

Economic Conversion in Perspective

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With the end of the Cold War, the conversion of defense industries to commercial production has again become a topic of interest for public officials, business executives, and scholars around the world. The prospect of massive layoffs in defense industries, coupled with the release of hundreds of thousands of military personnel, creates a political problem for officials from affected districts, while decreases in defense spending, coupled with budget deficit reduction, could lead economies into recession. In short, the defense economy has become a political problem for many countries, most prominently the United States and former Soviet Union.

In seeking remedies, editorialists and legislators have called for more government action to help defense industries compete in the commercial marketplace. The former chairman of the Joint Economic Committee, Senator Paul Sarbanes, has suggested that government contracts for commercial products and services could intentionally be let to defense firms in order to provide the incentive structure needed for them to enter new fields.¹ President Bill Clinton has created a “technology reinvestment program” aimed at encouraging defense firms to produce “dual-use” technology for both the military and commercial sectors. And the United States government has also been assisting the Newly Independent States (NIS) through its Cooperative Threat Reduction program as they attempt to turn guns into butter.

Part of the rationale for this government activism is found in the prevalent reading of the historical record. After World War II, it is commonly said, both the United States and Soviet Union engaged in massive conversion programs. These programs allegedly helped the economy transform from war- to peacetime, and made it possible for defense firms to re-enter the civilian economy.²

In this piece, we offer a contrasting view of the conversion process. In part one, we argue that the perceived version of history is largely a myth and that it is inappropriate to focus policy attention on conversion at the plant level. Instead, we suggest that conversion is best seen as a macroeconomic process, in which the factors of production move to their most efficient uses in response to the development of new economic sectors and industries. A corollary is that in the absence of economic growth, conversion is likely to become more politicized, with the possible ironic result that under such conditions defense firms may be kept going by governments in Keynesian fashion.

In part two, we turn to some historical examples of conversion from the United States and Western Europe. This history, unlike that which has

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entered public memory, suggests that plant level conversion has generally been a failure. That does not mean, however, that governments have no role to play as defense expenditures decline. On the contrary, macroeconomic policies that maintain aggregate demand, coupled with micro-policies that help workers to retrain, are of great value as societies cope with downsizing.

In part three, we focus on the former Soviet Union. No country in modern history built a larger peacetime defense industrial base than the Soviet Union, and now Russia must face the challenge of making that industrial base a useful contributor to a new political economy. We suggest that policies and programs—including Western assistance programs—focusing on plant-level conversion are of only limited value, and that the best hope for Russia is economic growth and the creation of new industries that will allow the factors of production used in the defense sector to find new outlets. Owing to relative factor immobility, such industrial policies may be targeted at the regional level over the mediumterm, but over the longrun the policy objective should be to encourage the reallocation of resources on an economy-wide basis.

We conclude the article with some policy implications and recommendations, which hopefully will be of value not just for American officials, but for those in Russia and other countries as well.

I. Conversion in Theoretical Perspective

From a macroeconomic perspective, defense spending has constituted a significant share of government expenditures in the United States since the

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Second World War. Even in the current economic and security environments, with deficits on the one hand and the collapse of the Soviet threat on the other, defense consumes more than one-quarter of all government outlays. In short, defense spending continues to

exercise a profound influence on the nation’s pattern of resource allocation.

For particular regions, the role of defense looms especially large. During the Reagan years, for example, New England was a major beneficiary of the defense build-up. From fiscal year 1987 to 1989, residents of Massachusetts received an average of over \$1400 per resident, and those in Connecticut over \$1600 per resident, on the basis of local defense expenditures. These figures were about three times the national average.³

Similarly, particular firms and industries are vulnerable to defense cutbacks. The “prime contractors” (e.g., Lockheed and Raytheon), whose defense sales as a percentage of overall sales are more than 75 percent, immediately come to mind, but they are not alone. Indeed, supporting these primes are thousands of equally dependent subcontractors. The termination of defense contracts has a multiplier effect that reaches deep into firms and their communities.

