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US-South Korea Nuclear Sharing: A Middle Path to Increase Security on the Peninsula

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Since North Korea's first nuclear weapons test in 2006, its threat to South Korea has grown significantly. This article assesses South Korea's changing threat environment and explores its options for strengthening deterrence. We make three key arguments. First, South Korea's concerns about the state of deterrence on the Peninsula are well founded with growing nuclear dangers and declining credibility of the US extended deterrent. Second, leaders in South Korea have options for responding to these growing threats. Third, one of these options—a nuclear sharing agreement with the US—offers a sensible middle course. Nuclear sharing represents a compromise between the status quo (which leaves South Korea dependent on questionable US extended deterrence) and acquisition of independent capabilities (which may entail high political and economic costs).

Keywords North Korea, South Korea, alliance, nuclear, deterrence

Introduction

Two decades after North Korea's first nuclear test, efforts to persuade Pyongyang to relinquish its arsenal have failed and its nuclear program has grown more threatening. Pyongyang is building an arsenal with more than mere minimum deterrent capabilities, and the Kim regime is integrating nuclear operations into its military planning. North Korea is also investing in intercontinental nuclear delivery capabilities, which is an expensive undertaking that suggests Pyongyang sees nuclear weapons as a potential wedge to divide Washington and Seoul. To complicate matters further, a new challenge comes from South Korea's principal ally, the US. Donald Trump has not only returned to the White House, but his return has been marked by a vigorous critique of America's longstanding allies in Europe (Wolf 2025; Erlanger 2025). Even beyond Trump's term, trends in US politics reflect a growing possibility that American voters may elect future leaders who are skeptical of Washington's active role in the world and are less supportive

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of US allies.

In this uncertain landscape, it is not surprising that many South Koreans worry about the wisdom of relying on the US nuclear umbrella for their country's core deterrence needs. Given these trends, what are Seoul's options? How might South Korean security planners approach the critical mission of nuclear deterrence? This article assesses South Korea's changing threat environment and explores Seoul's options for strengthening deterrence. We make three principal arguments.

First, South Korea's concerns about the state of deterrence on the Peninsula are well founded. Nuclear dangers are increasing, and the current strategy, which relies on the US extended deterrent to protect South Korea, is less credible in the face of new trends. Second, leaders in Seoul have a range of options for addressing these dangers, several of which offer plausible approaches for addressing the challenges South Korea faces. Third, of these options, a nuclear sharing agreement with the US offers a sensible middle course. Nuclear sharing represents a compromise between the status quo (which leaves South Korea dependent upon a questionable US extended deterrence guarantee) and acquisition of independent capabilities (which would likely entail significant political and economic costs for Seoul). Getting leaders in Washington and Seoul to agree to a nuclear sharing arrangement would be a challenge, but with careful diplomacy this could prove to be a mutually beneficial path forward.

This article proceeds as follows. The next section describes changes in South Korea's threat environment—developments in North Korea's nuclear program and shifts in US domestic politics. Then, the article lays out the continuum of options from which South Korea might choose to address its growing vulnerability. We examine the option of nuclear sharing in detail in the subsequent section, describing the NATO model, unpacking the details of a South Korean model, and analyzing its strengths and downsides. The final section summarizes our key arguments and concludes our analysis.

Extended Deterrence on the Korean Peninsula

A large body of academic literature identifies the key challenges that a country faces when it seeks to deter its adversaries and assure its allies. These challenges are even greater when *extended* deterrence is involved, referring to efforts to deter attacks on an ally (Snyder 1961; Mearsheimer 1983; Huth 1988). Successful extended deterrence requires that a country's threats and promises are backed by adequate military capabilities to carry them out; it also requires that a country's threats and promises are credible. As Thomas Schelling (1966, 35) commented, "Saying so, unfortunately, does not make it true; and if it is true, saying so does not always make it believed. We evidently do not want war and would only fight if

we had to. The problem is to demonstrate that we would have to." Scholars debate to what extent credibility stems from a country's power and interests versus its past behavior (Henry 2022; Press 2005; Weisinger and Yarhi-Milo 2015).

Since the end of the Korean War, the US and South Korea have sought to deter North Korea's use of force or invasion against South Korea. Toward this end, South Korea has mobilized significant conventional military power, building a large and technologically sophisticated military and instituting mandatory conscription. The US also stations approximately 28,500 military personnel in South Korea, spread across numerous US military installations, that would be involved in any war. Through regular joint exercises—such as the annual Freedom Shield exercise, which most recently took place in March 2025—the alliance maintains a high level of readiness and preparedness in multiple domains, including land, sea, air, cyber, and space.

For decades, the US used nuclear threats to bolster conventional deterrence on the Peninsula, signaling to Pyongyang that any invasion could result in nuclear retaliation by the US (Cha and Kang 2018; Pollack 2011). Starting in the late 1950s, the US stationed nuclear weapons and delivery systems in South Korea to enhance US nuclear options if war erupted and thereby increase the credibility of the US nuclear deterrent. In 1991, however, with the end of the Cold War, US President George H.W. Bush withdrew US nuclear forces from the Peninsula, leading up to the 1992 denuclearization agreement between North and South Korea (Kristensen and Norris 2017; Roehrig 2017). Since the early 1990s, the US nuclear umbrella has relied principally on promises that US strategic forces—deployed far away from the Peninsula and carrying high-yield weapons—would adequately deter any nuclear attack by North Korea on the South.

At different times since the founding of the alliance, South Koreans have worried about the credibility of the US security guarantee. During the Nixon Administration, troop withdrawals and the 1968 "Nixon Doctrine" (which charged US allies to take on the primary role of their own defense) fueled South Korean worries about US credibility. As a result, President Park Chung-hee instigated a nuclear weapons program (Miller 2025; Jang 2016; Oberdorfer and Carlin 2014; Hong 2011). Under significant pressure from Washington, however, Seoul agreed to end its program in exchange for US security assurances (Jang 2016; Hersman and Peters 2006). South Korea ratified the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in 1975.

