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The Future of Nuclear Proliferation after the War in Ukraine

Nicholas MILLER



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As international security is increasingly shaped by global strategic competition among great and middle powers, nuclear armaments and, more generally, weapons of mass destruction (WMDs) have been brought back to the fore, gradually recovering the centrality they had during the Cold War era. Whether it be Russia's nuclear rhetoric over Ukraine, the progress of North Korea's proliferating activities, China's strategic and nuclear build-up, and worrying trends in the Middle East's arms race, deterrence and proliferation issues are now again an essential aspect of international politics.

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Executive summary

In the context of deep changes to the international security environment, especially the war in Ukraine, this paper, by reviewing the arguments analysts have made on the acceleration of proliferation in the coming years, shows how the literature partly overestimates proliferation risks. Some insights on the future of proliferation in the Middle East and East Asia are derived.

Four categories of factors have been identified that may trigger a nuclear proliferation escalation. First, **changes to the international security environment can lead to an increase in the proliferation pressure** amid intensified security competition in Europe, Asia, and the Middle East. The end of unipolarity adds to the intensification of the competition between the United States (US) on the one hand and Russia and China on the other. The second key issue is that, over the years, **the US ability to enforce the non-proliferation regime has been declining**. Indeed, the US reliability as a security provider is diminishing, resulting in its allies seeking nuclear capability as they worry the US will pull back from its security commitment. Also, as the US position in the civilian nuclear marketplace has declined in the last decades, Washington's ability to use nuclear assistance as leverage is lowering. The US is also seen as less trustworthy as a negotiating partner in non-proliferation bargains, as the cases of Iran, Iraq, Libya, and Ukraine illustrate.

A third factor that might increase the odds of proliferation involves **the normative environment surrounding nuclear weapons and nonproliferation**. Indeed, the failure of nuclear powers to live up to Article VI of the Non-Proliferation Treaty (NPT) on the commitment to pursue negotiations toward the goal of nuclear disarmament can encourage non-nuclear states to seek nuclear capability. Additionally, the emergence of the Treaty on the Prohibition of Nuclear Weapons (TPNW) in 2017 has led some non-nuclear weapon states (NNWS) to worry that nuclear states will withdraw from the NPT by substituting their commitment to the TPNW.

Finally, **the war in Ukraine has the potential to increase proliferation risks**, as it signals that nuclear powers can attack an adversary with conventional capabilities while backing its actions with nuclear threats to deter third-party intervention. The war also sends the message that nuclear weapons are a necessary guarantor of national security.

Although there are many reasons to suspect that proliferation risks are growing, **the proliferation environment is not as dire as it seems**. Several of these factors are not new and have been effectively managed in the

past without leading to widespread proliferation. First, the concern about US reliability goes back to the beginning of the Cold War, and even if US allies did consider acquiring nuclear capabilities as a response, the American government generally effectively managed these concerns through a combination of coercion and reassurance. In the same way, **the failure of nuclear states to engage in a meaningful discussion on disarmament is not new**, and qualitative and quantitative studies support the idea that US policies on arms control and disarmament were not a major factor in influencing whether key countries made commitments to the nonproliferation regime. **The US and international community have also been able to manage proliferation consequences from conventional wars backed by nuclear deterrence**, as seen in the cases of Israel and Pakistan. Intense competition between great powers has been damaging to nonproliferation efforts in the past, but this depends on the degree to which the great powers prioritize nonproliferation vs. other geopolitical objectives. Consequently, even if the current security environment leads to more proliferation pressures, it can be preventable depending on the actions that great powers take.

Other proliferation risk factors are more novel but are unlikely to be decisive in their impact. For example, the decline of the American nuclear industry is mitigated by the limited rebound in the US nuclear industry, **the increase of overall stringency of global safeguards**, and the ability of the US to use alternative sources of leverage that can compensate. With respect to the TPNW, even if members or other NNWS are frustrated with the regime's withdrawal from the NPT in protest, they would still face significant material costs from the nuclear powers for failing to cooperate with the nonproliferation regime. Also, it seems that because of the war in Ukraine, **the European public understands better why the nuclear umbrella is important for their security**, as the integration of Finland and Sweden in the North Atlantic Treaty Organization (NATO) demonstrates. This could make it less likely for European countries to support the TPNW. On the other hand, **the erosion in the efficiency of US sanctions and diplomacy is an important risk factor for proliferation pressures**, as states learn how to insulate their economies from coercion or are unwilling to make deals with an American government they view as untrustworthy.

Overall, the odds of a significant surge in proliferation are lower than many analysts suggest, as the US and the international community have a long track record of successfully slowing proliferation, even in the presence of many of the risk factors that face the world today. Still, there are specific reasons for concern, particularly the deterioration of the global security environment and enhanced great power competition and the reduced effectiveness of the US in enforcing sanctions and making deals.

The implications of these arguments for the Middle East and East Asia differ. For allies like Japan and South Korea, the US will likely be able and willing to use its leverage as a security provider to convince them to stay non-nuclear. By contrast, for adversaries like Iran, where leverage depends much more on the ability to impose economic pain and credibly commit to ending the pain if nonproliferation concessions are made, the erosion of the efficacy of US sanctions is more salient. In this context, **Iranian leaders could decide to try to cross the nuclear threshold in the coming years**, banking on the fact that the US and Israel would not have the will or capacity to go to war to prevent it, while Russia and China might look the other way as they focus on competition with the US. **If Iran does acquire nuclear weapons in the coming years, it will likely pressure** Saudi Arabia to consider doing the same, and the great powers might be reluctant to pressure Riyadh due to its perceived geopolitical importance in the context of intense global competition.

To conclude, this paper argues that the risk of proliferation in the coming decade is real but less acute and more manageable than many analysts have suggested. To limit proliferation pressures, great powers and the international community need to step in to manage proliferation triggers by maintaining a focus on nonproliferation in their statecraft.

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Introduction

What will the nuclear landscape look like over the next decade? Will the nuclear club remain at nine members, continue to grow gradually, or expand in a significant way? In the last few years, a number of analysts have warned that we may be on the brink of a more proliferated world as the security environment deteriorates, hostility between the great powers grows, and the Nonproliferation Treaty (NPT) seems to be under increasing stress with the emergence of the Treaty on the Prohibition of Nuclear Weapons (TPNW) and growing dissensus among NPT parties.¹ These fears were supercharged by the Russian invasion of Ukraine in 2022, which appeared to demonstrate that nuclear weapons can facilitate conquest and that giving them up—as Ukraine did with Soviet weapons on its territory before joining the NPT in the early 1990s—exposes states to terrible predation.² When combined with the US invasion of Iraq in 2003 and NATO intervention in Libya in 2011,³ this adds to a growing pattern of countries being attacked after restraining their nuclear ambitions. Prominent Yale University historian Timothy Snyder went so far as to predict “global nuclear proliferation” unless Russia is defeated in Ukraine.⁴

Of course, there is a long history of policymakers and analysts predicting that the world stands on the brink of a nuclear proliferation cascade or tipping point.⁵ Similarly, when it comes to the NPT, “the scholarly literature gives a strong impression of a regime that finds itself in a perpetual existential crisis.”⁶ Despite these predictions, the NPT has never come close to collapsing, and we have never experienced a rapid cascade of nuclear

1. See, for example: E. Brewer, I. Goldenberg, J. Rodgers, M. Simon, and K. Thomas, “Toward a More Proliferated World? The Geopolitical Forces that Will Shape the Spread of Nuclear Weapons,” Center for a New American Security, September 2020; R. Davis Gibbons and S. Herzog, “Durable Institution Under Fire? The NPT Confronts Emerging Multipolarity,” *Contemporary Security Policy*, Vol. 43, No. 1, 2022, pp. 50-79; H. Sokolski, “The NPT Turns 50: Will it Get to 60?,” *Bulletin of the Atomic Scientists*, Vol. 76, No. 2, 2020, pp. 63-67; M. Lee and M. Nacht, “Challenges to the Nuclear Non-Proliferation Treaty,” *Strategic Studies Quarterly*, Vol. 14, No. 3, 2020, pp. 95-120; and M. Rost Rublee and C. Wunderlich, “The Vitality of the NPT after 50,” *Contemporary Security Policy*, Vol. 43, No. 1, 2022, pp. 5-23.

2. See M. Budjeryn, “Distressing a System in Distress: Global Nuclear Order and Russia’s War against Ukraine,” *Bulletin of the Atomic Scientists*, Vol. 78, No. 6, 2022, pp. 339-346; M. O’Hanlon and B. Riedel, “The Russia-Ukraine War May Be Bad News for Nuclear Proliferation,” Brookings Institution, March 29, 2022, available at: www.brookings.edu; A. Umland and H. von Essen, “Putin’s War is a Death Blow to Nuclear Nonproliferation,” *Foreign Policy*, March 21, 2022, available at: foreignpolicy.com.

3. N. Miller, “The Eroding Value of Nonproliferation Sanctions,” Center for a New American Security, June 10, 2017, available at: www.cnas.org.

4. T. Snyder, “How Does the Russo-Ukrainian War End?” October 5, 2022, available at: snyder.substack.com.

5. See M. Yusuf, “Predicting Proliferation: The History of the Future of Nuclear Weapons,” *Policy Paper*, No. 11, Brookings Institution, 2009, available at: www.brookings.edu.

6. M. Smetana and J. O’Mahoney, “NPT as an Antifragile System: How Contestation Improves the Nonproliferation Regime,” *Contemporary Security Policy*, Vol. 43, No. 1, 2022, p. 25.

acquisition. Instead, many states have reversed their nuclear weapons programs,⁷ while the proliferation that has occurred has been relatively slow—on average, a new nuclear power every seven years—thus making it easier for the international system to manage. Indeed, we are presently in an unusual moment where no country is known to be actively developing nuclear weapons that they does not already have, and no new country has acquired nuclear weapons in more than 15 years.⁸

Scholars seeking to explain this disjuncture between alarmist predictions and a more benign reality have pointed to a number of factors, including domestic political and ideational factors that inhibit proliferation and the prospect of military intervention.⁹ A large body of recent research points to US nonproliferation policy and the nonproliferation regime more broadly as a crucial reason for the relatively limited spread of nuclear weapons.¹⁰ In this vein, several scholars and analysts have argued that current proliferation concerns are overblown and that challenges to the regime may even serve to strengthen it.¹¹ Which side in this debate is right? Are we on the brink of a significant upsurge in proliferation, or will the nonproliferation regime continue to hold?

This paper assesses the likely future of proliferation in four steps. First, it reviews the arguments analysts have made for why proliferation is likely to accelerate in the coming years. Second, it contends these arguments generally overestimate proliferation risks. Many of the risk factors analysts have identified have been managed successfully in the past without leading to significant proliferation. Other risk factors are more novel but are unlikely to have substantial proliferation effects. There are a couple of risk factors,

7. A. Levite, “Never Say Never Again: Nuclear Reversal Revisited,” *International Security*, Vol. 27, No. 3, 2002-2003, pp. 59-88.

8. Iran is the most obvious possible exception to this. However, the US intelligence community continues to assess that Iran is not developing nuclear weapons. See M. Lee, “U.S. Intelligence Assessment Says Iran Not Currently Developing Nuclear Weapons,” Associated Press, July 10, 2023, available at: apnews.com.

