise export figures is the multiplicity of potential sellers. In the past, arms trade was extremely centralized, usually involving only one or a handful of specialized and strictly controlled state-owned trade agencies in each country. Today arms trade licences are issued to private trade companies, the producers themselves, and often several state agencies as well. For example, agencies selling surplus military stock are not necessarily traditional trading companies.

Anecsiac, the Romanian National Agency for the Control of Strategic Exports and Prohibition of Chemical Weapons, publishes a comprehensive report on arms exports and export control activity. This unusually detailed information provides valuable insight into the country's military trade relations.

In 2000, Romania exported arms worth USD 37.8 million, which represented 0.3 per cent of the total value of Romanian exports. In 2001, arms exports dropped to USD 24.5 million, only 0.2 per cent of total exports. These figures show a serious drop from the post-cold war record reached in 1995, when Romanian weapons sales reached USD 167.7 million. By 2001, the arms trade balance stood at 47 per

cent exports and 53 per cent imports. In 2000, 34 per cent of the exported weapons were small arms and automatic weapons and their components, and 36 per cent ammunition and components for the former. In the next year the share of the first group of items increased to 55 per cent, while the share of ammunition and components dropped to 8 per cent. Also for 2000, Romania's main arms buyers were the United States (21 per cent), Pakistan (13 per cent), and Israel (10 per cent); in 2001 principal buyers were the United States (36 per cent), Israel (18 per cent), and India (10 per cent). CN Romarm and RA Romtehnica, the two state-owned centres of the Romanian military sector, exported 57 per cent of Romania's arms exports in 2000 and 78 per cent in 2001 (Ancesiac, 2002, pp. 28–38).

The Romanian defence industry and its management have some unique features, but this data highlights certain characteristics that are valid for most countries under review. The most striking element is the extremely low level of arms as a percentage of total exports. Even if figures are not complete, this data reflects the rather poor performance of a sector that is considered an important export engine. The data on the export and import of weapons indicates a similar trend. The arms trade balance worsened between 2002 and 2003, mirroring the increasing resources spent on modernizing the national armed forces and, as the report itself maintains, 'the reduced technological capacity' of the local defence industry, which failed to meet both domestic needs and external demand.

Another meaningful element is the fact that, despite near continuous financial infusions by the state and some important investments by foreign—mainly Israeli—companies in the aviation sector, the main military export items are still small arms, light weapons, and ammunition. Simultaneously, however, the export share of aircraft, unmanned aerial vehicles, and aircraft engines and components has increased steadily, reaching 11 per cent in 2002 and 15 per cent in 2002. This may well herald the beginnings of a shift in the structure of exports towards more sophisticated items, produced through international cooperation.

The arms export figures published by Ancesiac do not always correspond with figures released by government officials or published in newspapers. Such discrepancies are a typical problem concerning data in the region. A case in point is the Bucharest-based Rompress Agency; unlike Ancesiac, which stated that arms exports in 2001 amounted to USD 24.5 million, Rompress cited a figure of USD 30 million based on information from Decebal Ilina, the state secretary responsible for the defence industry at the Ministry for Industry and Resources (Rompress, 2002).

In 2002, Romanian arms exports doubled, reaching USD 60 million (*Jane's Defence Weekly*, 2003a). This change underlines the volatile nature of the region's arms trade. Since the sector is highly concentrated and, as mentioned above, company export performance tends to fluctuate, one good deal or one failed contract might have a ruinous impact on the whole sector's results.³⁹

Another interesting element is that the bulk of the arms trade is still carried out by the successor companies of the former arms trade monopolist enterprises, in the case of Romania by the two centralized state-owned agencies, CN Romarm and RA Romtehnica. The situation is similar in other countries of the region, with the exception of Hungary, where the bankruptcy of the Technika Armstrade company led to the wide-scale decentralization of commerce in weapons. This fact underlines that the legal market for arms is still principally based on trust, network capital, and, usually, on state guarantees.

Foreign cooperation

Exports aside, probably the most promising prospect for the region's defence producers is foreign cooperation. Many military-related East-West cooperation efforts were initiated from the mid-1990s onwards. Large Western corporations became active in searching for Eastern cooperation when the Eastern countries introduced offset programmes. Companies realized that cooperation with local producers was indispensable to successful participation in the lucrative modernization programmes of Eastern European armed forces.

