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**RUSSIA'S GROUND COMBAT
CAPABILITIES AND IMPLICATIONS
FOR U.S.-RUSSIA COMPETITION**

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Preface

This document presents the results of a project titled *U.S.-Russia Long Term Competition*, sponsored by the Deputy Chief of Staff, G-3/5/7, U.S. Army. The purpose of the project was to help the U.S. Army understand the shifting relative capabilities of the U.S. and Russian militaries of the next twenty years.

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Summary

Understanding how Russian military capabilities will develop over the next 20 years is critical to future Western defense planning. Perfectly predicting the future is not possible, but one can gain insights for the future of key Russian ground capabilities by analyzing the critical political, economic, demographic, and societal factors underlying Russian military power.

Factors Underlying Russian Military Power

A relatively coherent and consistent view of Russia's security policy goals currently exists, and these have been translated into a political-military strategy for the armed forces that involves five key tasks: strategic deterrence (to prevent aggression on the Russian homeland); regional dominance, including responding to instability, terrorism, or conflict in the near abroad (meaning the non-Baltic former Soviet Union); expeditionary operations; preparedness in case of a major ground war; and domestic stability. While changes are possible, we expect continuity in this strategy.

Other economic, demographic, and societal factors underlying Russian military power over the last decade have undergone significant change, but they also show signs of remaining stable over the medium term (ten years). Public attitudes show support for Russia's government, foreign policies, and the military. Russia is projected to experience relatively stagnant economic growth of 1 percent to 2 percent of

gross domestic product (GDP), due to low growth in oil and gas export revenue, poor prospects for domestic reform, and low investment, although higher and lower growth scenarios are possible. Russia's military budget has increased substantially due to larger acquisition expenditures, although we expect future military budgets to level out and grow proportionate to GDP. While Russia is not expected to enjoy major population growth, its demographic situation is not by any measure crippling. Russia also has built a relatively stable mixed conscript and contract manning system for the military.

In aggregate, we expect these factors to facilitate continued incremental modernization of Russia's military but not major discontinuous improvements or collapse.

Key Capability Areas for Ground Combat

To analyze Russia's developing ground combat capabilities, we look at eight key areas: maneuver ground forces; indirect fire (<100 km range); long-range strike; rapidly deployable forces; command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR); air defense, electronic warfare (EW); and internal security forces. For each of these areas, we systematically analyze recent trends in doctrine, spending, personnel, and recent operations, and extract the near-term outlook from these trends.

We identify three general modes of development that characterize the changes we observe in the key capability areas: retain-and-adapt, in which Russia draws on sometimes-modernized Soviet-era systems or concepts; emulate-and-adapt, in which Russia draws on foreign models or concepts; and asymmetrically countering foreign threats.

Russia's maneuver ground forces are the prime example of the retain-and-adapt approach. The ground forces have received a small proportion of resources for procurement and modernization. Modernized Soviet-era platforms, such as the T-72B3, can be made almost as effective as new platforms with the addition of new components (such as fire control or active protection systems) at a fraction of the cost. Russia has maintained a massed and area-effects threat by retaining a

large volume of indirect fire launchers and munitions from the Soviet Union with less significant modernization. Russia's rapidly deployed forces—including the Airborne and GRU Spetsnaz—also build on Soviet-era formations, but represent new and dramatically reformed forces, with novel C4ISR systems and other state-of-the-art equipment. Russia's internal security forces, which play an important role in the defense of Russia, have been built from pieces of Soviet-era structures within newly created or reorganized institutions.

Russia also retained-and-adapted Soviet designs in its acquisition of long-range strike systems (i.e., systems that are used at the theater level, generally with >100 km range) while emulating-and-adapting U.S. operating concepts in its doctrine and approach. Russia has developed the ground-launched Iskander-M from the Oka intermediate-range ballistic missile, and the sea-launched Kalibr from the RK-55 Relief ground-launched cruise missile. Russia has long sought to emulate aspects of the U.S. use of long-range strike systems, as in Kosovo, Afghanistan, and Iraq. However, Russia needed the additional resources that became available after 2008 to begin deploying additional air-, sea-, and ground-launched long-range strike systems. Russia's C4ISR also represents a combination of legacy Soviet systems and the emulation-and-adaptation of concepts and approaches such as net-centric warfare. Russia's highly advanced air defense systems build on the extensive Soviet-era investment in air defenses, while its EW offers a primary example of where Russia has invested in capabilities that can asymmetrically counter perceived U.S. advantages.

We also examine how the Russian government has funded or subsidized the defense industry. We identify different patterns of investment and state support that shed light on priorities and future developments. In some areas, particularly long-range strike and C4ISR, the Kremlin has invested significant resources in recapitalizing particular enterprises, indicating its prioritization of the systems they produce. In other areas, such as air defense and EW, Russia has engaged in long-standing support of companies producing systems that are strategically significant. A third pattern reflects the collapse and incorporation of troubled enterprises into state-owned holding companies. This has been the fate of Russia's main producers of tanks and infantry fighting vehicles, in part

because of weak demand and undercapitalization. A fourth approach is investment in more speculative technologies through means such as venture capital, but these efforts are quite modest. The overall outlook for Russian development in these key capabilities is continuity in terms of overall approach and with respect to the characteristics of the military industrial complex.

Projecting Future Russian Capabilities

Looking back, Russia's development of its ground capabilities reflects the strategy we identified for the armed forces, within the constraints of Russia's economic performance, defense budget, demographics, and military personnel system. Russia improved its long-range strike, C4ISR, and air defense capabilities to strengthen strategic deterrence. Changes in military personnel policy, among other reforms, enabled the professionalization, increased reliability, and greater readiness of Russia's rapidly deployable forces. In turn, these forces strengthened Russian military capabilities for the task of regional dominance, as shown by its operations in Ukraine. Russia's investment in rapidly deployable forces and long-range strike also improved its expeditionary capabilities, as shown by Russia's operations in Syria. Still, Russia retained the ability to fight a major ground war with the West or China through the capability of its maneuver ground forces, indirect fires, and long-range strike, its rescue of firms producing ground vehicles, and the retention of conscription.

The same underlying factors that shaped Russia's military development in the past will also likely shape Russian capabilities in the future. While there may be continued incremental developments in the future, we view the most likely future as one of continuity in the strategy for the armed forces and social stability, small growth in the economy and defense budget, and a small demographic decline. Russia will continue to focus on achieving dominance in its near abroad, with an emphasis on readiness and professionalization of a small component of the force. Some expansion and incremental improvements will occur in long-range strike, rapidly deployable forces, C4ISR, and air defense,

while relative stagnation will occur in the maneuver ground forces and indirect fires.

While we see continuity as most likely, we recognize that change is possible. Energy prices could increase or decrease, which could, in turn, affect growth in the economy and Russia's defense budget and military capabilities. Another possibility is that changes in Russia's economic growth and security strategy could occur because of shifts in relations with the West or China. Such changes could give Russia incentives to shift priorities within its strategy for the armed forces and pursue different ground capabilities, but in general we continue to expect a prioritization of capabilities associated with strategic deterrence, regional dominance, and internal security.

Policy Implications

To achieve U.S. interests, the U.S. military will need to provide forces that can compete with Russia across a range of different types of interactions, from cooperation to conflict. Given Russia's extensive conventional and nuclear strategic deterrent capabilities, the key challenge will be how to develop U.S. capabilities that can achieve U.S. interests at any intensity of competition without escalation. The United States will also need to consider how to minimize cost, given the limited risk of Russian actions threatening U.S. core interests and competing budgetary priorities. Using the framework of our identified Russian strategy for the armed forces, we describe the policy implications for the United States of our analysis of Russia's future interests, capabilities, and priorities, with a focus on the U.S. Army.

The first and last elements of Russia's security strategy, strategic deterrence, and internal security, are inherently defensive, although strategic deterrent forces could threaten the United States and its allies. Russia clearly sees threats from the North Atlantic Treaty Organization (NATO) enlargement and the enhancement of U.S./NATO military capabilities on its borders, and the possibility exists that Russia's view of the threat could increase or a crisis could develop that could lead to unintended military escalation. U.S. policymakers need to be attuned

to Russian perceptions of the threat posed by U.S. force deployments in Europe.

Regional dominance, the second element of Russia's strategy for the armed forces, poses a more immediate threat to U.S. interests, given that Russia's primary desired sphere of influence includes former Soviet republics such as Ukraine and Georgia, who aspire to join Euro-Atlantic institutions. Given Russia's growing capabilities and greater interests, U.S. support has not been, and does not appear likely to be, able to significantly undermine Russia's regional dominance; however, the U.S. military can explore options to bolster partners' security forces by improving the quality and capacity of niche areas such as foreign area officers, units focused on providing security-force assistance, information operations, and military medical units.

Russia's expeditionary operations and capabilities, the third element in Russia's strategy for the armed forces, pose a complex challenge that will require both flexibility and preparedness for high-intensity conflict with well-armed adversaries. While Russia has invested in special forces, long-range strike, and air defense, the Russian military is not configured to be a global expeditionary military, especially given its gaps in expeditionary logistics and standing basing arrangements. Nevertheless, Russia may support proxies who may undermine U.S. interests. The U.S. Army should investigate options to prepare for the challenge of Russian expeditionary capabilities, such as ensuring that its forces deployed in areas where a conflict with Russia is conceivable have the necessary training and equipment and are prepared to take action while avoiding escalation.

Perhaps the most dangerous possibility is a large-scale ground war with Russia. We see it as unlikely that Russia is preparing to initiate such a war given its security goals and strategy, past decisions to develop key capabilities, and the constraints posed by its economy, demography, and personnel policy. Nevertheless, beyond Russia's advantage in the size of ground forces in Europe, existing research shows various ways that Russia's current and projected near-term capabilities pose a threat to the U.S. Army in Europe.

To address these developments in Russian capabilities, our analysis offers insight across the range of capability areas outlined. For the

maneuver ground forces, the Army should prepare for challenges from the overall size of the Russian forces and modernized Soviet-era platforms. To address the challenge posed by Russia's indirect fire and long-range strike capabilities to U.S. forces at all echelons of the battlefield, the U.S. Army should investigate options to attrite Russian systems; to pursue dispersal, denial, and deception; and to improve EW and air and missile defenses. Improving U.S. cyber and EW capability at the tactical and operational level could help address Russia's growing parity in C4ISR, although this may require investment in command, control, and planning, as well as possible changes in authorities to use cyber. The U.S. military should also continue to pursue options to bolster communications, positioning, navigation, and timing (PNT), and intelligence, surveillance, and reconnaissance (ISR) against Russia's EW, and Multi-Domain Battle and related concepts to address Russia's anti-access/area denial (A2/AD) capabilities.

In addition to filling U.S. Army capability gaps, a joint U.S. military and combined alliance response will be required. For allies who border Russian territory, including Poland and the Baltic states, finding ways to better compete with Russian military forces in possible collaboration with U.S. forces could be invaluable for deterring both Russian subversion short of war and high intensity conflict.

While Russia's ground capabilities will continue to develop, they will be constrained and directed by political, demographic, economic, and social factors within Russia, which will likely change slowly over the next five to ten years. Studying Russia's priorities and its constraints helps shed light on how the U.S. military can best develop its full range of capabilities to better compete with Russia and achieve U.S. interests, while minimizing financial cost and the risk of war.

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Abbreviations

A2/AD	Anti-access/area denial
ALCM	air-launched cruise missile
BRICS	Brazil, Russia, India, China, and South Africa
BTG	Battalion Tactical Groups
C2	command and control
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
CAST	Center for Analysis of Strategies and Technologies
CIS	Commonwealth of Independent States
CSTO	Collective Security Treaty Organization
DARPA	Defense Advanced Research Projects Agency
DIA	Defence Intelligence Agency
DOTMLPF	Doctrine, Organization, Training, Materiel and Education, Personnel and Facilities
DPRK	Democratic People's Republic of Korea
EEU	Eurasian Economic Union
EU	European Union
EW	electronic warfare

FDI	foreign direct investment
FFRDC	federally funded research and development center
FMSO	Foreign Military Studies Office
FOI	<i>Totalförsvarets forskningsinstitut</i> (Swedish Defense Research Agency)
FPI	<i>Fond perspektivnykh issledovaniy</i> (Foundation for Prospective Research)
FSB	<i>Federal'naya sluzhba bezopasnosti</i> (Federal Security Service)
FSU	former Soviet Union
GDP	gross domestic product
GRU	<i>Glavnoye Razvedatel'noye Upravleniye</i> (Main Intelligence Directorate)
IISS	International Institute for Strategic Studies
IMF	International Monetary Fund
INF	Intermediate Nuclear Forces
ISR	intelligence, surveillance, and reconnaissance
KMZ	<i>Kurganmashzavod</i> (Russian arms manufacturer)
KSO	<i>Komandovaniye Sil Spetsial'nykh Operatsiy</i> (Special Operations Command)
MENA	Middle East and North Africa
MOD	Ministry of Defense
MTOE	Millions of tons of oil equivalent
MVD	<i>Ministerstvo Vnutrennikh Del</i> (Ministry of Internal Affairs)
NATO	North Atlantic Treaty Organization

NDMC	National Defense Management Center
PNT	positioning, navigation, and timing
PUIC	Project Unique Identification Code
R&D	research and development
SAP	State Armaments Program
SCO	Shanghai Cooperation Organization
SDO	State Defense Order
SIPRI	Stockholm International Peace Institute
SOCOM	U.S. Special Operations Command
SOE	state-owned enterprise
SOF	Special Operations Forces
UAV	unmanned aerial vehicle
UN	United Nations
UNSC	United Nations Security Council
UVZ	<i>Uralvagonzavod</i> (Russian arms manufacturer)
VDV	<i>Vozdushno-desantnye voyska</i> (Airborne Troops)
VKO	<i>Voyskaya Vozdushno-Kosmicheskaya Oborona</i> (Aerospace Defense Forces)
VKS	<i>Vozdushno-Kosmicheskiye Sily</i> (Aerospace Forces)
WMV	weapons of mass destruction

Introduction

Background and Purpose

Given conflicting interests between Russia and the West and uncertainty about Russia's future intentions, the development of the Russian military poses real challenges to the United States and its allies. Russia's military appears to have improved significantly since the war in Georgia in 2008, as demonstrated by Russia's successful seizure of Crimea in February 2014, its ability to support separatist forces in eastern Ukraine, and Russia's military action to shore up Bashir al-Assad's government in Syria. While perfectly predicting the future is, of course, impossible, understanding the potential range of the development of Russian military forces is critical for Western defense planning. If Russia were able to dramatically modernize its forces to achieve parity with the West and could use its military strength to pursue more aggressive policies in Europe, a significant shift in Western military policy could be necessary. If, by contrast, Russia's military collapsed under the weight of economic and demographic pressures or if there were no likelihood that Russia would use military force against the West, Russia might no longer need to be viewed as a major potential adversary. This report analyzes the development of Russia's military capabilities over the next 20 years, with a focus on ground combat and the implications for U.S.-Russian competition.

While building on the extensive literature on the Russian military, our report focuses on addressing two key gaps. First, the literature focuses on Russia's current military potential by noting specific military actions that Russia is taking or could take that would be harmful

to U.S. or allied interests. While these current or hypothetical threats are important, it is also critical to prepare for future military challenges by studying the broader political, social, and economic context of Russia's military development.

Second, the study of Russian military capabilities focuses largely on specific military hardware or systems, without necessarily studying how these systems fit into Russia's overall force structure, doctrine, training, and strategy, or investigating the military industrial, political, or economic constraints on the development or employment of future systems. We show how the development of Russia's ground combat capabilities are constrained and motivated by political priorities and economic constraints, and, as far as possible, show the linkages between the factors underlying Russian military power and the specific capabilities it develops.

Methodology and Sources

The future is inherently uncertain, and so our forecasts about the future of Russian military capabilities are necessarily speculative. Nevertheless, past experience offers some guide to the future development of Russia's military forces. We designed a two-part theoretical framework to analyze the development of Russia's military forces relevant to ground combat: 1) we identify and make forecasts about the political, economic, demographic, and societal factors underlying Russian military power, and 2) we analyze the likely future development of key military capability areas. This framework is designed to provide a transparent, flexible, and systematic approach for making forecasts about the future over the short term (the next five years), medium term (five to ten years), and long term (ten to twenty years).

In Chapter 2, we analyze six factors within Russia that underlie military power: Russian strategy for what the armed forces should do; societal support for the regime, foreign policy, and the military; Russia's overall economy; the defense budget; demographics; and military personnel policy. Along with other elements, such as bureaucratic iner-

tia, the military industrial complex, and beliefs about the future of warfare, these factors influence and constrain Russia's efforts to shape and develop the military. Each factor does have some observable direct impact on specific military forces, especially the strategy for what the military should do. To a greater degree, however, the precise effect of the factors is difficult to disentangle because they interact and together shape the overarching development of Russia's military. By understanding the recent history of these factors and making forecasts about their trajectory over the next 20 years, we gain insight into the potential different paths Russia's military could take.

After analyzing these factors, in Chapter 3, we turn to eight specific key military capability areas that are most important for ground combat. We selected the main systems and forces involved in ground combat and the key enablers that support them, and seek to understand how these forces have developed in the past and the outlook for the future. In particular, we examine: 1) ground vehicles, 2) indirect fires, 3) long-range strike, 4) air defense, 5) high-readiness light infantry, 6) internal security forces, 7) electronic warfare (EW), and 8) C4ISR (command, control, communication, computers, intelligence, surveillance, and reconnaissance). By indirect fires, we mean systems with less than 100 km range, while long-range strike refers to longer-range systems with theater-level effects. While the internal security forces, including the National Guard (*Rosgvardiya*) or Federal Security Service (*Federal'naya sluzhba bezopasnosti*, FSB), are not technically military organizations, they play an important role in Russia's approach to internal security and they may be deployed abroad. Their development also shapes Russia's overall military potential. The future development of these key capability areas together describes the future of Russia's ground combat capability.

The factors identified in Chapter 2, and especially the strategy for the armed forces, offer significant insight into the development of each key capability area. Based on these observations, in Chapter 4 we consider possible future changes in the factors, for example, fluctuating oil prices or shifts in relations with the West and China, and the implications for the key ground combat capability areas.

The final chapter in our report draws from our analysis to identify policy implications for the U.S. Army, and Western policymakers more broadly.

The main body of our report, Chapters 1 through 5, is built on and summarizes the core findings of the 12 appendixes. The appendixes contain the bulk of our research and analysis, including analyzing the factors that shape the future of the Russian military and the key capability areas for ground combat. For two factors (Russia's political-military strategy and its economic performance), we draw on the well-developed literature. No appendix is provided for that analysis, but we do offer additional analysis of the likely future outlook in these areas. For the four other factors—societal support, defense spending, demographics, and military personnel—in the relevant appendix we offer a general causal framework describing what we believe explains the development of this factor over time. We describe the recent historical trend of each factor (e.g., the size of the past defense budget) based on available evidence. We hypothesize explanatory variables that explain these trends (e.g., in the case of the military budget, GDP growth and the size of the acquisition budget). We then extrapolate forward, using projections of the identified explanatory variables to make a range of probable forecasts. The factor appendixes are meant to provide a suggestive framework for analysis of the future rather than conclusively demonstrate causation. Our methodology provides transparent and flexible forecasts by mapping out the explanatory variables and basing forecasts on stated alternative projections of these variables. While the factor appendixes generally follow a similar structure, there is some variation based on the specific content and data available, and some go into more detail about the outlook and implications for other factors.

The next eight appendixes analyze the key capability areas for ground combat. For each capability area, we examine the recent history of doctrine and operating concepts, systems, level of resources spent, the defense industry, personnel and training, and operations. We then use our analysis of the past, and other available information, to assess the likely future outlook. This framework draws from common analytic tools such as the Doctrine, Organization, Training, Materiel and Education, Personnel, and Facilities (DOTMLPF) framework while

adding a focus on military industrial considerations that play a major role in the future development of Russian military capabilities. Because of the diversity of the key capability areas and data available, there is some variation in the structure of the capability appendixes.