It is not surprising that defense cutbacks, in the absence of other forms of government spending, will have a recessionary effect. According to economist Alan Reynolds, “there has been a recession after every major war in U.S. history. . . . Why should the Cold War be any different?” Reynolds points out that during the four post-World War II periods of downsizing,

unemployment rates rose from between 2.4 to 10.3 percentage points, and industrial commodity prices generally fell sharply.⁴ To date, economic growth has allowed the United States to avoid this fate, although there is some evidence that former defense workers are finding new jobs at greatly reduced wages.

In the wake of sharp declines in defense spending, public policy is faced with two major problems: first, the loss of demand for military goods and services; second, the matching of resources once employed by the military with new civilian requirements. The macroeconomic task is thus to stimulate demand, while micro-policies should be adopted to ease the transfer of resources to alternative employment. Far from simply relying on the "magic of the marketplace," governments have an important role to play in the conversion process.

Government policies aimed at maintaining economic growth and investment have at their disposal five general instruments:

(1) tax policy, especially tax cuts; (2) monetary policy, specifically lower interest rates; (3) increased government purchases of nondefense items; (4) increased transfer payments and adjustment assistance to displaced workers and industries; and (5) export promotion policies. The success of economic conversion

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will largely be a function of these aggregate offset policies. The higher the general demand in the economy, the faster market forces will operate, facilitating the shift of resources from defense to commercial sectors. From an historical perspective, the U.S. government has employed all these policy instruments at one time or another in the face of decreased defense spending.⁵

In sum, a mix of macro- and microeconomic policies is required in order to make a successful transition to lower levels of defense expenditure. But the best way to think about conversion is as a macroeconomic phenomenon. That is, what policymakers should worry most about is the reallocation of the factors of production (capital and labor) to their most productive alternative uses, rather than focusing on efforts to turn guns into butter at the plant level. While industrial conversion does take place from time to time, it is likely to be statistically insignificant. In the sections that follow, historical lessons are drawn from earlier conversion in the United States and elsewhere in support of this argument.

II. Conversion in Historical Perspective

During the Second World War, the United States virtually transformed itself into a command economy. Defense spending reached almost 40 percent of gross domestic product in 1944 and made up 90 percent of the federal budget. Over the two-year period 1945-47, the economy faced incredible challenges as eleven million Americans left the armed services, an

additional two million left civilian jobs working for the military, and defense-related employment in industry fell by about ten million jobs.⁶

American policies for shifting to a postwar economy began to take shape in 1943, when Franklin D. Roosevelt's top advisor, Jimmy Byrnes, was asked to chair a conversion taskforce, while at the same time the U.S. Senate established a Special Committee on Postwar Economic Policy and Planning. The programs subsequently fashioned were directed toward both the macro- and microeconomies, though the latter had mixed results.

Most important from the macroperspective were the Keynesian measures adopted after the war to maintain full employment, which had as its noblest expression the Employment Act of 1947 and the lifting of price controls that same year. Exports were pushed overseas to meet the world's reconstruction needs, and with the passage of the Marshall Plan in 1948 these exports were largely financed by American taxpayers. Domestic demand was stimulated through such measures as the G.I. Bill, which made

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it possible for ex-servicemen to purchase new homes. And these servicemen found jobs with amazing speed, often at the expense of women and minorities who held many manufacturing jobs during the war.

Less successful, however, were attempts to convert guns into butter at the plant level. As part of the Byrnes conversion effort, teams of engineers were

dispatched to defense plants across the country, studying their potential for commercial production. By 1949, these studies were in the dustbin, and this part of the conversion program was deemed a failure. Former defense enterprises were out business, their machine tools dumped into the ocean. The American economy indeed converted from a military to a commercial basis, but many wartime defense firms failed in the process.