Joint ventures or forms of looser productive cooperation target local or third markets. The most spectacular example of this type of cooperation is the Aero Vodochody-Boeing deal. Israel also became extremely active in the defence sector of Eastern, Central, and Southeast Europe, proposing cooperation projects for upgrading existing platforms, principally in the aviation branch. Due to the relative technological simplicity of small arms production, similar projects are scarcer in this field, but there are some examples of successful international cooperation over upgrades. For example, Bulgaria's Samel-90, a producer of man-portable air defence systems, or MANPADS, has reportedly been successful in finding a market niche in communications-disrupting munitions and has cooperated with the United Kingdom's Racal Electronics to develop advanced battlefield radio systems (Simunovic, 1999, p. 8). Similarly, Romania's Arsenalul Armatei, a supplier of small arms, and the Swiss Oerlikon Contraves AG cooperated to market a low-level short-range air-defence, or SHORAD, upgrade package (*Jane's Defence Weekly*, 2000).

Comparable to trade relations, military cooperation links between Eastern European countries fell to a minimum after the fall of the Berlin Wall. During the 1990s, there were some efforts to renew cooperation with former partners, for example in the repair and upgrade of aircraft, but these largely failed. At present, only a few defence firms intend to renew abandoned ties of production and commerce with former Eastern European partners. These are among the more successful companies with a longer-term vision: they have recognized the market potential for 'hybrid' systems. Most have tried to continue production, or at least a steady supply of spare parts, by re-establishing business contacts. Some intend to reconstruct Eastern cooperation in order to diminish production costs and gain large-scale, relatively tolerant markets, as their Western counterparts have done.

Conclusion

1. *In the aftermath of the cold war, the small arms and light weapons production base of Eastern, Central, and Southeast Europe declined and fractured significantly.*

As a result of the landslide transformations in the region's political and economic systems, and the general crisis of the defence-related sector, the military industrial base has declined considerably in Eastern, Central, and Southeast Europe. Several companies went bankrupt; some converted to civilian production; and most firms that continued defence-related production drastically reduced their scope of activity, output, and exports.

This weakened defence industry split into two uneven groups. The smaller group is composed of successful companies that managed to solidify their positions and became more efficient and flexible than in the past. They are now exclusive domestic suppliers or enjoy major international cooperation agreements and markets. The much larger group consists of military-related companies that were unable to adjust to the changed international and domestic environments and have uncertain prospects.

The crucial factors of change were the fundamentally different international conditions, the drive of the companies for survival, and, despite large-scale privatization in the sector, government policy concerning the defence industry.

2. *Successfully adjusted companies have relatively good prospects.*

In the short- and medium-term, companies that managed to adjust successfully to the economic and political changes have the following opportunities:

- Participation in upgrading and modernizing the existing arsenal of their national armed forces, in order to meet NATO standards.
- Development of hybrid systems, which utilize both former WTO and NATO standards that can be sold both in Western and Eastern markets and, most importantly, in former 'socialist' or non-aligned countries in the developing world.
- Achievement of NATO supplier status.

In general, successful small arms and light weapons producers in the region seek all these opportunities and employ a combination of strategies. In most cases, they actively seek foreign partnerships with established actors in the defence sector. International cooperation became a primary means of acquiring new resources, technology transfers, and markets. At the same time, the precondition for international partnership is often the status of a recognized domestic supplier.

Companies that succeed in progressing in any of these directions have the potential to survive, even in countries where the defence industry is in generally poor shape.

Successful companies, whether they supply domestic or international markets, have good opportunities for expanding their activities and increasing output. Under current economic and social conditions,

however, it is likely that they will respect local and international arms trade regulations. They are eager to remain actors on the international market, or, if they are predominantly national suppliers, it is likely that their activity will be strictly controlled by their respective national agencies.

3. *Partial consolidation of the defence industry has grave economic and social consequences.*

The large majority of defence-related companies and their suppliers that were unable to adjust successfully represent a serious security risk. Despite the significant reduction of the defence industrial base in the region in the last decade, an extensive, often obsolete production potential still exists, especially in the southern part of the region.

Most companies that have failed to restructure are desperate to generate resources in order to avoid bankruptcy and safeguard their workforces. In the absence of feasible alternatives, they may be attracted to transactions bordering on the illicit—from dumping or unfair competition to illicit sales. They represent a risk factor for further arms proliferation.

These companies are also a potential danger to domestic security. Many are key employers in their respective regions, which suggests that continued deterioration or eventual bankruptcy might lead to regional social crises with serious security implications. Economic and political decision-makers, both at the national and international levels, have to address urgently this section of the defence industry, before it degenerates further.