This report does not attempt to offer a comprehensive treatment of the overall Russian military and, instead, focuses on the potential future development of capabilities related to ground combat. While we do touch on some naval, air force, or other capabilities related to ground combat, we do not offer a detailed analysis of these forces. Nor, aside from our analysis of ground-related capabilities, do we detail the overall structure of Russian military, command and control, the military industrial complex, or other related organizations. This information is covered in detail in other works.¹

We rely on a wide range of open sources. We use official Russian government documents, including official budgets, law, and public statements. We also rely on a growing range of detailed open-source reports about the Russian military by government, government-sponsored, and nongovernmental research institutions such as the Defense Intelligence Agency, the Swedish Defense Research Agency (FOI), Foreign Military Studies Office (FMSO), the RAND Corporation, and others. Russian and Western news media further provide valuable reporting on Russian military developments and operations. Finally, we conducted interviews and discussions in Washington, D.C., and Moscow with U.S., Russian, and other officials and analysts engaged in the study of the Russian military.

¹ See, among others, Gudrun Persson, ed., *Russian Military Capability in a Ten-Year Perspective-2016*, FOI-R—4326—SE, Stockholm: Sweden, December 2016; Lester W. Grau and Charles K. Bartles, *The Russian Way of War: Force Structure, Tactics, and Modernization of the Russian Ground Forces*, Fort Leavenworth, Kan.: Foreign Military Studies Office, Foreign Military Studies Office, 2017; Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 2017.

Factors Underlying Russian Military Power

Any country's ability to generate and sustain military forces depends on many factors, but some of the most important are their security priorities, societal support, economic performance, defense spending, demographics, and the quantity and quality of military personnel. We appreciate that these factors are interrelated and that developments in one will affect others. Demographics influence economic performance and the size and structure of the military. Russian security priorities and economic performance directly influence defense spending. Societal support affects the Russian government's policies and military budget.

This chapter analyzes these factors in Russia, considering their recent past and potential future development (see also Appendixes A through D). Our goal is to understand what underlies Russian military power and the outlook for the long-term U.S.-Russian competition.

Russia's Security Priorities

The Russian elite's view of the country's security priorities is, perhaps, the most directly influential factor shaping the development of its ground combat capabilities. The elite's security policy goals and threat perceptions shape the development of a strategy for the armed forces that answers the basic question of "what is the military

for?”¹ This strategy explains a great deal about Russia’s priorities for key capability areas. To explore the elite’s perspectives on this issue, we relied on a wide array of interviews, analysis, and official documents.²

Security Policy Goals

A relatively coherent and consistent understanding of Russia’s security policy goals currently exists, unlike in the 1990s and even the 2000s when views within the establishment diverged sharply. The consensus has been called the “hard realist” school.³ The other approaches to security policy—“pro-Western” or ultranationalist—have been largely discredited or partially coopted. The ultranationalist camp, initially empowered by the annexation of Crimea and the war in the Donbas, was subsequently discredited by their own radicalism. Differences still exist among Russian elites on the severity and prioritization of threats and their predictions about the future of relations with other countries, but most appear to share similar views about the broad contours of

¹ Our description of and conception of strategy draws on, but differs from, the structure and content of Russian strategic documents. We attempt to outline a parsimonious description of the tasks the Russian armed forces are intended to accomplish to achieve Russia’s objectives and response to threats, while the Russian strategic documents, such as the National Security Strategy, detail all “the national interests and strategic national priorities of the Russian Federation, and domestic and foreign policy goals, goals and measures directed at strengthening national security and ensuring the country’s stable long-term development” (Russian Federation, “The Russian Federation’s National Security Strategy,” December 31, 2015).

² In particular, we draw on over 25 interviews, conducted in Moscow in July 2017, with Russian analysts and current and former officials; the Russian government’s official pronouncements on strategy, including the 2014 Military Doctrine, the 2016 Foreign Policy Concept, and the 2015 National Security Strategy; published interviews with Russian officials; and secondary literature, including elite surveys. Given our focus on the long-term development of Russia’s strategic priorities, we have focused on documenting the views of the wider foreign policy community in Russia rather than Putin’s public statements. These views are largely consistent with those articulated by Putin. See Vladimir Putin, “Putin’s Prepared Remarks at 43rd Munich Conference on Security Policy,” Munich, February 12, 2007; Vladimir Putin, “Meeting of the Valdai International Discussion Club,” Sochi, Russia: Valdai International Discussion Club, October 24, 2014; and Vladimir Putin, “Address by the President of the Russian Federation,” March 18, 2014.

³ Interview with Russian government advisor, Moscow, July 2017.

Russian security policy goals. Some of these goals lead to specific policies, while in other cases Russia's policies and behaviors appear to be the product of the intersection or overlap of several goals.

The top security policy goal is stability, a concept in Russia that is far broader than in the West. It entails a broad sense of predictability and minimization of uncertainty about the future. Stability implies, first and foremost, domestic political stability; in other words, avoidance of any popular unrest, separatism, terrorism, or other threats to the current political order. Economic stability—avoidance of sharp downturns—is a means to the end of political stability and, thus, a goal in and of itself.⁴

Russia also seeks stability externally, most of all on its borders, because of a perceived direct link between events there and stability inside Russia.⁵ Stability is defined particularly by avoidance of “color revolution” scenarios whereby, as many Russian elites see it, Western governments capitalize on popular unrest to overthrow sitting governments and install ones hostile to Russia.⁶ To avoid such an outcome, Russia tends to support “friendly” regimes and put pressure on those that are not.

Beyond its own neighborhood, the security policy goal of stability involves thwarting perceived U.S. attempts at regime change globally, and particularly vis-à-vis Russia, supporting like-minded sitting (mostly, but not exclusively, authoritarian) governments and deterring the United States from taking steps to undermine Russia's domestic stability.⁷

⁴ Interviews with Russian analysts, Moscow, July 2017.

⁵ See interview with Security Council Secretary Nikolai Patrushev in Elena Chernenko, “*Za destabilizatsiei Ukrainy skryvaetsya popytka radikal'nogo oslableniya Rossii*” [“The Destabilization of Ukraine Is a Cover for an Attempt to Radically Weaken Russia”], *Kommersant*, June 22, 2015. Patrushev says, “Behind the destabilization of Ukraine is hidden an attempt to radically weaken Russia.”

⁶ See presentations by Minister of Defence Sergei Shoigu, Foreign Minister Sergei Lavrov, and Chief of the General Staff Valery Gerasimov at the 3rd annual Moscow Conference on International Security.

⁷ See Samuel Charap, “Russia, Syria and the Doctrine of Intervention,” *Survival*, Vol. 55, No. 1, March 1, 2013, and Andrew Radin and Clinton Bruce Reach, *Russian Views of the International Order*, Santa Monica, Calif.: RAND Corporation, 2017.

A second consensus security policy goal is retaining and increasing Russia's influence in its "near abroad"; that is, to be the political, economic, and security center of gravity in the region that consists of the 11 other non-Baltic former Soviet republics (the Baltic states, having joined North Atlantic Treaty Organization [NATO] and the European Union [EU], seem to be viewed in the same, more "foreign" category as the east and central European countries).⁸ This goal entails minimizing the influence of the West in the region, since the West's involvement there is seen not only as leading to color revolutions but also as increasing the integration of Russia's neighbors into Euro-Atlantic institutions leading to the potential placement of NATO forces and infrastructure closer to Russian borders.⁹ To that end, Russia seeks to weaken NATO to prevent its enlargement, although few in Moscow actively seek to destroy the alliance and some believe that doing so would be destabilizing and could provoke a Western European military buildup.¹⁰ China's growing economic role has also eroded Russian dominance within the former Soviet region, especially in Central Asia, but Moscow has confidence that it can establish an effective division of labor with Beijing: China defers to Russia on security and political matters while taking a leading role on infrastructure and investment projects.¹¹ The Russian elite does not believe Chinese influence to be a security threat because China also abhors color revolutions and does not seek to deploy forces or build military infrastructure in the region.¹²

⁸ Ivan Timofeev, *Theses on Russia's Foreign Policy and Global Positioning (2017–2024)*, Moscow: Center for Strategic Research, June 2017, p. 6; interviews with Russian analysts, Moscow, July 2017.

⁹ Sergei Karaganov, et al., *Strategiya dlya Rossii: rossiiskaya vneshnyaya politika: konets 2010-*kh*—nachalo 2020-*kh* godov* [Strategy for Russia: Russian Foreign Policy From the End of the 2010s to the Beginning of the 2020s], Moscow: Council on Foreign and Defense Policy, May 2016, p. 14.

¹⁰ Interview with Russian government advisor, Moscow, July 2017.

¹¹ Samuel Charap, John Drennan, and Pierre Noël, "Russia and China: A New Model of Great-Power Relations," *Survival*, Vol. 59, No. 1, January 2, 2017.

¹² Interviews with Russian analysts, Moscow, July 2017.

The Russian elite also believes that the country needs to be the leader of a broader region to further a third consensus security policy goal: to enhance and reinforce Russia's great power status. Moscow wants a say on all matters of global importance and to be taken seriously as a truly independent player with its own voice. Practically, this means reinforcing the centrality of the United Nations Security Council (UNSC) and the UN system generally, given Russia's veto power there.¹³ It also means pioneering Russia-led, or heavily Russia-influenced international organizations, like the Shanghai Cooperation Organization (SCO), Brazil, Russia, India, China, and South Africa (BRICS), Collective Security Treaty Organization (CSTO) and Eurasian Economic Union (EEU).¹⁴ Maintaining nuclear parity with the United States is another manifestation, as is having the ability to project military forces outside Russia's immediate near abroad. Moscow believes that great powers should also cooperate with other great powers; Russia should, therefore, be able to work with the United States, Europe, China, and others on shared challenges.¹⁵

Threat Perceptions

Russian elites broadly share similar threat perceptions, although their prioritization of these threats varies. Many Russian strategists consider domestic stability to be the country's top security priority and, thus, domestic instability to be the number one threat.¹⁶ According to a 2016 study, more Russian elites see the "inability to solve domestic problems" as the "utmost" threat to the country, greater than any other threat.¹⁷

¹³ Karaganov et al., 2016, p. 19.

¹⁴ Timofeev, 2017, pp. 18–21.

¹⁵ Interviews with Russian analysts, Moscow, July 2017.

¹⁶ Indeed, the 2014 Military Doctrine states, "There is tendency for military risks and military threats to shift into the information space and the internal sphere of the Russian Federation." As one former senior official put it, "We long ago concluded that Russia could never be defeated by external invasion. We can only be defeated from the inside out." Interview with former senior official, Moscow, July 2017.

¹⁷ Sharon Rivera, et al., *The Russian Elite: Perspectives on Foreign and Domestic Policy*, Clinton, N.Y.: Hamilton College, 2016.

Popular unrest—spurred from abroad—that could topple the government or undermine state institutions is seen as a very real prospect.¹⁸ For Moscow, this threat is anything but purely domestic; most scenarios for instability emphasize the role of external factors in fomenting discontent, unrest, etc. Indeed, such a perspective is consistent with Russian attitudes toward protests globally. From the Arab Spring to the Maidan Revolution, Russia is inclined to see the hand of outside powers behind the people in the streets.¹⁹

A second and related set of threats emanates from Russia's near abroad. The nature of these threats varies from subregion to subregion. The main risk in Ukraine, Moldova, and Belarus, as well as the South Caucasus, is the further enlargement of the EU and NATO. While the potential for Kyiv to join Euro-Atlantic institutions looms large, Ukraine is in a category of threat by itself, both due to the country's centrality to Russia's security concerns and the multifaceted and long-term nature of the ongoing crisis.²⁰ In the future, Russia is likely to be facing a Ukraine that regards it as a mortal enemy and has the capacity to cause trouble, particularly in Crimea and rebel-held areas in the Donbas.²¹ Moscow is also concerned about state breakdown in Central Asia or the South Caucasus, especially since weak states there facilitate the spillover of Islamic extremism as well as potentially compel Russia to intervene militarily to restore order.

¹⁸ "I count 30 color revolutions since 2003," said the former senior official, who saw no reason why one could not happen in Russia as well. He also alleged that there was an attempt at such a revolution in 2011–2012, a reference to the mass protests in major cities following a deeply flawed election cycle. Interview with former senior official, Moscow, July 2017.

¹⁹ As the former Chief of the General Staff writes, "I am fully convinced that any color revolution is a stage-managed action intended to effect a coup d'état." Yuri Baluevskii, "*Voina ne konchaetsya, ona—zamiraet*" ["War Doesn't End; It Dies Down"], *Nezavisimoe voennoe obozrenie*, May 26, 2017.

²⁰ Even today, Russia is affected through the flow of refugees and economic migrants. Formally, 1.1 million have registered as refugees, but one official estimated the total number of Ukrainians, including those who did not register, at approximately 2.5 million (UN High Commissioner for Refugees, "Ukraine: UNHCR Operational Update, 14 May 14–10 June 2016," The UN Refugee Agency, 2016; and interview with Russian official, Moscow, July 2017).

²¹ Timofeev, 2017, p. 19.

Islamic extremism and terrorism represents a third source of threats to Russia, given its past extremist terrorist attacks and greater risk of terrorism at home due to ties between Muslim communities in Russia and Central Asia and extremist groups in the Middle East and North Africa (MENA) region.²² The extremist threat from the Middle East is viewed differently from that in Russia's near abroad, since the Gulf region is considered the original source of radical Islamist theology and funding for the global terrorist and extremist threat. Given the lack of geographic continuity, Russian-speakers, and shared Soviet past, the countries of MENA are viewed largely through a narrow counterterrorism lens, albeit one that is linked to broader counterterrorism efforts in and around Russia.

The West, and more specifically the United States, represents a fourth category of threat.²³ The United States itself is now seen as the single gravest source of global instability and unpredictability, which will continue to threaten Russia directly and indirectly, in some cases unintentionally.²⁴ A direct conflict with NATO in Europe is viewed as a very low probability but high consequence event, and one that would be possible only due to an accident, miscalculation, or further NATO enlargement to the east.²⁵ The Baltic region is not seen as a priority threat, although many in Moscow acknowledge the potential for unintentional conflict.²⁶

²² In the 2016 Hamilton survey, terrorism is ranked as the second "utmost" threat to Russia (Rivera et al., 2016).

²³ The Hamilton study of elites showed that 88 percent of respondents in 2016 believed that the United States is either "fairly" or "very" hostile toward Russia (Rivera et al., 2016).

²⁴ See Chernenko, 2015.

²⁵ Interviews with Russian analysts and officials, Moscow, July 2017.

²⁶ A Russian official emphasized, "I don't believe scenarios" of Russia-NATO conflict emerging because of the Russian-speakers in the Baltics, and noted Western officials' "dangerous philosophy" of playing out "sci-fi" scenarios (for example, Russia-NATO conflict) publicly, and thereby making them become more real. Two possible scenarios that were raised for conflict include the deployment of unspecified NATO military capabilities and/or infrastructure or a massive "pogrom" against Russian speakers there (interviews with Russian official and former senior official, Moscow, July 2017).

China is a final and far more distant threat for Russia, given Russian confidence in its strategic partnership with China. However, things could change for the worse in the future, for example, through a nationalist takeover in Beijing.²⁷

Strategy for the Armed Forces

The Russian leadership appears to have developed a political-military strategy for the armed forces based on its security policy goals and threat perceptions. This strategy involves the military carrying out five key tasks: strategic deterrence; regional dominance within Russia's near abroad (the non-Baltic former Soviet Union [FSU]); expeditionary operations; preparedness in case of major war; and domestic stability. This strategy emerged, in part, out of Russia's reconsideration of its military priorities following a disappointing performance in Georgia and the related military reform effort that focused on shrinking the size of Russia's military forces and increasing their readiness.²⁸ Our articulation of this strategy focuses on preparations for kinetic combat, and does not include military support to political or intelligence activities (such as cyber or information operations) that are undertaken outside of possible kinetic operations.²⁹ Capabilities to undertake such operations may be implied by the elements of the strategy or may independently shape military planning.

²⁷ Interview with former senior official, Moscow, July 2017. See also Anton Lavrov, "Russia's Geopolitical Fears," *Moscow Defense Brief*, Vol. 55, No. 5, 2016a.

²⁸ See Appendix D and E as well as Andrew Monaghan, *Power in Modern Russia*, Manchester: Manchester University Press, 2017, pp. 68–70; and Igor Sutyagin and Justin Bronk, *Russia's New Ground Forces: Capabilities, Limitations and Implications for National Security*, RUSI Whitehall Papers, Vol. 89, No. 1, 2017, pp. 10–42. Aleksandr Golts also highlights that, due to the 2008 reforms, the military "had a clear mission. They had to win in a short-term local conflict." However, Golts notes that the only way to win a large-scale conflict with the West, given the reformulation of the military, was using nuclear weapons, pointing to the importance of strategic deterrence over a preparation for large-scale war in Russia's current strategy for the armed forces. Aleksandr Golts, *Military Reform and Militarism in Russia*, Uppsala Universitet, 2017, p. 290.

²⁹ An example is the cyber activities by the GRU (Main Intelligence Directorate [*Glavnoye Razvedatel'noye Upravleniye*]) in the case of the 2016 U.S. election. See Director of National Intelligence, "Assessing Russian Activities and Intentions in Recent US Elections," ICA 2017-01D, January 6, 2017.

Strategic deterrence is critical to this strategy and dates from Soviet times. It has gained new salience as Russia has developed more acute threat perceptions regarding Western intentions and fielded its own new weapons classes. Strategic deterrence calls for nuclear weapons, nonnuclear strategic weapons, and air defense to prevent any aggression on the Russian homeland first and foremost. However, strategic deterrence is broadly defined and is intended to deter and coerce potential adversaries across the range of potential conflicts.³⁰ Strategic deterrence also serves as the insurance policy in case the relationship with China were to sour in the long term.

The second critical element of Russia's strategy is regional dominance: to be able to respond rapidly to any form of instability, terrorism, or conflict that may emerge within its near abroad and to have escalation dominance over both regional actors and other external powers. Russia's military response within its region would not only ensure a flexible and variable response to dominate any potential adversary within the region but also deter outside powers by establishing dominance immediately at the beginning of a conflict.

Third, Russia aims to be able to engage in out-of-area expeditionary operations to respond to terrorism, instabilities, and humanitarian disasters and, thus, bolster Russia's role as a great power. It is important to note that Russia's ambition for expeditionary operations is quite limited, especially in comparison to the United States, which is part of the reason Russia seeks collaboration for future expeditionary operations. Russia lacks a strong network of bases and allies to support expeditionary operations, it has a very small expeditionary logistics capacity,³¹ and there is little in Russia's strategic documents

³⁰ Kristin Ven Bruusgaard, "Russian Strategic Deterrence," *Survival*, Vol. 58, No. 4, August–September 2016.

³¹ For example, while Russia was acquiring aging cargo ships and standing up the *ad hoc* "Syria express" to supply its forces in the region, the improvised nature of this effort and the weakness of Russian military forces to provide logistical support are indicative of larger challenges for expeditionary logistics. Jonathan Saul and Maria Tsvetkova, "Russia Supplies Syria Mission With Old Cargo Ships Bought from Turkey," *Reuters*, December 15, 2015. On the larger military logistical challenges facing Russia, see also Grau and Bartles, 2016, pp. 274–283.

to suggest that expeditionary operations are a priority. Nevertheless, Russia's engagement in Syria, its efforts to cultivate its expeditionary capabilities through the development of a merchant marine, and other procurement priorities indicate that Russia does seek to develop the potential to use its military overseas in the future. While these activities are expected to be largely in the MENA region, they may also occur on the Korean peninsula if there were instability in the Democratic People's Republic of Korea (DPRK) or, potentially, other regions.³²

Fourth, Russia's strategy calls for preparedness in case of major war, largely through mobilization. As can be seen in relative resource allocations discussed later, preparation for a land war with NATO or China does not appear to be a top priority in developing the military since the likelihood of such a conflict is viewed as highly remote.³³ Still, the possibility of protracted ground conflict with a peer competitor remains an important consideration in the minds of Russian strategists, particularly given the enduring legacy of World War II and Russia's long history of being invaded by foreign powers.³⁴

Finally, Russia wants its armed forces to play a role in maintaining domestic security and stability. This priority is most vividly seen in the creation of *Rosgvardia* and the strong financial and political support for it and other internal security agencies.