It is of current interest to note that the topic of economic conversion was rife with controversy in World War II America. After all, the government held title to a significant fraction of the nation's industrial base, including 90 percent of the synthetic rubber, aircraft, and magnesium industries and over 50 percent of the aluminum and machine tools industries. In short, conversion was a process of some consequence for the American political economy. As one historian of the process has remarked, “The ways these plants were transferred from wartime to peacetime service held the potential for economic social change.”⁷

The experience of the Second World War points up the importance of the macroeconomy in defense conversion. To be sure, government policies that retrained servicemen or helped them find jobs were of great value, but their corollary at the level of the firm generally failed. What saved the American economy after the war was the pent-up demand and savings that enabled millions of consumers to enter the marketplace for the goods and services they had longed for since the Depression. Indeed, the first cars produced by the automobile firms after World War II were not new models, but 1939 products made with pre-war machine tools!

The United States was still engaged in postwar conversion in 1950, when the Korean War erupted and led to industrial remobilization. Thus, six years after the process was launched, it was nowhere near completion. There are important lessons to be drawn from this experience, chief among them that even given macroeconomic policies that catalyzed postwar growth, millions of workers—especially women and minorities—lost their jobs in postwar America. The United States economy recovered from war with remarkably little recessionary effect, but nonetheless a painful period of adjustment occurred.

Of even greater contemporary relevance, perhaps, is the post-Vietnam experience. After the Vietnam conflict drew to a close, defense firms had a difficult time in the postwar environment. On the macroeconomic level, the American economy was performing badly in the 1970s, suffering from a fatal mix of stagnation and inflation—stagflation—that followed in the wake of the Arab oil embargo. Scrambling for niches in this dismal environment, defense companies entered new businesses, from building buses (Grumman) to bathtubs (Boeing). For its part, General Dynamics went on to lose money in shipbuilding and asbestos mining.⁸

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Overall, the record of defense industries in commercial enterprise has not been a good one. The record from both the post-Korea and post-Vietnam periods suggests that defense firms divested themselves within five years of the vast majority of non-defense business that they tried to enter.⁹ Advocates of defense industry diversification would do well to recall that a booming commercial sector already exists in the United States, always seeking new consumer products for a seemingly insatiable marketplace. In such an environment, it is unlikely that defense firms will develop some unique competitive advantage.

The French experience after the Algerian War lends further support to the argument made here about the importance of macro-factors in economic conversion. After the Algerian War, the French were faced with the necessity of converting many of their naval shipyards to alternative uses. From a technical perspective, it appeared that the shipyards in Brittany would be easier to convert than those in the Mediterranean, but by the mid-1960s the French had discovered that conversion had been more successful in the latter case. Upon investigation, it was found that this was due to the locational advantages of the Mediterranean yards. Because the Mediterranean economy was growing at this time, shipyards were able either to convert to marinas or to become repair yards for yachtsmen, or the workers were able to find new jobs in tourist-related industries. In Brittany, by contrast, the regional economy was slumping and conversion efforts failed. Efforts to convert shipyards ran into daunting human resource and physical infrastructure problems, and the French state found it was making much larger investments than planned in the effort. By the late 1960s, the conversion program for Brittany was deemed a failure.¹⁰

In short, neither the American nor the French experience gives much hope for large-scale conversion of defense plants to commercial purposes at the end of the Cold War. Instead, workers will find new jobs as the world economy begins to grow, and capital will flow to more productive uses than making weapons. Over the long run, the process of conversion will benefit both the global economy and global security. But in the short term, it will bring tremendous pain to those who have given their lives to defense industries. In order to help those workers move into new careers, the government should provide retraining programs and perhaps grants to help would-be entrepreneurs get started in small businesses. But the government should not give false hopes that jobs and plants can be maintained and converted. The historical record suggests that this simply does not happen.

For the United States, which in recent years has spent at most 6.5 percent of GNP on defense, the story told here may be upsetting, but it is hardly devastating. For Russia, in contrast, industrial conversion appears to be a vital necessity. The industrial economy in Russia is largely inseparable from its defense firms, and it would seem impossible simply to shut them down and retrain the workers for new pursuits. In a country where the factors of production are largely immobile—workers can't even move to new cities for lack of housing—it would seem that defense conversion provides the *only* way out of the economic doldrums. In the next section, we explore the prospects for economic conversion in the former Soviet Union, with a focus on the Russian Federation.