9. See E. Solingen, *Nuclear Logics: Contrasting Paths in East Asia and the Middle East*, Princeton: Princeton University Press, 2007; J. Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy*, New York: Cambridge University Press, 2006; J. Hymans, *Achieving Nuclear Ambitions: Scientists, Politicians, and Proliferation*, New York: Cambridge University Press, 2012; A. Debs and N. Monteiro, *Nuclear Politics: The Strategic Causes of Proliferation*, New York: Cambridge University Press, 2017.

10. See A. Levite, “Never Say Never Again,” *op. cit.*; M. Rost Rublee, *Nonproliferation Norms: Why States Choose Nuclear Restraint*, Athens, GA: University of Georgia Press, 2009; G. Gerzhoy, “Alliance Coercion and Nuclear Restraint: How the United States Thwarted West Germany’s Nuclear Ambitions,” *International Security*, Vol. 39, No. 4, 2015, pp. 91-129; N. Miller, “Nuclear Dominoes: A Self-Defeating Prophecy?” *Security Studies*, Vol. 23, No. 1, 2014, pp. 33-73; N. Miller, *Stopping the Bomb: The Sources and Effectiveness of Nonproliferation Policy*, Ithaca, NY: Cornell University Press, 2018; R. Mehta, *Delaying Doomsday: The Politics of Nuclear Reversal*, New York: Oxford University Press, 2020; R. Davis Gibbons, *The Hegemon’s Tool Kit: U.S. Leadership and the Politics of Nuclear Nonproliferation Regime*, Ithaca, NY: Cornell University Press, 2022; and J. Kaplow, *Signing Away the Bomb: The Surprising Success of the Nuclear Nonproliferation Regime*, New York: Cambridge University Press, 2023.

11. See M. Smetana and J. O’Mahoney, “NPT as an Antifragile System,” *op. cit.*; A. Bollfrass and S. Herzog, “The War in Ukraine and Global Nuclear Order,” *Survival*, Vol. 64, No. 4, 2022, pp. 7-32; R. Einhorn, “Will Putin’s Invasion Spur Nuclear Proliferation?,” Brookings Institution, May 24, 2023, available at: www.brookings.edu.

though, that are genuinely concerning, such as intensified great power competition and the declining effectiveness of US nonproliferation sanctions and diplomacy. Third, the paper applies these insights to specific regional contexts, analyzing the prospect of proliferation in the Middle East and East Asia. This analysis suggests proliferation risks are significantly greater in the Middle East, while they are more manageable in East Asia. The paper concludes with a discussion of policy implications and by identifying developments that could substantially alter the paper's assessment.

Potential drivers of increased proliferation

In the last few years, scholars and analysts have identified four main categories of factors that have the potential to trigger increased proliferation: (1) changes to the international security environment, (2) a decline in the effectiveness of US nonproliferation policies, (3) eroding nonproliferation norms, and (4) the specific lessons of the ongoing war in Ukraine. This section explains each set of factors in turn.

Changes to the international security environment

The last several years have witnessed dramatic changes to the international security environment. China has rapidly advanced its military capabilities and commenced an unprecedented buildup of its nuclear arsenal. Russia has broken from the West and engaged in nuclear-backed aggression in Ukraine, while bilateral arms control arrangements with the US are falling by the wayside. North Korea has made key strides in its nuclear weapons program, while Iran has expanded its presence in the Middle East and moved closer to the nuclear weapons threshold than ever before, with its current breakout time measured in days.¹² Analysts have pointed to two specific features of this environment that could trigger nuclear proliferation: (1) higher intensity of security threats in a variety of regional contexts and (2) the demise of US-led unipolarity and the associated return of great power competition.

Higher intensity of security threats

A consistent finding from the scholarly literature on nuclear proliferation is that security threats are a major motivator of nuclear proliferation. Historically, states have sought nuclear weapons in order to balance against nuclear rivals, protect themselves against overwhelming conventional threats, and have been more likely to initiate nuclear programs in the wake

12. See T. Copp and L. Baldor, "China is Building Up its Nuclear Weapons Arsenal Faster than Previous Projections, a US Report Says," Associated Press, October 19, 2023, available at: apnews.com; L. Horovitz and L. Wachs, "Russia's Nuclear Threats in the War Against Ukraine," *SWP Comment*, No. 29, April 2022, available at: www.swp-berlin.org; L. Bayer, "NATO Chief Warns Global Arms Control System at Risk of 'Collapse,'" *Politico*, April 18, 2023, available at: www.politico.eu; B. Lendon and J. Yeung, "North Korea Says It Tested an Advanced Solid-fueled Ballistic Missile," *CNN*, July 13, 2023, available at: edition.cnn.com; and I. Ali, "Iran Can Make Fissile Material for a Bomb 'in about 12 Days,'" Reuters, February 28, 2023, available at: www.reuters.com.

of recent conflict and major defeats.¹³ A corollary of these arguments is that states with nuclear-armed allies should be less likely to seek nuclear weapons due to the protection their patron provides.¹⁴

Drawing on these findings, analysts have suggested proliferation pressures are likely to increase in the coming years, given intensified security competition in Europe, East Asia, and the Middle East. According to one recent report, for example, “these security challenges will not automatically result in nuclear weapons programs, but they provide fertile ground for weapons ambitions to take root...”¹⁵ For instance, one can imagine Ukraine being motivated to acquire nuclear weapons to prevent another Russian invasion or Taiwan seeking nuclear weapons to deter Chinese efforts at forceful reunification. In the Middle East, Iran could decide it needs nuclear weapons to better deter Israel or the US, and Saudi Arabia could respond in kind. In East Asia, South Korea and Japan could conclude they cannot trust the US to protect them from a Chinese and/or North Korean nuclear attack.

Great power competition and the end of unipolarity

A second set of security arguments focuses on the number of great powers and the intensity of competition among them. While the nuclear nonproliferation regime was born under bipolarity, it was strengthened and has, in many respects, thrived under unipolarity after the end of the Cold War. North Korea is the only country to have acquired nuclear weapons in the post-Cold War era,¹⁶ a much slower pace of proliferation than experienced during the Cold War. According to Monteiro and Debs, unipolarity facilitated nonproliferation by improving the security environment and making it easier for the US to prevent the spread of nuclear weapons through coercive means.¹⁷ Even within bipolarity, nonproliferation was more successful in the second half of the Cold War when the intensity of

13. See, for example: S. Sagan, “Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb,” *International Security*, Vol. 21, No. 3, 1996, pp. 54-86; B. Thayer, “The Causes of Nuclear Proliferation and the Utility of the Nuclear Non-Proliferation Regime,” *Security Studies*, Vol. 4, No. 3, 1995, pp. 463-519; S. Singh and C. Way, “The Correlates of Nuclear Proliferation: A Quantitative Test,” *Journal of Conflict Resolution*, Vol. 48, No. 6, 2004, pp. 859-885; A. Debs and N. Monteiro, *Nuclear Politics*, op. cit.

14. See S. Sagan, “Why Do States Build Nuclear Weapons,” op. cit., S. Singh and C. Way, “The Correlates of Nuclear Proliferation,” op. cit.; P. Bleek and E. Lorber, “Security Guarantees and Allied Nuclear Proliferation,” *Journal of Conflict Resolution*, Vol. 58, No. 3, 2014, pp. 429-454; D. Reiter, “Security Commitments and Nuclear Proliferation,” *Foreign Policy Analysis*, Vol. 10, No. 1, 2014, pp. 61-80.

15. E. Brewer *et al.*, “Toward A More Proliferated World,” op. cit., p. 16.

16. While Pakistan first tested a nuclear device in 1998, it is believed to have achieved a nuclear weapons capability by the late 1980s. See P. Bleek, “When Did (and Didn’t) States Proliferate? Chronicling the Spread of Nuclear Weapons,” Discussion Paper, Project on Managing the Atom, Belfer Center for Science and International Affairs, Harvard Kennedy School, and the James Martin Center for Nonproliferation Studies, Middlebury Institute of International Studies, June 2017.

17. N. Monteiro and A. Debs, “The Strategic Logic of Nuclear Proliferation,” *International Security*, Vol. 39, No. 2, 2014, p. 25.

great power competition was lower, thus facilitating superpower cooperation in preventing the spread of nuclear weapons.¹⁸

These arguments suggest proliferation is likely to be on the rise, as unipolarity appears to be on the way out—if it is not over already—and competition between the US on the one hand and Russia and China on the other has markedly intensified.¹⁹ According to Gibbons and Herzog, “As tensions among the US, Russia, and China run high, it will be difficult for them to cooperate on expanding membership and enforcing the [nonproliferation] regime’s constituent agreements.”²⁰ Brewer *et al.* likewise argue that enhanced great power competition could result in “widening gaps in [great power] perceptions of what is ‘good’ for international security” and note that the US, Russia, and/or China might be tempted to look the other way in particular cases of proliferation in order to protect alliance relationships,²¹ much like the US did with Pakistan in the 1980s. For instance, would Russia or China really be willing to turn the screws on Iran if they decided to cross the nuclear threshold in this geopolitical environment? The same question could be asked about the US *vis-à-vis* Saudi Arabia or South Korea if they started their own bomb program, a point this paper will return to later.

Declining effectiveness of US nonproliferation policies

As noted above, historically, the US has played a central role in building and enforcing the nonproliferation regime, thereby limiting the spread of nuclear weapons. However, according to a number of analysts, Washington’s ability to fulfill this mission may be declining for four reasons: (1) its reliability as a security provider is diminishing, (2) its position in the civilian nuclear marketplace has substantially weakened, (3) its ability to effectively impose sanctions may be declining, and (4) its capacity to live up to nonproliferation bargains it strikes is increasingly questionable.

18. See A. Coe and J. Vaynman, “Collusion and the Nuclear Nonproliferation Regime,” *Journal of Politics*, Vol. 77, No. 4, 2015, pp. 983-997; E. Gheorghe, “Proliferation and the Logic of the Nuclear Market,” *International Security*, Vol. 43, No. 4, pp. 88-127; J. Colgan and N. Miller, “Rival Hierarchies and the Origins of Nuclear Technology Sharing,” *International Studies Quarterly*, Vol. 63, No. 2, 2019, pp. 310-321.

19. On the debate over the polarity of the international system, see, *inter alia*, C. Layne, “This Time It’s Real: The End of Unipolarity and the Pax Americana,” *International Studies Quarterly*, Vol. 56, No. 1, 2012, pp. 203-213; S. Brooks and W. Wohlforth, “The Myth of Multipolarity: American Power’s Staying Power,” *Foreign Affairs*, Vol. 102, No. 3, 2023, pp. 76-91.

20. R. Davis Gibbons and S. Herzog, “Durable Institution Under Fire,” *op. cit.*, p. 71.

21. E. Brewer *et al.*, “Toward A More Proliferated World,” *op. cit.*, pp. 24-25.

Unreliability as a security power

For decades, alliances and security commitments have been among the most important tools in Washington's nonproliferation toolkit. As previously mentioned, research demonstrates that alliances with great powers reduce the odds that a country will seek nuclear weapons, in part because their protection is assured through other means. This dynamic has been extensively explored with US alliances specifically, where American protection has been shown to have played a key role in keeping Germany and Japan non-nuclear, for instance.²² However, history also shows that when alliance guarantees are not perceived as sufficiently credible, states may hedge their bets by seeking an independent nuclear capability.²³ For example, Taiwan and South Korea initiated secret nuclear weapons programs in the late 1960s and early 1970s when they perceived the US commitment to be weakening due to a combination of domestic and international developments.²⁴

These historical patterns have led some analysts to worry that increased proliferation is on the horizon, as US allies increasingly worry that America will pull back from some of its security commitments, either because of an inability to shoulder their increasing costs and risks in a more competitive security environment involving two near-peer rivals or because of rising isolationist sentiment (in the Republican Party in particular).²⁵ If Trump is elected in 2024, for instance, and follows through on his desire to pull back from NATO,²⁶ European countries like Germany or Poland could re-think their nuclear choices. South Korea or Japan could do the same if they concluded US support was wavering as North Korean nuclear capabilities grow and China increases its capabilities in both the conventional and nuclear realm. South Korea is particularly concerned, given public opinion polls that consistently show support for acquiring nuclear weapons.²⁷

22. See, for example: A. Lanoszka, *Atomic Assurance: The Alliance Politics of Nuclear Proliferation*, Ithaca: Cornell University Press, 2018; G. Gerzhoy, "Alliance Coercion and Nuclear Restraint," op. cit.; F. Hoey, "Japan and Extended Nuclear Deterrence: Security and Non-proliferation," *Journal of Strategic Studies*, Vol. 39, No. 4, 2016, pp. 484-501.