Conclusions and Outlook

Russia's security policy goals reflect longstanding and, by all indications, deeply held views among elites. Despite some variation reflecting recent events, there is also broad consensus on the threats facing

³² Interviews with Russian analysts, Moscow, July 2017.

³³ No interviewees claimed that the military should be focused on fighting large land wars with peer competitors. As the former senior official put it, "the time of mass armies is over." However, officials and analysts saw value in maintaining conscription within a mixed system as a means of instilling patriotism in the youth and as an insurance policy for the contingency of a large-scale land war with NATO or China. Interviews with former senior official and analysts, Moscow, July 2017.

³⁴ See Makhmut Gareev, "Uroki i vyvody iz opyta Velikoi Otechestvennoi voiny dlya stroitel'stva i podgotovki Vooruzhennykh Sil," *Voennaya mysl'*, No. 5, 2010.

the country. Russia has developed a strategy for its armed forces to achieve its security policy goals and address its threat perceptions. The five tasks are: strategic deterrence; regional dominance; expeditionary operations; preparation in case of major war; and domestic stability. While changes are possible, we expect continuity in this strategy.

Societal Support

Support from Russian society is a second key factor in shaping Russia's military, including by influencing the stability of the regime, Russia's foreign policy, and its ability to generate and sustain Russian military force. Current polling shows substantial, and likely continuing, public support in each of these areas.³⁵

There is extensive public support for Russia's current system of government and for President Putin. Through nearly two decades of his leadership as Russia's president or prime minister, Putin has generally enjoyed high levels of public support. Even at the time of the lowest approval point, in 2011–2013, his ratings exceeded 60 percent. Since the Ukrainian crisis and annexation of Crimea in early 2014, Putin's approval rating has stayed above 80 percent.³⁶ Russians appear to approve of Putin's performance because they see him as responsible for economic growth and for providing security and stability.³⁷

³⁵ See Appendix A for the polling data in these areas and additional analysis on the following observations.

³⁶ "Optimizm rossiyan snizhayetsya, reyting Putina—poka net" ["Russians' Optimism Is Waning—But Not Their Support for Putin"], *Deutsche Welle*, September 24, 2015; "Deyatel'nost gosudarstvennykh institutov" ["Functioning of the State Institutions"], *VTsIOM*, no date.

³⁷ Hilary Appel, "Is It Putin or Is It Oil? Explaining Russia's Fiscal Recovery," *Post-Soviet Affairs*, Vol. 24, No. 4, 2008, pp. 301–323; Edward Lucas, *The New Cold War: Putin's Russia and the Threat to the West*, London: Palgrave Macmillan, 2014; Daniel Treisman, "Presidential Popularity in a Hybrid Regime: Russia under Yeltsin and Putin," *American Journal of Political Science*, Vol. 55, No. 3, 2011, pp. 590–609; Kathryn Stoner and Michael McFaul, "Who Lost Russia (This Time)? Vladimir Putin," *The Washington Quarterly*, Vol. 38, No. 2, Summer 2015, pp. 167–187.

Many Russians consider Putin's primary accomplishments to be the strengthening of Russia's global standing and improvement of the Russian military force.³⁸ Furthermore, only 12 percent of Russians think that a future Russian president should pursue more liberal approaches to governance, and over 70 percent are either content with the current style of governance or think it should be harsher.³⁹ Putin's popularity reinforces the stability of the regime, but other factors play a role in maintaining that stability as well, including apathy and strong crackdowns on the freedom of speech and assembly.⁴⁰

Nevertheless, political protest activity seems to have grown over the course of 2017, most visibly manifest in Russia-wide anti-corruption protests in March and June 2017.⁴¹ Although these events attracted the greatest numbers of participants since the mass protests of 2011–2012, they are unlikely to signal a serious immediate challenge to the current regime, as the protesters represent a vocal and educated middle-class minority among the Russian youth and Russians more generally. A great majority of Russians say they would not participate in protests and do not seem to share the protesters' views or their antigovernment zeal.⁴² There is little indication that public support for Putin and his regime is likely to wane drastically in the near term given Putin's dominance in polls leading up to the 2018

³⁸ Robert Person, "Balance of Threat: The Domestic Insecurity of Vladimir Putin," *Journal of Eurasian Studies*, Vol. 8, No. 1, 2017, pp. 44–59; "Vladimir Putin: Otnosheniye I Otsenki" ["Vladimir Putin: Attitude And Evaluations"], Levada Center, April 4, 2017.

³⁹ "Prezident 2018" ["President 2018"], Levada Center, May 7, 2017.

⁴⁰ Douglas Rutzen, "Civil Society under Assault," *Journal of Democracy*, Vol. 26, No. 4, 2015, pp. 28–39; Daria Skibo, "Five Years of Russia's Foreign Agents Law," *Open Democracy*, August 14, 2017; See also "Lyudi Privykayut K Nasiliyu" ["People Are Getting used to Violence"], Levada Center, January 18, 2017.

⁴¹ Denis Volkov, "Chto Osobennogo v Novoy Volne Protestov v Rossii" ["What Is Special About the New Wave of Protests in Russia?"], Moscow Carnegie Center, April 6, 2017; Denis Volkov, "Ottsy i Deti: Problema, s Kotoroy Stolknulsya Naval'nyy 12 Iyunya" ["Fathers and Sons: The Problem Navalny Faced on June 12"], *RBC*, June 13, 2017.

⁴² "Protestnyj Potencial" ["Protest Potential"], *VTsIOM*, January 15, 2017.

election.⁴³ While it is difficult to see whether Putin's popularity would carry over to a new president in a new regime, there seems little reason to suspect that low public opinion of the current regime will lead to such a change in the near to medium term.

There is also strong public support for Russia's foreign policy, with more than 40 percent of the public seeing foreign policy as a main accomplishment of the government.⁴⁴ A strong majority believe that Russia should be a great power, and an increasing majority believe that Russia is a great power today.⁴⁵ Russians are more likely to see ISIS (58 percent) rather than U.S. power and influence (37 percent) as a threat to their country.⁴⁶ The public appears to largely support Russia's current policies, in part because recent policies—including the annexation of Crimea, intervention in Ukraine, and opposition to Western alliances—resurrected and built on longstanding patriotic sentiments. Russians tend to see the West as responsible for the recent crisis in relations, with a majority of Russians claiming that the West's unwillingness to accept Russia as a great power is behind the West's hostility toward Russia. The Levada Center's analysis of its own polling also suggests that Russians are willing to sacrifice economically (e.g., due to sanctions) to maintain Russia's position as a great power.⁴⁷

Although the linkage between domestic political concerns and military operations is uncertain and probably varies in different con-

⁴³ "Vybory 2018" ["Elections 2018"], *VTsIOM*, December 2017.

⁴⁴ Theodore Gerber, "Foreign Policy and the United States in Russian Public Opinion," *Problems of Post-Communism*, Vol. 62, No. 2, No. 98-111, 2015, p. 100.

⁴⁵ "Derzhavnost' I Osobyi Put' Rossii" ["Russia's Special Power and Path"], Levada Center, December 12, 2016.

⁴⁶ Jacob Poushter and Dorothy Manevich, "Globally, People Point to ISIS and Climate Change as Leading Security Threats," Pew Research Center's Global Attitudes Project blog, August 1, 2017.

⁴⁷ "Russia and the West: How Russians Think the West Views Them," Levada Center, June 26, 2015; "Greatness Instead of Democracy: How Russia Became a Peer to the U.S. in the Minds of Its Citizens" ["Velichiye Vmesto Demokratii: Kak Rossiya Dognala Nas V Umakh Svoikh Lyudey"], Levada Center, February 4, 2016.

texts, analysts do emphasize that Russian foreign policy is, in part, influenced by concerns about public opinion.⁴⁸ In the case of the annexation of Crimea, Putin, at a minimum, considered domestic popular support in formulating his policy and a desire to boost his popular appeal after the 2012 election may have motivated his decision.⁴⁹ From this line of argument, it is possible to speculate that another Russian military action might be motivated by a desire to boost the regime's popularity.⁵⁰ However, war carries substantial risk to the government, and Russian public support for military conflict is by no means guaranteed, as shown by the low popularity of a Russian military intervention in Ukraine.⁵¹

Public support for the Russian military is strong. The Army (which refers to all military services) is one of Russia's most trusted institutions and a tremendous and growing source of pride for the Russian population.⁵² After common opposition to conscription due to hazing and other problems, a growing number of Russians support the preservation of compulsory Army service for all men (58 percent in 2017 versus 47 percent in 2011).⁵³ About 36 percent of Russians

⁴⁸ See, for example, Kimberly Marten, "Crimea: Putin's Olympic Diversion," *Washington Post*, March 26, 2014; Tobias Theiler, "The Microfoundations of Diversionary Conflict," *Security Studies*, Vol. 27, No. 2, 2017, pp. 318–343; Olga Oliker, et al., *Russian Foreign Policy in Historical and Current Context: A Reassessment*, Santa Monica, Calif.: RAND Corporation, PE-144-A, 2015.

⁴⁹ "Address by President of the Russian Federation." See John W. Parker, "Understanding Putin Through a Middle Eastern Looking Glass," Institute for National Strategic Studies, July 2015, No. 19, p. 35; Stoner and McFaul, 2015, pp. 180–181.

⁵⁰ See, for example, Dmitri Gorenburg, "Russian Military Intervention in Kazakhstan," *American Enterprise Institute*, January 17, 2018, p. 2.

⁵¹ In July 2014, polls found that only 5 percent to 10 percent of respondents supported such a Russian military intervention, which likely explains Russia's denial of its presence in the country. Harley Balzar, "The Ukraine Invasion and Public Opinion," *Georgetown Journal of International Affairs*, March 19, 2015.

⁵² "Institutional Trust," Levada Center, October 13, 2016; "Gordost', patriotizm i otvetstvennost'" ["Pride, Patriotism and Responsibility"], Levada Center, December 7, 2015.

⁵³ "Rossiyskaya Armiya" ["Russian Army"], Levada Center, February 20, 2017.

believe defense spending should be a priority in 2016, in line with past years.⁵⁴

From the perspective of societal support, Russia's current policies appear quite sustainable. The population supports the government, its foreign policy, the development of the military, and the necessary public expenditures to that end. There are elements of the society that might support a more aggressive nationalist foreign policy and smaller elements that might prefer a more pro-Western foreign policy but, overall, public sentiment backs the status quo for the foreseeable future.

Economic Performance

Russia's economic performance, measured by its gross domestic product (GDP), is a third key factor in shaping Russia's ability to generate and sustain Russian military forces.⁵⁵ Past performance offers some insights into the future.

Historical Trends

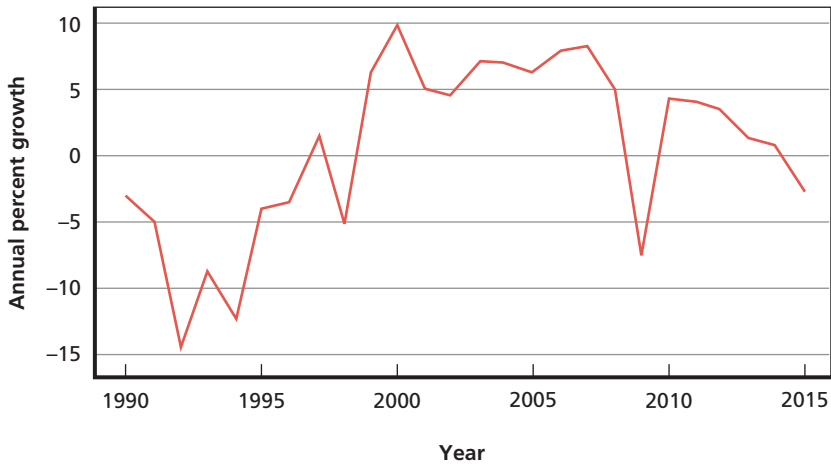
Since the end of the Soviet Union, Russia has experienced major economic fluctuations (see Figure 2.1). Based on World Bank data, Russia's economy grew at an average rate of -3.14 percent from 1989 to 1997, approximately 6.9 percent from 1998 to 2008, 1.0 percent from 2009 to 2013, and -0.77 percent from 2014 to 2017.

The export of oil and gas has historically appeared to play a strong role in explaining both Russia's dynamic growth and periods of recession. In a 2016 RAND report analyzing Russia's medium-term economic prospects, Keith Crane and coauthors estimated that the

⁵⁴ "Ekono Mika I Oborona" ["Economy and Defense"], Levada Center, July 21, 2015; "V Rosii Vyroslo Chislo Tekh, Kto Predpochitayet Lichnoye Blagopoluchiye Velichiyu Strany" ["The Number of Those Who Prioritize Personal Well Being to the Country's Status Has Grown in Russia"], RBC, December 12, 2016.

⁵⁵ While Russia sees itself as a great power, its economy lags significantly behind the United States, and its nominal GDP is approximately the same size as Italy, although taking into account purchasing power, Russia's economy is larger. See World Bank data.

Figure 2.1
Russian Growth Rates



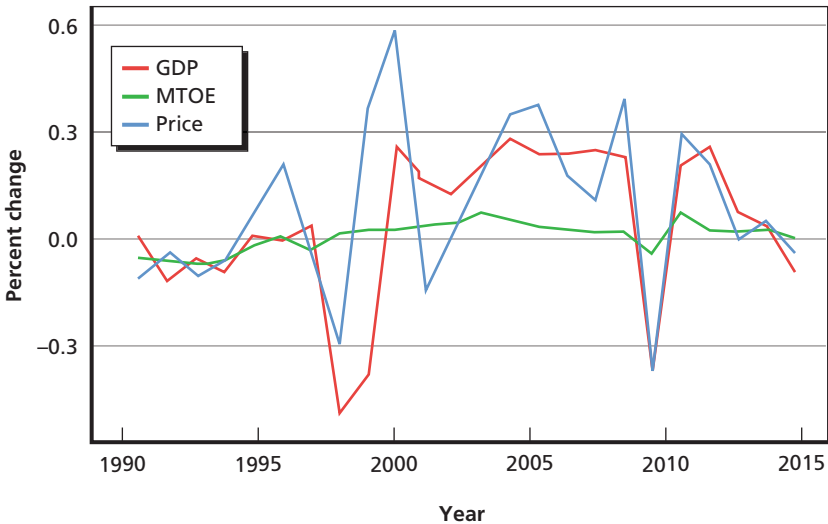
SOURCE: World Development Indicators, World Bank, *Global Economic Prospects: A Fragile Recovery*, Washington, D.C.: World Bank, 2017.

proportion of energy revenues was approximately 17 percent to 25 percent of Russia's GDP between 2000 and 2011.⁵⁶ Figure 2.2 shows that GDP growth has generally correlated with the price of oil rather than with oil and gas production, although there has been some gradual increase in production and associated revenue over the last 25 years.

However, Russian economic growth over the last two decades has been influenced by trends in several other factors. On the growth side, Russia benefited from an increase in labor productivity in the early 2000s, which some analysts attribute to growth in the private sector and the adoption of Western management practices and technology.

⁵⁶ Keith Crane, et al., *Russia's Medium-Term Economic Prospects*, Santa Monica, Calif.: RAND Corporation, RR-1468-RC, 2016; Alexey Kudrin and Evsey Gurchich, "A New Growth Model for the Russian Economy," *Russian Journal of Economics*, Vol. 1, No. 1, March 2015, p. 47, p. 5; World Bank, 2017, and Kudrin and Gurchich, 2015, p. 10, estimate that approximately half of the 6.9 percent annual growth from 2000 to 2008 can be explained due to revenues from oil and gas.

Figure 2.2
Change in Russian GDP, Petroleum Production
(Measured in Millions of Tons of Oil Equivalent [MTOE] and Commodity
Prices Over Time)

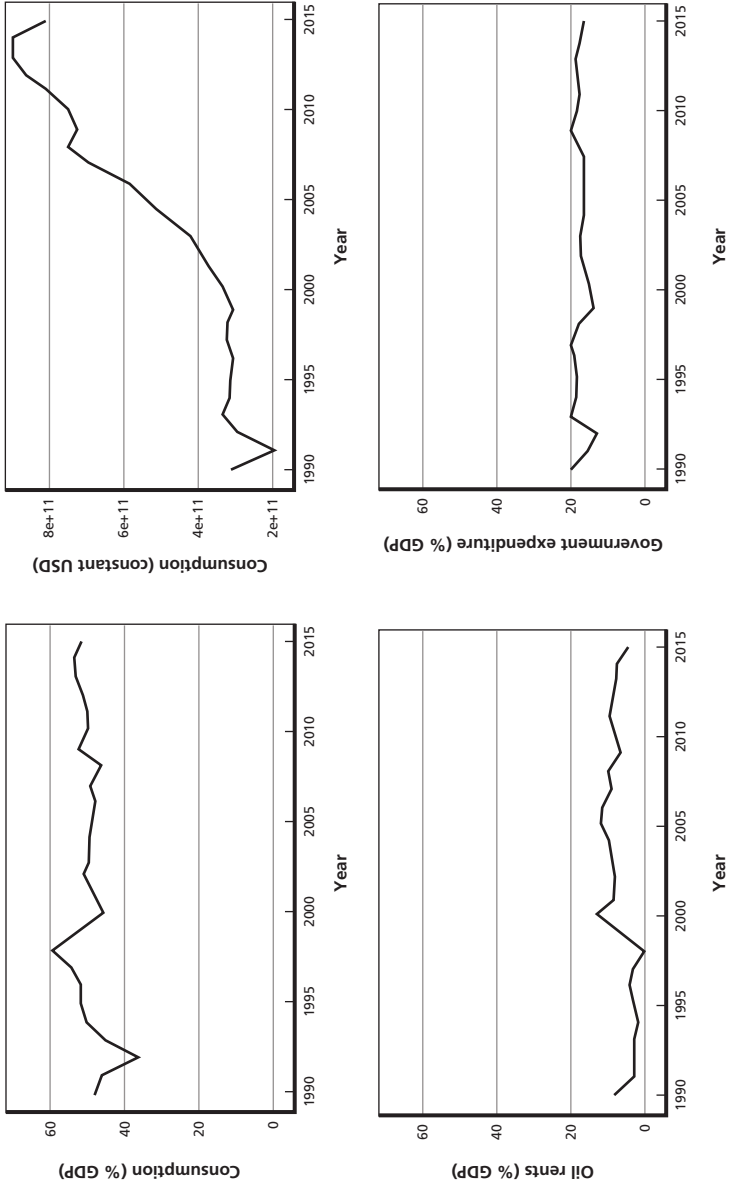


SOURCE: GDP is from the World Development Indicators (World Bank, 2017); MTOE from OECD, 2017; oil prices from the U.S. Energy Information Agency, 2018.

New businesses were created in the service sector, and domestic consumption steadily increased, which over time appears to have decreased the importance of oil rents in GDP (see Figure 2.3). The effect of oil and gas revenues on the economy was also stabilized by the creation of a reserve fund and by government expenditures. For the future, Russia has the advantage of a continuing high level of education, and a substantial reserve of Russian capital and skilled labor exists abroad, which could return to Russia and encourage growth if economic conditions appeared more favorable.⁵⁷

⁵⁷ Crane et al., 2016, pp. 9–10; Martin Gilman, “Demythologizing the Russian Economy,” online presentation, March 26, 2013; discussions with economic analysts in Washington, D.C., and Moscow, June and July 2017.

Figure 2.3
Change in Household Consumption Over Time



SOURCE: World Development Indicators, World Bank, 2017.

At the same time, the Russian economy faces several longstanding constraints on growth. First, Russia has quite low investment levels. Foreign direct investment (FDI) levels have declined since 2009, which became more severe after Western economic sanctions were imposed; FDI dropped from 3.1 percent of GDP in 2013 to 0.49 percent in 2015.⁵⁸ Russia has long experienced significant capital flight, estimated at \$151 billion in 2014 and \$57 billion in 2015 (although 2016 capital flight levels appear lower).⁵⁹ Analysts also note that a serious problem for domestic investment is that many wealthy Russians keep their capital overseas. With the significantly lower access to foreign capital following the development of the Western sanctions regime, Russian interest rates also rose substantially, making domestic investment costlier.⁶⁰

The second constraint on growth relates to Russia's business climate, including both the interrelated issues of corruption and the regulatory burden. Corruption in Russia leads to differential treatment of businesses by the government, with businesses that have better connections receiving favorable tax treatment or easier access to government contracts and others being subject to extortion or expropriation. Corruption also creates incentives for public officials to maintain or increase the complexity of regulation, which creates disincentives for investment and hurts growth. Related, flaws in internal security and law enforcement organizations in Russia are perceived to constrain growth.⁶¹ Russia ranks low on international surveys for the protection

⁵⁸ These FDI numbers derive from IMF data on inward flows. They are reported in U.S. dollars and then converted to percent GDP.