Trends Undermining Extended Deterrence

The past several years have witnessed growing debate about the stability of deterrence on the Korean Peninsula and greater discussion about the possibility of an independent South Korean nuclear arsenal. In 2024, South Korea Defense

Minister Kim Yong-hyun noted that with respect to nuclear weapons, "all options are open" (Kim 2024). Previously, South Korea President Yoon Suk-yeol startled the world when he commented that given the rising North Korean nuclear threat, Seoul may need to "introduce tactical nuclear weapons or build them on our own" (Choe 2023a). He is not alone in his concerns. Poll data from 2023 shows that roughly half of Koreans doubt that the US would respond in kind if North Korea used nuclear weapons against the South (Kim, Chungku, and Hee 2023). Following the Washington Summit in April 2023 (at which the US government under President Biden and the South Korea government under President Yoon announced a variety of confidence-building measures to bolster deterrence), South Korean confidence in the US actually dropped. A subsequent poll revealed that only thirty-nine percent of respondents said they believed that the US would defend South Korea with nuclear weapons (Ji 2024).

Concerns about the state of deterrence have been fueled by two major trends: the changing nature of the North Korea nuclear threat, and mounting questions about the direction of US domestic politics.

The North Korean Nuclear Threat

First, over the past decade, virtually every aspect of North Korea's nuclear arsenal has grown: the size of its arsenal (now between fifty and one hundred weapons);[1] the yield of its weapons (now up to two hundred kilotons or more);[2] the range of its delivery systems (on the verge of reliably reaching the US mainland); the survivability of its launchers (with more responsive solid fueled missiles); and the roles of nuclear weapons in North Korean military plans (to include battlefield missions). What had been a small and primitive arsenal has become a medium-sized force with growing capabilities.

Three aspects of North Korea's nuclear developments deserve particular attention. First, North Korea's ongoing development of *intercontinental* missile capabilities is game-changing for the US-South Korea alliance (Choe 2017; Lewis 2015). Previously, the US could promise retaliation for a North Korean nuclear strike on South Korea, secure in the knowledge that the American people were out of range if North Korean responded. In the near future, however, a US nuclear retaliatory strike against North Korea could trigger a nuclear response from Pyongyang against US cities. This situation naturally raises questions about the credibility of the US nuclear guarantee. It is reasonable for South Koreans to wonder whether any US leader—let alone one with profound doubts about the value of US allies (discussed below)—would defend South Korea if doing so risked the destruction of US cities and the deaths of millions of Americans. Even worse, North Korean leaders may be drawing the same conclusions, that Pyongyang's intercontinental nuclear capabilities degrade US extended deterrence guarantees.

This change is not a small matter. When the same dynamic occurred during

the Cold War (that is, when the Soviet Union first developed intercontinental delivery systems that could reach the US homeland), Washington's closest allies in Europe decided they could no longer solely rely on the US strategic nuclear deterrent. They developed a range of new strategies—many of which are discussed in the next two sections—for enhancing nuclear deterrence in Europe (Lind and Press 2023).

The second notable change in North Korea's nuclear posture is the size of Pyongyang's arsenal. When Pyongyang's nuclear force was very small (e.g., a dozen weapons) there was little North Korea could do with its nuclear weapons beyond threatening its neighbors in peacetime. Had conventional war erupted on the Peninsula during those years, North Korea's nuclear forces would not have been particularly useful. Had Pyongyang used nuclear weapons to attack South Korean and US conventional forces, for example, those strikes would have consumed most of North Korea's nuclear arsenal, and its few remaining weapons would have been vulnerable to a US counterstrike—leaving Pyongyang exposed to US retaliation. In the past, therefore, a small North Korean arsenal was principally useful as a tool to "escalate to deescalate"—meaning to force a ceasefire if a conventional war was going badly (Friedman 2022; Lieber and Press 2023). And North Korea's vulnerability to a disarming counterstrike from the US meant that its arsenal was not even well-suited to that simple mission.

A larger nuclear arsenal, however, allows North Korea to use its weapons during a war to coerce the South and the US to accept a ceasefire (the escalate-to-deescalate strategy), and it creates other military options for North Korea. For example, by using a third of its nuclear arsenal during a war—aimed at South Korean and US military forces on the Peninsula—North Korea could create havoc among South Korean and US conventional defenses (without necessarily causing major damage to South Korean civilian areas).[3] North Korean planners could hold their remaining twenty-five to fifty nuclear weapons in reserve to restrain the intensity of the US response by maintaining a threat to US and allied cities. When North Korea had a small nuclear force, it was merely an "arsenal of last resort" for the North—a worrisome prospect in and of itself. Today, and especially as its force continues to grow, North Korea has a risky but real wartime options for neutralizing South Korean and US conventional forces.

To be clear, such a military strategy would violate international norms, but it is hard to rule out such behavior given the North Korean government's other actions. And such a strategy would be an enormous gamble for the North Korean leadership. But if there was a war on the Peninsula triggered by some chain of events—for example, an incident along the demilitarized zone that escalated, or a partial collapse of the North Korean regime that led to a South Korea-US intervention—North Korea could use its nuclear arsenal to alter the *conventional* military balance. In fact, given the weakness of North Korea's conventional forces, using nuclear weapons if war were to erupt might be the least risky course of

action for Pyongyang (Lieber and Press 2013; Kelly 2023).

The third important change in the nuclear landscape is a shift in North Korea's nuclear doctrine, including steps designed to bring tactical nuclear aspirations into reality (Park and Jo 2025). In a 2021 speech, Kim Jong Un declared that Pyongyang was developing nuclear weapons designed for tactical missions (National Committee of North Korea 2021). A year later, North Korea revised the law that governs its nuclear weapons, their control, and their mission. Although the new law still emphasizes these weapons' defensive purpose, Pyongyang's plans now explicitly include tactical nuclear employment to "repuls[e] hostile forces" and to help "tak[e] the initiative in war" (Davenport 2022). These statements have been supported by tangible actions: photos that appear to show new warheads sized for tactical missions (Nam 2023), and a North Korean nuclear exercise in which a short-range missile delivered a mock warhead, detonated at a height of burst to minimize fallout (Van Diepen 2023). This suggests a real interest in tactical nuclear weapons use.

Taken together, the nuclear trends on the Korean Peninsula raise serious questions about the sufficiency of the existing extended deterrence arrangement. North Korea is a country with weak conventional forces and an expanding nuclear arsenal. Its leaders talk openly about tactical nuclear employment during a war, and the country seems to be developing small warheads and training for that mission. Pyongyang is also developing capabilities to strike the US homeland—an essential part of a tactical nuclear strategy, aimed at restraining Washington's response to Pyongyang's actions on the Peninsula (Bennett et al. 2023; Lewis 2015). And, of course, the North Korean government is notoriously unconcerned about international laws, norms, or opinions.