23. In some cases, relying on the nuclear umbrella as a signal of US commitment can backfire by making partners worry about being entrapped in an unwanted nuclear conflict and increasing the overall salience of nuclear weapons, leading them to consider their own arsenals. See L. Sukin and T. Dalton, "Reducing Nuclear Salience: How to Reassure Northeast Asian Allies," *Washington Quarterly*, Vol. 44, No. 2, 2021, pp. 143-158.

24. See A. Lanoszka, *Atomic Assurance*, op. cit.; R. Hersman and R. Peters, "Nuclear U-Turns: Learning from South Korean and Taiwanese Rollback," *Nonproliferation Review*, Vol. 13, No. 3, 2006, pp. 539-553.

25. See E. Brewer *et al.*, "Toward a More Proliferated World," op. cit., pp. 16-18; E. Heginbotham and R. Samuels, "Vulnerable US Alliances in Northeast Asia: The Nuclear Implications," *Washington Quarterly*, Vol. 44, No. 1, pp. 157-175.

26. J. Barnes and H. Cooper, "Trump Discussed Pulling U.S. From NATO, Aides Say amid New Concerns Over Russia," *New York Times*, January 14, 2019, available at: www.nytimes.com.

27. F. Klug, "South Koreans Want Their Own Nukes: That Could Roil One of the World's Most Dangerous Regions," Associated Press, November 30, 2023, available at: apnews.com.

Weakened position in the civil nuclear marketplace

Alongside alliance guarantees, civil nuclear assistance has been a longstanding nonproliferation tool employed by the US, with Washington offering aid in developing civilian nuclear programs in exchange for the acceptance of safeguards and other nonproliferation commitments. This has been used as leverage in getting countries to sign the NPT and in convincing countries like South Korea, Taiwan, and Sweden to reverse nuclear weapons programs or refrain from initiating them in the first place.²⁸ However, the US position in the nuclear marketplace has precipitously declined in the last several decades, undercutting Washington's ability to use nuclear assistance as leverage, for instance, in its long-running negotiations over civil assistance to Saudi Arabia. Meanwhile, Russia has assumed a position of dominance in the marketplace, with China increasing its stature as well.²⁹

This trend would not necessarily be a problem for nonproliferation if China and Russia were likely to have the same commitment to preventing the spread of nuclear weapons as the US. However, as Brewer *et al.* note, they “do not require the same nonproliferation controls” in their civilian nuclear deals as Washington typically does.³⁰ Moreover, while Russia has historically demonstrated a solid commitment to nonproliferation, Bollfrass and Herzog observe that it has been increasingly acting like a “rogue state” in recent years.³¹ The fact that Moscow helped torpedo the negotiations to revive the Joint Comprehensive Plan of Action (JCPOA) with Iran in the wake of its invasion of Ukraine suggests they may increasingly down-weight nonproliferation concerns when it conflicts with their desire to impose costs on their Western rivals.³²

At the same time as its position in the civilian nuclear realm has declined, the US has called into question the basic principle of only offering peaceful assistance to non-nuclear states, with the recent AUKUS agreement committing the US and Britain to provide Australia with nuclear-powered submarines. Nonproliferation advocates worry this could help set a precedent whereby countries like Iran justify high levels of uranium enrichment as necessary for submarine propulsion.³³

28. See N. Miller, “Why Nuclear Energy Programs Rarely Lead to Proliferation,” *International Security*, Vol. 42, No. 2, 2017, pp. 40-77; R. Gibbons Davis, “Supply to Deny: The Benefits of Nuclear Assistance for Nuclear Nonproliferation,” *Journal of Global Security Studies*, Vol. 5, No. 2, 2020, pp. 282-298.

29. N. Miller and T. Volpe, “The Rise of the Autocratic Nuclear Marketplace,” *Journal of Strategic Studies*, forthcoming.

30. E. Brewer *et al.*, “Toward a More Proliferated World,” *op. cit.*, pp. 21-22.

31. A. Bollfrass and S. Herzog, “The War in Ukraine and Global Nuclear Order,” *op. cit.*, 12-13.

32. See H. Notte, “Don't Expect Any More Russian Help on the Iran Nuclear Deal, War on the Rocks”, *War on the Rocks*, November 3, 2022, available at: warontherocks.com.

33. J. Acton, “Why the AUKUS Submarine Deal Is Bad for Nonproliferation—and What to Do About It,” Carnegie Endowment for International Peace, September 21, 2021, available at: carnegieendowment.org.

Diminishing efficacy of sanctions

The US does not just use civilian nuclear assistance as nonproliferation leverage. Increasingly since the 1970s, the US has used its broader economic and financial power to further nonproliferation aims, threatening and imposing economic sanctions in an effort to coerce states into remaining non-nuclear. Evidence suggests that the threat of sanctions has deterred countries dependent on the US from seeking nuclear weapons since the late 1970s, while multilateral sanctions coalitions have helped convince South Africa, Libya, Iraq, and Iran to roll back or otherwise restrain their nuclear programs.³⁴ In recent years, the US has increasingly utilized secondary sanctions—imposing costs not just on the primary target but on countries that do business with them—to notable effect.³⁵

However, the success of US sanctions has the potential to be self-defeating over time as countries increasingly learn how to circumvent them and reduce their dependence on the dollar and the US financial system more broadly.³⁶ In the nonproliferation realm, this could reduce one of the main disincentives to seeking nuclear weapons,³⁷ possibly leading countries like Iran to conclude they will increasingly be able to weather the costs of sanctions. This could be especially dangerous in interaction with increased great power competition, which is likely to deadlock the UN Security Council, making it difficult to impose multilateral sanctions.

Beyond economic punishments, proliferators may believe the willingness of the US to impose military punishment is declining as well, as it focuses on domestic issues and great power politics. After all, Syria suffered only token military costs for its repeated use of chemical weapons,³⁸ and Iran has managed to cross many red lines in its nuclear program since 2018 without triggering an attack.

Inability to uphold nonproliferation bargains

At the same time, as US leverage in the nonproliferation realm is potentially diminishing, its trustworthiness as a negotiating partner may decline as well. In order to effectively use sanctions (or other forms of pressure) to convince states to restrain their nuclear programs, Washington must be able to provide a credible assurance: that is, they must be able to convince

34. N. Miller, *Stopping the Bomb*, op. cit.

35. See B. Han, “The Role and Welfare Rationale of Secondary Sanctions: A Theory and a Case Study of the US Sanctions Targeting Iran,” *Conflict Management and Peace Science*, Vol. 35, No. 5, 2018, pp. 474-502; R. Nephew, *The Art of Sanctions: A View from the Field*, New York: Columbia University Press, 2017.

36. See D. McDowell, *Bucking the Buck: US Financial Sanctions and the International Backlash Against the Dollar*, New York: Oxford University Press, 2023.

37. E. Brewer *et al.*, “Toward a More Proliferated World,” op. cit., 22-24.

38. On the US response to Syrian chemical weapons use, see W. Bowen, J. Knopf, and M. Moran, “The Obama Administration and Syrian Chemical Weapons: Deterrence, Compellence, and the Limits of the ‘Resolve plus Bombs’ Formula,” *Security Studies*, Vol. 29, No. 5, pp. 797-831.

proliferators that if they roll back their nuclear program, sanctions and other punishments will, in fact, be lifted.³⁹ If proliferators calculate that they will be punished no matter what they do, they have little incentive to comply with US demands.

Unfortunately, “Washington has not done well when it comes to removing sanctions and restoring a country’s economic health” when a target of sanctions gives in to US nonproliferation demands. The Trump administration’s withdrawal from the JCPOA and re-imposition of sanctions in 2018 is a case in point.⁴⁰ One could also point to the NATO-backed overthrow of Qaddafi in Libya in 2011, which occurred in spite of his WMD reversal in 2003 and the informal security assurances offered as part of that process, or the US-led invasion of Iraq in 2003, which occurred in spite of the fact that Iraq had ended its WMD programs.⁴¹ A number of analysts have argued the war in Ukraine has only compounded this program. In the early 1990s, Ukraine agreed to relinquish the Soviet nuclear weapons on its territory partly in exchange for security assurances from the US, Britain, and Russia—the so-called Budapest Memorandum. The fact that Russia blatantly violated this agreement and Washington and London did not directly intervene to protect Ukraine has arguably further undercut America’s credibility as a nonproliferation dealmaker.⁴² This credibility may not lead new countries to launch nuclear programs, but it could make it harder to reach deals to restrain existing ones, such as in Iran or North Korea. The summits between North Korea and the US during the Trump administration, which many argued bolstered the Kim regime’s legitimacy, seem to have failed in part because North Korea worried it would face the same fate as Libya if it disarmed.⁴³

Eroding nonproliferation norms

The third set of factors analysts have identified as potentially increasing the odds of proliferation has to do with the normative environment surrounding nuclear weapons and nonproliferation. Two specific concerns are that (1) the failure of the nuclear powers to live up to Article VI of the NPT could increasingly damage the nonproliferation regime, and (2) the emergence of the TPNW could compound this effect over time.

39. On the importance of assurances in coercion, see T. Schelling, *Arms and Influence*, New Haven: Yale University Press, 1996; M. Cebul, A. Dafoe, and N. Monteiro, “Coercion and the Credibility of Assurances,” *Journal of Politics*, Vol. 83, No. 3, 2021, pp. 975-991; R. Pauly, “‘Stop or I’ll Shoot, Comply and I Won’t’: Coercive Assurance in International Politics,” Ph.D. dissertation, Massachusetts Institute of Technology, 2019.

40. E. Brewer *et al.*, “Toward a More Proliferated World,” *op. cit.*, 23.

41. N. Miller, “The Eroding Value of Nonproliferation Sanctions,” *op. cit.*

42. See M. Budjeryn, “Distressing a System in Distress,” *op. cit.*, p. 343; A. Bollfrass and S. Herzog, “The War in Ukraine and Global Nuclear Order,” *op. cit.*, pp. 10-11.

43. See M. Specia and D. Sanger, “How the ‘Libya Model’ Became a Sticking Point in North Korea Nuclear Talks,” *The New York Times*, May 16, 2018, available at: www.nytimes.com.