⁵⁹ Dmitry Dokuchaev, "Russian Capital, No Longer on the Run," *Russia Direct*, August 24, 2016.

⁶⁰ See Crane et al., 2016, pp. 41–43; Svetlana Ledyeva and Mikael Linden, "Determinants of Economic Growth: Empirical Evidence from Russian Regions," *European Journal of Comparative Economics*, Vol. 5, No. 1, June 2008, pp. 87–105, highlights the importance of domestic investment in Russia by noting that variation in investment explains variation in regional growth rates, at least before 2008.

⁶¹ Kudrin and Gurvich, 2015, p. 48, for example, highlight flaws in law enforcement that undermine growth, including "the excessive centralization of law enforcement; prevailing vertical hierarchical coordination; multiple parallel governance verticals; the persisting "tick-sheet" evaluation system caused by centralized governance; a lack of external supervision and communication with local communities and civil authorities."

of property.⁶² Russia has made efforts to improve its regulatory burden, especially by improving its standing on the World Bank's "Ease of Doing Business" ranking, from 120th in 2012 to 35th in 2018. Nevertheless, Russia actions have not fully addressed concerns about the police and judiciary targeting innocent business owners, which clearly disincentivizes business investment.⁶³ In aggregate, Crane et al., estimate that Russia's GDP growth could be 0.3 percent per year higher if corruption were reduced and, through a separate calculation, 2.2 percent if the business climate were significantly improved.⁶⁴

A third related constraint is state control of the economy. State-owned enterprises (SOE), estimated to have contributed 70 percent of GDP, are believed to be substantially less efficient than private enterprises.⁶⁵ Analysts note a trend toward renationalization, meaning the state taking over increasing control of the economy, with possible goals including ensuring stability in a volatile world, state control of strategic industries, or punishing opponents or rewarding supporters.⁶⁶ Indeed, Russian analysts blame, in part, the dominance of SOEs in the military industrial sector for Russia's lack of technological innovation.⁶⁷ Although there are Russian venture capital approaches to innovation, such as the Foundation for Prospective Research (FPI) founded in

⁶² Kudrin and Gurchich, 2015, p. 47.

⁶³ Leonid Ragozin, "When Russian Officials 'Nightmare' Your Business, You Can Lose Everything—Even Your Life," *Bloomberg News*, January 29, 2018; World Bank, "Doing Business 2018: Reforming to Create Jobs," 2018, p. 4; Crane et al., 2016, p. xiii.

⁶⁴ Crane et al., 2016, pp. xvi, 38–41.

⁶⁵ Ekaterina Mereminskaya, "*Gosudarstvo i goskompanii kontroliruyut 70% rossijskoj ehkonomiki*" ["The Government and State-Owned Companies Control 70% of the Russian Economy"], *Vedomosti*, September 29, 2016.

⁶⁶ See, for example, Kudrin and Gurchich, 2015, pp. 43–44. Crane et al. claim that the low labor productivity of SOEs and the large amount of capital invested in SOEs limit Russia's GDP growth. Crane et al., 2016, pp. 25–34. See also Fiona Hill and Clifford G. Gaddy, *Mr. Putin: Operative in the Kremlin*, new edition, Washington, D.C.: Brookings Institution Press, 2015. Discussion with Russian analysts, Washington, D.C., and Moscow, July 17, 2017, and January 26, 2018.

⁶⁷ One Russian analyst explained, "private companies are too weak, [but] government companies are too inefficient." Discussion with Russian analyst, Moscow, July 17, 2017.

2012, modeled after the Defense Advanced Research Projects Agency (DARPA), analysts are not optimistic about their prospects.⁶⁸

Fourth, Russia has faced a decline in available labor and challenges developing its human capital. As the following demographic section details, in addition to a decline in population since the early 1990s, Russia faces a future decline in the working-age population. Russia has also experienced a decline in researchers working on research and development (R&D) from about 3,800 per million people in 1996 to 3,100 in 2014. At the same time, Russian intellectuals and scientists are far more integrated in global epistemic and scholarly communities than they were in Soviet times, and Russia remains one of the most highly educated countries in the world.⁶⁹

Fifth, Russia's economy remains subject to volatility in the price of oil, although less vulnerable because of its recent decision to float the ruble. In 2013, with a reduction in oil prices and increasing pressure on Russia after sanctions were imposed in 2014, the exchange rate of the ruble began to fall. After failing to retain a soft peg of the ruble exchange rate after 2013, Russia in 2014 permitted the ruble to float. This policy led to a sustained decrease in the value of the ruble, with a number of negative consequences, including increased inflation and lower private consumption due to Russia's dependence on imported consumer goods. This policy did, however, increase domestic production and make exports significantly more attractive, which ultimately stabilized the economy and reduced the effect of the oil price shock.⁷⁰ By March 2017 inflation had diminished to 4.3 percent, the lowest level since 2012.⁷¹ Going forward, the policy to float the ruble will

⁶⁸ Dmitry Adamsky, "Defense Innovation in Russia: The Current State and Prospects for Revival," Institute on Global Conflict and Cooperation, January 2014, pp. 4–6; Irina Dezhina, "Innovation Policy in Russia: Development, Challenges, and Prospects," Note No. 12, *Observatoire Franco-Russe*, February 2016.

⁶⁹ In 2013, 58.2 percent of Russians between the ages of 25 and 34 had completed tertiary education, making Russia third in the world, after South Korea and Japan (see OECD, 2017).

⁷⁰ Crane et al., 2016, pp. 19–24.

⁷¹ Elena Holodny, "Russian Inflation Keeps Tumbling," *Business Insider*, April 5, 2017.

continue to have stabilizing effects on the economy, although there could be short-term impacts on consumers in the midst of crises.

Future Prospects of the Determinants of Russian Economic Performance

Long-term predictions of Russia's energy exports are uncertain. While future forecasts of oil prices are notoriously imprecise, oil prices are expected to slowly rise, from about \$81 in 2020 to \$152 in 2035.⁷² However, the volume of Russian energy exports are expected to decline after 2020, in large part because of decreasing production due to lower investment, restrictions on the import of Western extraction technology, and the depletion of existing reserves. Other Russian energy exports of gas and coal are not expected to increase significantly, given a lack of new markets. While energy exports will continue to sustain the Russian economy, their role in bolstering Russian GDP growth will diminish, and the relative contribution of fuel and energy to the GDP is expected to decrease from 31 percent in 2015 to 13 percent to 15 percent in 2040.⁷³

Continued Western sanctions impose another constraint on the Russian economy, with a potentially significant long-term effect on Russian energy production. Crane et al., expect that the end of sanctions would increase Russia's GDP growth rate by 1.4 percent.⁷⁴ However, following the passage of U.S. legislation in August 2017 authorizing new sanctions against the Russian energy sector and codifying existing measures, sanctions relief appears unlikely for the near term.

A potential source of economic growth is structural reform, including reforms that would diminish corruption, improve the Rus-

⁷² U.S. Energy Information Administration, "Annual Energy Outlook 2017: Table: Total Energy Supply, Disposition, and Price Summary."

⁷³ One detailed Russian report expects a decline in oil production after 2020 under a range of different political and economic scenarios. Alexey Makarov, Leonid Grigoriev, and Tatiana Mitrova, eds., "Global and Russian Energy Outlook 2016," Energy Research Institute of the Russian Academy of Sciences and the Analytical Center for the Government of the Russian Federation, 2016, pp. 162, 167, 172.

⁷⁴ According to Crane et al., 2016, p. 52, such reforms could be the greatest potential for sustained economic growth.

sian business climate, or enable privatization. President Putin has recognized the need for reform and tasked several different organizations to offer suggestions, including the more liberal Center for Strategic Research, led by Alexei Kudrin, and the more statist Stolypin Club, led by Boris Titov.⁷⁵ A wide range of analysts, however, remain skeptical that major structural reform proposed by Kudrin's group—such as the privatization of state-owned enterprises and addressing law enforcement's abuse of businesses—is likely to occur. While these reforms would address some of the concerns described, from the perspective of some factions within Russia it could threaten stability by changing the status quo and would also likely negatively impact powerful individuals and interest groups within the government.⁷⁶ Absent the lifting of sanctions, analysts speculate that Putin is unlikely to engage in the significant liberalization that liberal economists advocate. While Russia's reform prospects are uncertain until after the election, incremental behind-the-scenes reform, that likely will not address the major flaws described, and direct investment into the economy are viewed as most probable—but probably unlikely to significantly change Russia's economic prospects.⁷⁷

Conclusion and Outlook

While the Russia economy is not on the brink of collapse, it will likely be constrained in the future by low investment, political and economic institutions that discourage growth, high corruption, and a small demographic decline. In line with a consensus among economists studying the Russian economy, for the foreseeable future we expect Russia to

⁷⁵ Discussions with Russian analysts, Moscow, July 2017; see, for example, Kathrin Hille, "Kremlin Gathers Experts to Tackle Russia's Anemic Growth," *Financial Times*, May 31, 2017.

⁷⁶ See, for example, Andrew Kuchins, "Putin's Legacy: Brezhnev Lite?" *Russia Matters*, December 14, 2017; Evgenia Pismennaya, Stepan Kravchenko, and Ilya Arkhipov, "Even After 'Lost Decade' Putin Isn't Ready to Fix the Economy," *Bloomberg News*, May 31, 2017; Darya Korsunskaya and Andrey Ostroukh, "Putin Leaves Russians Guessing on Economic Reform Plan," *Reuters*, June 3, 2017.

⁷⁷ Andrey Biryukov, Ilya Arkhipov, and Evgenia Pismennaya, "Russia Weighs Biggest Spending Spree Since Putin's Re-Election," *Bloomberg News*, January 15, 2018; discussions with U.S. and Russian analysts, Washington, D.C., and Moscow, June and July 2017.

experience steady but slow growth of 1 percent to 2 percent of GDP.⁷⁸ This projection is consistent with projections from major international organizations such as the UN, the World Bank, and the International Monetary Fund (IMF).⁷⁹

One Russian expert noted that the predictions from the major international organizations are similar because they use similar models and proposed that, if the structural reform proposed by Kudrin were to occur, combined with an increase in oil prices and influx in capital from abroad, Russia could conceivably again experience sustained growth at levels of 5 percent to 6 percent of GDP, as it did in the early 2000s.⁸⁰ This event seems unlikely given the outlook of the oil market and the domestic prospects for reform, but it is certainly possible. Another, perhaps more likely possibility is for protracted low oil prices, increased sanctions, or a domestic political crisis to lead to more negative than expected growth, including a sustained contraction in GDP.

Defense Spending

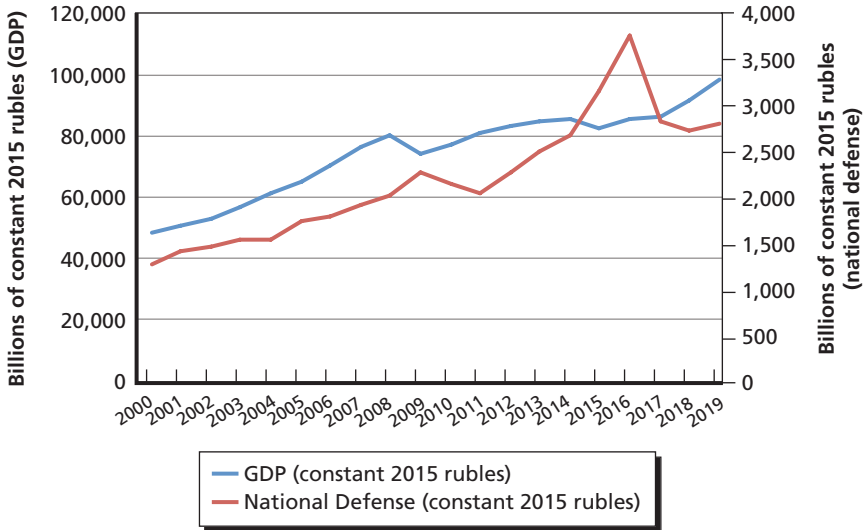
One of the main ways Russia's economic performance influences Russia's ability to generate and sustain Russian military force is through enabling defense spending. Indeed, Russia's economic performance in early to mid-2000s enabled a substantial increase in the country's military expenditures beginning in the late 2000s. As shown in Figure 2.4, in constant ruble terms, Russia's defense spending roughly doubled from 2000 to 2017, at the same time GDP also roughly doubled. GDP and defense spending were not closely aligned; for example, defense spending increased substantially from 2011 to 2015, at the same time the economy barely grew. Further, while Russian defense expenditures rose in 2016, this was due to a one-time 700 billion to 800 billion ruble payment to reduce the debt of the military industrial complex rather than a planned sustained increase

⁷⁸ See also Konstantin Sonin, "Russia's Economic Stagnation Is Here to Stay," *Project Syndicate*, February 1, 2018.

⁷⁹ Projections from World Bank, 2017; UN estimates from United Nations, *World Economic Situation and Prospects*, New York: United Nations, 2017; IMF from imf.org.

⁸⁰ Interview with Russian economic official, Moscow, July 17, 2017.

Figure 2.4
Past and Projected Russian GDP and Spending on National Defense in Constant 2015 Rubles



SOURCE: GDP 2000–2015 from World Bank World Development Indicators; GDP 2016–2019 from Cooper, 2017; National Defense from official executed Russian budgets, except for future projections.

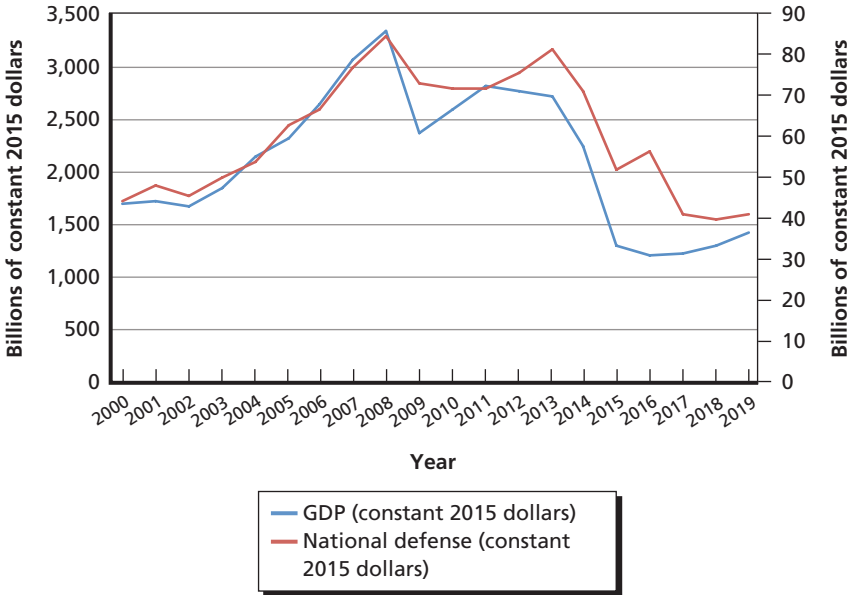
in spending.⁸¹ When this one-time payment is taken into account, the defense spending trend is smoother and more in line with GDP growth.

Russia's defense expenditures represent a significant portion of its overall budget, varying between 12 percent and 23 percent of the Russian federal budget and 2.6 percent and 4.4 percent of GDP.⁸²

⁸¹ Michael Kofman, "The Russian Defense Budget and You," *Russian Military Analysis*, March 17, 2017; Julian Cooper, "Prospects for Military Spending in Russia in 2017 and Beyond," March 23, 2017a.

⁸² Our description of National Defense is based on the Russian government's use of this term, which does not include various social spending to support the military that is typically included within NATO or Stockholm International Peace Institute (SIPRI) definitions of defense spending. Spending under National Defense does include some spending outside of the Ministry of Defence, such as spending within the Ministry of Fuel or Rosatom, but spending on internal security is carried out under other budget categories. Appendix B contains additional charts that convert spending into constant dollars, share of budget, and GDP.

Figure 2.5
Russian GDP and Spending on National Defense in Inflation Adjusted Dollars



SOURCE: Exchange rates and GDP 2000–2015 from World Bank World Development Indicators; GDP 2016–2019 from Cooper, 2017; National Defense from official executed Russian budgets, except for future projections.

In Figure 2.5, we convert the Russian GDP and defense spending into constant 2015 U.S. dollars for comparison. Throughout the rest of our analysis, we use constant rubles, rather than dollars, to analyze Russia’s defense spending because of the large variation in exchange rates over 2000–2017. As Figure 2.5 indicates, considering dollar expenditures implies that Russia’s defense expenditures dropped in 2013, which is not accurate. Russia’s defense expenditures were largely carried out within Russia, so constant rubles are a more accurate measure of the expenditures.

Much of the increase in Russian defense expenditure since 2000 has gone toward acquisition of new materiel. Russia’s military acquisition is specified under Russia’s long-term procurement plans known as

State Armaments Programs (SAP),⁸³ with yearly procurement carried out under the State Defense Order (SDO).⁸⁴ While SAPs are officially intended to run ten years, they are often revised every five years. The planned expenditures of the second half of the SAP are, thus, unreliable because it is widely understood that these planned programs are likely to be continually pushed forward in time and not implemented.⁸⁵ The details of SAPs and SDOs are classified, although some information is either announced or can be extrapolated from open sources.

The most recent SAP was instituted in 2011 and was planned to run until 2020. Russia allocated around 20 trillion rubles (about \$348 billion at September 2017 exchange rates), significantly above prior levels of spending, and senior Russian leaders, including President Putin, played central roles in its implementation.⁸⁶ Table 2.1 highlights its priorities, as estimated by the Russian Center for Analysis of Strategies and Technologies (CAST).⁸⁷ SAP-2020 focused significantly on the Navy and Air Force, with the Ground Forces, despite its large size, receiving a smaller proportion of the total. Some Russian defense analysts claim that the SAP-2020 was intended more as a means of redistributing oil money to struggling defense enterprises and investing in new air and sea platforms to replace Russia's air and sea fleet rather than specifically about improving the military to achieve particular

⁸³ In Russian, *Gosudarstvennye Programmy Vooruzheniya*.

⁸⁴ Brian Taylor, "Kudrin's Complaint: Does Russia Face a Guns vs. Butter Dilemma?" PONARS Eurasia, policy memo 254, June 2013; Susanne Oxenstierna, "Russian Military Expenditure," in Persson, 2016, p. 142.

⁸⁵ Author discussions with Russian analysts, Moscow, July 2017.

⁸⁶ Center for Analysis of Strategies and Technologies (CAST), "*Gosudarstvennye programmy vooruzheniya Rossiyskoy Federatsii problemy ispolneniya i potentsial optimizatsii*" ["The State Armaments Programs of the Russian Federation: Problems of Implementation and Potential for Optimism"], Moscow, 2015, pp. 8–9.

⁸⁷ One goal of the 2020 SAP was to provide the military with at least 70 percent of modernized equipment. The achievement has been uneven, with some sectors such as air defense and aircraft seeing marked improvements while others, such as the army and navy, have fared less well. Nevertheless, in spite of sanctions and loss of external technological sources, the 2020 SAP has markedly improved Russian military capabilities. Julian Cooper, *Russia's State Armaments Programme to 2020: A Quantitative Assessment of Implementation 2011–2015*, FOI-R—4239—SE, Stockholm: Sweden, March 2016, p. 52.