The government in Pyongyang probably wishes to avoid war, but if a conflict erupts—possibly through circumstances beyond Pyongyang's control—it may quickly feel compelled to use nuclear weapons as the only hope for defeating superior South Korean and US conventional forces. The existence of US nuclear weapons—which are far away and controlled by US leaders who rightly fear nuclear attacks on their own cities—may no longer be an adequate deterrent posture given these growing dangers.

Domestic Political Trends in the US

Doubts among South Koreans about the US-South Korea alliance have also been rising in the wake of changes in US domestic politics and have profound foreign policy ramifications. The key development is, of course, the reelection of Donald Trump, but there are broader signs of discontent among segments of the American political elite who now question the wisdom of the US' globalist foreign policy.

For decades, South Koreans could feel secure that US presidential candidates would be chosen from a pool of leaders committed to a globally active national

security strategy in which alliances played a major role, and in which the US contributed significant resources. Republicans have traditionally championed a "Reaganite" strategy of strong military power and global leadership for the US (Dueck 2010). Democrats, meanwhile, have long valued a "liberal international order" that was managed through international institutions and defended by the use of US military force (Lissner and Rapp-Hooper 2020; Wright 2017; Brooks, Ikenberry, and Wohlforth 2012). For many decades, therefore, a "left-right consensus" existed in the US about value of US alliances, which reassured US allies that they had a reliable partner, regardless of who was elected president.

Donald Trump, however, represented a significant break with the Republican Party's traditional globalist approach to national security (Vlahos 2023; Dueck 2010; Kroenig and Negrea 2024). The Trump foreign policy envisions a narrower view of US national interests. It privileges homeland security (such as border security), advocates "fair trade" rather than free trade, and adopts a more transactional approach to US alliances. As a presidential candidate in 2015, and during his first term, Trump criticized South Korea and other US allies for "free-riding" and "ripping us off" (*Hankyoreh* 2017; *Hankook Ilbo* 2018; J. Kim 2018; Lee 2019; Klingner, Pak, and Terry 2019). Since returning to office in 2025, Trump's administration has launched a vigorous critique of longstanding US alliances, particularly vis-à-vis NATO (Erlanger 2025; Wolf 2025). Trump also evinces significant unpredictability; although, for example, he campaigned with a promise to end "forever wars," he later called for the annexation of Canada and Greenland.

Even if the US-South Korea alliance survives Trump's second term, South Koreans know he has given voice to an alternative foreign policy vision that has been gaining strength and influence. For example, an important conservative intellectual center, the Heritage Foundation, broke with other conservative think tanks to support an "America First" foreign policy platform. Heritage President Kevin Roberts, Vice President J. D. Vance, Ohio gubernatorial candidate Vivek Ramaswamy, and other rising leaders in the Republican Party are vocal proponents of America First foreign policy principles. Other organizations, such as the CATO Institute and the Quincy Institute, also advocate foreign-policy restraint. Though they disagree with many aspects of Trump's platform, they provide additional intellectual architecture and leadership for a more restrained US foreign policy.

In sum, South Koreans worry that under President Trump, the US might withdraw US military forces from South Korea—or might even withdraw from the Mutual Defense Treaty altogether (Choi 2022). Beyond Trump, however, a nationalist foreign policy platform, with a more skeptical view of US alliances, has gained momentum. Ankit Panda comments that South Korean "policy makers will have to keep in the back of their mind the possibility of the US once again electing an administration that would have a different approach for South Korea" (Hancocks 2023).

Three South Korean Options for Strengthening Deterrence

Given these trends, observers have been discussing several possible responses for the US-South Korea alliance. South Korean options are not binary, as in either "go nuclear" or not. Rather, their options exist along what we have called a "nuclear continuum" (Lind and Press 2023, 2021). The options commonly discussed include continuing with the status quo (with some enhanced measures to strengthen deterrence), US forward-deploying nuclear weapons on the Korean Peninsula, and South Korea building an independent nuclear capability. Here we discuss each option and their limitations, before turning to the nuclear sharing option in the next section.

The Status Quo—Extended Deterrence (Enhanced)

First, South Korea could continue with the status quo policy of extended deterrence, under which the US nuclear arsenal serves as South Korea's deterrent force (Roehrig 2017). At the core of this policy, Washington has promised that a nuclear attack by Pyongyang against the South would trigger a devastating US response—and US leaders have sought to *convey the impression* (without actually promising) that the devastating response might be nuclear. But in line with broader US nuclear policy, the US strategy seeks to create fear of US nuclear retaliation without truly committing to using nuclear weapons in any specific situation. The hope is that the fear of nuclear catastrophe will be enough to deter North Korean leaders from crossing the nuclear threshold.

Given the growing nuclear threat from North Korea, the US and South Korea have pursued a variety of policies to bolster the credibility of US extended deterrence promises (Santoro and Warden 2015). In 2023, the Biden and Yoon governments agreed to the Washington Declaration, which announced several confidence-building measures (Snyder 2023; Panda 2023). This included the creation of a Nuclear Consultative Group, which convenes senior defense officials in both countries to discuss matters related to nuclear deterrence and contingency planning, assuring Seoul that its views will be represented in any US deliberations about nuclear weapons on the Peninsula (J. Kim 2025). As a confidence-building measure, several US submarines have recently visited the port of Busan, including one—the USS Kentucky—that is a nuclear missile submarine. (J. Kim 2025; Choe 2023b).

It is possible that South Korean leaders may conclude that the US extended deterrent still meets their security needs, despite the North Korean buildup.[4] In fact, following the Washington Summit, South Korean President Yoon Suk-yeol expressed full confidence in the US security guarantee. Many factors might reassure South Koreans—the two countries have shed blood together, have been close security allies for seven decades, and enjoy a myriad of economic and interpersonal linkages that closely bind their societies together. Furthermore,

South Koreans know that an influential group of people within the US foreign policy community and the general public continue to value US alliances and a globalist national security strategy. For example, a recent Chicago Council on Global Affairs survey found that fifty-nine percent of Republicans and seventy percent of Democrats support East Asian alliances. Another Chicago Council poll found that seventy-one percent of respondents say the alliance with South Korea makes the US more secure, and sixty-four percent of Americans favor maintaining US military bases in South Korea (Smeltz 2023; Friedhoff 2023). For all these reasons—and because of the costs of the alternatives, discussed below—South Koreans may feel that the status quo, enhanced with new measures to bolster US credibility, remains the best way forward.