Failure to live up to Article VI

The non-nuclear-weapon-states (NNWS) party to the NPT has long been dissatisfied with the extent to which the nuclear-weapon-states (NWS) have lived up to their Article VI commitment “to pursue negotiations in good faith” toward the goal of nuclear disarmament.⁴⁴ While substantial progress was made on nuclear arms control at the end of the Cold War and in its aftermath, those trends have reversed in the last few years, with almost all the nuclear powers expanding or modernizing their arsenals and some analysts declaring nuclear arms control as effectively “dead.”⁴⁵ For those who understand the NPT as a “grand bargain,” whereby the NWS offers civilian nuclear aid and a commitment to disarmament in exchange for the NNWS forswearing nuclear weapons, these trends raise the possibility that the NNWS may ultimately give up on the NPT or reduce their cooperation with it. The divisions between NPT parties can be witnessed in the fact that the last two NPT Review Conferences have failed to produce an agreed-upon final document.⁴⁶

According to Budjeryn, Article VI is “one of the lynchpins” of the nuclear order and the ongoing demise of arms control threatens to undermine this order.⁴⁷ In a similar vein, Brewer *et al.* suggest that the NNWS may be less willing to take steps to strengthen the nonproliferation regime when the NWS is perceived to be shirking on its end of the bargain.⁴⁸ Over time, this could increase the stress on the nonproliferation regime and make it harder to mobilize action against countries seen to be challenging it, such as Iran.

Emergence of the TPNW

One consequence of the growing frustration on the part of the NNWS has been the emergence of the TPNW in 2017, which aims to increase normative pressure on the NWS and their allies to work toward disarmament.⁴⁹ According to some analysts, this has the potential to undermine the NPT if it leads states to withdraw from the treaty and substitute a commitment to the TPNW. While the TPNW requires parties to maintain IAEA safeguards on their facilities, critics have argued it missed an opportunity to require a

44. See N. Tannenwald, “Justice and Fairness in the Nuclear Nonproliferation Regime,” *Ethics and International Affairs*, Vol. 27, No. 3, 2013, pp. 299-317; C. Craig and J. Ruzicka, “The Nonproliferation Complex,” *Ethics and International Affairs*, Vol. 27, No. 3, 2013, pp. 329-348.

45. See “States Invest in Nuclear Arsenals as Geopolitical Relations Deteriorate,” Stockholm International Peace Research Institute, June 12, 2023, available at: www.sipri.org; D. Sanger, “Putin’s Move on Nuclear Treaty May Signal End to Formal Arms Control,” *The New York Times*, February 21, 2023, available at: www.nytimes.com.

46. See G. Mukhatzhanova, “10th NPT Review Conference: Why it Was Doomed and How it Almost Succeeded,” *Arms Control Association*, October 2022, available at: www.armscontrol.org.

47. M. Budjeryn, “Distressing a System in Distress,” *op. cit.*, pp. 341-344.

48. E. Brewer *et al.*, “Toward a More Proliferated World,” *op. cit.*, p. 20.

49. R. Davis Gibbons, “The Humanitarian Turn in Nuclear Disarmament and the Treaty on the Prohibition of Nuclear Weapons,” *Nonproliferation Review*, Vol. 25, Nos. 1-2, 2018, pp. 11-36.

higher standard of safeguards (i.e., the Additional Protocol). Another potential risk could emerge if the treaty has the intended impact of making nuclear weapons and nuclear use seem less legitimate. If great powers like the US no longer seem willing to carry out nuclear threats, this could lead countries currently protected by its nuclear umbrella to seek their own arsenals.⁵⁰

Others have raised even more dire possibilities: according to Rublee and Wunderlich, “The TPNW’s profound changes to the normative and legal ordering of the [nonproliferation regime]” could contribute to the NPT “partially collapsing,” as “states that believe they need nuclear weapons for deterrence...become increasingly frustrated with states that emphasize nuclear disarmament” while “disarmament states that believe horizontal proliferation is likely despite the NPT might decide to abandon it altogether.”⁵¹ In other words, the frustration on the part of the NNWS could eventually reach a breaking point, causing them to fundamentally rethink their position on nonproliferation and nuclear acquisition.

Lessons from the Ukraine war

Finally, on top of the long-term changes to the security environment, the efficacy of US nonproliferation policy, and the normative landscape, many have suggested the war in Ukraine has the potential to supercharge proliferation risks by sending the dual messages that (1) nuclear weapons can effectively facilitate aggression and (2) nuclear weapons are the ultimate guarantor of security against such aggression.

Nuclear weapons can facilitate aggression

There is a longstanding debate in the academic literature over whether nuclear weapons can serve offensive (or “compellent”) purposes or whether they are merely useful to preserve the *status quo* as deterrents.⁵² Those who suggest they have more offensive potential often argue they can be useful as a shield behind which nuclear power can engage in conventional aggression. In particular, a nuclear power might conventionally attack an adversary and then threaten nuclear retaliation to deter or limit a forceful response.

50. T. Erasto, “The NPT and the TPNW: Compatible or Conflicting Nuclear Weapons Treaties?” Stockholm International Peace Research Institute, March 6, 2019, available at: www.sipri.org.

51. M. Rost Rublee and C. Wunderlich, “The Vitality of the NPT after 50,” op. cit., pp. 11-12.

52. See, for instance: R. Betts, *Nuclear Blackmail and Nuclear Balance*, Washington: Brookings Institution Press, 1987; M. Kroenig, “Nuclear Superiority and the Balance of Resolve,” *International Organization*, Vol. 67, No. 1, 2013, pp. 141-171; T. Sechser and M. Fuhrmann, *Nuclear Weapons and Coercive Diplomacy*, New York: Cambridge University Press, 2017; S. Ganguly and S. Kapur, *India, Pakistan, and the Bomb: Debating Nuclear Stability in South Asia*, New York: Columbia University Press, 2010; M. Bell, *Nuclear Reactions: How Nuclear-Armed States Behave*, Ithaca: Cornell University Press, 2021.

Pakistan is often pointed to as a country that has used nuclear weapons in this fashion, for example, during the 1999 Kargil War.⁵³

Russia's invasion of Ukraine in 2022 is perhaps the most clear-cut case of nuclear weapons being used in this offensive manner. As a result, many have suggested it could send a strong message to the international community that nuclear weapons are useful tools of aggression, thereby incentivizing revisionist states to acquire their own arsenals. As Umland and Von Essen provocatively put it, "Russia's renewed aggression makes it look as if the [NPT]'s purpose is to keep weak countries defenseless and prey to the nuclear-weapon states. Russian President Vladimir Putin said as much at the start of the war when he announced that he had put his country's nuclear forces on alert and issued ominous threats to anyone daring to get in Russia's way."⁵⁴ According to Budjeryn, it "seems fair to assume...that if Russia were not a nuclear power and therefore could not use nuclear threats to deter any direct Western involvement, its calculations about invading Ukraine would have been very different."⁵⁵ Timothy Snyder argues that "If Russian nuclear blackmail succeeds, we can expect not only more Russian nuclear blackmail but also nuclear blackmail from other nuclear powers."⁵⁶ Aggressive states—potentially Iran, for example—that internalize these messages may have a stronger incentive to seek nuclear weapons since they believe they will allow them to fulfill more expansive geopolitical aims.

Nuclear weapons are an indispensable guarantor of national security

The flip side of this logic is the Russian invasion of Ukraine could incentivize status quo powers to acquire nuclear weapons to protect their sovereignty. No country wants to become the next Ukraine, and states facing potentially revisionist nuclear rivals—for instance, Taiwan *vis-à-vis* China or South Korea *vis-à-vis* North Korea—might calculate they need their own nuclear weapons to prevent their adversaries from following the Russian playbook. Particularly because Ukraine possessed Soviet nuclear weapons when it became independent and then was invaded multiple times after giving them up, the war has the potential to send a clear message about the value of nuclear weapons in ensuring security.

For Riedel and O'Hanlon, the war will, therefore, reinforce two messages: "If you have nuclear weapons, keep them. If you don't have them yet, get them, especially if you lack a strong defender like the US as your ally

53. See M. Bell, *Nuclear Reactions*, op. cit.; S. Ganguly and S. Kapur, *India, Pakistan, and the bomb*, op. cit.; V. Narang, "Posturing for Peace: Pakistan's Nuclear Postures and South Asian Stability," *International Security*, Vol. 34, No. 3, 2010, pp. 38-78.

54. A. Umland and H. von Essen, "Putin's War is a Death Blow to Nuclear Nonproliferation," op. cit.

55. M. Budjeryn, "Distressing a System in Distress," op. cit., p. 342.

56. T. Snyder, "Nuclear War! Why it Isn't Happening," February 8, 2023, available at: [snyder.substack.com](https://www.substack.com/p/snyder-nuclear-war).

and if you have a beef with a big country that could plausibly lead to war.”⁵⁷ According to Bollfrass and Herzog, “If Ukraine is forced to cede territory or becomes a de facto Russian colony, the clear message would be that security against nuclear-armed aggressors can only be found through alliances with other nuclear-weapons state or nuclear proliferation.”⁵⁸ Snyder takes this logic even further, arguing that Russian victory would “[tend] to convince everyone that the only way to defend themselves is to build nuclear weapons, which means global nuclear proliferation.”⁵⁹

57. B. Riedel and M. O’Hanlon, “The Russia-Ukraine War May be Bad News for Nuclear Nonproliferation,” op. cit.

58. A. Bollfrass and S. Herzog, “The War in Ukraine and Global Nuclear Order,” op. cit.

59. T. Snyder, “How Does the Russo-Ukrainian War End,” op. cit.

Why the proliferation environment is not as dire as it seems

As the preceding discussion makes clear, at first glance, there are many reasons to worry about an upsurge in nuclear proliferation. This section will argue that although proliferation risks are growing, they are not as dire as many believe. First, many of the developments analysts point to as making proliferation more likely—an intensifying security environment, declining trust in the US as a security provider, failure to live up to Article VI, and the use of nuclear weapons to support aggression against non-nuclear states—have occurred in the past and either (1) did not lead to major surges in proliferation or (2) hold lessons for how to more successfully limit proliferation in the current moment. Second, while there are certain risk factors that are more novel—such as a potential erosion in the efficacy of US sanctions and diplomacy, the decline of the US nuclear industry, and the emergence of the TPNW, they are unlikely to be decisive in spurring proliferation, with limited exceptions. The subsequent section applies these arguments to the Middle East and East Asian regional contexts, suggesting that proliferation risks are significantly higher in the Middle East than in East Asia.

How similar risks were managed in the past

There is little doubt, as discussed above, that perceptions of US reliability as a security provider are declining, that the nuclear powers are moving in the opposite direction of what is called for in Article VI, and that the Russian invasion of Ukraine has demonstrated nuclear weapons can be used for aggressive purposes and possessing them is instrumental to deterring invasion. Yet none of these developments are unique in the nuclear age, and history shows they have generally been managed in the past without leading to widespread proliferation.

Concerns about US reliability

Concerns about US reliability as an ally go back to the beginning of the Cold War. They were particularly acute in the late 1950s and early 1960s—when the US homeland became increasingly vulnerable to Soviet nuclear attack—and the late 1960s through early 1970s, when US efforts at détente and

retrenchment called its reliability into question, particularly in Asia.⁶⁰ In both cases, some US allies did consider acquiring their own nuclear weapons in response. However, the US effectively managed these concerns and prevented proliferation, with the partial exception of France (as discussed below).