Table 2.1
Targets of the SAP-2020

Branch	Size of allocation, trillions of rubles	Percent of total
Ground Forces	2.6	15
Navy	5.0	25
Air Force	4.7	24
Strategic Missile Forces	1.0	5
Aerospace Defense Forces	3.4	17
Other multiservice (C4ISR)	2.7	14
Total	19.4	100

SOURCE: CAST, 2015, p. 23.

defense objectives. Analysts further emphasize that new procurement is focused on upgrading or purchasing modernized older platforms rather than “hasty” investments in next-generation systems fighters, bombers, or tanks. While Russia has, in places, pursued next-generation platforms, these investments are generally small, and procurement of these platforms has generally been repeatedly delayed.⁸⁸

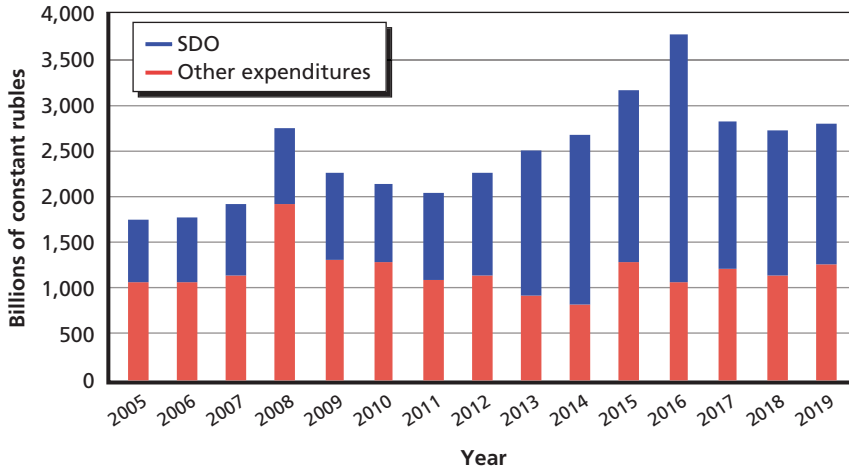
The recent rise in Russian defense spending is, to a great extent, the product of increased procurement under the 2020 SAP. This can be seen by estimating the relative size of the yearly SDO, which we do based on publicly released Russian budget figures and a method originally developed by Julian Cooper.⁸⁹ In Figure 2.6, after adjusting for inflation, we show the size of the yearly SDO, as a proportion of the overall military budget. In 2017–2019, the size of planned acquisition is expected to level off as the government reduces direct support for the military industrial complex, although future expenditures are subject to change.⁹⁰ We indicate the non-SDO component of the budget

⁸⁸ Discussion with Russian military analysts, Moscow, July 2017.

⁸⁹ Julian Cooper, *Russian Military Expenditure: Data, Analysis, and Issues*, FOI, Stockholm: Sweden, September 2013; Cooper, 2017.

⁹⁰ Kofman, 2017a.

Figure 2.6
Russian Procurement Expenditures Compared to Other Military Expenditures in 2015 Constant Rubles



SOURCE: RAND Arroyo Center analysis.

NOTE: The defense budget for 2016 includes a 700 to 800 billion-ruble one-time debt repayment (Kofman, 2017a).

as “other expenditures,” which we assume includes the costs Russia incurs from military operations, maintenance, personnel, and training. Figure 2.6 shows that the size of the Russian defense expenditure, since 2009 is largely driven by changes in the overall size of the SDO rather than by fluctuations of the other expenditures.

The Future

Although military expenditures will not be slashed drastically in the near or medium term, they will decrease from prior levels. The general parameters of the fiscally conservative 2017–2019 budget indicate that defense spending (as defined by the “National Defense” budget category) will remain around 3 percent of GDP and 17 percent of the budget.⁹¹ We expect these general parameters to continue into the future,

⁹¹ Dmitriy Butrin, Denis Skorobogat'ko, and Vadim Visloguzov, “Byudzhet mirnogo bre-meni” [“The Budget of the Peace Burden”], *Kommersant*, October 27, 2016.

meaning that defense spending will rise at roughly the same pace as GDP, about 1 percent to 2 percent per year. In the future, a significant increase in GDP or a rise in perceived threat could similarly lead to an increase in defense spending, while an increased need for social spending would put pressure on the defense budget. Nevertheless, as shown from the steady growth in the defense budget from 2008–2017 even with variable GDP growth, Russia has maintained high defense spending even in the face of political and economic troubles, so a steady or potentially somewhat higher spending seems likely in the future.

Future Russian defense expenditures will depend largely on the costs of future procurement. Support to the military industrial complex is expected to decline, as Russian officials have made clear to defense firms that leaner times are ahead.⁹² The best indication of short to medium term future procurement is the 2018–2025 SAP originally intended to begin in 2020. The current value of the new SAP is currently estimated to cost 20 trillion rubles. Although the precise distribution is uncertain, preliminary reports expect an increase share to be allocated to the Ground Forces and Airborne Troops (VDV) of about 4 trillion rubles (20 percent to 21 percent of the total program), an increase of approximately 15 percent over the previous SAP. This apparent increase may be a less significant change, given that some reports indicated that Russia had increased the relative share of expenditure on ground capabilities over the last few years.⁹³ There is also expected to be greater acquisition of conventional long-range strike systems, such as air-launched cruise missiles.⁹⁴

Demographics

Demographics are a key factor in shaping Russia's ability to generate and sustain Russian military forces, both because of the need to recruit

⁹² See, for example, Alexander Zudin, "Putin Tells Russia's Defence Industry to Diversify," *Jane's Defence Weekly*, September 9, 2016.

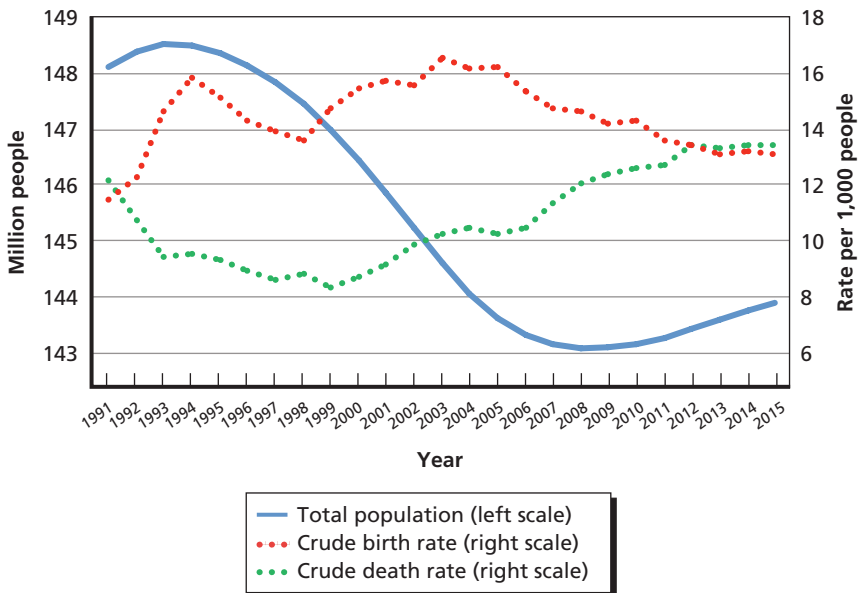
⁹³ Leonid Nersisyan, "*Kak budut vooruzhatsya Vooruzhennyye sily Rossii v sleduyushchie desyat' let?*" ["How Will the Armed Forces of Russia Be Armed Over the Next 10 Years?"], *Regnum*, November 17, 2017; interviews with Russian analysts, Moscow, July 2017.

⁹⁴ Nersisyan, 2017.

a sufficient number of personnel and because the size and characteristics of the Russian population underlie broader economic development.

After the fall of the Soviet Union, the birthrate in Russia dropped substantially, with total fertility per female dropping to 1.15 in 1999. As a result of this decline and rising mortality rates among men, Russia's population declined by approximately 4.15 million from 1991 to 2015, leaving a total population in 2015 of 144 million (see Figure 2.7). Over the course of the 2000s, Russia's demographics stabilized. Russia's birthrate rose from 1.2 in 2000 to 1.7 in 2012. Mortality rates also dropped, with male life expectancy increasing from 58.9 in 2005 to

Figure 2.7
Dynamics of Crude Birth and Death Rates and Total Population of Russia



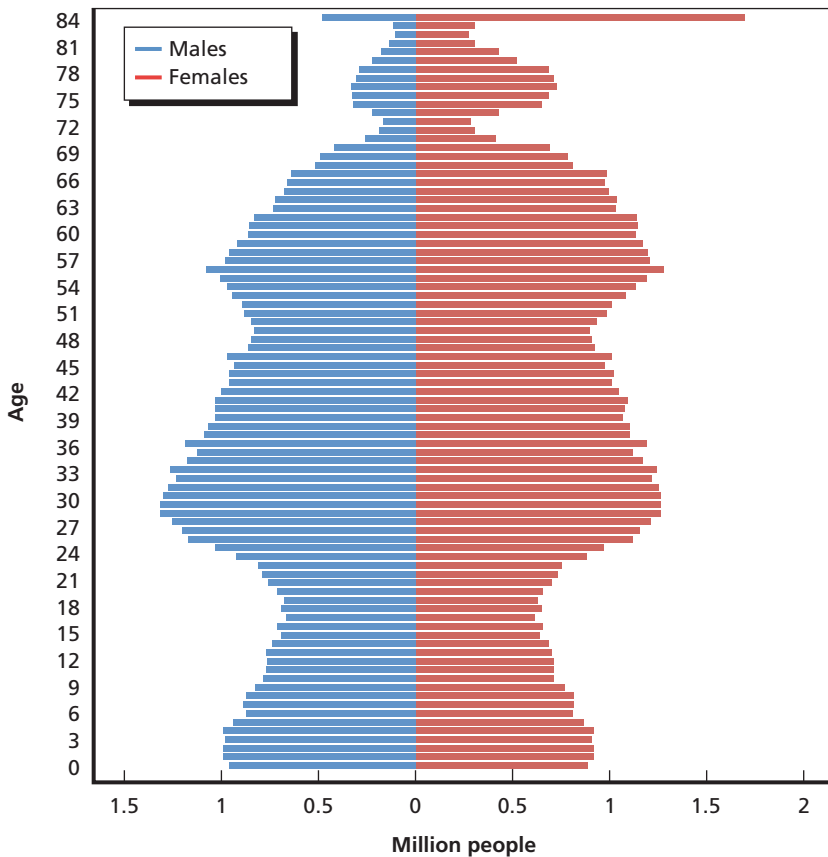
SOURCE: UN, 2017; World Bank, 2017.

NOTE: We mainly rely on data from UN Population Division, World Bank, and the Russian Federal State Statistics Service (Rosstat) for our analysis. Differences between data sources are a result of different methodologies and assumptions about the future (in the case of forecasts). Most important, Rosstat has fully incorporated the population of the annexed territories of Ukraine—Crimea and Sevastopol—in its statistics. According to Rosstat, the population of the peninsula stood at 2.3 million in 2014, raising the total population of Russia to over 146 million.

66.5 in 2016, although male life expectancy in Russia remains lower than that of Western countries. The lower number of births from the 1990s had a significant and sustained effect on Russia’s demographic future, as shown in the lower number of 9- to 25-year-olds in the population pyramid in Figure 2.8.

The demographic problems of low birth and high mortality rates were, in part, compensated for by in-migration from the former republics of the Soviet Union. In the mid-1990s until about 2005, a major source of in-migration consisted of ethnic Russians who decided to

Figure 2.8
Population Pyramid in 2017 (Estimate)



SOURCE: Rosstat, 2016a.

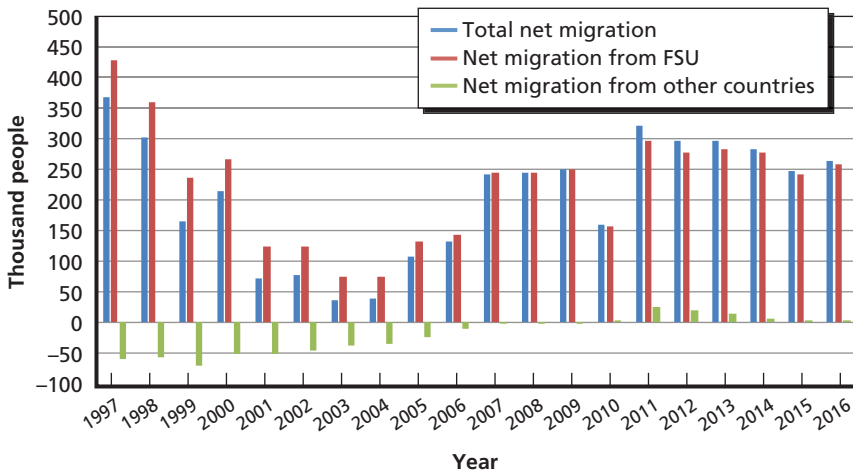
NOTE: The highest columns include males and females aged 85 and higher.

move to Russia from other former-Soviet republics. In the last decade, net migration appears to largely be determined by non-Russian, primarily economic, migrants from the former Soviet republics, especially Central Asia (see Figure 2.9). Official Russian policy, developed in 2007, calls for net migration to reach 300,000 per year in 2025, which is somewhat above the current levels of about 262,000 in 2016.

In the future, given these changing trends, Russia's population is generally expected to decline, although estimates widely differ based on assumptions, as shown in Figure 2.10. Russia's own Rosstat projections are higher than others, in part because they assume a higher birth rate and significantly higher net migration (the UN and World Bank project net positive migration of about 50,000 per year, compared with 288,000 in Rosstat's medium scenario).

Even in the most optimistic case, Russia is projected to face an aging population and decline in the labor force that will stress Russia's

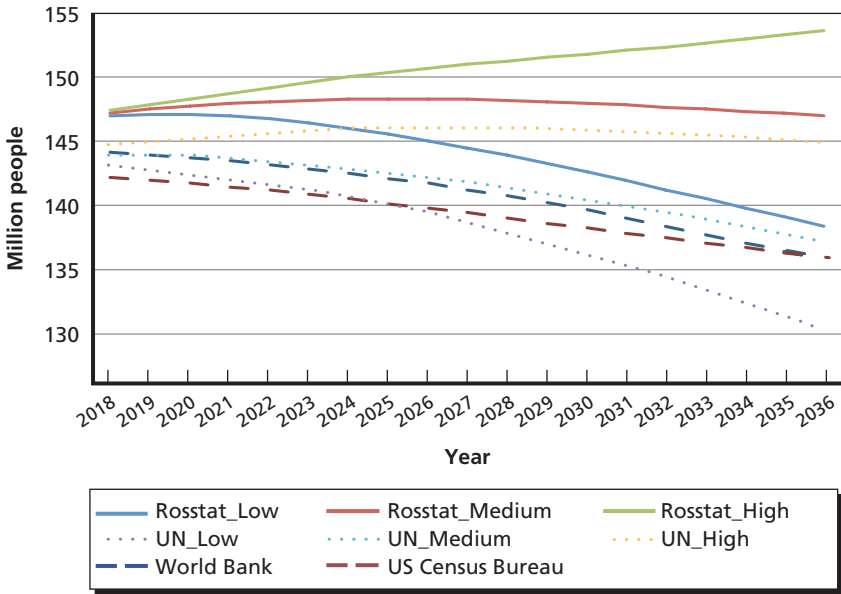
Figure 2.9
Net Migration from Selected FSU and Other Countries



SOURCE: Rosstat, 2017c.

NOTES: In this chart, we analyze migration from the FSU as defined as the Commonwealth of Independent States (CIS) countries plus Georgia, and does not include the Baltics. In 2015, the net migration from Uzbekistan became negative, reaching a net outflow of 20,000 people. Net migration is computed as the difference between the number of people that arrived from a country and the number of people that left to that country in a given year.

Figure 2.10
Population Projections to 2036

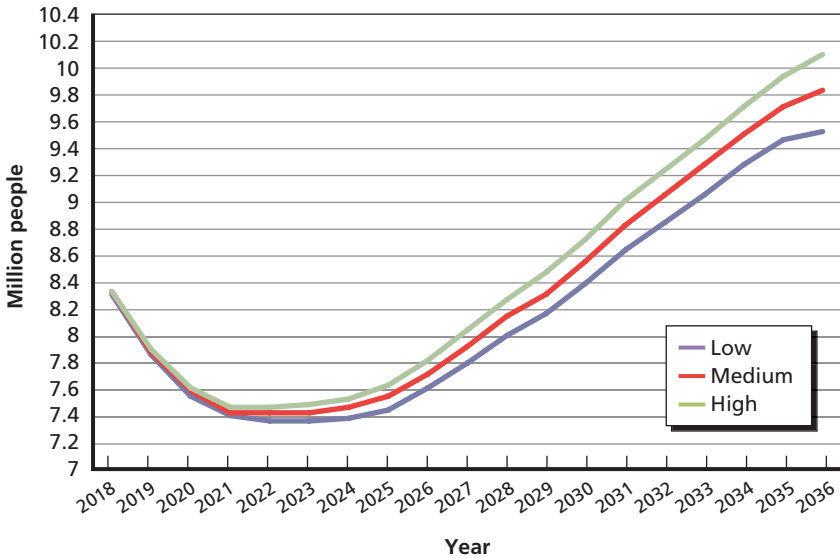


SOURCE: Rosstat, 2017a; World Bank 2017; U.S. Census Bureau, “Population Projections,” 2017; UN, 2017.

social support system and yield fewer conscription-age males. Under Rosstat’s medium forecast, the working age population is projected to decline from about 82.3 million in 2018 to 78.7 million in 2036 at the same time the above working age population increases from 37.5 million to 42.6 million. Military-age males will also decline through 2024, as shown in Figure 2.11. Nevertheless, even at the lowest point in 2024, there are still projected to be about 7.17 million males of conscription age in Russia, implying that there will remain more than enough personnel to staff the security forces, especially considering that the armed forces will draw on personnel who are older than 18. Still, Russia’s demographic decline will likely make recruitment more expensive and could lead to lower than desired physical standards.

Overall, Russia will continue to face demographic challenges that put pressure on the economy and on military recruitment due to the

Figure 2.11
Forecast of Number of Males of Conscription Age (18–27)



SOURCE: Rosstat, 2017b.

lower birth rates of the 1990s. Its demographic trend is stabilizing, however, due to rising birth rates and greater in-migration. Russia may face labor shortages, higher social spending due to a lower working age population, and greater competition for personnel to recruit into the military. It seems unlikely that it will face an absolute lack of personnel for internal security or military service, as discussed in more detail later, since recruiting requirements have shrunk over the last decade due to the rise of contract service and decline in annual draft requirements.

Military Personnel Policies

Russia's military personnel policies are a key factor in shaping Russia's ability to generate and sustain Russian military forces. Russia has developed a mixed military manning system of contract and conscript personnel. While the military is authorized approximately one million active

duty personnel, current personnel numbers as of 2017 are approximately 993,000, of which about a fifth are officers, a bit more than a third are professional enlisted, and a little less than one third are conscripts who serve a one-year term. Russia's reserve mobilization system has largely been neglected since 2010. While there are approximately 900,000 personnel who recently served and who can be recalled as reservists, Russia's plan to develop a more active and professional reserve system has not been well funded. Russia's recent attention to territorial defense and integrating civilian and military organizations during a crisis is anticipated to address some lingering mobilization issues.

The post-1991 system was largely built on the Soviet system of conscription and a cadre system of units that were intended to be fully staffed through mobilization in times of war. In the 1990s, service conditions and readiness in the Russian military deteriorated due to low spending, increasing demographic challenges, entrenched corruption, and widespread hazing of conscripts (*dedovshchina*). By 2008, only 13 percent of units were considered "permanently ready"—the highest state of readiness.⁹⁵

After 2008, Russia began a series of reforms to address these challenges. Russian leaders were guided, in part, by beliefs about the changing nature of warfare, such as the increasing occurrence of conflict on the spectrum from war to peace and the increasing importance of the aerospace domain, long-range strike, and net-centric conflicts. Russia required competent, trained personnel to operate in low-intensity conflicts and additional specialized personnel to operate high technology equipment. Readiness also became increasingly important to address the potential for quickly emerging conflict on Russia's periphery. The reforms initiated in 2008, therefore, dramatically reduced the size of the officer corps; eliminating low-readiness cadre units in favor of permanently ready forces; introducing professional contract service with the goal of building skilled personnel; and switching from a two-year conscription cycle to a one-year cycle to reduce hazing.⁹⁶ These changes

⁹⁵ "Army Reform Increased Number of Soldiers, Sergeants to 726,000," *ITAR-TASS*, February 17, 2010.