The danger for South Korea of relying on extended deterrence, however, is equally clear. From the standpoint of deterrence theory, the notion that the US will use nuclear weapons against an adversary (North Korea) that can retaliate in kind against the US homeland is difficult to defend logically, unless the US has a reliable means of disarming the North Korean force. Viewed through this lens, the Biden-Yoon summit failed to address the key deterrence and assurance problems in the US-South Korea alliance. A theme leaders emphasized at the summit was the warmth of the bilateral relationship, but lack of warmth was never the problem. The key problem was and remains whether a US president would actually take actions on behalf of an ally that could lead to devastating nuclear retaliation against US cities. A deterrent posture built on that threat is tenuous. When Washington's NATO allies faced the same situation—when the Soviets built intercontinental delivery systems in the 1950s—none of them accepted the status quo; they opted for a mix of the other strategies described below.

Reintroduce US Tactical Nuclear Weapons to the Peninsula

A second option to bolster US deterrent commitments to South Korea would be the re-introduction of US tactical nuclear weapons on the Korean Peninsula (Kelly and Kim 2024; Bennett et al. 2023; Einhorn 2023). As noted, the US previously deployed such weapons there before removing them at the end of the Cold War. In 2006, after North Korea's first nuclear test, Seoul reportedly requested that the US reintroduce tactical nuclear weapons to South Korea, although this was not done (Payne 2009). More recently, a 2017 poll found that sixty-eight percent of South Korean respondents approved of the US redeploying tactical nuclear weapons to their country (Lee 2017).

Forward basing of US tactical nuclear weapons would signal the readiness of the US to use the weapons if conditions warranted, and it would provide US and South Korean leaders with meaningful additional options if North Korea crossed the nuclear threshold. If, for example, North Korea employed nuclear weapons during a war as a means to degrade South Korean and US conventional defenses,

having tactical weapons on the Peninsula would permit the US to conduct numerous, prompt, low-yield strikes against critical North Korean conventional military targets—an option that does not exist given the current US nuclear posture.[5] More importantly, the understanding by the North that employing their own tactical weapons would merely invite the US to do the same would hopefully deter Pyongyang from crossing the nuclear threshold in the first place.

Critics have claimed that redeploying nuclear weapons to the Peninsula would be counterproductive because those weapons would be easy targets for an initial North Korean nuclear attack (Klingner 2022). But this criticism seems incorrect. In Europe, the US stores nuclear weapons in vaults underneath hardened aircraft shelters at several NATO bases. A similar deployment strategy could be devised for Korea that would present the DPRK with dozens of separate, and difficult-to-destroy nuclear targets, or even many times that number, if the US weapons were dispersed during a crisis. In other words, a smart deployment strategy could be devised that would be very difficult for North Korea to neutralize, even with a larger arsenal than it fields today.

Other critics assert that nuclear bombs on the Peninsula are redundant—the US' new low-yield submarine-based weapons (W76-2 warheads) are adequate for any Korean scenario, it is claimed. But the small number of W76-2s that would be on submarines in the Pacific (and the preeminence of the submarines' strategic deterrence mission, which would grow highly salient during any war that entailed a nuclear exchange) would constrain the availability of W76-2s during a nuclear exchange in Korea. Forward-based B-61 bombs, like those in Europe, if deployed wisely, would give the US (and by extension, South Korean leaders) significantly better retaliatory options if North Korea were to use nuclear weapons during a war. Hopefully, those options would deter Pyongyang from crossing the nuclear threshold.

A better criticism of forward-based nuclear forces is that it solves one problem—it provides a better retaliatory option—but does not address the key dilemma: whether the US would agree to use nuclear weapons, even if South Korea were attacked, given that the US homeland is increasingly at risk. Forward-deployed US nuclear forces would have sophisticated, disabling locks, and hence they could not be used unless the president authorized their release. If South Koreans fear that a US president would be unwilling to use nuclear weapons—given that doing so puts the US homeland at risk—then those fears should apply whether the weapons are stored on the Peninsula or in the US. In short, forward deployment is a step that solves some problems, yet it leaves others unaddressed.

A South Korean Nuclear Arsenal

Another option being debated is an independent nuclear capability for South Korea. According to this option, South Korea would withdraw from the NPT. Despite great confusion on the topic, Seoul could do so legally. Article 10 of

the NPT allows a member to withdraw in the event that "extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country." North Korea's deployment of nuclear weapons in violation of UN Security Council resolutions, its steady expansion of its arsenal, and its frequent threats against South Korea, more than qualify as such "extraordinary events."

To rapidly develop an independent capability, South Korea would likely initially develop air-delivered bombs. Fortunately for South Korea, its existing air force already possesses ideal delivery systems in their F-16 and F-35 fighter jets. By building vaults at its existing air force bases, South Korea could have a fairly survivable force, which created a difficult target set for North Korea, in a short period of time. In the longer term, South Korea would probably also make use of its existing submarine force, which—in conjunction with the air-delivered weapons—would give Seoul a robust and survivable capability. The two biggest hurdles and expenses for any country that seeks a nuclear arsenal are the fissile material and the delivery systems. In South Korea's case, the delivery systems already exist.

Polls have shown strong support among the South Korean public for an independent nuclear arsenal. For example, a 2022 Chicago Council on Global Affairs survey found that seventy-one percent of the South Korean public support the policy (Dalton, Friedhoff, and Kim 2022). Longitudinal poll data show support in the sixty percent range (Cha 2024). South Korean elites—who better understand the potential costs and risks of the move—are more skeptical, with only a third currently favoring an independent arsenal. But 2024 polls showed that their support grows significantly "if an 'America First' policy returns to the White House," which indeed it has. In this situation, half of respondents said this would cause them to change their minds, and ninety percent of those who previously favored nuclearization said their support would grow (ibid., 11).

Of all the options, this is the only one that truly addresses the dramatic changes in deterrence on the Peninsula. Namely, in the event of a North Korean nuclear strike on South Korea, the decision to retaliate would be South Korea's. This would enhance deterrence vis-à-vis North Korea, reducing the likelihood of a war. South Korea would also feel confident that its existence is no longer in the hands of another country—one whose decision to not retaliate against North Korea would be highly rational and whose foreign policy priorities are experiencing significant churn.