The Soviet launch of the Sputnik satellite in October 1957 and subsequent Soviet development of an ICBM capability roused significant concerns among NATO allies, who wondered whether Washington would be willing to fight a war to protect them if it exposed the US homeland to Soviet nuclear attack. Shortly after the launch, for instance, France, West Germany, and Italy began discussing the joint production of nuclear weapons, which would give Europe an independent deterrent outside US control.⁶¹ While this arrangement broke down under De Gaulle, West Germany and France maintained nuclear ambitions, with Paris racing forward on an independent nuclear weapons program and Bonn keeping its nuclear options open.⁶² Ultimately, the US succeeded at convincing West Germany to renounce nuclear weapons through a combination of coercion—making clear an alliance with the US was incompatible with an independent German nuclear arsenal—and reassurance, including the creation of the Nuclear Planning Group, which involved West Germany in NATO nuclear strategy discussions.⁶³ Italy likewise accepted the forward deployment of US nuclear weapons, which would be launched under a dual-key arrangement, as an alternative to an independent or joint European deterrent.⁶⁴

France, of course, ultimately did acquire its own nuclear weapons, rejecting the Eisenhower administration's offer of forward-deployed US nuclear weapons as an alternative.⁶⁵ While this is often attributed to the sort of alliance concerns described above, with French leaders not willing to trust the US to protect them, France's nuclear weapons program pre-dated Sputnik (and the prior Suez Crisis) by several years. Further, there is significant evidence suggesting French decision-makers were largely driven

60. On the former period, see E. Hatzivassilou, "The View from NATO: Sputnik as a Catalyst, 1957-1958," *International History Review*, Vol. 42, No. 6, 2020, pp. 1137-1164; J. Castillo and A. Downes, "Loyalty, Hedging, or Exit: How Weaker Alliance Partners Respond to the Rise of New Threats," *Journal of Strategic Studies*, Vol. 46, No. 2, 2023, pp. 227-268. On the latter, see J.H. Nam, *America's Commitment to South Korea: The First Decade of the Nixon Doctrine*, Cambridge: Cambridge University Press, 1986; Y. Komine, "Whither a 'Resurgent Japan': The Nixon Doctrine and Japan's Defense Build-up, 1969-1976," *Journal of Cold War Studies*, Vol. 16, No. 3, 2014, pp. 88-128.

61. See G. Gerzhoy, "Alliance Coercion and Nuclear Restraint," op. cit., p. 109; and M. O'Driscoll, " 'Les Anglo-Saxons,' F-I-G, and the Rival Conceptions of 'Advanced' Armaments Research and Development Co-operation in Western Europe, 1956-1958," *Journal of European Integration History*, Vol. 4, 1998, pp. 105-130.

62. G. Gerzhoy, "Alliance Coercion and Nuclear Restraint," op. cit., pp. 111-114.

63. *Ibid.*

64. See L. Nuti, "Extended Deterrence and National Ambitions: Italy's Nuclear Policy, 1957-1962," *Journal of Strategic Studies*, Vol. 39, No. 4, 2016, pp. 559-579.

65. On France's nuclear weapons program, see, for example, W. Kohl, *French Nuclear Diplomacy*, Princeton: Princeton University Press, 1971; L. Scheinmann, *Atomic Energy Policy in France under the Fourth Republic*, Princeton: Princeton University Press, 1965.

by status concerns—in particular, cementing France’s position as a great power—in seeking their own nuclear arsenal.⁶⁶

A second round of concerns about US reliability emerged a decade later. In the context of pressures for retrenchment due to the Vietnam War, the Nixon administration pushed its Asian allies to do more to provide for their own defense—the so-called “Nixon doctrine”—and sought improved relations with Communist China.⁶⁷ These policy changes led South Korea to initiate a secret nuclear weapons program, led Taiwan to accelerate a nascent program, and caused Japan to revive consideration of an independent nuclear arsenal.⁶⁸ Through a mix of carrots and sticks, the US succeeded in convincing South Korea and Taiwan to end their nuclear weapons programs,⁶⁹ while reassurance was utilized to help reinforce Japan’s decision to keep its nuclear capabilities latent.⁷⁰

The US track record of preventing allied proliferation despite alliance credibility concerns is thus quite strong, even in periods where the US was perceived to be in relative decline, as it was in the early 1960s and early 1970s. While France’s acquisition of nuclear weapons is an important counterexample, as noted above, concerns about US reliability were probably not the decisive factor in leading it to acquire nuclear weapons. The type of status concerns that motivated French leaders are unlikely to lead to proliferation amongst US allies today; while nuclear weapons were markers of prestige in the 1950s and early 1960s, the emergence of the NPT has, for the most part, flipped the script, meaning new proliferators can expect to lose status and be branded as “rogue” states for seeking nuclear weapons.⁷¹ Nevertheless, for certain types of leaders, for example, highly nationalist ones like Turkey’s Erdogan, nuclear weapons may retain appeal.⁷²

While the historical record is a cause for guarded optimism in terms of America’s ability to do the same in the coming years, the crucial caveat is that it depends on an American willingness to provide meaningful reassurance to its allies and to prioritize nonproliferation. This is an objective that has often been taken for granted in the past but may not apply in a prospective second Trump term, given his stated views on alliances and proliferation.⁷³

66. See J. Hymans, *The Psychology of Nuclear Proliferation*, op. cit., ch. 3; S. Sagan, “Why Do States Build Nuclear Weapons,” op. cit., pp. 77-80.

67. See, for example, C. Tudta, *A Cold War Turning Point: Nixon and China, 1969-1972*, Baton Rouge: Louisiana State University Press, 2012.

68. See R. Hersman and R. Peters, “Nuclear U-Turns,” op. cit.; M. Fitzpatrick, *Asia’s Latent Nuclear Powers: Japan, South Korea, and Taiwan*, New York: Routledge, 2017; and Y. Komine, “Whither a ‘Resurgent Japan,’” op. cit.

69. See N. Miller, *Stopping the Bomb*, op. cit., chs. 5 and 7; A. Lanoszka, *Atomic Assurance*, op. cit., ch. 5.

70. Y. Komine, “Whither a ‘Resurgent Japan,’” op. cit.; A. Lanoszka, *Atomic Assurance*, op. cit., ch. 4.

71. On this point, see S. Sagan, “Why Do States Build Nuclear Weapons,” op. cit.

72. See J. Hymans, *The Psychology of Nuclear Proliferation*, op. cit.; and S. Burgos, “Turkey Shows Nuclear Weapons Interest,” *Arms Control Today*, October 2019, available at: www.armscontrol.org.

73. See S. Fruhling and A. O’Neil, “Nuclear Weapons and Alliance Institutions in the Era of President Trump,” *Contemporary Security Policy*, Vol. 38, No. 1, 2017, pp. 47-53.

Lack of commitment to disarmament

The failure of the nuclear powers to work effectively toward nuclear disarmament is by no means new. Indeed, in the latter part of the Cold War, despite the entry into force of the NPT in 1970, the arsenal sizes of all the NWS continued to grow, with the exception of the US, whose arsenal plateaued in the low-20,000s range. Dramatic reductions in arsenal sizes were achieved through arms control after the Cold War,⁷⁴ though, as noted above, this trend may be in the process of reversing.

From a proliferation perspective, the key fact is that although NNWS often criticizes the nuclear powers for their failure to achieve progress on disarmament, there is very little evidence that this has materially affected the likelihood of proliferation or support for the nonproliferation regime. According to one quantitative study, there is no significant association between the size of the US nuclear arsenal and the likelihood that countries pursue nuclear weapons, provide sensitive nuclear assistance, or vote in favor of nonproliferation resolutions at the United Nations.⁷⁵ Likewise, a qualitative study found that US policies on arms control and disarmament were not a major factor in influencing whether key countries made commitments to the nonproliferation regime.⁷⁶ There is thus little historical basis for assuming that the demise of arms control will substantially weaken the nonproliferation regime going forward.

It is possible this could change going forward—if no arms control emerges with China, for instance, and its arsenal size continues to grow, this could convince Japan or Taiwan that the US would not risk a nuclear war to defend them. However, during the Cold War, the US managed to successfully reassure NATO allies even as the Soviet arsenal size reached into the tens of thousands—much larger than current projections for China’s arsenal size.

Lessons from past conflicts

The current war in Ukraine may be the most blatant example of nuclear weapons being used to backstop coercion and territorial conquest, but it is certainly not without historical precedent. Prior cases where nuclear weapons were used in a similar fashion sometimes stimulated proliferation pressures but rarely led to the actual acquisition of nuclear weapons by new states.

During the Korean War, for instance, the Eisenhower administration issued nuclear threats to try to compel China and North Korea to agree to an armistice on American terms. While there is a debate over the efficacy of these

74. See R. Norris, “Global Nuclear Stockpiles, 1945-2006,” *Bulletin of the Atomic Scientists*, Vol. 62, No 4, 2006, pp. 64-66.

75. M. Kroenig, “U.S. Nuclear Weapons and Non-Proliferation: Is There a Link?” *Journal of Peace Research*, Vol. 53, No. 2, 2016, pp. 166-179.

76. R. Davis Gibbons, *The Hegemon’s Tool Kit*, op. cit., p. 174.

threats,⁷⁷ and although the US did not start the Korean War, it is nonetheless a clear example of an attempt to use nuclear threats to compel concessions. Indeed, China's decision to start a nuclear weapons program was driven in large part by the perception that Washington had used its nuclear arsenal to coerce Beijing, both in Korea and during the Taiwan Straits Crises.⁷⁸ China did go on to acquire nuclear weapons, testing its first nuclear device in October 1964, but two caveats are in order about the limited relevance of this case for the contemporary environment. First, China's nuclear weapons program was started and completed prior to the existence of the NPT and a strong nonproliferation regime—a very different sort of environment from what faces potential proliferators today. Second, and relatedly, China made these decisions when the nuclear age was in its infancy, and there was limited understanding (and evidence) about how nuclear weapons would influence international politics. China's experience of nuclear coercion at the hands of the US was, therefore, likely to be more important in shaping views in the 1950s than Russian actions are today since we have more than 70 years of nuclear history to draw from. Russia's use of nuclear weapons for offensive purposes just adds one to several prior instances.

Subsequent cases where nuclear weapons have been utilized to facilitate compellent or territorial aims have not led to successful proliferation. Israel secretly acquired nuclear weapons in 1967 and subsequently conquered the West Bank, Gaza Strip, Golan Heights, and the Sinai Peninsula in the Arab-Israeli Wars of 1967 and 1973.⁷⁹ In these conflicts, Israeli officials viewed their nuclear arsenal as a useful insurance policy that could be used to compel the US to intervene diplomatically on their behalf, deter their Arab rivals from pushing their advantage, or preserve Israeli survival in extreme circumstances.⁸⁰ Many of Israel's Arab rivals subsequently did pursue nuclear weapons, at least in part to counter Israel, including Libya, Iraq, Iran, and Syria. Despite decades of effort, none of these countries have acquired nuclear weapons (at least so far), and each has faced significant sanctions and/or military force as a result of their nuclear ambitions, reflecting the stronger nonproliferation regime that exists post-NPT.⁸¹ The Iraq case is particularly instructive: Saddam Hussein pursued nuclear weapons with the specific idea that it would neutralize Israeli nuclear threats and thereby

77. See, for example: R. Foot, "Nuclear Coercion and the Ending of the Korean Conflict," *International Security*, Vol. 13, No. 3, 1988/89, pp. 92-112; R. Pape, *Bombing to Win: Airpower and Coercion in War*, Ithaca: Cornell University Press, 1996.

78. See J. Lewis and L. Xue, *China Builds the Bomb*, Stanford: Stanford University Press, 1988; M. Fravel and E. Medeiros, "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure," *International Security*, Vol. 35, No. 2, 2010, pp. 48-87.