⁹⁶ See Appendix D for details.

did significantly shift the makeup of the Russian military, effectively creating the current structure of a more-highly trained and ready contingent, largely staffed by professional enlisted forces, and a larger, lower readiness force comprised of conscripts. These reforms also improved public perceptions of the military as already discussed. One interviewee who is active in government commissions on these issues noted that personnel problems in the military have “basically disappeared” and the “quality of life dramatically improved.”⁹⁷ Though the reforms of the military were accomplished, there were considerable challenges and much remains to be done. Russia’s reserve policy, for example, has not significantly been dealt with since 2010 despite the intention to develop a more active reserve system, and military wages, though higher than many national averages, were stagnant from 2012–2017.⁹⁸

Russia’s current mixed military manning policy and the general size of its force appear likely to continue for the foreseeable future. A wide range of Russian analysts emphasized the need to continue with Russia’s current combination of conscripts and contract personnel, in part because of the importance of instilling patriotic values in young men and having some ability to fight in a large war. We expect Russia to continue to focus on improving contract service, with goals such as improving training to operate sophisticated military systems, while at the same time retaining conscription and a capacity for mass mobilization.⁹⁹

As the number of draft age males decline into 2024, the military will compete with the civilian sector and internal security forces for a shrinking labor pool. However, the burden of the draft on the 18- to 27-year-old population will remain roughly constant. As detailed in Appendix D, we calculate that the proportion of 18- to 27-year-olds to

⁹⁷ Discussion with Russian analyst, Moscow, July 19, 2017.

⁹⁸ Rosstat, “*Sotsial’no-ekonomicheskoe polozhenie Rossii*” [“Social-Economic Situation of Russia”], 2016b. *Zhalovan’e voennosluzhashchikh I vyplaty otstavnikam vyrosli s yanvarya* [“Servicemen’s Pay and Pensions Increased Starting from January”], *Rossiskaya Gazeta*, January 20, 2018.

⁹⁹ A different view came from a former senior defense official heavily involved in the previous reform efforts: Russia did not need a “massive army,” and the military should focus on building quality over quantity, even though conscription was still necessary as a means of instilling patriotism. Author discussion with retired senior Russian officer, Moscow, July 2017.

whom Russia will need to send draft notices to achieve 300,000 conscripts will remain roughly constant from 2018 to 2024. This implies that Russia can sustain the current size and structure of its armed forces, absent major demographic or societal problems. Increasing the size of the force beyond its current levels, however, would require reducing the number of exemptions, extending the draft period, or widening draft age, all of which would likely increase strain on the society and possibly produce public opposition. A changed political context, including increased perception of threat or large-scale hostilities, could, however, diminish public opposition to a larger military.

Conclusion

Over the last decade, the key factors in shaping Russia's ability to generate and sustain Russian military forces have undergone significant change, but these factors show signs of remaining stable over the medium term.

A consensus exists within the Russian elite on its strategic priorities in terms of security policy goals and threat perceptions. No indication suggests that the perspective of Russia's ruling coalition will change. Russia appears to have developed a coherent strategy for the armed forces: a combination of strategic deterrence, rapid response, and dominance in the near abroad; expeditionary operations; preparation in case of major war; and building up its internal security forces. Public attitudes show support for Russia's government, foreign policies, and the military.

Russia is projected to experience relatively low economic growth of 1 percent to 2 percent of GDP, with a small increase in its military budget proportionate to this growth. Russia's military budget has increased substantially due to increasing acquisition expenditures, although we expect future military budgets to level out and grow proportionately to GDP. While Russia will not enjoy major population growth, its demographic situation is not by any measure crippling. Russia has also built a relatively stable mixed conscript and contract Manning system for the military, enabling it to address the challenges that undermined the military in the late 1990s and early 2000s.

Key Capability Areas for Ground Combat

Conceptually, we identify five distinct arenas for ground combat, and within those we identify eight key capabilities areas for our analysis (italicized). Our typology of ground combat differs from the organization of units or combat arms in the U.S. or Russian military but offers a useful categorization of broadly delineated tasks and capabilities for ground combat. The forces that are relevant for these areas are focused within the Russian Ground Forces but also draw from across the Russian military, including, for example, Navy ships equipped with sea-launched missiles or Air Force bombers that carry air-launched weapons. By considering forces that lie outside of the Ground Forces but play a role in ground combat, we intend to provide a more complete picture of Russian ground combat capabilities. We identify Russia's prioritization and approach within these ground capabilities while recognizing that Russia's priorities within the set of ground capabilities may be different from its overall military procurement priorities (which include, for example, the strategic nuclear forces).

The first arena is combined arms ground combat, which involves forces employed in large-scale, high-intensity ground warfare and consists of two key capability areas, *maneuver ground forces* and *indirect fire*. Maneuver ground forces include units that operate tanks, infantry fighting vehicles, and armored personnel carriers, as well as integrated air defense, EW, and other supporting roles. Indirect fire includes artillery and rocket systems with less than 100 km range that directly support maneuver ground forces at the tactical level. Russia's approach to combined arms ground combat and employment draws from the

Soviet legacy, especially from World War II, although many changes have occurred in the last decade.¹

The second arena is *long-range strike*, which includes conventional systems to be used at the theater level to accomplish operational rather than tactical objectives. In practice, this includes cruise and ballistic missiles, which are often high precision, with a range longer than 100 km, and may be launched from the ground, sea, or air. We consider long-range strike systems separately from indirect fires, as they are likely to be employed in qualitatively different ways to achieve different effects. While long-range strike systems could, in theory, play a tactical role, they are more often conceptualized to be used to strike targets deep behind the adversary's lines and achieve effects such as disrupting logistics, attacking massed forces, disrupting adversary air power, and so forth. In some cases, long-range strike systems are dual use, meaning they could be equipped with a nuclear weapon, although they need not be, especially given precision targeting. Russia's pursuit of these weapons could imply fundamentally different political goals or means of achieving them, such as an interest in achieving political objectives by increasing the costs to an adversary rather than through compounded tactical victories.

The third arena is *rapidly deployable forces*, or elite ground units that are employed in conflicts short of conventional war, including the Airborne Troops (VDV), GRU Spetsnaz, and the small Special Operations Command (KSO). These rapidly deployable forces are among the highest readiness units in the Russian military and are available on short notice to respond to regional conflicts or perform an expeditionary role. Indeed, these forces have been extensively used in Ukraine and Syria, and their activities in these conflicts—including special reconnaissance, covert and direct-action missions, unconventional warfare,

¹ For details on the structure and history of Russian maneuver ground forces, see Grau and Bartles, Chapters 3–7, 2017. Olga Olikier also highlights longstanding Soviet and Russian military cultural components that draw from experience in World War II and heavily influence Russia's development today, including a "preference for the offense," "operational level of warfare and deep strike," and "firepower and artillery." Olga Olikier, "Between Rhetoric and Reality: Explaining the Russian Federation's Nuclear Force Posture," thesis, Massachusetts Institute of Technology, 2016, p. 64.

and working with proxies—highlight how they play a fundamentally different role from their heavier ground-force counterparts.² These capabilities, in part, reflect Russia's concerns about conflict in the near and far abroad other than major wars.³

The fourth arena includes key enablers for the Ground Forces, including *C4ISR*, *air defense*, and *EW*. Given advances in long-range strike, Russia's command and control and information gathering systems are fundamental in their ability to compete directly with the West and dominate regional adversaries. Since the 1980s, Russia has observed that U.S. developments in C4ISR in combination with improved strike capabilities fundamentally change the nature of warfare and enable U.S. superiority.⁴ Once greater resources began to become available in 2008, Russia invested heavily in C4ISR systems. Their ability to do so could qualitatively change Russia's ability to compete with the United States as a peer adversary. A second enabler, air defense, is critical because it supports the ability of Russian forces to defend and deter U.S. Air Force attack. Air defense is present within several different branches of the Russian military. The Russian Aerospace Forces includes the Aerospace Defense Forces (VKO), which operate long-range strategic defense capabilities, while the Ground Forces operate short- and medium-range systems, which are integrated at multiple levels of maneuver units. Finally, Russia has also made a significant investment in a third enabler, EW, and has sought to integrate EW capabilities throughout the Ground Forces.

The final arena is internal security forces, a somewhat different category from the military capabilities already described. Understanding the future development of the internal security forces is important for several reasons: they represent one major way Russia seeks to defend

² Alexey Ramm, "Russian Military Special Forces," in Ruslan Pukhov and Christopher Marsh, eds., *Elite Warriors Special Operations Forces from Around the World*, Minneapolis, Minn.: East View Press, 2017, p. 2.

³ See also Valery Gerasimov, "Value of Science in Prediction," *Voenna-promyshlennyi Kuryer* [*Military Industrial Courier*], March 9, 2016.

⁴ Dmitry Adamsky, *The Culture of Military Innovation*, Stanford: Stanford Security Studies, 2010.

itself from foreign aggression. Russia's investment of money and personnel in internal security forces may leave fewer resources available for other military forces, and Russian internal security forces may be deployable abroad to support military operations.⁵

Analysis of Key Capability Areas

Using a common framework, we look back in time to understand Russia's general approach to the development of each key capability area to describe the likely outlook. We describe what weapons Russia has procured and modernized. We consider the trends in the defense industry by identifying the major companies that produce relevant systems and understanding their current financial status, technological development, and political situation. We conclude with a general outlook for developments and forces in each of the capability areas. Table 3.1 summarizes our findings, drawing from Appendixes E through L.

General Approach and Recent Procurement

The developments highlighted in Table 3.1 reflect three general ways Russia has sought to develop its capabilities for ground combat. First, the perhaps predominant approach is to *retain-and-adapt* Soviet-era capabilities and organizations. Russia's military appears to recognize that there are a range of ways in which Soviet investment produced a capital stock and organizations that remain useful today, while also recognizing that precise replication of Soviet strategies is impractical and ineffective. Instead, modern technology and useful Western approaches can be grafted on to legacy structures or platforms. A second approach to improving capabilities is to *emulate-and-adapt* U.S. military capabilities and concepts, meaning that Russia has identified a desirable

⁵ See, for example, "National Guard to Complete Assigned Missions Both in Russia and Abroad," *TASS*, June 27, 2017.

Table 3.1
Summary of Findings of Key Capability Areas

Force Capability	General Approach	Examples of Recent Procurement	Current Military Industrial Status	Outlook
Maneuver Ground Forces (Tanks, IFVs, APCs)	Enlargement of armored formations in western Russia; new components on Soviet legacy platforms (active protection, fire control); small investment in next generation systems	<ul style="list-style-type: none"> For 2013–2015, 723 T-72B3 but only 20 T-14 tanks produced For IFV/APCs, similar focus on upgrades and legacy models 	Heavily indebted producers facing financial collapse taken over by Rostec in 2016—UVZ (tanks) and KMZ (IFV/APCs). Apparent plan for integrated armored vehicle company	<ul style="list-style-type: none"> Status quo in expanded heavier formations Continued upgrades to legacy platforms Very slow development of next-gen platforms (T-14, T-15, and Kurganetz) New unmanned systems
Indirect Fires (MRLs, Artillery)	Continued emphasis on volume area effects over precision; legacy Soviet-era systems	<ul style="list-style-type: none"> New Tornado-G/S, but are similar to legacy models Uragan-1M under slow development Upgrades to Msta-S self-propelled howitzer over next-gen Koalitsiia 	Uraltransmash (howitzer producer) is subsidiary of UVZ. Splav (rocket artillery producer) is healthy due to exports, also part of Rostec	<ul style="list-style-type: none"> Retain legacy systems Low volume or export-focus for next-gen systems and precision munitions
Long-Range Strike	Building on legacy Soviet systems to enlarge capability for long-range conventional precision strike, emulating United States	<ul style="list-style-type: none"> Fully equipping 10 Iskander-M brigades Reportedly deploying a INF-violating long-range ground launched cruise missile Production of long-range sea- and air-launched cruise missiles (Kalibr and Kh-101) 	High prioritization; recapitalizing enterprises; bottlenecks due to loss of Ukrainian components (e.g., engines); some companies also produce strategic systems and receive support accordingly	<ul style="list-style-type: none"> Continued production of cruise and ballistic missiles Support for enterprises Uncertainties exist as to potential INF Treaty limitations

Table 3.1—Continued

Force Capability	General Approach	Examples of Recent Procurement	Current Military Industrial Status	Outlook
Rapidly Deployable Forces (VDV, Spetsnaz)	Key element of post-2008 reforms, focus on operations in near abroad and expeditionary operations; improving readiness and effectiveness by increased proportion of contract personnel	<ul style="list-style-type: none"> • VDV Air Assault units receiving T-72B3 • Adding UAVs, new high-tech uniform (Ratnik) • Plans for new airmobile armed vehicle • Andromeda-D automated C2 	N/A—small impact on military industrial development	<ul style="list-style-type: none"> • Continued investment in VDV, Spetsnaz, and related forces • Greater effectiveness with new technology • VDV becoming heavier, likely for regional contingencies
C4ISR	Shifting C2 relationships; major investment in networks to improve effectiveness and centralization; emulation of Western investments in reconnaissance-strike complex, including UAVs, space, etc.	<ul style="list-style-type: none"> • Integration of military and security services networks, including through NDMC • Tactical, operational, and strategic C2 networks (e.g., Yesu-TZ) • New multi-domain ISR platforms (e.g., UAVs such as Orlan-10) • Domestically produced software and hardware 	Domestic industry consolidated within Rostec; government pursuing import substitution to resolve foreign dependence; subsidized through multiple revenue streams; good domestic software	<ul style="list-style-type: none"> • Will pursue advanced C4ISR • Longstanding gap between Russia and the West will persist, although lessen with high spending • More likely progress in UAVs and other ISR systems
Air Defense	Major spending on air defense; improvements of tactical and strategic air defense	<p>New and modernized systems:</p> <ul style="list-style-type: none"> • Buk-M2 and M3 • Pantsir S1, S2 • S-300 for Army and S-300/400 for VKS <p>Total procurement 2011–2020 of 473 billion rubles</p>	Almaz-Antey state-owned conglomerate; large revenues; management challenges; sanctions restricting imports; reduction in direct funding through State Targeted Programs	Continued leadership in air defense

Table 3.1—Continued

Force Capability	General Approach	Examples of Recent Procurement	Current Military Industrial Status	Outlook
Electronic Warfare	EW is opportunity for asymmetric capabilities against West; increasing investment, but low proportion of spending; increasing number of EW units	Various ground and air tactical and strategic systems throughout EW spectrum	Consolidated production into two holding companies, under Rostec; challenge to recruit and retain specialists and by cutoff from Western technology by sanctions	Continued view of EW as useful asymmetric capability
Internal Security Forces	Multiple organizations with military capabilities and overlapping roles; transfer of internal militarized forces to Rosgvardia in 2016; planned use of internal security forces abroad	Rosgvardiya components operate BTR-80/80A, BMP-2, Mi-8, and Mi-24 helicopters, and expect to receive new BTR-82B	N/A	<ul style="list-style-type: none"> Continued growth in funding given concerns about terrorism, conflict Unlikely to shrink security forces once created

SOURCE: Appendixes E through L.

capability or concept from abroad and adapted it to the Russian military context. According to a third approach, Russia has sought to *asymmetrically counter* capabilities it cannot match. In some capability areas, multiple approaches are applied simultaneously.

Russia's maneuver ground forces are the prime example of the retain-and-adapt approach. The ground forces have received a small proportion of resources for procurement and modernization considering their large size, and Russia's Ground Forces draw heavily on adapted Soviet-era platforms, such as the T-72, BMP-2, and BTR-80/82. These platforms can be made almost as effective as new platforms with the addition of new components, such as fire control or active protection

systems, at a fraction of the cost.⁶ Since 2013, the proportion of tank forces has grown within the Ground Forces, and the size and capability of maneuver ground forces in Western Russia has expanded, including through the formation of the 1st Guard Tank Army and enlarged tank and motor rifle divisions (see Appendix E). The Ground Forces have a smaller proportion of contract soldiers, although some select, higher readiness battalions have more contract personnel. These developments have significantly increased the capabilities of Russian Ground Forces, for example around the Ukrainian border.

Russia's indirect fires are also a case of retaining Soviet capabilities, with less significant modernization and adaptation. Russia's current indirect fire capabilities are the direct legacy of massive volumes of launchers and munitions produced by the Soviet Union. To date, while Russia has imagined new revisions, it has not funded major upgrades. The only new indirect fire systems that have been fielded since 1990 are direct successors that look very similar to the legacy system, including Tornado-G and Tornado-S (see Appendix F). More substantial improvements, such as the Uragan-1M or Koalitsiia, have been repeatedly pushed back. Furthermore, while Russia recognizes the potential benefit of precision weapons employed by the West and has developed new systems for upgrades, it has not pursued upgrades to precision indirect fires for its own forces. Russia's approach appears consistent with the belief that slightly upgraded massed and area-effects artillery can be as, if not more, effective than precision weaponry, especially when supported by new C4ISR systems such as unmanned aerial vehicles (UAVs). Analysts highlight that Russia's ground force continue to believe in "muscle and effort" and "streetfighting" rather than fully supplanting old practices with new technology.⁷

Russia's acquisition of long-range strike systems and its doctrine and approach have emulated and adapted U.S. operating concepts while retaining and adapting Soviet designs. Russia's key long-range

⁶ For example, an upgraded T-72B3 (obr 2016 version) costs an estimated 79 million rubles compared with an estimated 350 million rubles for a T-14 Armata, although that number is not finalized as the T-14s have not entered serial production. See Table E.4.

⁷ Discussion with Russian analysts, Moscow, July 17, 2017.

strike systems draw from Soviet systems. For example, the Iskander-M is developed from the Oka intermediate-range ballistic missile, and the Kalibr from the RK-55 Relief ground-launched cruise missile. The Intermediate Nuclear Forces (INF) Treaty banned both of these Soviet-era missiles, but the technology associated with them was apparently adapted into the new systems (see Appendix G). With regard to the integration of long-range strike and C4ISR, the decision to emulate aspects of U.S. warfighting goes back to the early 1980s.⁸ At the time, the Russian military did not have the ability or resources to use such technology, but after additional resources became available after 2008, Russia began deploying long-range strike technology it had seen the United States employ in Kosovo, Afghanistan, and Iraq.

Russia's rapidly deployed forces also build on Soviet-era formations but represent new and reformed forces. The VDV, historically intended to act as an air-mobile strategic reserve, was rapidly professionalized after 2008 and became more of an elite mobile infantry rather than a parachute force. The GRU Spetsnaz, historically intended to conduct reconnaissance, subversion behind enemy lines, and attacks on weapons of mass destruction (WMD), evolved to continue to provide reconnaissance forces, as well as developing a capability for unconventional warfare. While capabilities were built upon Soviet-era considerations, many elements are new and unique to Russia. Still, it appears that the U.S. Special Operations Command (SOCOM) and other models of special operations forces influenced Russia when it created the 500-operator strong KSO units.⁹ The VDV have also adopted a novel C4ISR system, the Andromeda-D (Appendix I), the state-of-the-art Ratnik infantry kit, integrated air defense capabilities, and potentially new vehicles (Appendix H).

⁸ See Mary FitzGerald, "Marshal Ogarkov and the New Soviet Revolution in Military Affairs," Alexandria, Va.: Center for Naval Analyses, 1987, and Richard Van Atta, Sidney G. Read, and Seymour J. Deitchman, "Assault Breaker," in *DARPA Technical Achievements*, Vol. II, Alexandria, Va.: Institute for Defense Analyses, 1991.

⁹ Tor Bukkvoll, "Military Innovation Under Authoritarian Government—The Case of Russian Special Operations Forces," *Journal of Strategic Studies*, Vol. 38, No. 5, 2015, pp. 618–619.

Russia's C4ISR represents a combination of legacy Soviet systems and the emulation and adaptation of concepts and approaches, such as net-centric warfare. After the collapse of the Soviet Union, Russia was left with hundreds of stove-piped command and control (C2) systems and did not invest significantly in modernization of these systems through the 1990s and early 2000s. During this period Russia studied Western C4ISR and hoped eventually to adapt modern C4ISR developments as well. With the increase in defense resources after 2008, Russia began modernizing its C4ISR infrastructure in earnest. Through the creation of the National Defense Management Center (NDMC) and continued integration with civilian agencies, local and regional governments, military, and internal security services, Russia has laid the foundations for a C4ISR infrastructure more complicated and interconnected than the U.S. interagency, with both the potential risks and benefits of greater centralization. Russia is in the process of developing and implementing a modern, whole-of-government C4ISR infrastructure that will enable Russia to pursue its vision of net-centric or "non-contact warfare." For example, in 2014 Russia established the NDMC, pursuing the integration of existing communications systems within a single network, as well as the development of UAVs, space-based intelligence, surveillance, and reconnaissance (ISR), and other sensors. Still, Russia's ability to develop and integrate high-technology C4ISR will continue to be limited by Russia's poorly developed domestic electronics industry, Western sanctions, and high costs (see Appendix I for details).