4. *Most small arms and light weapons producers of Eastern, Central, and Southeast Europe are defined by meagre prospects and a limited ability to restructure.*

Small arms and light weapons production usually represents the 'bottom end' of the defence industry. A number of companies in this relatively low-tech sector, particularly those engaged in ammunition production, have gone bankrupt since 1989 and many continue to teeter at the edge of bankruptcy. In comparison with other branches of military-related production, relatively few small arms producers have good prospects for participation in large-scale modernization projects, which is currently the main arena for international cooperation.

In order to survive, most small arms producer companies intend to stabilize their positions as domestic suppliers or try to secure export markets. The few genuinely successful companies combine these two strategies.

5. *The Eastern, Central, and Southeast European small arms supply is significantly larger than defence industry output.*

Due to the crisis and partial recovery of the defence industry, including the small arms and light weapons sector, the supply of newly produced arms from the region has declined considerably in the last decade. Yet large stockpiles, spare parts, and company deposits still exist, in addition to military equipment at Ministry of Defence reserves, which became redundant due to the radical reduction and reform of national armed forces. The existence of these stockpiles means that the drop in aggregate supply from the region is lower than the contraction of military-related production would suggest.

The maintenance and guarding of these reserves is expensive, the large majority of defence-related companies are in poor economic and financial condition, and the region's governments also frequently need additional sources of revenue to bolster their budgets. Since the early 1990s, when they managed to recover some of their traditional export markets and identify some new ones, several Eastern, Central, and Southeast European countries have sold large quantities of traditional arms on both the legal and illicit markets. Only some of these weapons were newly produced and a large quantity came from company or army reserves. Producers, trading companies, and state agencies have been actively pursuing markets in which to sell small arms, often at considerably reduced prices or to illicit destinations. The existence of large, marketable stocks of weapons, which are relatively easy to transfer, and the concurrent need for revenues create a key security risk.

6. *The impact of NATO accession and membership on the region's defence industry was double-edged.*

NATO membership, or the possibility of becoming an Alliance member, had a major impact on defence industrial development in each country of the region. Its impact was something of a double-edged sword. On the one hand, it created new opportunities and provided new resources for an industry that was passing through an extremely deep crisis and had rather limited prospects. Increased defence budgets, procurement opportunities, and modernization projects opened up new resources and space for manoeuvre. Since the military-related sector played a crucial role in the region's integration into the new international order, it gained a novel, unexpected source of legitimation and managed to secure its position in the new economic, social, and political system.

Page 46

On the other hand, NATO, and membership in other new international institutions, had a positive impact on national legislation and the reform of the military establishment. These international institutions pushed for strengthened state control over production and the arms trade and for the more efficient implementation of international laws and regulations. They also emphasized the need for more accountability and transparency in defence-related affairs and the importance of ensuring public control over military-related issues. Countries in the region that are most advanced in their new international integration process undoubtedly show more strictness in implementing their own legislation and respecting international requirements than at the beginning of the 1990s. Their independent media is also much more sensitive to these issues than the controlled media of the past. Integration might thus provide a positive example for other countries in Eastern Europe to follow.

7. *The long-term prospects for the defence industry, including small arms and light weapons production, are difficult to forecast.*

In the past, the structure and size of defence industrial production in the member states of the Warsaw Treaty Organization was strictly determined by the needs of the Organization. Since the transition began, the internal structure of the production branch sector has been determined by national state agencies' efforts to preserve certain productive facilities, external market demand, and companies' strategic decisions. These variables are more confused and spontaneous than those of the past and are often contradictory. Due to both the distortions inherited from the past and the impact of these new determining factors, the structure of domestic defence production in the region's countries does not necessarily correspond to the needs of national armed forces.

To complicate matters, the national and international military establishment has, at present, considerable difficulty in articulating these defence and security needs. Throughout most of the 1990s, amid accelerated political and economic changes, the military establishment in Eastern, Central, and Southeast Europe struggled to survive. Once presented with the option of joining NATO, the military establishment was preoccupied with meeting the requirements of the Alliance. It was, nonetheless, hardly in a position to prepare comprehensive security and military doctrines. In principle, however, these doctrines should provide a framework for long-term strategies concerning the needs of national armed forces and the role of the domestic defence industry.

In envisaging a new form of defence industry it is also necessary to define the sector's place in the new socio-economic system and to assign clearly the resources available to the sector. Even recently expanded military budgets prove to be modest when viewed against the general obsolescence of military equipment and the relative technological backwardness of the region's defence industry.