79. On Israel's nuclear program, see A. Cohen, *Israel and the Bomb*, New York: Columbia University Press, 1998.

80. See V. Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict*, Princeton: Princeton University Press, 2014; W. Broad and D. Sanger, "Last Secret of 1967 War: Israel's Doomsday Plan for Nuclear Display," *The New York Times*, June 3, 2017, available at: www.nytimes.com.

81. On the failure of a nuclear "domino effect" to materialize, see. N. Miller, "Nuclear Dominoes: A Self-Defeating Prophecy?" *Security Studies*, Vol. 23, No. 1, 2014, pp. 33-73.

“allow Iraq and its Arab allies to prosecute a prolonged war that would displace Israel from the territories occupied in 1967.”⁸² Nevertheless, due to sanctions, mismanagement, and military force, Iraq was forced to abandon its nuclear program after the first Gulf War.⁸³

Since the 1990s, Pakistan has consistently used its nuclear arsenal to help pursue revisionist aims *vis-à-vis* India, launching the Kargil War in 1999 and backing insurgent and terrorist attacks against India while threatening the first use of nuclear weapons to deter India from responding in a significant way.⁸⁴ Despite this pattern of behavior, there is no evidence any country began pursuing nuclear weapons based on lessons learned from Pakistan.

Likewise, while many analysts warn of grave proliferation consequences from the ongoing Russian war in Ukraine, they often fail to consider that Russia has attacked Ukraine before—namely when it took Crimea and occupied parts of eastern Ukraine in 2014—and this did not have any discernible proliferation consequences. No new countries—Ukraine or otherwise—initiated nuclear weapons programs after 2014, and Iran agreed to roll back its nuclear program just one year later. While it is true that the nuclear dimension was much less salient in 2014, Putin admitted in 2015 that he mulled placing Russian nuclear forces on alert to deter Western intervention, but ultimately, his aims were achieved without this being necessary.⁸⁵ In short, nuclear powers using their arsenals to support compellence or aggression is nothing new, and history suggests that it very rarely leads to the emergence of new nuclear powers—especially in the post-NPT era.

One important caveat to the preceding discussion is that different lessons might be drawn if Russia used nuclear weapons in the war, and this caused Ukraine to surrender or the West to pull back support for Kyiv. This could cause serious damage to the nuclear taboo and increase the perceived value of nuclear weapons in a way unseen for decades.

Intensifying security environment

The current security environment, marked by increasing competition and tensions amongst the great powers, in some respects bears resemblance to the more intense periods of the Cold War (whether the 1950s and early 1960s or the resurgence of intense competition in the 1980s). Indeed, the increasing hostility between the US, Russia and China has spawned a cottage industry of research and think pieces interrogating whether we are in the

82. H. Brands and D. Palkki, “Saddam, Israel, and the Bomb: Nuclear Alarmism Justified?” *International Security*, Vol. 36, No. 1, 2011, p. 135.

83. See H. Brands and D. Palkki, “Saddam, Israel, and the Bomb,” *op. cit.*; M. Braut-Hegghammer, *Nuclear Ambitions: Why Iraq and Libya Failed to Build Nuclear Weapons*, Ithaca: Cornell University Press, 2016; J. Rovner, “Delusion of Defeat: The United States and Iraq, 1990-1998,” *Journal of Strategic Studies*, Vol. 37, No. 4, 2014, pp. 482-507.

84. See Narang, “Posturing for Peace,” *op. cit.*

85. N. MacFarquhar, “Putin Says He Weighed Nuclear Alert over Crimea,” *The New York Times*, March 15, 2015, available at: www.nytimes.com.

midst of a “new cold war.”⁸⁶ Unlike the previously discussed factors, which historically did not result in major proliferation consequences, the record here is indeed more bleak.

In the early part of the Cold War, when the superpowers were overwhelmingly focused on competition with each other at the expense of other foreign policy objectives, they did relatively little to prevent their allies from acquiring nuclear weapons.⁸⁷ During this period, the nuclear club expanded from two to five members in a little more than a decade, with Britain, France, and China acquiring the bomb between 1952 and 1964. A more instructive comparison to the present environment is the “second Cold War” of the 1980s, sparked by the Soviet invasion of Afghanistan. This period sheds light on how the superpowers behaved when intense great power competition coexisted with a relatively strong nonproliferation regime after the creation of the NPT, the Nuclear Suppliers Group, and the establishment of sanctions policies by the US.⁸⁸ Like in the early Cold War, the nonproliferation track record here is not encouraging. While the superpowers did not relish the idea of India or Pakistan acquiring nuclear weapons, their efforts to prevent this were rather half-hearted.⁸⁹ In the case of Pakistan, the US waived nonproliferation sanctions in order to facilitate massive aid packages, as Islamabad was working with Washington to support the mujahideen fighting the Soviets in Afghanistan.⁹⁰ By the end of the 1980s, India and Pakistan had both assembled nuclear weapons for the first time.⁹¹ Leaving aside the superpowers, then, five of the eight countries that have acquired nuclear weapons (Britain, France, China, India, and Pakistan) did so during these periods of intensified great power competition.

Compared to the other risk factors discussed above, this is, therefore, a more serious source of concern in the coming years. However, the historical track record also holds lessons on how to manage proliferation more successfully in intense security environments. For example, in the same period when France, Britain, and China acquired nuclear weapons, Washington managed to dissuade West Germany from doing the same, and in the same period when India and Pakistan acquired nuclear weapons,

86. See, inter alia: H. Brands and J. Gaddis, “The New Cold War: America, China, and the Echoes of History,” *Foreign Affairs*, Vol. 100, No. 6, 2021, pp. 10-21; M. Sarotte, “I’m a Cold War Historian. We’re in a Frightening New Era,” *The New York Times*, March 1, 2022, available at: www.nytimes.com; M. McFaul, “Cold War Lessons and Fallacies for U.S.-China Relations Today,” *Washington Quarterly*, Vol. 43, No. 4, 2020, pp. 7-39.

87. See A. Coe and J. Vaynman, “Collusion and the Nuclear Nonproliferation Regime,” op. cit.; N. Miller, *Stopping the Bomb*, op. cit.

88. N. Miller, *Stopping the Bomb*, op. cit.

89. See, for example: T. Cavanna, “Geopolitics over Proliferation: The Origins of U.S. Grand Strategy and Their Implications for the Spread of Nuclear Weapons in South Asia,” *Journal of Strategic Studies*, Vol. 41, No. 4, 2018, pp. 576-603; A. Levy and C. Scott-Clark, *Deception: Pakistan, the United States, and the Secret Trade in Nuclear Weapons*, New York: Walker and Company, 2007; G. Perkovich, *India’s Nuclear Bomb: The Impact on Global Proliferation*, Berkeley: University of California Press, 1999.

90. N. Miller, *Stopping the Bomb*, op. cit., ch. 8.

91. P. Bleek, “When Did (and Didn’t) States Proliferate?,” op. cit.

Washington helped contain South Korea and Taiwan's nuclear weapons programs.⁹² What distinguished the successful from the unsuccessful cases? In the successful cases (West Germany, South Korea, and Taiwan), the US was more willing to prioritize nonproliferation, using not only meaningful inducements but also threats of punishment, such as downgrading the security relationship if nuclear programs continued. In the unsuccessful cases of US allies, Washington either only used inducements (France), made little effort at preventing proliferation (Britain), or undercut the credibility of its threats of punishment while refraining from offering the enhanced security commitment desired by the proliferator (Pakistan).⁹³

In short, this suggests that proliferation during intensified periods of great power competition is not automatic but is at least to some degree preventable, depending on the actions that great powers take to stop it. This should provide at least some optimism going forward as competition between Washington, Moscow, and Beijing ramps up. However, it again points to the importance of the willingness of great powers to prioritize nonproliferation, which cannot always be taken for granted.

Novel risk factors

While many of the proliferation risk factors analysts have identified have historical precedents, there are a few that are indeed novel, particularly the decline of the American nuclear industry, the emergence of the TPNW, and a potential reduction in the efficacy of US sanctions. However, these developments are likely to have relatively limited impacts on proliferation, with the exception of the latter.

Decline of the US nuclear industry

The relative demise of the American position in the nuclear marketplace has indeed undercut one of the weapons in the US nonproliferation toolkit. For instance, when negotiating with Saudi Arabia over its nascent civilian nuclear program, Washington's leverage is limited by competition from Russia, France, China, and South Korea as nuclear suppliers. Riyadh could pick another supplier with laxer nonproliferation requirements, or they could use the threat of doing so to convince the US to be more permissive, for instance, greenlighting a Saudi enrichment program.⁹⁴ While this is a real problem, its impact on proliferation is mitigated by three factors: (1) there is some evidence of a limited rebound in the US nuclear industry, (2) the overall stringency of

92. On West Germany, see Gerzhoy, "Alliance Coercion and Nuclear Restraint," op. cit. On South Korea and Taiwan, see M. Fitzpatrick, *Asia's Latent Nuclear Powers*, op. cit.

93. N. Miller, *Stopping the Bomb*, op. cit.

94. See N. Miller and T. Volpe, "Abstinence or Tolerance: Managing Nuclear Ambitions in Saudi Arabia," *Washington Quarterly*, Vol. 41, No. 2, 2018, pp. 27-46; M. Mazzetti, R. Bergman, E. Wong, and V. Nereim, "Biden Administration Engages in Long-Shot Attempt for Saudi-Israel Deal," *The New York Times*, June 17, 2023, available at: www.nytimes.com.

global safeguards has increased over time, though progress has slowed in recent years, and (3) Washington has many alternative sources of leverage that can compensate for a diminishing role in the civilian nuclear domain.

First, one of the few positive consequences of the Russian invasion of Ukraine is that European countries that have long relied on Russian nuclear imports are beginning to rethink their policies, providing an opportunity for Washington to step in and improve its flagging position in the nuclear marketplace. For instance, Ukraine and Sweden are replacing Russia with American and/or French nuclear fuel, while Finland has walked away from a deal with Russia for the construction of nuclear power reactors.⁹⁵ As a result, while Russia still commands a dominant position in the global nuclear industry, this could decline over time if potential customers conclude Russia is not a reliable partner due to its increasingly aggressive and erratic behavior.

Second, while it is true that the US tends to have stricter nonproliferation conditions than other nuclear suppliers, the overall stringency of safeguards at a global level has been increasing, mitigating the nonproliferation impact of the decline of US unilateral leverage. In 1992, the NSG—which includes all major nuclear suppliers as members—agreed to make full-scope safeguards a condition of nuclear supply agreements going forward. Then, in 2011, the NSG tightened the conditions for exporting enrichment and reprocessing technology.⁹⁶ Meanwhile, adherence to the IAEA's Additional Protocol has increased over time, with 141 countries now having these arrangements in force.⁹⁷ The upshot of these trends is that the overall robustness of safeguards has been increasing even though Washington has less ability to dictate terms unilaterally. In other words, even if Russia or China are not as strict as the US in their nuclear deals, they are unlikely to transfer enrichment and reprocessing technology outright or provide nuclear aid to nuclear aspirants who have rejected safeguards, and most of their customers are likely to have the Additional Protocol in force. That said, there are some important exceptions, such as Egypt and Saudi Arabia, which have not signed on to the most stringent safeguards standards.

Finally, Washington has other nonproliferation tools that can (and have) compensated for a decline in its influence in the civilian nuclear marketplace. Though it greatly accelerated after the end of the Cold War, the decline of the US nuclear industry began in the 1970s, at roughly the same time as the US began using sanctions regularly (and effectively) as a nonproliferation tool, threatening cutoffs in military and economic assistance to countries violating nonproliferation norms.⁹⁸ Most of the countries the US would be likely to provide civilian nuclear assistance to in

95. E. Brewer, N. Miller, and T. Volpe, "Ukraine Won't Ignite a Nuclear Scramble: Why Russia's War Might Boost Nonproliferation," *Foreign Affairs*, November 17, 2022, available at: www.foreignaffairs.com.