III. Military Conversion in the Former Soviet Union

That the United States has had such a difficult time with military conversion must be very discouraging to those responsible for conversion in what once was the Soviet Union. Not only must they deal with all the same obstacles that hamper American efforts, but they must also contend with an array of unique problems that by themselves would be enough to frustrate any policy

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planner. At least in the United States there is a reasonable sense of order. Each state has not seceded and declared its own independence. Nor is the United States in the midst of an economic collapse. It is hard enough for the United States to deal with

recessions (drops in GNP of about 1 percent)—indeed, George Bush lost his bid for reelection owing to domestic economic problems—so we can scarcely imagine the political difficulties of dealing with a drop in GNP of 20 percent or more.

If that were not enough, Russia is also undergoing a complete overhaul of its economic institutions. Boris Yeltsin and his former chief economic implementer, Yegor Gaidar, committed themselves to abandoning central planning and replacing it with a market system. This has meant implementing a program of privatization and market mechanisms such as price flexibility, convertibility and even bankruptcy. In an effort to accelerate this transformation and at the same time cure the depression and the roaring inflation that ushered in this remolding effort, the government has adopted a policy appropriately described as shock therapy.

Any one of these measures would normally be enough to bring down most governments. The Yeltsin government, for the time being at least, has moved to adopt them all at once. At this writing, the Yeltsin government has at least survived politically, albeit with strong challenges from the Duma (Russian Parliament) and at the expense of most reformers who were in positions of authority. What remains to be seen, however, is whether or not its draconian policies can produce enough in the way of positive results to keep the anti-reformists off-guard.

Against this backdrop, it is no wonder that the process of conversion in Russia has not gone smoothly.

Those in charge are not even sure how to proceed. At least in the United States there are fully developed labor and capital markets that can absorb some of the factors of production that are spun out of the military industrial sector. Even then the United States' market has difficulty finding a

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productive use for most of those resources. How under those circumstances can Russia expect a smooth transition when its market is at best shaky and untested and the economy is shrinking, not growing? For that matter, those officials in charge of conversion never seem to be quite sure how to implement the conversion process. Intellectually, they know they should use market forces to redirect the country's resources. Instinctively, however, even Yeltsin's so-called market reformers have a tendency to fall back on central planning procedures by decreeing one course of action or another. It is an unenviable position.

IV. Historical Perspectives

Russian leaders have had little opportunity to prepare themselves for dealing with their present circumstances. Not that our past failures have made current efforts much easier this time around, but based on several past attempts at conversion we at least have an idea of what to expect. Thus, we have some experience to draw on. For the Russians, the situation today is considerably different from what they had to face in earlier years. Admittedly, they did have to cut back after World War I and World War II, but conditions then were not the same as now.

While Russia did conscript a large army in both World War I and World War II, demobilization was not a major concern. After World War I, the process of reabsorbing veterans and converting industry more or less took care of itself. Most of the soldiers simply went back to their villages. After all, more than 80 percent of the Russian population at the time was rural.¹¹ There was no need for them to find jobs in the city.

The same situation held in industry. Russian industry was relatively underdeveloped at the time. There was not much to reorient. Moreover, the Civil War and the introduction of communism, which followed on the heels of World War I, resulted in the collapse of much of the civilian economy. Its recovery began after 1921, and Lenin's introduction of the New Economic

Policy was an attempt to promote rapid economic growth through industrialization. This policy continued and accelerated under Stalin.

Indeed, industrial conversion was scarcely of concern. As noted earlier in this article, conversion is less of a problem in an economic environment that is marked by rapid economic growth. That certainly characterized the 1920s. Furthermore, heavy industry, the kind of industrial activity that serves as the core of a military-industrial complex, is exactly what Stalin favored in the industrial expansion effort. The five-year plans gave pride of place to steel, machinery, heavy construction equipment, and, for that matter, military production. If anything, Stalin wanted more, not less, from his military-industrial sector.