Increased further military budgets might well become a risky undertaking, both in economic and social terms. Despite their partial recovery subsequent to the post-cold war recession, the region's economies are still fragile and resource-poor. During the initial period of systemic change, social acceptance of NATO accession, and the increasing defence budgets attached to it, was fairly high. At present, however, the costs and risks of accession are much clearer, while the immediate benefits many supporters had envisaged are failing to take shape.

In addition, since the transformations also brought dramatic increases in poverty and social inequality to the countries of Eastern, Central, and Southeast Europe, defence-related expenditures cannot continue to surpass other economic and social expenditures without creating major social tensions. Both political decision-makers and the public are aware that other socio-economic targets, including the reform of the social welfare, health, and education systems, are becoming pressing priorities. Under these circumstances, any significant further increase in military budgets, even if this appears to be justified from the military perspective, is likely to be contested.

Endnotes

- ¹ The Czech and Slovak data is calculated for the period since 1993, the break-up of the former Czechoslovakia.
- ² Human Rights Watch (1999) reports that 42,000 workers were employed in the defence industry in 1998. This number fell from more than 100,000 in 1989. The Bulgarian economic daily *Pari* reports that at the end of 1998 there were 38,000 people employed by the Bulgarian military industry (*Pari*, 1998). The most recent data from *Jane's Defence Weekly* (2002) quotes 25,000 employees.
- ³ See a detailed comparison of the two cases in Kiss (2001).
- ⁴ Author interviews with Jozef Jarabica, Vladislav Gabriel, and Oldrich Hlavicka, in Kiss (2001).
- ⁵ Author interview with Miroslav Dvorak, commercial director, and Jaroslav Skala, chief of sales and planning of ammunition production of the Policske Strojirny, Policska, Czech Republic, 23 April 2002.
- ⁶ Author interview with Vratislav Vajnar, vice-president for international relations and managing director of the Association of the Defence Industry of the Czech Republic, Prague, Czech Republic, 22 April 2002; interviews with Jozef Jarabica, Vladislav Gabriel, and Oldrich Hlavicka, in Kiss (2001).
- ⁷ Author interview with Radek Musil, managing director of the Sellier & Bellot, Vlasim, Czech Republic, 24 April 2002.
- ⁸ Author interview with Martin Zeman, managing director, and Jan Machovec, head of production of the Zbrojovka Brno Arms, Brno, Czech Republic, 24 April 2002.
- ⁹ Author interview with Takacs Bela, head of the Department of Defence Industry, Ministry of Industry and Trade, Ministry of Foreign Affairs, Budapest, Hungary, 8 April 2002; Gyongyos Jozsef, Deputy Director, Bureau of Licencing and Registration, Office of Military Foreign Trade, Ministry of Foreign Affairs, Budapest, Hungary, 8 April 2002; and Jozsef Horvath, head, department of economics and asset supervision, Ministry of Defence, Budapest, Hungary, 8 April 2002.
- ¹⁰ Author interview with Takacs Bela, head of the Department of Defence Industry, Ministry of Industry and Trade, Ministry of Foreign Affairs, Budapest, Hungary, 8 April 2002; with Kovacs Geza Peter, president, Defence Industry Association of Hungary, Tokol, Hungary, 5 April 2002.
- ¹¹ The explosives-producing unit is part of Nitrokemia, a large-scale chemical facility that has enjoyed state assistance on several occasions.
- ¹² Author interview with Peter Szabo, managing director, Nike-Fiocchi Sportloszergyarto Kft, Fuzfo Gyartelep, Hungary, 3 April 2002.
- ¹³ Author interview with Bojidar Penchev, head of department, defence industry, Ministry of Economy, Sofia, Bulgaria, 31 May 2001.
- ¹⁴ Author interview with Tilcho Ivanov, head, Department of National and Regional Security of the University of National and World Economy, Sofia, Bulgaria, 28 May 2001.
- ¹⁵ Author interview with Latchezar Stoykov, president, Defence Industry Association of Bulgaria, Sofia, Bulgaria, 19 March 2002.
- ¹⁶ Atanasov (2001): author interview carried out with Christo Atanasov, head, Internationally Controlled Trade Department, and secretary, Commission for Permission of Foreign Trade Deals with Arms and Dual-Use Products, Ministry of Economy, Sofia, Bulgaria, 30 May 2001; author interview with Christo Polendakov, chief expert, Directorate for International Security, Ministry of Foreign Affairs, Sofia, Bulgaria, 29 May 2001.
- ¹⁷ Author interview with Banko Bankov, executive director, and Yordan laymanov, sales and marketing manager, and visit of Arcus Co, Liaskovets, Bulgaria, 21 March 2002; Arsenal (2002): author interview with Christo Streshkov, technical director, Arsenal Co, Kazanlak, Bulgaria, 21 March 2002; Atlantic Council of the United States (2001); author interview with Christo Polendakov, chief expert, Directorate for International Security, Ministry of Foreign Affairs, Sofia, Bulgaria, 29 May 2001.
- ¹⁸ Author interview with Banko Bankov, executive director, and Yordan laymanov, sales and marketing manager, and visit of Arcus Co, Liaskovets, Bulgaria, 21 March 2002.
- ¹⁹ Author interview with Viorel Manole, executive manager, and Nicolae Iancu, marketing manager of the Romarm National Company for Military Technology, Bucharest, Romania, 27 May 2002.
- ²⁰ Author interview with Aurel-Victor Nemes, sales director of the C.N. Romtehnika s.a., Bucharest, Romania, 30 May 2002.
- ²¹ The companies, which are part of Romarm now, employed around 120,000 people before 1989.

