

The Missile Defense “Arms Race” Myth

US policy toward ballistic missile defense (BMD) of the homeland is designed to stay ahead of the rogue state threat while relying on nuclear deterrence to prevent an attack from the nuclear missile arsenals of Russia or China. Today, the United States has 44 ground-based interceptors (GBI) and plans to increase the total number of its most capable interceptors to 64 by 2030 with the deployment of the Next Generation Interceptor. After its recent successful test against an intercontinental ballistic missile (ICBM)-type threat, the United States is also examining how the Standard Missile-3 (SM-3) Block IIA could complement GBIs in a layered homeland missile defense architecture.

Domestic critics of US homeland missile defense, as well as Russia and China, claim that increased US missile defense capacity and capability will lead to an arms race. They assert that it will stimulate Russia and China to build more offensive missiles in response, ultimately making the United States less safe. The critics' logic also assumes that US restraint in missile defense will obviate Russian and Chinese perceived needs for missile modernization and production. These individuals predict a prototypical action-reaction dynamic that has little empirical support and deserves great scrutiny.

Russian Reaction to US Missile Defenses

Broadly speaking, Russia could react in two ways to overcome perceived advances in US missile defense: proportionally or disproportionately increase the overall number of missiles, launchers, and reentry vehicles in an attempt to overwhelm US missile defense capacity, or develop specific weapon systems meant to evade US missile defenses. Evidence for the first reaction is severely lacking while evidence for the second is mixed at best.

Beginning in 2000, when it became a serious possibility that the United States might pull out of the Anti-Ballistic Missile (ABM) Treaty that limited missile defenses, one would expect Russia to react—according to the “arms race” logic—by increasing the numbers of its missiles, launchers, and reentry vehicles. However, the number of Russian ICBMs and submarine-launched ballistic missiles (SLBM)—the systems most likely to be adjusted to counter advances in US missile defenses—and their associated launchers

and reentry vehicles declined substantially. Open source, estimated numbers tell the story. In 2000, analysts believed that Russia had 756 ICBMs and 348 SLBMs, totaling 1,104. Five years later, analysts believed that Russia had 585 ICBMs (down 23 percent) and 192 SLBMs (down 45 percent), totaling 777 (down 30 percent). In 2010, analysts believed that the number of ICBMs fell 43 percent and SLBMs 17 percent, a combined reduction of 37 percent. Russian ICBMs and SLBMs have remained at 2010 levels, with minor variation, through today. There is no perceptible arms race here.

Perhaps Russia placed more warheads on its missiles to overcome US missile defenses? Again, the data do not support such a mechanical action-reaction. Russia in 2000 had an estimated 5,116 warheads dispersed between ICBMs and SLBMs. In 2005, that estimate was 2,942, down 42 percent. In 2010 and 2015, estimates were at 1,666 and 1,721, respectively. Today, Russia is estimated to have 1,856 warheads. These numbers indicate a small increase in the past 10 years, yes, but it is hardly attributable to US missile defense—much less shows evidence of an arms race. More likely, the increase can be attributed to Russia’s ongoing nuclear modernization that is replacing older systems with newer systems.

Some may counter that Russia could not respond to US missile defense increases because of strategic arms control treaties with the United States. Indeed, Russian forces were constrained by such treaties, but Russia would likely never have agreed to those force limits unless it felt secure enough in its force composition to do so. Certainly, it was aware of the potential for US homeland missile defense improvements.

Furthermore, as Lt Gen Robert Ashley, US Army, retired, stated in 2019 when serving as the Defense Intelligence Agency director, the United States expects the Russian nuclear arsenal to grow “significantly” over the next decade. However, that growth “is primarily driven by a significant projected increase in the number of Russia’s non-strategic nuclear weapons” (i.e., short-range weapons, not the long-range weapons one would expect if there was an overriding impetus to compete in an arms race to offset US homeland missile defense advances).¹

Likewise, Cold War data do not support the inverse of the critic’s argument: that the US refraining from building missile defense lessens the need for Russia to build more missiles. From 1972 to 1982, a time when the United States built and then completely dismantled its only limited homeland missile defense system, the Soviet Union increased its number of ICBM reentry vehicles from about 1,500 to almost 6,000 total. SLBM reentry vehicles, in the same period, increased from 500 to about 1,500.²

Again, US restraint in building missile defenses apparently did nothing to discourage a Soviet buildup in offensive missile forces.

If building additional or more capable US missile defenses will not necessarily lead to an increase in Russia's missiles or reentry vehicles, what then can be said for the second argument? Will building more US missile defenses stimulate an asymmetric Russian reaction to build weapon systems specifically designed to negate or evade US missile defenses, thus making the US less safe? On this point, critics may find firmer ground, but the evidence is mixed at best.