The post-World War II conversion experience was much the same. There was no special emphasis on the civilianization of the economy; Stalin continued to stress military preparedness. To Stalin, the Soviet Union was encircled by a hostile capitalist world waiting to pounce. This was soon to become the Cold War. Stalin kept the country on a war footing throughout his lifetime, and that condition lasted into Nikita Khrushchev's era.

The Soviet Union also differed from the United States in the magnitude

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of the conversion problem because, unlike the United States', most of the Soviet industrial infrastructure was destroyed in World War II. Not surprisingly, the emphasis was on economic reconstruction and growth, not conversion. This, combined with the military build-up, meant that there was virtually no need to close or reorient any factories.

On the contrary, virtually every factory was put under enormous pressure to expand its existing output in both the civilian and military sectors. Occasionally there would be a change in the model of what was being produced, but seldom was there any need to alter the output mix of a particular factory. There is no better illustration of how important economic growth is to ameliorating the difficulties of conversion.

Nor was manpower conversion much of a difficulty. That was due in part to the great loss of life during World War II. If anything, there was a great shortage of industrial labor after World War II. Moreover, just as after World War I, a large percentage of military personnel returned to their farms. There had been considerable urbanization after 1917, but by the start of the war in 1940, 68 percent of the population continued to reside in rural areas.¹² Again the bulk of the veterans who survived the war simply returned to their villages and picked up where they had left off.

The first major effort at military conversion in the USSR had to wait until 1960. Then Khrushchev decided that it was time to reduce the Soviet military establishment by 1.3 million men.¹³ Although the Soviet economy was growing rapidly at the time, Khrushchev encountered enormous resistance and ultimately had to pull back. Despite this about-face, Khrushchev paid a high price for his efforts when the military, which had once supported him, joined the opposition or at least failed to oppose it when an effort was made to overthrow him. Thus in 1964, when the opposition, led by Leonid Brezhnev, conspired to oust Khrushchev, the military supported Brezhnev.

The difference between 1960 and the post-World War II era suggests why the current effort at reform will be even more difficult to implement. First, Soviet industry in 1960 was largely rebuilt and the memory of reconstruction was fading. Even more important, by 1960 military and industrial officials had become accustomed to their places in Russian society. They were no longer in the army only for emergency purposes. In effect, the Soviet Union, as noted earlier, was on a war footing for most of the post-World War II era, and that meant that those who had risen through the ranks had become accustomed to many privileges which they came to view as considerably more than a temporary perquisite. Not surprisingly, the military-industrial complex was reluctant to surrender perks and power and enter the regular civilian workforce. Civilian pay and prestige in no way matched that of those engaged in military activities. Nor was Khrushchev's

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promise to divert resources to advanced research and development much of a recompense (interestingly, Gorbachev would attempt the same ploy with the military-industrial complex during the early days of perestroika). Existing military forces wanted increased funding for their own activities, or at least a continuance of the status quo. They viewed it as an entitlement—just as their counterparts in the United States do today.

As it evolved, the Soviet economic system came to incorporate some procedures that made conversion even more difficult than in the United States. The Soviet planning system was predicated on what came to be known as the “val” system. Factory managers were rewarded if they could show that the ruble value of this year's output exceeded that of last year. There were two ways to do that. One was to produce more goods. However, given the way inputs were priced, a bonus could be won simply by producing a more expensive bundle of the same or a smaller amount of goods. Products were priced not according to the supply and demand pressures but on a cost-plus, fixed-market basis. Thus, by incorporating more expensive and more numerous inputs in the production process—no matter how wasteful that might be—managers got their bonuses. As with American manufacturers producing for the military, there has been a tendency in the Soviet military-industrial complex to foster the production of \$600 screwdrivers.

In fact, there are reports that a labor hour in the Soviet military costs five to six times what it would cost in the Soviet civilian sector.¹⁴ That also means that there is little concern about miniaturization. There is no reward for it. No wonder Soviet officials were said to pride themselves on their ability to produce the world's greatest microchip! Having mastered such techniques, it is understandable why so many enterprise managers in the military-industrial complex are reluctant to throw themselves into a more competitive environment.