Supporters of nuclearization might point to other benefits of independent nuclear capabilities. Some might favor it because of the perception that nuclear weapons confer prestige on states (O'Neil 2006; Sagan 1996). Others might argue that an independent arsenal would give Seoul greater strategic autonomy. South Korea has long felt buffeted like a "shrimp among whales"—a small country often bruised by jostling great powers. Similarly, many South Koreans resent the constraints imposed by overbearing major powers. For example, after the

Washington Summit—at which Yoon reaffirmed South Korea's NPT obligations—critics protested his acceptance of "nuclear shackles" imposed by the US (Gallo 2023). Strategic autonomy is an important theme in South Korean national security (Pardo 2023); supporters of nuclear weapons might argue that they would not merely protect South Korea from North Korea, they would also give South Korea greater autonomy relative to the great (nuclear-armed) powers.

On the other hand, a South Korean decision to develop an independent nuclear arsenal could bring significant costs and risks. Analysts have critiqued the move for several reasons, such as a nuclear cascade to Japan, the weakening of global nonproliferation norms, the diminishing of South Korea's soft power (Einhorn 2023; Bennett et al. 2023; Cha 2024; Kim 2018; Sukin and Dalton 2021); we have previously examined such arguments in detail (Lind and Press 2021, 2023).

One of the most serious critiques of nuclear acquisition by Seoul is the fear that the move could trigger a North Korean preventive strike during the window in which South Korea would be developing its arsenal (L. Kim 2025). To be sure, as long as the South Korea-US alliance were still in effect (despite, in this scenario, South Korea's withdrawal from the NPT), a North Korean preventive attack would be an enormous gamble, especially if that attack involved nuclear strikes on the South. But if the core of the deterrence problem on the Peninsula is the reduction in credibility of the US extended deterrent (for all the reasons described in the previous section), then a preventive strike by the North cannot be completely ruled out.

Foreign policy analysts also warn that a decision to acquire nuclear weapons would lead South Korea to face "reputational costs and international condemnation" in the eyes of the international community, to face sanctions on its civilian nuclear power industry, and to face economic or other sanctions from a hostile China (Cha 2024, 4; Bennett et al. 2023; Lind and Press 2021, 2023). Indeed, Beijing has previously imposed economic pressure to coerce countries to abandon policies it dislikes (Cha 2023; Kwon 2020). Beyond China, some observers speculate that the UN Security Council might sanction South Korea (as it did North Korea) for nuclear acquisition. The actual costs of a South Korean decision to acquire nuclear weapons are uncertain, but South Koreans are justified in worrying about them.

The reactions of the US, Japan, and European countries would be pivotal in limiting potential diplomatic and economic costs of South Korean nuclearization. Support from these countries could lessen the blow of any Chinese sanctions, prevent UN sanctions (via the US, French, and British vetoes on the UN Security Council), and protect Seoul's civilian nuclear program within the Nuclear Suppliers Group (India, for example, was eventually protected despite its nuclear acquisition).

But would those countries support Seoul? After all, all of these countries

have a longstanding commitment to preventing nuclear spread, and many people in the foreign policy communities have spoken out against South Korean nuclear acquisition (Klingner 2022; Einhorn 2023; Sukin and Dalton 2021).

There are good reasons to suggest that these countries—with whom South Korea has excellent relations—will be more supportive than many observers believe. All of these countries rely on nuclear weapons in different forms (Japan relies on the US nuclear umbrella and the Europeans either possess nuclear weapons or participate in NATO nuclear sharing). And none of these countries faces a nuclear threat as severe as that facing Seoul. South Korea is a responsible member of the global community and a valued partner. It is important to note that the world is much different in 2025 than it was even a few years earlier—that the conversation about nuclear weapons has changed dramatically. Today, Germans, Poles, and others are debating whether they need European (rather than US) nuclear sharing, or even nuclear weapons of their own (Lind 2024). The stability of South Korea's politics in the wake of Yoon Suk-yeol's declaration of martial law in December 2024 would be key to reassure other countries of its reliability (L. Kim 2025). South Korea's partners may thus be persuaded to support, or at least not oppose, its move to acquire nuclear weapons, particularly if Seoul pursues its arsenal legally and with extensive diplomacy that emphasizes the impossible position in which it finds itself due to North Korea's illegal arsenal.

In particular, US support would be key—to maintain the nuclear umbrella over South Korea during the transition period, to shield South Korea from sanctions at the UN Security Council, and to amplify Seoul's argument that its NPT withdrawal is the result of *North Korea's* illegal arsenal and highly threatening behavior. It is possible—and we believe likely—that facing the prospects of a ruptured US-South Korea alliance, the US would reluctantly support a South Korean nuclear program (if Seoul presented Washington with a firm decision to move forward). The reasons for supporting Seoul would be substantial—South Korea is a valued ally in a region of increased strategic importance to the US. Furthermore, nuclear spread is clearly the result of North Korea's actions. Nevertheless, the move to acquire nuclear weapons would be a gamble for South Korea.

US-South Korea Nuclear Sharing as a Middle Path

South Koreans may decide that the best way forward is neither the status quo nor an independent nuclear capability. A nuclear sharing program with the US offers a middle path (Lind and Press 2021, 2023; Bennett et al. 2023; Einhorn 2023).

The NATO Model

Nuclear sharing would be modeled on the NATO program created in the late

1950s. At that time, fears in NATO countries were rising in the wake of several trends: the growing destructiveness of thermonuclear weapons, the Soviets' superiority in medium-range ballistic missiles, and the Sputnik test in 1958 in which the Soviets' successfully tested a three-stage rocket that demonstrated their emerging ability to hit the continental US, NATO allies worried "that the US will no longer risk destruction of its cities to come to the defense of Western Europe with strategic nuclear weapons in case of Soviet attack, *or* that the Soviet Union may think that the US will no longer take such a risk" (Kohl 1965, 88).

US and European leaders debated how to resolve NATO fears. At that time, "German and French nuclear ambitions posed the central problem" (Maddock 1998, 561). US officials in the Eisenhower Administration worried that if Washington did not address allied insecurity and was too hostile to French and German nuclear ambitions, "NATO might splinter, and a neutral bloc in Western Europe might form" (ibid., 561). Maneuvering between NATO allies seeking nuclear weapons and the Soviet Union who was apoplectic about the idea of German nuclear weapons, the Eisenhower Administration offered nuclear sharing as a solution. "The plan was based on the idea," argues historian Marc Trachtenberg (1999, 194), "that a 'naked promise of nuclear protection' by America was 'no longer a sound basis for any major country's security.' NATO Europe needed a system that would assure the availability of American nuclear weapons in an emergency, and the 'best assurance' that nuclear power would 'in fact be available lies in our allies actually having a share in this power close at hand and a capability to employ it effectively.'"