It is undeniable that Russian president Vladimir Putin's attitude toward US missile defense plans has consistently ranged from skeptical to outright hostile; he has regularly declared that Russia will take the necessary steps to respond, specifically with its own asymmetric weapons programs. To cite just one of many examples, President Putin stated, "I want to say that the United States, when it withdrew from the ABM Treaty in 2002, forced us to begin developing new weapon systems. We told our partners about it, and they said, 'Do whatever you like.' Fine, that is what we did—so enjoy."³ And, indeed, as detailed in President Putin's speeches to the Federal Assembly, he has ordered a number of new exotic systems be built in response to US homeland missile defenses.

But does this settle the matter? If the US had remained in the ABM Treaty, would Russia not have built these systems, and would the United States be safer? We must examine these new Russian "super weapons" as evidence of Russia's response.

The first is the SS-X-29, a super-heavy ICBM, reportedly capable of carrying 10 reentry vehicles and nicknamed in the West as the "Son of Satan." "Satan" was the NATO designator of the missile that Russia will likely replace—the SS-18, which can also reportedly carry 10 reentry vehicles. The SS-18 itself was a replacement for the SS-9 Scarp, and its primary missions were reportedly destroying US ICBM fields and penetrating possible US missile defenses. But the SS-18 was originally deployed in 1975 and continued being fielded throughout the '70s and early '80s when the United States had zero missile defenses.⁴ In the context of nuclear arms control, it might be advantageous to have the capability of loading a relatively large number of warheads on a single missile when the number of missiles is limited. It is likely then that Russia views having this new super-heavy ICBM as much more than just a missile defense killer, and it was certainly not built solely as a response to US missile defenses.

The second and third new weapon systems that Putin claims are in response to US missile defenses are the SS-19 Mod-X-4 (Avangard) hyper-

sonic glide vehicle (HGV) and the Kinzhal air-launched ballistic missile. While the Kinzhal seems more likely to be used in a geographically limited conflict rather than for penetrating US homeland missile defenses, the Avangard HGV appears at first glance to be a direct counter to US missile defense. It seems designed to outmaneuver any BMD interceptor. But Russian officials plausibly may have wanted an HGV even if the United States had no missile defenses. Due to their low flight altitude, HGVs can literally “fly under the radar” of terrestrial-based radars pointed into space. This makes the HGV detectable much later in flight, giving the United States less strategic warning. Indeed, Russian officials could view Avangard as useful for targeting US radars, BMD sites, or time-sensitive assets. Again, Russia would likely find Avangard to be advantageous even if there were no US homeland missile defenses.

Finally, the fourth and fifth of Putin’s nuclear “super weapons” have the most plausible argument in being direct responses to US missile defenses. The “Poseidon,” a nuclear-powered “transoceanic nuclear[-armed] torpedo,” will evade US missile defenses by operating underwater. In addition, Russia is developing the “Burevestnik” nuclear-powered, nuclear-armed cruise missile, which Putin specifically mentions having “unlimited range” and is useful for avoiding missile defense. These two systems do seem to validate critics’ claims that without the US building up its missile defenses, these Russian systems would have no purpose and would not have been built, thus increasing US security.

Even this apparent action-reaction dynamic, however, is not proof enough of US missile defenses’ allegedly destabilizing nature. As Rose Gottemoeller, former NATO deputy secretary general, recently stated, it is not obvious that Russia views these nuclear-powered novelties as having real operational value for bypassing US missile defenses. She notes,

These exotic systems have more of a political function than a strategic or security one. Their role is to signal Russia’s continuing scientific and military prowess at a time when the country does not otherwise have much on offer. Devilishly expensive and sometimes dangerous to operate, they are unlikely to be deployed in big numbers, as a 2019 fatal testing accident of the Burevestnik shows. . . . The exotics don’t add to that [strategic] deterrent. They have some show-off value, but they will do no more than make the ruble bounce.⁵

If these systems do come to fruition, they will be inherently redundant for a mission that Russia can already accomplish: penetrating and overwhelming US missile defenses. The United States designed and built its homeland missile defenses to defeat only rogue state ICBMs—not the

much more advanced Russian or Chinese missiles that can accommodate missile defense countermeasures. Thus, Russia gains practically no security advantage in developing these exotic nuclear weapons. In fact, US homeland BMD may have unintentionally imposed costs on the Russian defense sector—causing Russia to invest untold millions of rubles into redundant systems. Every ruble it invests in these exotic systems is not invested in systems that could threaten a perceived US weakness.

More importantly, US homeland defense efforts lose none of their effectiveness or value if Russia may more easily defeat them. The purpose of US homeland missile defense is to defend against rogue states, not Russia or China. While Russia’s reactions to US missile defense show little evidence of an arms race dynamic, China’s reaction may provide additional insight into this debate.