Their disdain for civilian production is in part a product of firsthand experience. It turns out that almost all military-industrial enterprises in the Soviet Union produce consumer goods as well. In 1989, for example, it was reported that 40 percent of the output of the military-industrial complex was already categorized as civilian.¹⁵ For example, 95 percent of all the country's refrigerators were manufactured by predominantly military, not

civilian, factories. Over 60 percent of the country's washing machines and vacuum cleaners were produced in the same fashion.¹⁶ Having observed such operations firsthand, managers at military factories know better than anyone else that their civilian counterparts have always been treated as second-class citizens, not only as to pay but also in terms of both prestige and access to quality raw materials and equipment. Moreover, they also see how uncompetitive such consumer goods are. Given the "val" system, it is not surprising that without exception Soviet consumer goods are bulkier and of poorer quality than those produced in the West. No wonder there is not much eagerness to shift out of the military sector.

On the other hand, conversion has become a necessity for these very managers and their plants. The simple fact is that military orders have fallen to a small fraction of Cold War levels, while demand for consumer goods continues to rise. It is for this reason that Deputy Minister of Economy Sergey Vasilyev proclaimed that "conversion is complete."¹⁷ While that statement is, of course, optimistic in the extreme, it does point to the changing nature of the post-Soviet economy and its consequences for defense producers.

V. The Yeltsin Reforms

Having committed themselves to the process of conversion, what are the prospects for Yeltsin and his reform team? Just as in the United States, the prospects for the defense sector as a whole are dim. Not only is there still no

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market system available to absorb at least some of the newly released capital and labor resources, but the absence of infrastructure (like housing) and the fact that most social assets (housing, day care, medical facilities) remain tied to specific plants limits factor mobility. Nor, of course, does it help that the economic system is in a free-fall depression

with GNP down by as much as 20 percent in one year.

As if this were not enough, the process of moving to the market and privatization of industrial concerns is badly flawed. Because of ideological hangovers from the days of communism, there is still a considerable resistance to privatizing ownership of land, although substantial progress has been made with respect to privatization of factories and service facilities. Still, in the absence of legal reform and the establishment of clearly defined property rights, entrepreneurship, and foreign investment will remain hampered.

It turns out, too, that many of those involved in the privatization effort, and in private enterprise more generally, are unsavory types. Of course, there are important exceptions, but criminals—or what the Russians refer to as the mafia class—have become a major factor in the private sector. Combatting crime is one of the major challenges confronting the emerging Russian state.

Alongside the private mafia, there are more mainstream privatizers who are attempting to take control of manufacturing assets. For the most part, these are one-time party, government, or managerial officials who have come to assume a proprietary interest in the enterprises under their

jurisdiction. It is a form of primitive accumulation. Through one strategy or another, they manage to transfer title or at least operational control over the assets under their supervision. Occasionally such power grabs are openly challenged, but in all cases there is uncertainty over the legal niceties of such actions. As a measure of popular reaction to such efforts, the Russian public refers to those involved as the "party mafia." It would not be surprising if at some point there is a public reaction to such power grabs.

The Yeltsin government is attempting to control the whole privatization process and open it up to legitimate competitors.¹⁸ There were open auctions in several regions in 1992, and now regional privatization centers are being opened to assist new management teams in the restructuring process.¹⁹ Initially, most of this effort focused on the privatization of retail shops, but more recently it has been extended to include the sale of shares transferring ownership of factories (including many defense plants) to the public as well as to the factory workers and managers of the specific plants undergoing privatization. The workers and managers of these plants have, in most cases, been offered discounts.²⁰

Many defense enterprises have also sought to affiliate with foreign manufacturers, a process that is now being facilitated by Western aid programs. Sometimes this has produced rather unorthodox alliances. Polaroid recently teamed up with the Ministry of Atomic Energy, including some divisions responsible for producing nuclear weapons. Gillette allied itself with a branch of Leninetz, one of St. Petersburg's biggest military producers.²¹ Razor blades would hardly be considered high technology, but for the Russian partner it did offer a chance to earn hard currency, and that was as important as any other consideration.