Under the NATO nuclear sharing program, which continues to this day, the US stations US-owned nuclear weapons under US peacetime control in member countries (Belgium, Germany, Italy, Netherlands, and Turkey). With US support, these countries train and equip their militaries to handle and deliver nuclear weapons; several of them maintain dual-capable aircraft for this purpose. In the event that NATO faced a high risk of nuclear attack, for example during a conventional war or nuclear crisis with Russia, the sharing agreement envisions the US transferring control of some of the Europe-based nuclear weapons to NATO host countries.

A US-South Korea Program

A US-South Korea nuclear sharing program could be structured similarly to the NATO model. As in the European program, the US could station air-delivered nuclear bombs on the Peninsula, maintaining US ownership and control of those weapons during peacetime. This would likely require building or modernizing storage vaults at Osan and Kusan air bases—two large facilities that are used by both US and South Korean air forces—and at a certain number of other South Korean air force bases where the bombs could be dispersed if they were transferred to South Korean control.

Under this plan, the US military would train the South Korean Air Force to handle, store, and deliver nuclear weapons, and Washington would agree to transfer control of the weapons to the South Korean military under some specified conditions. The conditions that necessitated transfer could be defined in a variety of different ways. The agreement could set a relatively low bar for transfer, such as a major North Korean conventional attack on South Korea. Alternatively, the bar for transfer could be higher. For example, the agreement might specify that transfer would only occur *after* North Korea employed nuclear weapons against South Korea. But the core of the plan would be straightforward: to forward deploy weapons, support South Korea's training to use them, and promise to transfer them under some defined situations. As described earlier, the South Korean military would be capable of delivering nuclear weapons with the F-16s and F-35s that it already owns. Like their European counterparts, dual-capable South Korean fighter aircraft might require software to allow them to deliver nuclear munitions, but this minor technical hurdle has been solved for NATO and could be solved for South Korea.

Supporters of US-South Korea nuclear sharing argue that it is legal under international law, for the same reasons that NATO's nuclear sharing program passes legal scrutiny. The NPT forbids nuclear weapons states from *giving* nuclear weapons to non-nuclear weapons states (Article 1); it also prohibits non-nuclear members from *receiving* nuclear weapons (Article 2). Thus, although nuclear sharing obligates the US and its NATO partners to violate the NPT if some terrible future nuclear crisis unfolds, prior to that occurring, there is no violation of the Treaty. Washington has also argued that the NPT would be no longer controlling if there were a major war in Europe, because the preamble to the Treaty says its purpose is to prevent such a war in the first place (Nassauer 2001). Most importantly, nuclear sharing has endured for six decades. Arguing that it is legal when used to protect Europe but illegal when used to protect South Korea (which faces greater nuclear dangers than European countries), would be a difficult case to sustain.

The Advantages of Nuclear Sharing

Relative to other options, a US-South Korea nuclear sharing program offers several advantages from the standpoints of both South Korea and the US.

The Benefits of Nuclear Sharing for South Korea: First, nuclear sharing would have several direct benefits for South Korea. As noted above, Seoul may see it as an essential response to the worsening situation on the Korean Peninsula. The nuclear threat from North Korean is growing, the logic of the extended deterrence strategy is eroding (because North Korea's nuclear weapons can increasingly reach the US, and US domestic politics are becoming unpredictable). Nuclear sharing is a popular option among South Korean elites; a Center for Strategic &

International Studies survey found that elites who currently advocate nuclear acquisition say their next preference is nuclear sharing, and people who currently oppose a nuclear arsenal report that they favor nuclear sharing "if necessary"—that is, in the event of a weakened US-South Korea alliance (Cha 2024, 11-12).

Nuclear sharing would also be valuable as a stepping-stone toward a possible, future independent nuclear capability. Through nuclear sharing, South Korea would learn established practices for storing and handling nuclear weapons and would gain experience in mission planning for nuclear operations. Their aircraft would be equipped with the software needed to deliver nuclear weapons, and their pilots would train to fly nuclear missions. In this sense, nuclear sharing is both an alternative to an independent nuclear capability and a step in that direction—in case dangers on the Peninsula continue to worsen or relations with the US weaken.

Because sharing is both an alternative to, and a step toward, independent nuclear capabilities it would be a valuable signal—warning North Korea and the countries that have supported its nuclear program that unrestrained nuclear developments by Pyongyang are promoting proliferation. It is debatable what levers China or Russia have to constrain North Korea's nuclear actions, but facing the unwanted reality of nuclear sharing in Northeast Asia and fearing the next step on that path, Beijing and Moscow would face strong incentives to take steps that might moderate Pyongyang's nuclear policies to the extent possible.

The Benefits of Nuclear Sharing for the US: The US government has a longstanding opposition to nuclear proliferation, but nuclear sharing with South Korea would also offer advantages. First, sharing could be an answer to the growing tension in the alliance today. The contradictions at the heart of the US extended deterrence policy are real and will not simply disappear. Left unaddressed, these contradictions could leave South Korea vulnerable and resentful and possibly on a path toward NPT withdrawal. If the US felt compelled to impose economic sanctions on South Korea for pursuing its own (legal) nuclear force, it is not clear how the alliance could survive. South Korea would be justified in feeling betrayed—sanctioned by its closest ally for legally protecting itself from an existential threat (Engle 2018; Salmon 2019).

In contrast, nuclear sharing could bring the two allies closer together, as it did for NATO members. The policy would be emblematic of US efforts to help South Korea solve its legitimate security concerns. Indeed, the NATO experience is revealing; in the 1960s, the fears and doubts among NATO allies caused by Soviet intercontinental capabilities could have led, as Washington then feared, to resentful allies leaving NATO and acquiring independent nuclear capabilities. Instead, nuclear sharing bound European partners closer to the US and strengthened the alliance.