Chinese Reaction to US Missile Defenses

Just as with Russia, there are two broad ways of potentially demonstrating that the buildup of US missile defenses would likely cause a buildup of China’s intercontinental-range missiles. First, one can examine the number of China’s intercontinental-range missiles and associated reentry vehicles over time, especially the period from 2000 to today. Indeed, in the past 20 years there has been a substantial increase in the number of Chinese intercontinental-range systems and their associated warheads. In 2000, according to open sources, China had about 20 ICBMs and associated warheads. By 2010, those numbers had risen to approximately 40, and by 2020, China possessed approximately 98 ICBMs with 138 associated warheads and 48 (intercontinental-range) SLBMs and associated warheads—all of which could conceivably reach the United States and overcome US homeland missile defenses. These increases do indeed line up with the steady US improvement in the capability and quantity of missile defense interceptors over the same period.

But does this apparent correlation equal causation? During this same time, the United States also increased its conventional capabilities and signaled a much greater focus on defending its interests in the Pacific. In addition, the United States is just beginning to modernize its entire nuclear arsenal, from missiles to submarines to bombers. Meanwhile, Russia has modernized its nuclear forces on its border with China. Any of these factors could be the basis for China’s growing intercontinental-range missile arsenal, without mentioning some intangible factors such as wanting to demonstrate its scientific prowess as a great power. Finally, two years before President Bush decided to withdraw from the ABM Treaty in

2001 and pursue homeland missile defense, the US intelligence community was already projecting a relatively significant growth in the Chinese intercontinental-range nuclear arsenal—indicating that China may have at least partially planned the growth of its missile forces without US missile defense in mind. It is difficult to describe the slow and steady buildup of Chinese intercontinental-range missiles as an arms “race” (the next 20 years might be a different story), much less solely attributable to US homeland missile defense enhancements.

If the overall size of the Chinese intercontinental-range nuclear force cannot provide definitive proof of an action-reaction dynamic with US missile defenses, perhaps its composition—the types of weapons China is producing—can provide clues. China has, and is developing, missiles capable of delivering multiple reentry vehicles. Whether China views this capability as mainly aimed at defeating US missile defenses or simply being able to threaten multiple targets with one missile, or both, is impossible to say with certainty. China is also developing hypersonic glide vehicles, seemingly designed to defeat US missile defenses. But, as explained with Russian HGVs, China may value the element of reduced attack warning provided by its HGVs just as much as their counter-missile defense capabilities. In any case, it is certainly not clear that if the United States refrained from improving its homeland missile defenses, China would have acted any differently in building new systems. Again, just as with Russia, China is likely increasing its forces in proportion to its national strategic aims, regional ambitions, and threat perceptions—of which US missile defense is only one factor, and likely a minor one, among many.

Conclusion

The available open-source data, culled from the Cold War to the present day, on the numbers and types of Russian and Chinese intercontinental-range systems and their associated warheads does not indicate a direct, discernable, or predictable relationship between the size and capability of US missile defenses and Russian and Chinese missile developments. While it appears that Russia and China believe they have reacted to US missile defense developments, it is far from clear how those unique reactions are manifest in their numbers or types of weapons, and there is good reason to suspect they might have done the same things even in the absence of US missile defenses. In short, Russian and Chinese reactions to US homeland missile defense in the past cannot reasonably be called an “arms race,” and present trends in the arsenal can be attributable to range of factors.

While perhaps counterintuitive, the point should not be surprising. When the US government asked similar questions about the action-reaction dynamic between the nuclear arsenals of the US and USSR during the Cold War, some of the brightest minds, given access to the full collection of intelligence, came to a similar conclusion. The consensus was that “the facts will not support the proposition that either the Soviet Union or the United States developed strategic forces only in direct immediate reaction to each other.” Or paraphrasing then-US secretary of defense Harold Brown, “When we build, they build; when we cut, they build.”

The motivations behind the decisions of what type of missile to build and how many are so numerous and variable that they defy direct, mechanical-like linkage and formulation. We must advance the field of study by eschewing simplistic and unsupported “arms race” rhetoric and focus instead on the unique cultural, historical, and bureaucratic factors that influence threat perceptions, technological innovation, and weapons procurement. Anything less will provide an incomplete threat picture and cause avoidable misperceptions—an unacceptable outcome for a subject where the consequences of being wrong are by nature strategic. **SSQ**

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Notes

1. Lt Gen Robert P. Ashley, Jr., “Russian and Chinese Nuclear Modernization Trends” (remarks, Hudson Institute, Washington, D.C., 29 May 2019), <https://www.dia.mil/>.
2. US Department of Defense, *Soviet Military Power*, 2d ed. (Washington, D.C.: Government Printing Office, 1983), 19, 23, <http://insidethecoldwar.org/>.
3. Vladimir Putin, quoted in “Interview to American TV Channel NBC,” President of Russia website, 10 March 2018, <http://en.kremlin.ru/>.
4. Pavel Podvig, ed., *Russian Strategic Nuclear Forces* (Cambridge, MA: The MIT Press, 2001), 215–17.
5. Rose Gottemoeller, “Russia Is Updating Their Nuclear Weapons: What Does That Mean for the Rest of Us?,” Carnegie Endowment for International Peace, 29 January 2020, <https://carnegieendowment.org/>.

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