²² In a later interview, published in *Jane's Defense Review* (Ripley, 2001), Aleksander Lijakovic, marketing manager of the Yugoimport export company, also confirmed that, 'All our important facilities were protected and we are ready to begin production for export customers.'

²³ The UN arms embargo was introduced on 25 September 1991 under Security Council resolution 713.

²⁴ This attitude reflects the conspicuous absence of analysis of the disastrous policy the country followed during Milosevic's rule. Serbia and Montenegro is still pursuing an international lawsuit against NATO countries that participated in the 1999 attack to stop the Kosovo atrocities.

²⁵ See for example, Neil Barrett (2003) and Miroslav Antic (2003).

²⁶ Author interview with Josip Martincevic-Mikic, head of production department, Ministry of Defence, Zagreb, Croatia, 12 June 2002.

²⁷ Author interview with Antun Persin, general manager of RH-Allen, Zagreb, Croatia, 13 June 2002, and Josip Martincevic-Mikic, head of production department, Ministry of Defence, Zagreb, Croatia, 12 June 2002.

²⁸ Author interview with Duska Paravic, minister plenipotentiary, Department for International Security, Ministry of Foreign Affairs, Zagreb, Croatia, 13 June 2002.

²⁹ Author interview with Lav Kalda, chief inspector, Small Arms, Ministry of Interior, Zagreb, Croatia, 9 June 2002.

³⁰ Information in this section, unless otherwise specified, is from author interview with Zeljko Pavlin, Director of HS Product, Karlovac, Croatia, 11 June 2002.

³¹ Information in this section, unless otherwise specified, is from author interview with Banko Bankov, executive director, and Yordan laymanov, sales and marketing manager, and visit of the Arcus Co, Liaskovets, Bulgaria, 21 March 2002.

³² Author interview with Banko Bankov, executive director, and Yordan laymanov, sales and marketing manager, and visit of the Arcus Co, Liaskovets, Bulgaria, 21 March 2002.

³³ Information in this section, unless otherwise specified, is from author interview with Mircea Clonta, director general adjunct, and Francisc Kudler, factory manager, and other members of the management of the S.C. Cugir s.a. company, Cugir, Romania, 28 May 2002.

³⁴ Information in this section, unless otherwise noted, from an interview with Radek Musil, managing director, Sellier & Bellot company, Vlasim, Czech Republic, 24 April 2002.

³⁵ Information in this section, unless otherwise noted, from an interview with Marcsinyi Gyorgy, president of the board of directors, MFS 2000 Magyar Loszergyarto Kft, Sirok, Budapest, Hungary, 4 April 2002.

³⁶ Information in this section, unless otherwise specified, is from author interview with Christo Streshkov, technical director, Arsenal Co, Kazanlak, Bulgaria, 21 March 2002.

³⁷ See details in the 13 March 2001 issue of David Isenberg's *Weapons Trade Observer*, a valuable research tool that is no longer available.

³⁸ See details in Saferworld (2002), Human Rights Watch (2002), and Grillot (2003).

³⁹ A similarly dramatic change took place in the Czech Republic. Arms exports reached USD 101.4 million in 1999, doubled between 1999 and 2000, then dropped to 70 per cent by 2001. See Saferworld (2002), MTI (2002), and the *Financial Times* (2003).

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