Second, the US could use the possibility of nuclear sharing to renegotiate

the broader mission of the US-South Korea alliance. In recent years, China has emerged as the focus of US national security policy. The US worries about a Chinese invasion of Taiwan and about Chinese aggression over disputed islands with American allies (Japan and the Philippines). South Korea, however, has so far pursued a strategy of hedging between the two superpowers (Kim 2023; Lind 2012). To be sure, in recent years, South Koreans have grown more concerned about the rise of Chinese power (particularly after Beijing's economic coercion, discussed earlier). In recent years, South Korea's relations with Japan have also improved to a remarkable degree, signifying a willingness to deepen trilateral cooperation with Japan and the US (Draught-Véjares 2025; Curtis, Wright, and Kelley 2024). Still, however, to a degree surprising for a US treaty ally, South Korea has been careful not to antagonize China, its most important trading partner (Roy 2023; Grossman 2023). And South Korea has reiterated that the US-South Korea alliance is focused on their shared security concerns *on the Korean Peninsula*, not broader US security concerns in East Asia.

Greater South Korean participation in a balancing effort against China would be valuable to the US. South Korea is a key player in the realm of export controls—South Korea and Taiwan are the only countries in the world that manufacture the most advanced semiconductors (Lind and Mastanduno 2025; *The Economist* 2023; Liu and Young 2023). Participation in technology controls by a South Korean government that was truly committed to those control efforts would be quite different than the participation of a government that is trying to keep its options open. Furthermore, the US would greatly value closer security cooperation vis-à-vis China. US access to South Korean airbases during a conflict over Taiwan would be invaluable, elevating US sortie generation rates and reducing US casualties (Anderson and Press 2024).

Nuclear sharing could be part of US efforts to draw South Korea into closer strategic alliance. South Korea faces an increasingly difficult security environment, and the risks that the US bears to help defend South Korea (e.g., nuclear threats to the US homeland) have grown dramatically. The US has no obligation to put nuclear weapons on South Korean territory or to enter into a nuclear sharing agreement with Seoul. Washington may thus require South Korea to move more completely into the US-led regional security architecture as a requirement for US participation in a nuclear sharing program.

Hurdles to Nuclear Sharing

Nuclear sharing would not be without costs for South Korea. Some of the downsides of developing an independent nuclear capability—e.g., condemnation from many countries around the world and punitive economic measures by China—would also likely happen in response to nuclear sharing. Most importantly, the policy would come with two major drawbacks.

First, a sharing agreement does not fully solve the core problem at the heart

of the South Korea-US extended deterrent relationship. If the concern in Seoul is that leaders in Washington will not use nuclear weapons to defend South Korea, they may logically worry that US leaders may not transfer control of the weapons in the event of war. The weapons, after all, have sophisticated, disabling locks and, therefore, would only be available to South Korea if the US president wishes to make them available. South Koreans who today doubt the credibility of the US nuclear umbrella may not be convinced that the US president would actually transfer the weapons if the occasion arose.

This concern, though reasonable, does not negate the benefits of sharing. First, nuclear sharing would generate all the benefits of a redeployed US nuclear capability on the Peninsula, and more. Under nuclear sharing, tactical nuclear weapons would be stationed in peacetime in South Korea, allowing for the employment of numerous, prompt, low-yield strikes in the case of a major war on the Peninsula. Having those capabilities and, therefore, better response options if North Korea crossed the nuclear threshold would enhance deterrence.

Critically, a nuclear sharing agreement would benefit Seoul and Washington in more ways than the mere reintroduction of US nuclear forces to the Peninsula without a sharing agreement. For example, a sharing agreement would involve training South Korean forces to handle and secure nuclear weapons; to plan nuclear missions; and to fly nuclear attack sorties. Nuclear sharing would therefore enhance the alliance's nuclear options by putting weapons on the Peninsula, and it would prepare South Korea for potential next steps—including possibly an independent nuclear capability—if the North Korean threat continued to worsen. In this important sense, nuclear sharing is both an alternative to an independent nuclear capability and a step along the path to that capability. Nuclear sharing is therefore also a coercive tool—to show North Korea, China, and Russia that Pyongyang's continued nuclear buildup is pushing the region in directions that none of those countries prefer.

Finally, it is worth noting that although the wartime transfer of nuclear capabilities is not guaranteed—regardless of what is promised during peacetime and in official sharing documents—there is a real possibility that during an intense crisis or war, the US, seeking to convince Pyongyang that it cannot divide Seoul from Washington, might execute the transfer. The fear of triggering a nuclear-armed South Korea should provide additional restraint on leaders in Pyongyang and reduce their willingness to engage in nuclear coercion—or nuclear attacks—during a crisis or war.

In short, nuclear sharing is a middle path. It provides more security than merely forward-deployed US nuclear forces, and it provides less autonomy than a truly independent nuclear capability. But like most middle paths, it balances benefits and costs better than either extreme.

The second downside of nuclear sharing for Seoul is more serious: getting the US to agree would likely require hardball politics and potentially significant

compromises. Seoul is likely to fail if it merely asks a US president for a nuclear sharing agreement—Washington would likely just refuse. The most likely way to make progress, emulating the example of the European NATO allies during the Cold War, is to *decide* that the status quo is unacceptable and that South Korea must reluctantly acquire nuclear weapons. If that decision is sincere and the US government sees no other way to get Seoul to change course, it would likely offer a nuclear sharing agreement. But playing hardball like this with a key ally is dangerous, and it probably only makes sense if Seoul is highly concerned about extended deterrence.

Relatedly, the US is likely to (reasonably) ask for something in return. If South Korea wants a nuclear sharing agreement with the US, the days of hedging in broader East Asian geopolitics are likely over. The European members of NATO support Washington's most important foreign and security policy goals in Europe; if leaders in Seoul want the US to increase US nuclear commitments to South Korea, Seoul will likely need to forge a closer regional security arrangement with Washington and other US partners in the region.

Conclusion

After decades of successful conventional and nuclear deterrence on the Korean Peninsula, changes in North Korea's nuclear arsenal and developments in US domestic politics have created doubts about the credibility of the US nuclear umbrella. This article has examined South Korea's changing threat environment and explored its options for establishing stronger deterrence. We argued first that South Korea's concerns about the state of deterrence on the Peninsula are justified—that Pyongyang shows no interest in relinquishing its arsenal and, quite the opposite, the North Korean nuclear threat is growing. Furthermore, Donald Trump's return to the White House and drastic changes in US national security policy suggest that the range of foreign policies considered by future leaders has widened significantly to include policies that are less favorable toward US allies.