96. Nuclear Threat Initiative, "Nuclear Suppliers Group," available at: www.nti.org.

97. International Atomic Energy Agency, "Additional Protocol," available at: www.iaea.org.

98. N. Miller and T. Volpe, "The Rise of The Autocratic Nuclear Marketplace," op. cit.; and N. Miller, "The Secret Success of Nonproliferation Sanction," *International Organization*, Vol. 68, No. 4, pp. 913-944.

the first place are countries that have wide-ranging economic and security relationships with Washington, that provide numerous other avenues of influence. For example, if Saudi Arabia or Egypt turned to another country to build its nuclear power plants, the US would still have significant leverage in the form of arms sales and economic and military aid, respectively, if it was willing to utilize that leverage (more on this below).

Emergence of the TPNW

Like the decline of the US nuclear industry, the emergence of the TPNW potentially represents a new challenge for global nonproliferation efforts. The arguments for how it would lead to the emergence of new nuclear states are rather far-fetched, however, for two reasons.

First, the idea that parties to the TPNW would eventually become so frustrated that they withdraw from the NPT and seek their own nuclear weapons strains credulity since the same attitudes that lead countries to support the TPNW (mass and/or elite opposition to nuclear weapons) would make it very difficult to mobilize support for a nuclear weapons program. It is more plausible that frustration among TPNW members or other non-nuclear states frustrated with the regime (e.g., Egypt) could lead them to withdraw from the NPT in protest (without seeking nuclear weapons) or further reduce their cooperation with nonproliferation efforts directed at third parties like Iran. However, this still runs into the problem that TPNW members generally support nonproliferation and could face significant material costs from the nuclear powers for failing to cooperate or withdrawing from the NPT.

Second, while it is possible that the war in Ukraine could increase support for the TPNW as the public becomes more aware of nuclear risks, which over the long run could reduce the credibility or support for extended deterrence commitments, it could just as easily have the opposite impact, as European publics begin to better understand why the nuclear umbrella is important for their security.⁹⁹ The decisions by Sweden and Finland to join NATO and increases in defense spending in much of Europe reflect a perception of an increasingly dangerous security environment, which is likely to bolster support for NATO and its nuclear dimension.

Erosion in the utility of US sanctions and diplomacy

The last novel risk factor is the potential for US sanctions and nonproliferation diplomacy to decline in effectiveness as states learn how to insulate their economies from coercion or are unwilling to make deals with an American government they view as untrustworthy. This is indeed a valid cause for

99. See A. Bollfrass and S. Herzog, "The War in Ukraine and Global Nuclear Order," op. cit.

concern: there is growing evidence that US adversaries and even allies are looking for ways to protect themselves from US sanctions, which have dramatically expanded in frequency and scope in recent years.¹⁰⁰ The ongoing resilience of the Russian and Iranian economies in the face of powerful Western sanctions is one vivid example of this; in part, this reflects the fact that the primary targets of US sanctions are increasingly cooperating with one another as a way to weather the economic storms they face.¹⁰¹

At the same time, there is also evidence that the US track record of not living up to nonproliferation bargains is impacting the calculus of proliferators or potential proliferators. North Korean officials have referred to the overthrow of Qaddafi in Libya as a reason why they cannot be safe if they trade away their nuclear arsenal.¹⁰² More recently, the inability of Iran to trust the US to abide by its word after Trump's withdrawal from the JCPOA was a factor in the failure of the negotiations to revive the agreement under Biden.¹⁰³

These are significant problems for US nonproliferation policy, but primarily for adversaries. When dealing with allies, the US has many sources of leverage apart from economic sanctions—such as threats to downgrade or terminate a security commitment—and its promise to lift sanctions if compliance is forthcoming is far more credible. For adversaries, by contrast, the US often relies overwhelmingly on economic sanctions and has a hard time credibly committing to sanctions relief due to domestic and geopolitical pressures to punish US rivals regardless of their nuclear behavior.

100. See H. Farrell and A. Newman, "The Twilight of America's Financial Empire," *Foreign Affairs*, January 24, 2020, available at: www.foreignaffairs.com; A. Demarais, "The End of the Age of Sanctions? How America's Adversaries Shielded Themselves," *Foreign Affairs*, December 27, 2022, available at: www.foreignaffairs.com.

101. M. Scollon, "'A Terrible Club to Be In': Russia, Iran, and the Bloc of Sanctioned Nations," *Radio Free Europe/Radio Liberty*, January 3, 2023, available at: www.rferl.org.

102. W. Bowen and M. Moran, "What North Korea Learned from Libya's Decision to Give Up Nuclear Weapons," *The Conversation*, May 11, 2018, available at: theconversation.com.

103. K. DeYoung, "Iran Says No Nuclear Deal Without U.S. Guarantees it Won't Walk Out Again," *The Washington Post*, September 19, 2022, available at: www.washingtonpost.com.

Implications for East Asia and the Middle East

The preceding analysis suggests the odds of a significant upsurge in proliferation are substantially lower than many analysts suggest. Many of the factors identified as risk factors, such as concerns about US reliability as an ally, the failure of the nuclear powers to live up to Article VI of the NPT, and the use of nuclear weapons in an aggressive fashion, have been managed successfully in the past without substantial increases in the number of nuclear powers. This has been true even when many of these conditions have been present simultaneously—for instance, in the 1970s, when superpower arsenals continued to grow, doubts about US reliability in Asia spiked, and Israel’s rivals grappled with Arab states’ territorial losses in 1967 and 1973, no new nuclear powers emerged in East Asia or the Middle East. Some of the more novel risk factors, such as the decline of the US nuclear industry and the emergence of the TPNW, are less consequential than they may seem at first glance. Still, there are a couple of factors that deserve serious concern; in particular, the possibility that heightened geopolitical competition will lead great powers to de-prioritize proliferation and the potential for the effectiveness of US sanctions and nuclear dealmaking to decline.

This section concludes by discussing how these factors are likely to play out in the two regions of highest proliferation concern: East Asia, where Japan and South Korea are often considered prime candidates for proliferation, and the Middle East, where Iran and secondarily Saudi Arabia receive a lot of attention for their nuclear ambitions. While Europe is sometimes mentioned as a region of concern, particularly in a scenario where the US pulls back from NATO, this would probably be more likely to lead to France and/or Britain providing a stronger nuclear guarantee to alliance members than to new independent nuclear programs.¹⁰⁴ Applying the insights above to East Asia and the Middle East suggests we should be significantly more concerned about the odds of proliferation in the Middle East.

Potential proliferation in East Asia

The simultaneous rise of China and substantial advancements in North Korea’s nuclear capabilities have contributed to an increasingly tense security environment in East Asia. In response, both Japan and South Korea

104. See, for instance, B. Tertrais, “Will Europe Get its Own Bomb?,” *Washington Quarterly*, Vol. 42, No. 2, 2019, pp. 47-66; T. Volpe and U. Kuhn, “Germany’s Nuclear Education: Why a Few Elites Are Testing a Taboo,” *Washington Quarterly*, Vol. 40, No. 3, 2017, pp. 7-27.

have increased their investments in defense, including in missile and missile-defense capabilities.¹⁰⁵ Compounding matters, South Korean and Japanese officials have increasingly questioned the reliability of the US as an ally, leading to a reevaluation of nuclear options.¹⁰⁶ Despite this, it is unlikely that either South Korea or Japan will move to acquire their own nuclear weapons in the next decade, as the US is likely to have the incentive and capacity to reassure both countries while cautioning them against an independent nuclear program.

As discussed above, the US has a successful track record of preventing proliferation in East Asia, even in the context of concerns about US reliability and perceptions of American decline. Both for geopolitical reasons—to balance against China’s rising power—and nonproliferation reasons, the US has a strong incentive to reassure South Korea and Japan and strengthen the American commitment. While a potential return of Trump to the presidency could call this into question, a strong bipartisan consensus has developed on the importance of competing with China,¹⁰⁷ which is likely to translate into bipartisan support for maintaining and/or strengthening ties with Japan especially, but also South Korea. The Biden administration recently made substantial efforts in this regard, responding to comments by the South Korean president about a potential nuclear program by strengthening the alliance. The so-called “Washington Declaration” provides for enhanced consultation on matters of nuclear deterrence, closer operational planning at the conventional level, and visits to South Korea by nuclear-armed US submarines. As part of the declaration, South Korea reaffirmed its intention to abide by its NPT commitment to remain non-nuclear.¹⁰⁸ The Biden administration likewise strengthened its commitment to Japan, endorsing Tokyo’s decision to substantially expand its military capabilities.¹⁰⁹ The US, South Korea, and Japan also agreed to expand cooperation on missile defense.¹¹⁰

Even if Japanese or South Korean leaders are not fully satisfied with US efforts at reassurance, the alternative—an independent nuclear weapons program—is likely to be perceived as too costly or risky. Pursuing nuclear weapons would expose either country to nuclear trade sanctions, seriously damaging their substantial nuclear energy programs, could cause the US to

105. See E. Heginbotham, S. Leiter, and R. Samuels, “Pushing on an Open Door: Japan’s Evolutionary Security Posture,” *Washington Quarterly*, Vol. 46, No. 2, 2023, pp. 47-67; and I. Bowers and H. Hiim, “Conventional Counterforce Dilemmas: South Korea’s Deterrence Strategy and Stability on the Korean Peninsula,” *International Security*, Vol. 45, No. 3, 2020, pp. 7-39.

106. E. Heginbotham and R. Samuels, “Vulnerable U.S. Alliances in Northeast Asia,” *op. cit.*

107. C. Carothers and T. Sun, “Bipartisanship on China in a Polarized America,” *International Relations*, 2023.

108. A. Panda, “The Washington Declaration is a Software Upgrade for the U.S.-South Korea Alliance,” Carnegie Endowment for International Peace, May 1, 2023, available at: [carnegieendowment.org](https://www.carnegieendowment.org).

109. E. Wong, “Biden and Kishida Vow to Bolster U.S.-Japan Alliance as China’s Power Grows,” *The New York Times*, January 13, 2023, available at: www.nytimes.com.

110. “The Spirit of Camp David: Joint Statement of Japan, the Republic of Korea, and the United States,” The White House, August 18, 2023, available at: www.whitehouse.gov.

downgrade or terminate alliance arrangements, and would likely lead to substantial Chinese sanctions.¹¹¹

While some have argued the US would (or should) look the other way if South Korea or Japan go nuclear,¹¹² consistent with the argument above that intense geopolitical competition outweighs nonproliferation concerns, this is unlikely for several reasons. First, unlike prior cases like Britain and France, South Korea and Japan would be proliferating in the context of a robust nonproliferation regime Washington has a strong incentive to uphold. While the US could still choose to prioritize great power competition, as it did with Pakistan in the 1980s, the implications here would be different since (unlike Pakistan) South Korea and Japan are parties to the NPT. Legitimizing their withdrawal from the treaty could provide cover for other countries, such as Iran or Saudi Arabia, to do the same.