Branching into either Polaroid cameras or razor blades is probably one of the best examples of the conversion process at work. Unfortunately, from the Western partner's viewpoint, the transformation is not working as well as anticipated. Because of the collapse of the value of the ruble and the chaos involved in establishing government jurisdiction, American corporations have been having difficulty earning dollar profits, or even determining who their actual partner is. Many of the same factors explain why the Batterymarch Financial Management Fund of Boston has abandoned its quest (at least temporarily) to invest in some of the more sophisticated military technology developed in St. Petersburg. Even for those with a long time horizon, the business climate has become too uncertain.

Questions about the viability of massive conversion, and the consequences of sharp cuts in the defense budget for regional employment, have seemingly led Russian officials to rethink their programs in this area. After some initial talk about an 85 percent cut in the military budget, calmer heads began to realize what the economic and political implications of such a drastic step would be.²² These bold efforts were then replaced with more moderate efforts to set military expenditures at about 5 percent of the GNP.²³ It was also decided to allocate budget funds to military producers who would otherwise be forced to close or go bankrupt. The authorities concluded that they could not risk the unemployment that such bankruptcies would bring, especially in Siberia, where many cities are devoted almost entirely to military production. For that matter, the situation is not much better in St.

Petersburg, where reportedly 70 percent of the city's industry is devoted to military production.

The overemphasis on military production, with no evident need for such equipment within the country, is why there are so many worries about reported sales of equipment to outlaw countries such as Iran and Iraq.²⁴ There are also fears that Russian weaponry will fall into the hands of terrorists. Already there are reports of nuclear reactors, not to mention conventional weaponry, being offered for sale in the new commodity markets that have mushroomed across the country.²⁵ Because these needs are so urgent and because they seem to have so few options, Russian military factory managers are liable to do anything to earn money, especially those who have been opposed to the idea of conversion from the beginning. Why should they cut back and refrain from production and sales efforts to foreign clients, they ask, when they do not see Americans doing the same thing? It is unlikely, however, that Russia will again become a major arms exporter anytime soon, given the country's inability to assure maintenance and spare parts to potential buyers.

Almost as troubling are reports of those officials who are literally walking away from their problems. Numerous reports are appearing of nuclear weapons and even submarine reactors simply being dumped, some into the Bering Sea. There are at least seventy-two unloaded reactors from submarines stored within Russia.²⁶ Similar complaints (although not about nuclear reactors) have been issued throughout Eastern Europe about abandoned Soviet military bases.²⁷

Amidst all this gloom there are a few positive developments. Some factories have moved from theory to practice and are producing new consumer goods. Often they are rather simple in makeup, including such elementary and unsophisticated products as household pressure cookers and children's sleds. Some factories are moving into the manufacture of consumer electronics. Some working groups (collectives as the Russians call them) have joined together to form new private or cooperative enterprises, often using technology developed in the course of their previous work for the state. In several cases, these ventures have become quite profitable.

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When all else fails, some enterprises have entered the salvage business. They have discovered, that if nothing else, much of the existing military equipment can be sold for scrap to Western buyers for dollars.²⁸ Granted, the prices are a fraction of what it would cost to reproduce some of what they are selling; but who needs battleships today? Indeed, one of the reasons for the quarrel over the ownership of the Black Sea naval fleet is that the ships are viewed as a source of junk and hard currency. Because of the unusually skewed nature of the ruble-dollar exchange rate, dollars go a long way in what used to be the Soviet Union and almost anything portable is available for sale.