Russia has a highly advanced air defense system within multiple services, building on and modernizing the extensive Soviet-era investment in air defenses. Indeed, ground units have potent integrated air defenses to complement the strategic air defenses within the Aerospace Forces (VKS), although the ground force systems are somewhat less modern. Russia is expected to produce additional systems, with increased range and detection capabilities. To date, Russia has prioritized its strategic systems but appears to be fulfilling its needs and likely shifting toward acquiring new tactical systems over the next ten years (see Appendix J).

To develop its internal security forces, Russia has incorporated pieces of Soviet-era structures within newly created or reorganized institutions (see Appendix L, Figure L.1). In particular, responsibility for

ensuring internal security lies with Rosgvardiya, which was created in 2016 and took responsibility for several of the militarized internal security organizations, including the internal troops and various riot police organizations, which operated a range of armored personnel vehicles and helicopters. The creation of a militarized internal security force is not unique. But it is new for Russia; since the Soviet collapse, Russian leadership has tended to empower the Ministry of Internal Affairs (MVD), largely a law-enforcement body, with domestic policing functions. As one interlocutor explained, by creating Rosgvardiya, any debate about the need for militarized internal security forces had been resolved.¹⁰ Still, there remains a multiplicity of overlapping Russian internal security organizations, including the FSB, the Federal Protection Service, and a variety of private security firms and paramilitary groups.

EW offers the primary example in the case of ground capabilities where Russia has invested in capabilities that can asymmetrically counter perceived U.S. advantages. Senior Russian military leaders, including Chief of the General Staff Valery Gerasimov, recognize the extent to which adversaries depend on the reliability of electronic command and control systems, and see that EW can “neutralize” adversary advantages (see Appendix K, Outlook). Since 2011, Russia has delivered a number of advanced EW systems to the Ground Forces, at the company, battalion, and brigade levels, which seek to jam VHF radio, radio-controlled fuses, and GPS. UAVs with EW capabilities also complement existing airborne systems.¹¹ Although procurement of EW represents a small portion of overall expenditures, it likely has an outsized negative impact on Russia’s adversaries.

Defense Industrial Policy

Russia’s ability to field new military systems is determined by the capacity of its defense industry. Russian strategic documents highlight the role of what they term the “defense-industrial complex” and its

¹⁰ Interview with Russian professor, Moscow, July 2017.

¹¹ See, for example, FMSO, “Counter UAV Tactics and the ‘Leer-3’ Electronic Warfare System,” *OE Watch*, Vol. 7, No. 7, August 2017, p. 3.

technological development as integral contributors to the country's national security.¹² State-owned enterprises dominate the Russian defense-industrial complex, and many of them are subsidiaries of one large state-owned holding company, Rostec. Recognizing the importance of the defense-industrial complex for Russian security, in 2006 the Russian government established the Military Industrial Commission to oversee and coordinate it. The influence of this body, which includes government officials, military commanders, and representatives of defense enterprises, has grown over time. In 2011, it fell under the purview of Dmitry Rogozin, a colorful Deputy Prime Minister with a background as a nationalist politician. In the aftermath of the annexation of Crimea, President Putin decided to transfer the Military-Industrial Commission formally to the Russian President's office, and Putin became its formal head in 2015 while retaining Rogozin to run its day-to-day affairs. Control over the defense-industrial complex and military procurement is highly centralized: all of the major stakeholders are controlled by the state, including the Ministry of Defense (MOD), the state-owned enterprises, and the Military Industrial Commission.

Our analysis of Russia's military industrial complex focused on the enterprises producing the major systems, their corporate performance, and what type of resources they receive. All the major enterprises are funded or subsidized by the state in some way, and in the end the MOD is their primary customer. But the ways through which the Russian state supports these companies illuminates its priorities and has major implications for the development of Russian capabilities. The extent to which defense enterprises succeed in terms of their domestic and export sales are also opportunities for or constraints on the development of Russia's overall military potential.

Four general patterns of investment emerge from our analysis of Russia's defense-industrial complex. First, in some areas, particularly long-range strike and C4ISR, the Kremlin has invested significant resources, recapitalizing particular enterprises, including the use of specific State Targeted Programs to facilitate the production of new

¹² See, for example, Russian Federation, 2015, para 37, 62, 69.

high-technology systems. The Iskander program, for example, was expected in 2012 to receive 40 billion rubles in capital investment before 2020, 60 percent from the state budget with the balance from production enterprises' own resources (see Appendix G). With regard to C4ISR, Russia has sought to counter its dependency on foreign components by investing in domestic electronics companies under Rostec, including Sozvezdiye, the producer of the Yesu-TZ tactical C2 system (see Appendix I). These investments illustrate how the Russian state prioritizes particular enterprises producing systems that Russian leaders consider to be of particular importance.

A second approach is the longer-term support of companies producing systems that are strategically significant, such as in the case of air defense and EW. A few Russian defense enterprises are successful enough that they require relatively few direct state subsidies. For instance, Almaz-Antey, a state-owned holding company manufacturing air defense systems and one of the Russia's largest defense firms, enjoyed steady revenue growth from 2010–2015 thanks both to strong sales from the Russian government and to robust demand from foreign customers. Almaz-Antey benefits from the fact that it manufactures some of the world's most advanced air defense systems and that these systems are competitively priced on the world market, particularly after the post-2014 collapse in the value of the ruble (see Appendix J). Unfortunately, Almaz-Antey is an outlier among Russia's defense enterprises, many of which are poorly managed, undercapitalized, and struggling to attract demand for their military and civilian output.

These troubles lead to the third observed trend within the military industrial complex, the collapse and incorporation of troubled enterprises into state-owned holding companies. In recent years, this fate has afflicted several of Russia's remaining large independent defense enterprises, both state and privately owned. Ironically, the relatively high diversification of some of these firms made them vulnerable to exogenous shocks unrelated to demand for their military products. Uralvagonzavod (UVZ), Russia's main tank producer, nearly went bankrupt in 2016, apparently due to the collapse of its civilian railcar business, which resulted from the falling price of natural resources. In other cases, chronic weak demand and undercapitalization left defense

enterprises so weakened they could not weather a sudden downturn like that experienced in 2014. The major producer of infantry fighting vehicles, Kurganmashzavod (KMZ), which had been one of Russia's few large private defense enterprises, went bankrupt. The Russian government responded similarly in both cases, by incorporating UVZ and KMZ into Rostec. This step not only gave the firms access to greater financing, it subordinated them to Rostec's management, which is relatively professional by Russian standards (see Appendix E). Time will tell if these enterprises will fare better under Rostec's purview than they did as independent companies.

A fourth approach is investment in more speculative technologies through means such as venture capital. The Russian state first attempted to channel venture capital toward the defense sector over ten years ago, but these efforts remain quite modest in absolute terms, with only a few tens of millions of dollars invested.¹³ A high-profile effort to encourage the development of advanced defense technologies is the DARPA-modeled FPI, led by Dmitry Rogozin. The FPI cultivates partnerships between the Russian state, academic research institutions, and commercial firms to encourage the development of exotic new technologies for military use. FPI projects have investigated topics such as UAVs and military robots.¹⁴ Most of these projects remain too preliminary for immediate military application, but Russian leaders hope they will eventually translate into both battlefield advantages and lucrative new profit centers for Russia's economy.

Future Outlook

The overall outlook for Russian development in these key capabilities for ground combat is continuity, in terms of the overall approach and

¹³ Yuriy Emelin, "Venchnurnye investitsii prikhodit v OPK" ["Venture Investors Are Coming to the Industrial-Military Complex"], *Voенно-promyshlennyyi Kur'yer*, April 7, 2004; Denis Legezo, "V Rossii sozdan venchnurnyi fond dlia oboronnykh predpriatii" ["Russia Created a Venture Fund for Defense Enterprises"], *CNews*, May 29, 2017.

¹⁴ Foundation for Advanced Studies, *Fond perspektivnykh issledovannykh*, website, undated.

with respect to the characteristics of the military industrial complex. We expect continued upgrades in maneuver forces and indirect fires and very slow development of the next generation of platforms. Production will continue of cruise and ballistic missiles with support for their firms, but uncertainties do exist as to potential limits under the INF Treaty. There will be continued investment in rapidly deployable forces and their effectiveness will improve with the introduction of new technology. Advanced C4ISR will be pursued, with likely progress in UAVs and other systems, but the gap between Russia and the West will persist. Russia will continue to be a leader in air defense and seek EW systems to counter the West's systems. Finally, Russia's internal security forces will continue to receive funding and political support.

Future Russian Capabilities

Chapter 3 described the development of eight key capability areas over the last ten years. The factors described in Chapter 2 explain much of their development, although beliefs about the future of warfare, technological limitations, the characteristics of Russia's military industrial complex, bureaucratic politics, and inertia also play a role. Indeed, Russia's decisions to develop ground capabilities reflect the strategy for the armed forces, within the constraints of its economic performance, defense budget, demographics, and military personnel system. See Table 4.1.

First, Russia improved long-range conventional strike, C4ISR, and air defense to strengthen strategic deterrence. Drawing from its observation of Western military actions in the Balkans, Libya, and Syria, long-range strike offered a lower-cost means of degrading Western military capabilities and holding at risk high-value targets. The nonnuclear deterrent capacity provided by these capabilities complemented Russia's increased spending on its nuclear forces, which ensured that a peer adversary, such as the West or China, would face a grave cost in aggression directly against Russia.¹

Second, Russia's military capabilities relevant to regional dominance improved substantially after 2008. The key developments were the changes in military personnel policy and other improvements that enabled the professionalization, increased reliability, and readiness of the Airborne, GRU Spetsnaz, and other rapidly deployable forces. The

¹ See Ven Bruusgaard, 2016.

Table 4.1
Mapping Strategy for Armed Forces to Capabilities for Ground Combat

Tasks	Description	Developments
Strategic deterrence	Prevent aggression against Russian homeland by imposing costs	Modernized nuclear forces; improved long-range conventional strike; C4ISR; air defense
Regional dominance	Rapidly respond and dominate in near abroad (former Soviet Union except Baltics)	Professionalization, increased reliability, readiness of rapid reaction forces (Airborne, Spetsnaz); reorganized and modernized maneuver ground forces
Expeditionary operations	Out-of-area campaigns to respond to terrorism, instabilities, humanitarian disasters	Investments in rapidly deployable ground forces and long-range strike
Preparedness in case of major war	Ability to have sufficiently large, capable forces in case of major war, largely through mobilization	Modernizing maneuver ground forces; maintaining indirect fires; improving long-range strike, C4ISR, EW, and air defense; maintaining conscription
Domestic stability	Ensure regime survival, defend against color revolutions, terrorism	Expanding internal security forces and creation of Rosgvardia

Airborne, the first to integrate substantial contract personnel, benefited from new C4ISR networks; more recently, they have begun to receive tanks. The GRU Spetsnaz was also reorganized several times with the goal of improving reconnaissance but only began to focus on the critical task of unconventional warfare after 2013.² Russia also reorganized, modernized, and expanded its maneuver ground units. This included creating the First Guards Tank Army in the Western Military District in 2015 and creating new divisions with additional tank and motor rifle regiments. It is notable that much of the expanded force, totaling approximately 1,000 infantry vehicles and more than 750 main battle tanks, is near the Ukrainian border, including three of the new divisions (see Appendix E). According to one analyst, the Airborne's role

² Ramm, 2017, pp. 2–11.

is to act as the “light imperial infantry,” responsible for quick reaction within Russia’s near abroad (i.e., the empire according to the imperial analogy), while the rest of the ground forces would act as the “heavy imperial infantry,” responsible for backing up the Airborne in case of more heavily equipped and more numerous adversaries.³ Russia would also rely on an aging, but nevertheless effective, indirect fires capability and, theoretically, long-range strike systems, depending on range requirements, to dominate regional adversaries.

Russia’s activities in Crimea and eastern Ukraine demonstrate how the developments in these capabilities improved Russia’s combat effectiveness in its near abroad. In Crimea, in late February, GRU Spetsnaz, Airborne Forces, naval infantry, and special operations forces were moved into the peninsula, and they rapidly seized strategic points. A snap inspection exercise involving 150,000 troops, as well as a complex information operation, backed their action.⁴ In eastern Ukraine, after Ukrainian forces began to take ground against the Russian-backed separatists despite Russian train-and-equip efforts, Russia directly intervened in late August with conventional forces.⁵ The novel and legacy tactics that separatist forces used—including massed artillery strikes, cyber attacks, UAVs, and attacks on Ukrainian supply lines—indicate the improvements in the Russian forces that supported them.⁶

Third, Russia bolstered its expeditionary capabilities through investment in rapidly deployable ground forces and long-range strike. Russia’s operations in Syria demonstrate these improvements. Russian

³ Interview with Russian analyst, Moscow, July 17, 2017.

⁴ Michael Kofman, et al., *Lessons from Russia’s Operations in Crimea and Eastern Ukraine*, Santa Monica, Calif.: RAND Corporation, 2017; Ellen Nakashima, “Inside a Russian Disinformation Campaign in Ukraine in 2014,” *Washington Post*, December 25, 2017.

⁵ Kofman et al., 2017, pp. 33–45.

⁶ See Persson, 2016, pp. 56–57; David Hambling, “Russian Drones Attack With Grenade Weapons,” *Scout*, September 18, 2017; Anton Lavrov, “The Use of Tanks in Eastern Ukraine: Lessons Learnt,” *Moscow Defense Brief*, Vol. 3, No. 53, 2016b; Dustin Volz, “Russian Hackers Tracked Ukrainian Artillery Units Using Android Implant: Report,” *Reuters*, December 22, 2016; see Phillip Karber and Joshua Thibeault, “Russia’s New Generation Warfare,” *Army Magazine*, Vol. 66, No. 6, June 2016.

Special Operations Forces (SOF) are reported to have played a role in securing the Tartus port and the airfield at Latakia, as well as in the liberation of Palmyra (see Appendix H), although details remain unclear. Russia also used Kalibr missiles and Kh-101 air-launched cruise missiles (ALCMs) to strike ground targets in Syria, and there are reports of Iskander launchers at the Khmeimim Airbase (see Appendix G). While these strikes undoubtedly were intended to be a training mission and demonstration of Russian capabilities for external signaling more than for direct military effects in Syria, they do show how developments in these areas support Russia's expeditionary capabilities. Russia's capabilities for expeditionary operations largely depend on the supporting naval and air forces. Russian analysts also highlight investments in the Navy and Air Force in the 2020 SAP, although some remain skeptical of Russia's naval capabilities and investment.⁷

Fourth, Russia retained preparedness in case of a large war with the West or China by maintaining conscription and the size of its overall military (see Appendix D); modernizing and, to a degree, restructuring its maneuver ground forces; maintaining indirect fires; and improving long-range strike. Russia's modernization of the T-72s, rescue of firms producing ground vehicles, maintenance of conscription, and the type of major ground exercises it holds shows Russia's continued desire to be ready for a major ground war (see Appendixes G, I, J, and K).⁸ Igor Sutyagin also specifically attributes Russia's

⁷ In discussions with the authors, Russian analysts highlighted the need for building Russia's Navy transport capability, for example, to enable expeditionary operations. However, Michael Kofman criticizes the Defence Intelligence Agency's (DIA) "Russian Military Power" report's claim that Russia is investing in out-of-area operations by explaining, "There is nothing to substantiate that besides long-range strike capability. Russia is not investing in the sea lift, logistics sustainment, a blue water navy, or other capacities for combat operations distant from its borders. Equally there is nothing to indicate a preparation for the occupation of other countries, an operational reserve, or other capacity to operate "out of area"—of course we should note that Russia's area is quite vast but in general the Armed Forces are clearly setup for fights 'across the street' more so than anything else." Discussions with Russian analysts, Moscow, July 2017; Michael Kofman, "DIA's Military Power," *Worldpress.com*, July 3, 2017b.

⁸ Johan Norberg, "Training to Fight—Russia's Major Military Exercises 2011–2014," December 2015.

changes from a brigade-centric structure under the post-2008 reform to a mixed brigade, division, and army-level capability to an intention to hedge against a conflict with NATO or China.⁹ However, the re-creation of divisions should not imply that Russia has abandoned the prior focus on local wars, as many brigades remain and the divisions appear, in part, centered around potential regional conflicts, as already noted. The reform of the personnel system, including the shift from a cadre-based military and from a two-year to a one-year conscription period and recruiting additional professional soldiers to staff high-technology systems, will also likely make Russia more able to fight a high intensity war.¹⁰

Russia appears to be pursuing its capabilities for large-scale ground warfare through retaining and upgrading legacy capabilities rather than pursuing next-generation ground platforms (see Appendixes E and F). This choice can be interpreted in multiple ways. It could imply that Russia does not expect to fight in a major ground war, in part because it expects its strategic deterrent approach to work and, hence, is devoting its resources to capabilities it expects to employ in the near future, such as rapidly deployable forces. This interpretation also reflects the discourse of military analysts and officials, who emphasize that they do not see Russia fighting a major ground war in the near future.¹¹ Alternatively, while Russia may believe a major ground war is possible and it seeks to prepare for one, it simply sees less benefit for a given investment in indirect fires or maneuver ground forces as compared with long-range strike, EW, or C4ISR. These approaches are not mutually exclusive, and Russia's actual policy may reflect elements of both.

⁹ Sutyagin and Bronk, 2017, pp. 25, 43–44. Another reason given for the creation of division-level headquarters was to provide a professional growth for Army leadership. “The Return of Divisions: The Ground Forces Will Reverse the ‘Brigade Bias’” [“*Vozvrashhenie divizij: V Suhoputnyh vojskakh ispravjat ‘brigadnyj perekos’*”], *Voyenno-Promyshlenny Kuryer*, February 8, 2016. See also Appendix E.

¹⁰ One Russian academic noted that Russia's military force was “much smaller,” “about 1/4 or 1/5 of what they used to be,” but with “equal or greater military capacity.” Interview with Russian academic, Moscow, July 19, 2017.

¹¹ Interviews with former senior Russian officer and Russian analysts, Moscow, July 2017.

Several details of Russia's development of its force structure, personnel policy, and industrial policy indicate that it is not preparing to initiate a large-scale ground war. Russia has paid little attention to developing an effective and sizable active reserve system that might be immediately required in the event of a major war (see Appendix D). Its current active reserve force of 4,000 to 5,000 and the small size of its territorial reserve force (two battalions and a regiment) are more consistent with reserve forces for regional contingencies than large-scale war with the West.¹² Further, while Russia has reestablished some ground divisions, it retains an approach to ground readiness in which ground brigades should be able to produce one battalion tactical group of highly-ready professional soldiers.¹³ This approach enables combat units to rapidly support regional contingencies with highly capable forces while leaving forces in reserve in the event of a major war. Finally, Putin has encouraged the defense industry to switch to civilian production while retaining the capability to rapidly switch to defense production in the event of conflict, a policy more consistent with preparation for the possibility of a future war than immediate preparation for initiating one.¹⁴

Fifth, Russia invested in expanding its internal security forces given the perceived threats from terrorism and external subversion. Internal security and law enforcement organizations include approximately 3.2 million personnel in 2017 (see Appendix L, Table L.1), significantly higher than the approximately 961,000 active duty personnel in the armed forces (see Appendix D). The 2016 creation of Rosgvardiya demonstrated the concern of the ruling regime about internal security and created a dominant militarized organization responsible for internal security. Still, as Appendix L highlights, there remain multiple internal security organizations with close connections to the regime and overlapping roles, which compete for resources and position. Russia's spending on internal security increased in 2012–2013, likely, in

¹² See also Monaghan, 2017, pp. 77–78.

¹³ See, among others, Sutyagin and Bronk, 2017, pp. 22–24.