Second, leaving aside the NPT, a nuclear-armed Japan or South Korea would be much more dangerous for the US than a nuclear Pakistan because it could spark nuclear crises and arms races in a region where the US is deeply involved. The US has always been unlikely to become directly involved in an India-Pakistan war, but the same cannot be said for a war involving South vs. North Korea or a war involving China vs. Japan. It is, therefore, very much in the US interest to ensure there are as few “nuclear buttons” at play as possible in any conflict scenario and to avoid potentially dangerous crises that could occur if China or North Korea sought to prevent their rivals from acquiring nuclear weapons.

Third, while India and Pakistan’s acquisition of nuclear weapons did do damage to the nonproliferation regime, it did not fundamentally call into question the value of US security commitments since neither country had a firm alliance with the US.¹¹³ By contrast, if South Korea or Japan went nuclear, it could send a message that US alliance guarantees are not sufficient to ensure security, a message American officials would be loath to send.

In short, the US is likely to have the will and capacity to do what it takes to persuade Japan and South Korea to remain non-nuclear, even in the context of an increasingly tense security environment.

111. See R. Einhorn, “Will Putin’s Invasion Spur Nuclear Proliferation?,” *op. cit.*; S. Herzog and L. Sukin, “The Dueling Nuclear Nightmares Behind the South Korean President’s Alarming Comments,” Carnegie Endowment for International Peace, January 25, 2023, available at: [carnegieendowment.org](https://www.carnegieendowment.org).

112. See R. Kelley, “The U.S. Should Get out of the Way in East Asia’s Nuclear Debates,” *Foreign Policy*, July 15, 2022, available at: foreignpolicy.com; J. Lind and D. Press, “Should South Korea Build Its Own Nuclear Bomb?,” *Washington Post*, October 7, 2021, available at: www.washingtonpost.com.

113. The US defense agreement with Pakistan only committed Washington to support Islamabad in the event of Communist aggression. See D. Bolsinger, “Not at Any Price: LBJ, Pakistan, and Bargaining in an Asymmetric Intelligence Relationship,” *Texas National Security Review*, Vol. 5, No. 1, 2022, pp. 56-80.

Potential proliferation in the Middle East

For more than three decades, the prospect of additional proliferation in the Middle East has commanded international attention, as Iraq, Iran, Syria, and Libya all made efforts to acquire nuclear weapons at various points. While Iraq, Syria, and Libya's nuclear programs were all halted through sanctions, diplomacy, and/or force, today, Iran stands closer to the nuclear weapons threshold than at any time in its history. While the US intelligence community continues to assess that Iran has not made the decision to produce nuclear weapons, its breakout time is currently a matter of days, as it continues to stockpile more and more 60% enriched uranium.¹¹⁴ Meanwhile, Saudi officials are working to build a nuclear energy program while simultaneously making clear that if Iran acquires nuclear weapons, they will do the same.¹¹⁵ Compared to East Asia, there is more reason to worry about proliferation in the Middle East since two of the key risk factors identified above are more salient in this region: namely, the erosion of the efficacy of US sanctions and dealmaking and the possibility that intensified geopolitical competition will outweigh proliferation concerns.

For allies like Japan and South Korea, the US wields enormous leverage through its role as a security provider. For adversaries like Iran, by contrast, leverage depends much more on the ability to impose economic pain, which means the erosion of the efficacy of US sanctions is more salient. The trajectory of the Iranian nuclear program over the last decade bears this out. The combination of powerful US and multilateral sanctions was crucial in bringing Iran to the negotiating table in 2013, ultimately leading to the JCPOA.¹¹⁶ However, Trump's withdrawal from the deal in 2018, despite Iranian compliance, significantly undercut the credibility of US diplomacy. When the Biden administration took office and commenced negotiations for the revival of the JCPOA, Iran sought "guarantees" against the possibility of a future US withdrawal, which proved to be a major obstacle in what were ultimately unsuccessful negotiations.¹¹⁷ At the same time, Iran has gotten

114. See I. Ali, "Iran Can Make Fissile Material for a Bomb 'in about 12 Days,'" op. cit.; F. Murphy, "Iran Undoes Slowdown in Enrichment of Uranium to Near-Weapons-Grade," Reuters, December 26, 2023, available at: www.reuters.com.

115. J. Berger, "Crown Prince Confirms Saudi Arabia Will Seek Nuclear Arsenal if Iran Develops One," *The Guardian*, September 21, 2023, available at: www.theguardian.com. Turkey, Egypt, and the United Arab Emirates all possess or are planning for substantial civilian nuclear energy programs, but there is little evidence of active interest in nuclear weapons. Syria's nuclear program seems to have been derailed by the Israeli airstrike in 2007 and subsequent civil war.

116. See R. Nephew, *The Art of Sanctions*, op. cit.; N. Miller, *Stopping the Bomb*, op. cit.; A. Tabatabai, "Negotiating the 'Iran Talks' in Tehran: The Iranian Drivers that Shaped the Joint Comprehensive Plan of Action," *Nonproliferation Review*, Vol. 24, No. 3-4, 2017, pp. 225-242.

117. M. Salem, F. Pleitgen, and H. Alkshali, "Iran Wants Compensation if US Pulls Out of Nuclear Deal Again, Diplomatic Source Says," CNN, August 16, 2022, available at: edition.cnn.com.

better at weathering the impact of US sanctions, substantially increasing its oil exports in part due to sanctions evasion techniques.¹¹⁸

In combination, these two factors significantly diminish Washington's ability to use sanctions to negotiate limits on Iran's nuclear program: the costs of sanctions are declining, and Iran's belief that it can avoid them by making concessions is declining as well. The fact that Iran has steadily expanded its nuclear program since Trump's 2018 withdrawal from the JCPOA is reflective of this fact. At the same time as US leverage has declined and the Iranian nuclear program has advanced, the security environment in the Middle East has deteriorated, with an Israel-Iran shadow war now compounded by the ongoing war between Israel and the Iran-backed Hamas, which has also included skirmishes with the Iran-backed Houthis and Hezbollah—a war that analysts worry could escalate to direct Iranian involvement.¹¹⁹

In this context, it is possible that Iranian leaders could decide to try to cross the weapons threshold in the coming years, banking on the fact that the US and Israel would not have the will or capacity to go to war to prevent it. While one might hope Russia and/or China would pressure Iran not to take this step, the fact that they did not play a particularly constructive role in the JCPOA revival talks suggests they may be putting nonproliferation on the back burner, focusing instead on their competition with the US and its allies. Neither Russia nor China would relish an Iran with nuclear weapons, but they also derive strategic benefits from the relationship that could make them reticent to turn the screws on Tehran, whether in terms of discounted oil for China or the drones and missiles Iran is providing to Russia to aid its war effort in Ukraine.¹²⁰

If Iran does acquire nuclear weapons in the coming years, Saudi Arabia would feel strong pressure to respond in some fashion, consistent with many prior statements by Saudi officials. Before the war between Israel and Hamas broke out in October 2023, the US and Saudi Arabia were engaged in negotiations that would provide for Saudi normalization of relations with Israel, some form of American assistance to a Saudi nuclear energy program, and a formal US defense pact for Riyadh.¹²¹ If such an agreement were reached and Saudi Arabia came under US protection in a similar fashion to Japan and South Korea, this would likely be sufficient to reassure Riyadh and sway them away from seeking their own nuclear weapons.

118. A. Lawler and T. Gardner, "Iran's Oil Output, Exports Rise as Washington, Tehran Talk," Reuters, August 31, 2023, available at: www.reuters.com.

119. E. Schmitt, J. Barnes, H. Cooper, and D. Sanger, "Attacks Heighten Fears of a Wider War for the Middle East and U.S.," *The New York Times*, January 3, 2024, available at: www.nytimes.com.

120. See N. Bertrand, "Russia Appears Poised to Purchase Ballistic Missiles from Iran, Official Says," CNN, January 4, 2024, available at: www.cnn.com; K. Bradsher, "China's Economic Stakes in the Middle East: Its Thirst for Oil," *The New York Times*, October 11, 2023, available at: www.nytimes.com.

121. E. Wong and M. Mazzetti, "Biden Aides and Saudis Explore Defense Treaty Modeled After Asian Pacts," *The New York Times*, September 19, 2023, available at: www.nytimes.com.

However, if such an agreement fails to materialize, and the US, China, and Russia continue to compete for the allegiance of what they deem to be a strategically crucial partner, this geopolitical environment could provide a fertile environment for Saudi Arabia to advance its nuclear capabilities. As described above, this sort of competition could lead to the provision of nuclear technology to Saudi Arabia with laxer conditions than is typical in US nuclear cooperation agreements. This competition could also result in a reluctance to impose punishment on Saudi Arabia if they decided to develop a nuclear weapons program for fear of “losing” Riyadh to a rival bloc in the context of a “new Cold War.” Indeed, Washington has already demonstrated a reluctance to punish Saudi Arabia, for instance, when it was found to be building a covert ballistic missile factory, orchestrated the murder of Jamal Khashoggi, and cut production in order to increase oil prices, undercutting the US effort to contain Russia after its invasion of Ukraine.¹²² In contrast to East Asia, where the US is likely to have the will and capacity to prevent further proliferation, in the Middle East, it is much more questionable whether the great powers could or would do the same.

122. See E. Knickmeyer and M. Lee, “U.S. Moves to Shield Saudi Crown Prince in Journalist Killing,” Associated Press, November 18, 2022, available at: apnews.com; E. Brewer *et al.*, “Toward a More Proliferated World,” *op. cit.*, p. 26/34; A. Zhang, “Biden Shakes Hands with Saudi’s bin Salman at G20 Summit,” *Politico*, September 9, 2023, available at: www.politico.com.

Conclusion

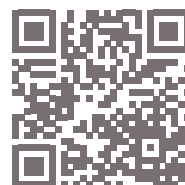
This paper has argued that the risk of proliferation in the coming decade is less acute and more manageable than many analysts have suggested. Many of the risk factors that have been identified—such as concerns about US reliability as an ally, the failure of the nuclear powers to work toward disarmament, and the use of nuclear weapons to support aggressive foreign policies—are not new and have been managed effectively in the past without leading to significant upsurges in proliferation. Other risk factors that are more unique, such as the decline of the US nuclear industry and the emergence of TPNW, are unlikely to substantially increase the odds of nuclear proliferation in the coming decade. Two risk factors stand out as most concerning: intensified competition between great powers and the declining effectiveness of US nonproliferation sanctions and diplomacy. When we apply these insights to the two regions of greatest proliferation concern, East Asia and the Middle East, we see that the latter is a more likely site of additional proliferation.

A number of policy implications are derived from this analysis. As noted throughout the paper, a big reason why many factors identified as proliferation triggers did not, in fact, lead to additional nuclear powers in the past is because the great powers and the international community generally stepped in to manage them, particularly in the post-NPT era. This suggests that for these trends to continue, policymakers need to maintain a focus on nonproliferation in their statecraft. For instance, the US needs to continue to work hard to reassure its allies, along the lines of the recent Washington Declaration with South Korea, and it also needs to continue to make clear (alongside its allies) that it is opposed to the further spread of nuclear weapons. To the extent possible, the US, China, and Russia should try to maintain a high priority on nonproliferation—and be willing to cooperate on this issue—even in the face of competing geopolitical objectives.

A corollary of this argument is that a de-prioritization of alliances or nonproliferation by the US or other great powers could be extremely damaging to the cause of nonproliferation. If Trump is nominated and re-elected in 2024, for example, and decides to terminate or weaken US alliances while simultaneously downgrading the importance of nonproliferation, that could have grave proliferation consequences in not just East Asia and the Middle East but also Europe. Absent such a dramatic reversal, though, a significant increase in proliferation is unlikely to materialize in the next decade.

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