Beginning in 1994, it is likely that many more dollars will be made available to assist the conversion process. As part of its Cooperative Threat

Reduction program to dismantle weapons of mass destruction, the United States government will be channeling millions of dollars into the military-industrial complex. A Defense Enterprise Fund is being created that will make equity investments and take loans in defense plants that are undergoing conversion. However, our analysis suggests that while this may assist particular plants, it is hardly a remedy, and indeed it could backfire as Westerners are accused of "cherry-picking." We would argue that Western donors should focus their assistance at the regional level, helping defense-dependent regions facilitate the process by which workers and investment capital can find their most productive uses.

Conclusions

The prospects for a successful conversion program in the defense industries of the Newly Independent States are not very encouraging. Conversion will be a hard enough process for the United States, even with the country out of recession and rapidly growing; indeed, there is little evidence that defense firms are diversifying into civilian pursuits, even with government financial assistance as an incentive. When there is low or no economic growth, however, not to mention the structural upheaval of the political and economic system, such as we find in contemporary Russia, the chances of success are very limited. Moreover, there is almost no wartime destruction to repair or rebuild, which ironically makes conversion even more difficult to achieve.

It is not a particularly pleasant situation to contemplate. Only if shock therapy works, sparking so much growth from the civilian sector that it also stimulates an envious military-industrial complex to join in, would there be much reason for hope. But the chances of that happening, particularly in the near future, are not high. To conclude, conversion is best seen as a macroeconomic phenomenon, and Russian economic policy and Western assistance should focus above all on stabilization policies and legal reform. Policies are also needed at the micro-level, including worker retraining and technical assistance to start-up companies. Programs directed at existing defense plants may be economically useful in some cases, and politically necessary in others, but if conditions are not created to encourage foreign investment and entrepreneurship, then Russian economic reform efforts will fail.

"The prospects for a successful conversion program in the defense industries of the Newly Independent States are not very encouraging."

Notes

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3. Yolanda Henderson, "Defense Cutbacks and the New England Economy," *New England Economic Review* (July/August 1990), 6.

4. Alan Reynolds, "The Sky is Not Falling," *Forbes*, 30 March 1992, 152.
5. Roger Bolton, "Defense Spending: Burden or Prop?," in Bolton, ed., *Defense and Disarmament* (Englewood Cliffs, N.J.: Prentice-Hall, 1966), 1-54.
6. Joint Economic Committee, *Annual Report*, 120.
7. Gerald White, *Billions for Defense* (University, Ala.: University of Alabama Press, 1980).
8. "The Pentagon's Menagerie," *The Economist*, 16 June 1990, 69.
9. Ethan B. Kapstein, "Testimony before the Joint Economic Committee," 9 April 1992.
10. Jean Chardonnet, *L'Economie Francaise* (Paris: Dalloz, 1970).
11. *Gosudarstvennyi Komitet SSSR po Statistiki, Narodnoe khozaistvo SSR za 70.* (Moscow: Finansy i Statistika, 1987) 373.
12. Ibid. [The same page as the preceding note.]
13. Arkady Shevchenko, *Breaking with Moscow* (New York: Alfred Knopf, 1985), 92-93.
14. Sovset, 13 June 1991, 21.
15. *New Outlook*, Summer 1991, 26; *Foreign Broadcast Information Service (FBIS)*, 25 July 1989.
16. *Boston Globe*, July 33, 1990, p. A-2.
17. Seminar at Harvard Russian Research Center, 18 April 1994.
18. *New York Times*, February 29, 1992, p. 5.
19. *Boston Globe*, 5 April 1992, 1.
20. For an excellent overview of the privatization process, see Maxim Boycko, Andrei Shleifer, and Robert Vishny, "Privatizing Russia," *Brookings Papers on Economic Activity* 2 (1993): 139-192.
21. *New York Times*, 23 December 1991, D-1.
22. Ibid.
23. *FBIS*, 27 April 1992, 31, 37; *Moscow News*, 7, 1992, 1; *Moscow News*, 39, 1991, 7.
24. *Nezavisimaya Gazeta*, 25 April 1992, 1.
25. *Commerzant*, 16 September 1991, 6.
26. *FBIS*, 27 April 1992, 37.
27. *Moscow News*, 22, 1990, 3.
28. *Commerzant*, 6 April 1992, 14.