¹⁴ Kremlin, "Meeting with Defence Ministry and Defence Industry Senior Officials and Heads of Ministries and Regions," November 22, 2017.

part, as a response to the Bolotnaya protests, and it appears unlikely that Russia will be easily able to reduce the size of or its spending on security forces. Continuing social support for the regime and lack of opposition to Rosgvardiya likely indicates the sustainability of Russia's approach to internal security (see Appendix A).

Possible Changes in Factors and Future Ground Combat Capabilities

Just as the five factors shaped the development of the Russian military over the last decade, the trajectory of these factors is likely to shape Russian capabilities in the future. As described in Chapter 2, while there may be continued incremental developments in the future, there will not be major changes in the factors. We view the most likely future as one of overall continuity.

Russia's military forces will generally meet its security goals within its available resources. Russia will likely face higher costs for military recruitment due to declining military-age males through 2024 but should be able to find and recruit sufficient personnel to maintain the current size of its military forces. Russia will continue to focus on achieving regional dominance in its near abroad, with an emphasis on readiness and professionalization of a small component of the force. Some expansion and incremental improvements will occur in long-range strike, rapidly deployable forces, C4ISR, and air defense, while relative stagnation will occur in the maneuver ground forces and indirect fires. Russia will pursue continued collaboration with the West in activities such as counterterrorism in the Middle East while attempting to pivot east toward closer relations with India and China.

At the same time, the future is not known, and we see two areas where changes in the factors are possible and consequential for the development of Russian military capabilities. One is fluctuating energy prices, which could affect growth in the economy and, in turn, Russia's defense budget and military capabilities. The second area is changes in Russia's economic growth and security strategy due to shifts in relations with the West or China. See Table 4.2 for a summary of these potential

Table 4.2
Possible Changes in Factors Affecting Russian Strategy for Armed Forces and Ground Combat Capabilities

Potential Changes		Developments in Russian Strategy for Armed Forces and Ground Combat Capabilities
Energy prices	Increase	<ul style="list-style-type: none"> • Improvements in maneuver ground forces, C4ISR, long-range strike, air defense, and rapidly deployable forces • Faster pace of modernization of legacy ground systems and production of the next generation ground vehicles
	Decrease	<ul style="list-style-type: none"> • Emphasis on internal security forces and strategic nuclear forces rather than more costly improvements to C4ISR and long-range strike • Improvements in maneuver ground forces for internal security and deterrence against Western domestic interference
Relations with West	Improve	<ul style="list-style-type: none"> • Western incursion into the near abroad or direct conflict less focus in security strategy • Adoption of domestic economic reforms leading to economic growth and increase in defense spending and opportunity to pursue technological innovation • Upgrade in legacy platforms as well as improvements in Russia's C4ISR, long-range strike, and air defense • Improvements in rapid reaction forces continue due to ongoing concern about threats from terrorism and instability in the near abroad
	Worsen	<ul style="list-style-type: none"> • Security strategy focus primarily on strategic deterrence and regional dominance • Limited resources focused on nuclear weapons and long-range strike, while pursuing a steady modernization of ground forces • Possible buildup of ready forces in the Western Military District
Relations with China	Worsen	<ul style="list-style-type: none"> • Budgetary resources and demographic flexibility lacking to expand military forces • Priority to strategic deterrent, including both nuclear forces and long-range strike over maneuver ground forces • Emphasis on rapidly deployable forces to ensure regional dominance within the near abroad • Attention to preparing for an invasion by increasing mobilization capacity • Few available resources for modernizing legacy equipment for C4ISR or acquiring next-generation systems

changes and what it could mean for Russian strategy for armed forces and ground combat capabilities.

Changes in Energy Prices

Russia's economic prospects could improve if energy prices increase. In this case, with the increase in GDP, Russia could choose to increase the defense budget and military expenditures and use these additional resources to improve the maneuver ground forces, C4ISR, long-range strike, air defense, and rapidly deployable forces. Russia could also undertake a faster pace of modernization of its legacy systems (such as T-72s, T-80s, or T-90s; BMP-2s; and BTR-80/82s) as well as move to serial production of the next generation of ground vehicles.

More unlikely, but possible, energy prices could drop, leading to a Russian economic crisis, especially if economic reform had not occurred. In this case, social stability could decline, which would add pressure to Russia's internal security situation. What Russia would do in this situation is uncertain, although at a minimum Russia would likely bolster its internal security forces and prioritize strategic deterrence, possibly by bolstering its legacy strategic nuclear forces instead of committing to more costly improvements to C4ISR and long-range strike. It might also strengthen its maneuver ground forces to bolster its internal security and deterrence against the West and potential domestic interference.

Changes in Russia's Relations with the West or China

Russia's relations with the West in the future could improve or worsen. In the case of improving relations and a diminished threat from the West, the Russian strategy for the armed forces would likely focus less on Western incursion into the near abroad or direct conflict. If, as a result, Western sanctions were lifted, the Russian government could develop a more positive view of the liberal reform ideas mentioned in Chapter 2, leading to a higher than predicted economic growth.¹⁵ In

¹⁵ Russian analysts noted that reforms proposed by Kudrin's group, with a perceived closer connection with the West, were especially unlikely so long as Western sanctions and poor relations with the West persisted. Interviews with Russian analysts, Moscow, July 2017.

this case, defense spending could rise proportionately, and rapprochement could offer Russia an opportunity to pursue technological innovation. This could lead to an upgrade in legacy platforms as well as improvements in Russia's C4ISR, long-range strike, and air defense. Improvements in its rapid reaction forces would continue due to ongoing concern about threats from terrorism and instability in the near abroad. But Russia could seek greater cooperation with the West in the Middle East and other regions.

Were relations with the West to worsen, the prospects for reformed Russian economic growth and the acquisition of modern technologies would decrease. Concern would arise about Western aggressive intentions, both within Russia and in the near abroad. In its strategy for the armed forces, Russia would focus on strategic deterrence and regional dominance. In developing its military capabilities, Russia would use its limited resources on nuclear weapons and long-range strike while pursuing a steady modernization of its ground forces. It could also build up its ready forces in the Western Military District.

Another possibility is that Russia's relations with China could worsen. While Russia's current relationship with China appears strong, conflict over China's growing influence in Central Asia could emerge, leading to greater tensions and a perceived threat from China.¹⁶ Facing a simultaneous threat from the two larger superpowers, Russia would not have the budgetary resources or demographic flexibility to expand its military forces. In this case, Russia would likely prioritize its strategic deterrent, including both nuclear forces and long-range strike over its maneuver ground forces. Russia would continue to emphasize rapidly deployable forces to ensure regional dominance within the near abroad and likely devote some attention to preparing for an invasion by increasing mobilization capacity, drawing on Soviet-era systems. It would have few available resources for modernizing legacy equipment, improving C4ISR, or acquiring next-generation systems.

¹⁶ See Alexander Gabuev, "Friends With Benefits: Russian-Chinese Relations After the Ukraine Crisis," Carnegie Moscow Center, June 2016, pp. 25–29.

Conclusion

Continuity in Russia's development of ground capabilities is likely, including a focus on long-range strike, C4ISR, and rapidly deployable forces. However, there could be changes in the factors involving energy prices and economic growth or in Russia's relations with the West or China that could give Russia incentives to pursue different ground combat capabilities. The potential outcomes of these options offer insights for the range of different future Russian military capabilities. In general, we continue to expect a prioritization of capabilities associated with strategic deterrence, regional dominance, and internal security.

Policy Implications

To draw the policy implications for the United States, we analyzed different ways in which Russia's interests, preparations, and capabilities may in the future interact with U.S. interests, priorities, and capabilities. To achieve U.S. interests, the U.S. military will need to provide forces that can compete with Russia across a range of different types of interactions, from cooperation to conflict. As the 2018 National Defense Strategy articulates, the U.S. military will likely be called on to counter coercion and subversion short of military competition, strengthen allies and partners, deter adversary aggression, and if necessary, defeat aggression by a major power and manage escalation up to and including nuclear war.¹

Given Russia's extensive conventional and nuclear strategic deterrent capabilities, the key challenge will be how to develop U.S. capabilities that can best compete with Russia and achieve U.S. interests at any intensity of competition without escalation. The United States will also need to consider how to minimize cost, given the limited risk of Russian actions threatening U.S. core interests and competing budgetary priorities. Using the framework of our identified Russian security strategy, we describe the implications of our analysis for the United States of Russia's future interests, capabilities, and priorities, with a focus on the U.S. Army.

The first and last elements of Russia's security strategy, strategic deterrence and internal security, are inherently defensive, although

¹ Department of Defense, "Summary of the 2018 National Defense Strategy of the United States of America," 2018.

strategic deterrent forces could threaten the United States and its allies. It is unlikely that the United States would initiate conflict with Russia or intervene militarily to support internal groups. The United States should, therefore, not see these capabilities as posing an immediate threat to U.S. interests. Nevertheless, Russia clearly sees threats from the United States and the rest of NATO from NATO enlargement and the enhancement of U.S.-NATO military capabilities on its borders. Though neither the European Deterrence Initiative nor the NATO Enhanced Forward Presence battalions are likely to trigger a Russian military response, the possibility exists that Russia's view of the threat could increase or a crisis could develop that could lead to unintended military escalation. U.S. policymakers need to be attuned to Russian perceptions of the threat posed by U.S. force deployments in Europe.²

Regional dominance, the second element of Russia's security strategy, poses a more immediate threat to U.S. interests, given that Russia's primary desired sphere of influence includes former Soviet republics such as Ukraine and Georgia, who aspire to join Euro-Atlantic institutions. Russia's military actions in Crimea and eastern Ukraine clearly demonstrate the threat that the Russian military and its proxies pose to U.S. partners and demonstrates how an aggressive Russian foreign policy can threaten U.S. interests.³ Our analysis suggests that Russia's capabilities for regional dominance are also likely to increase, since Russia will continue to invest in its rapidly deployable forces, C4ISR, and long-range strike assets across a range of possible future political and economic changes.

Given these growing capabilities and Russia's greater interests, U.S. support has not and does not appear likely to be able to significantly undermine Russia's dominance in Ukraine, Georgia, and other former Soviet republics. In these countries, the U.S. military can explore options to bolster partners' security forces. A stronger and more

² Bryan Frederick, et al., *Assessing Russian Reactions to U.S. and NATO Posture Enhancements*, Santa Monica, Calif.: RAND Corporation, RR-1879-AF, 2017.

³ David E. Johnson, *The Challenges of the "Now" and Their Implications for the U.S. Army*, Santa Monica, Calif.: RAND Corporation, 2016, PE-184; Radin and Reach, 2017.

accountable Ukrainian security force can better achieve U.S. interests of securing Ukraine's sovereignty and freedom of action without increasing the likelihood of escalation.

The Army and other services could bolster partner-building capabilities by improving the quality and capacity of niche areas such as foreign area officers, units focused on providing security-force assistance, information operations, and military medical units. There may be other ways to adapt U.S. activities across the whole-of-government in Ukraine to improve the prospects for reform, such as adopting longer time horizons (five to ten years); increasing the training, specialization, and tours of duty for U.S. personnel; and working with allies to place greater and consistent pressure on the Ukrainian government to pursue reforms. While existing support to Ukraine, such as U.S. training by the Joint Multinational Training Group-Ukraine, can be beneficial, efforts that more systematically support the security establishment may be more likely to be effective. Lethal aid backed by U.S. Army train-and-equip, may increase the Ukrainian military's capabilities and clearly demonstrate U.S. commitment to the country. But it risks provoking a strong counterreaction by Russia, which has many options to escalate. Further, the potential for strengthening Ukraine's military is minimal compared with the possible benefit of bolstering the ability of Ukraine's large military industrial complex to provide better support to the country's military.⁴ In other former Soviet republics, where U.S. interests are more limited, such as Central Asia, ongoing Russian regional dominance may pose less of a threat, but further study of possible Russian interventions in these countries may be desirable.

Russia's expeditionary operations and capabilities, the third element in Russia's security strategy, pose a complex challenge that will require both flexibility and preparedness for high-intensity conflict with well-armed adversaries. While Russia has invested in special forces, long-range strike, and air defense, the Russian military is

⁴ See Andrew Radin and Lynn Davis, "What Ukraine Urgently Needs to Defend Itself," *Newsweek*, October 16, 2016; Olga Oliker, et al., *Security Sector Reform in Ukraine*, Santa Monica, Calif.: RAND Corporation, 2016.

not configured to be a global expeditionary military, especially given its gaps in expeditionary logistics and standing basing arrangements. Russia is likely attempting to secure port or airfield access rights but so far has not made breakthroughs. Nevertheless, Russia may support proxies that may undermine U.S. interests without attribution to Russian forces. The U.S. Army should investigate options to prepare for the challenge of Russian expeditionary capabilities, such as developing further military-to-military connections with Russian commanders. Reference to and study of Cold War-era strategies for engagement may be valuable.

The U.S. government needs to prepare for direct and indirect confrontation with Russia outside of Europe. As in former Soviet republics, the United States and its partners will likely face Russian proxies with advanced military tactics and technology. A clearer understanding of what capabilities Russia can provide through training and equipping partners may illuminate potential capabilities that the United States could provide to its own partners. Furthermore, the U.S. military needs to prepare for the potential that in a conflict like Syria, where both U.S. and Russian forces are deployed, a direct confrontation between the United States and Russia could emerge. Beyond contingency planning for such scenarios, the U.S. Army should assess whether forces deployed in areas where a conflict with Russia is conceivable have the necessary training and equipment and are prepared to take action while avoiding escalation.

Perhaps the most dangerous possibility is the fourth element of Russia security strategy, preparation for a large-scale ground war.⁵ It seems unlikely that Russia is preparing to initiate such a war given its security goals and strategy, past decisions to develop key capabilities, and the constraints posed by its economy, demography, and personnel policy. While the Baltics are often identified as a possible region in which high intensity conflict will emerge, this analysis emphasizes that

⁵ A 2016 RAND study, for example, emphasizes that given the current U.S. posture, in the event of a large Russian invasion, Russian forces would be on the outskirts of the Baltic capitals of Riga and Tallinn within 60 hours. David A. Shlapak and Michael Johnson, *Reinforcing Deterrence on NATO's Eastern Flank: Wargaming the Defense of the Baltics*, Santa Monica, Calif.: RAND Corporation, 2016.

Russia's interests and military preparations do not indicate a political desire to seize the region nor a particular focus on developing military capabilities to facilitate an invasion as compared with other areas, such as Ukraine. Nevertheless, the possibility of a major ground war in Europe cannot be ruled out, and the U.S. military should prepare for that possibility.

Beyond Russia's advantage in the size of ground forces in Europe, existing research has identified six ways Russia's current and projected near-term capabilities pose a threat to the U.S. Army in Europe.⁶ First, Russian C4ISR and deep-strike capability pose a threat to fixed C2 sites and logistics sites far behind the forward edge of battle. Second, Russia's extensive air defense network appears likely to impede access by NATO air forces and, hence, overall NATO air superiority.⁷ Third, the combination of Russian deep strikes, EW, and air defenses could degrade U.S. and allied C4ISR and, with it, the ability of joint forces to provide fire support to U.S. ground forces. Fourth, Russia has advantages in the volume, area effects, and range of its indirect fires and, fifth, its maneuver forces pose a far more significant direct fire threat to U.S. armored forces than most other adversaries. Sixth, the ambiguities in Russia's approach to the use of nonstrategic nuclear weapons imply that U.S. ground forces could face the use of nuclear weapons in the midst of a regional conflict.⁸ Eastern Europe is especially challenging for the U.S. military since Russia can draw on its full range of military capabilities, but to the extent Russian forces or capabilities may be deployed elsewhere, these six challenges may apply to other regional contingencies as well.

⁶ See, for example, Scott Boston and Dara Massicot, *The Russian Way of Warfare: A Primer*, Santa Monica, Calif.: RAND Corporation, PE-231-A, December 2017.

⁷ The combination of long-range strike, coastal defense, and air defenses to obstruct power projection is sometimes referred to as the anti-access/area-denial threat (A2/AD). See, among others, Timothy M. Bonds, et al., *What Role Can Land-Based, Multi-Domain Anti-Access/Area Denial Forces Play in Deterring or Defeating Aggression?* Santa Monica, Calif.: RAND Corporation, 2017, pp. 91–95.

⁸ See, for example, Dmitry Adamsky, "If War Comes Tomorrow: Russian Thinking About 'Regional Nuclear Deterrence,'" *Journal of Slavic Military Studies*, Vol. 27, No. 1, 2014, pp. 163–188.

For the future, these specific challenges will persist, and some could become worse. Russian C4ISR and long-range strike is likely to improve, posing a greater threat to fixed U.S. and allied positions. Air defense and EW are likely to continue to experience gradual improvement in the coming years. While Russia is unlikely in the near term to significantly improve the quality of its indirect fires or adopt next-generation ground vehicles, among other things, its existing capabilities will continue to pose a threat.

Addressing the challenge of Russia's developing military capabilities likely requires a joint U.S. military and combined alliance response. Improving the capabilities of the allies who are most proximate to Russia, such as Poland and the Baltic states, could be invaluable for deterring both Russian subversion short of war and high intensity conflict.

In addition to responding to these geographically specific challenges, analysis of Russia's development of key ground capabilities provides insights for the U.S. Army as it considers options for developing its own capabilities:

- In terms of the maneuver ground forces, we expect incremental modernization of legacy systems unless energy prices increase, continued adoption of advanced fire control, sensors, and protection technologies on legacy Soviet systems, and the very slow adaptation of next-generation systems, including the T-14 and T-15. This calls for the U.S. Army to prepare for challenges from the overall size of Russian forces and from modernized Soviet-era Russian platforms, but probably not significant numbers of new Russian platforms in the next five to ten years.
- Indirect fires are unlikely to experience significant improvement in the next ten years, although these capabilities will likely be bolstered by improvements in C4ISR. This calls for the U.S. Army to investigate future options to counter Russian C4ISR, to attrite the long-range indirect fire systems, and to pursue dispersal, denial, and deception.
- Russia's long-range strike capacity and capabilities are expected to increase, although production capacity challenges will likely place limits in the near term. This could change if energy prices rise or

sanctions are relaxed. The U.S. Army needs to prepare for coordinated and sustained attacks on critical rear-echelon nodes and explore options to counter Russian long-range strike capabilities to include improved air defense and EW.

- Russia's rapidly deployable forces are likely to experience steady investment and gradual improvement. The U.S. Army needs to expect and prepare for its partners to face Russian forces or their proxies, including in Europe, the Middle East, South Asia, and Northeast Asia.
- Russian C4ISR is expected to improve, though its ability to meet its 2020 goal of a unified information space and production of ISR systems will be pushed farther back, absent improved relations with the West (and, hence, diminished sanctions) or greater oil revenue to fund the high costs of domestic procurement. Improving U.S. cyber and EW capability at the tactical and operational level could be beneficial to address Russia's growing parity in C4ISR, although this may require investment in command, control, and planning, as well as possible changes in authorities to use cyber.⁹
- Russia's air defense is expected to continue to improve slowly, thereby continuing to threaten U.S. air superiority. The U.S. Army needs to develop its capabilities in line with Multi-Domain Battle and other new concepts to counter the adversary's Anti-access/area denial (A2/AD) capabilities.
- Russian EW will continue to improve, so the U.S. Army needs to examine its capabilities and options to deny Russia the ability to undermine U.S. communications, positioning, navigation, and timing (PNT), and ISR.
- Russia's internal security forces are likely to retain their current size unless Russia experiences a significant economic collapse or increased domestic protests, which could lead to an increase in the size of its internal security forces. We do not expect diminished resources for the Russian military given the greater prioritization of domestic unrest, however, since Russia would likely link external and internal threats.

⁹ Austin Long, "A Cyber SIOP? Operational Considerations for Strategic Offensive Cyber Planning," *Journal of Cybersecurity*, Vol. 3, No. 1, March 1, 2017, pp. 19–28.

While Russia's ground capabilities will continue to develop, they will be constrained and directed by political, demographic, economic, and social factors within Russia, which will likely change slowly over the next five to ten years. Studying Russia's priorities and its constraints helps shed light on how the U.S. military can best develop its full range of capabilities to better compete with Russia and achieve U.S. interests while minimizing financial cost and the risk of war.

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