This article then examined several options, all of which would bring costs and risks, for South Korea to strengthen deterrence on the Peninsula: an enhanced status quo, the stationing of US nuclear weapons on the Peninsula, the acquisition of an independent nuclear arsenal, and a nuclear sharing program with the US. Although the decision rests with the South Korean government, we argue that a nuclear sharing agreement appears the most promising, given strategic conditions facing South Korea today. None of South Korea's options is cost free—in particular, China is bound to be angered by anything other than the status quo and may punish Seoul for taking steps to increase its security. South Koreans will need to decide whether their feelings of insecurity merit these costs, and will need to discuss with the US and other partners to what extent they will

support Seoul and shield it from Chinese pressure.

Anti-nuclear communities and international organizations will likely criticize any steps that South Korea takes along the nuclear continuum. But their critique—a reflex owing to their across-the-board opposition to proliferation—is misguided. The continued strength of the global nonproliferation norm depends on countries that follow the norm remaining safe from those who violate it. If adherence to the nonproliferation norm puts countries at risk, the norm will collapse. The status quo, in which the threats to South Korea are magnified because Seoul is resolutely following its international agreements, creates the worst precedent of all.

The bad news is real: South Korea faces a set of nuclear dangers that are unprecedented since the early Cold War. Its main adversary is enhancing its nuclear capabilities and apparently integrating them, in some fashion, into its conventional war plans. Its deterrence posture, based on extended nuclear deterrence guarantees, is being eroded by the growing threat to its main ally's homeland. Meanwhile, its ally is experiencing a policy revolution in the way it thinks about its own role in the world, and the logic of bearing high costs and risks on behalf of allies.

The good news is that there are options that mitigate these dangers. For now, South Korea has a strong ally in the US and, if Seoul plays its cards well, it might induce Washington to bolster extended deterrence in these dangerous times.

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Notes

1. For an estimate near the lower bound, see Albright (2023). Higher estimates can be found in a 2023 Korea Institute of Defense Analyses report and a joint study by RAND and the ASAN Institute, which estimates the DPRK arsenals at roughly twice the lower bound (Herskovitz 2024).
2. In addition to simple plutonium-based or uranium-based fission weapons, North Korea can probably also build composite-core weapons (which use a mixture of plutonium and uranium), which would permit an approximate doubling of explosive yield. In addition, Pyongyang has tested fusion devices and may have operational thermonuclear weapons (permitting ten times more yield relative to the simple fission weapons). See the discussion in Albright (2023). The current North Korean arsenal may have weapons

spanning from ten kilotons to two hundred kilotons or more.
3. On the ability to use nuclear weapons without creating fallout, see Lieber and Press (2017, 27-32). The results on the right side of Figure 3 in Lieber and Press (2017, 31) show the consequences of a low-fallout US nuclear strike on North Korea, but North Korea could conduct a similar low-casualty strike on US and South Korean conventional forces. Note that because US and South Korean conventional forces are softer targets than the targets modeled in Figure 3, North Korea would not need to develop precision accuracy with its nuclear delivery systems to conduct low casualty nuclear strikes.
4. As noted, however, the public was skeptical, with confidence in US promises actually falling after the Washington Summit (Ji 2024).
5. According to reliable unclassified sources, the current US nuclear arsenal allows for a *very small number* of prompt, accurate, low-yield nuclear strikes, from the new low-yield warheads recently deployed on US ballistic missile submarines. Other US retaliatory options are either very high-yield (on US land-based and submarine-based missiles) or low-yield weapons that would take hours or days to employ in East Asia, given their peacetime locations. Forward-basing tactical nuclear weapons on the Korean Peninsula would enhance US capabilities, which might be useful for deterring and responding to North Korean nuclear attacks. On US nuclear force structure, see Kristensen et al. (2024).

References

Albright, David. 2023. "North Korean Nuclear Weapons Arsenal: New Estimates of Its Size and Configuration." Institute for Science and International Security, April 10. https://isis-online.org/isis-reports/detail/2023-north-korean-nuclear-weapons-arsenal-new-estimates (accessed April 11, 2025).

Anderson, Nicholas D. and Daryl G. Press. 2024. "Access Denied? The Changing Military Balance in Maritime East Asia." Working Paper.

Bennett, Bruce W., Kang Choi, Cortez A. Cooper III, Bruce E. Bechtol Jr., Myong-Hyun Go, Gregory S. Jones, Du-Hyeogn Cha, and Uk Yang. 2023. "Options for Strengthening ROK Nuclear Assurance." RAND Corporation, October 29. https://www.rand.org/pubs/research_reports/RRA2612-1.html (accessed April 18, 2025).

Brands, Hal. 2024. "An 'America First' World: What Trump's Return Might Mean for Global Order." *Foreign Affairs*, May 27. https://www.foreignaffairs.com/united-states/america-first-world (accessed April 11, 2025).

Brooks, Stephen G., G. John Ikenberry, and William C. Wohlforth. 2012. "Don't Come Home, America: The Case against Retrenchment." *International Security* 37 (3): 7-51. doi: 10.1162/ISEC_a_00107.

Cha, Victor D. 2023. "Statement before the House Committee on Rules: Examining China's Coercive Economic Tactics." May 10. Washington, DC: Center for Strategic & International Studies. https://www.csis.org/analysis/examining-chinas-coercive-economic-tactics (accessed April 11, 2025).

Cha, Victor D. 2024. "Breaking Bad: South Korea's Nuclear Option." Report of the CSIS Korea Program, April 29. Washington, DC: Center for Strategic & International Studies. https://www.csis.org/analysis/breaking-bad-south-koreas-nuclear-option (accessed April 11, 2025).

Cha, Victor D., and David Kang. 2018. *Nuclear North Korea: A Debate on Engagement Strategies*. New York: Columbia University Press.

Choe, Sang-hun. 2017. "U.S. Confirms North Korea Fired Intercontinental Ballistic Missile." *The New York Times*, July 4. https://www.nytimes.com/2017/07/04/world/asia/north-korea-missile-test-icbm.html (accessed April 11, 2025).

Choe, Sang-hun. 2023a. "In a First, South Korea Declares Nuclear Weapons a Policy Option." *The New York Times*, January 12. https://www.nytimes.com/2023/01/12/world/asia/south-korea-nuclear-weapons.html (accessed April 11, 2025).

Choe, Sang-hun. 2023b. "U.S. Nuclear-Capable Sub Visits South Korea for First Time in Decades." *The New York Times*, July 18. https://www.nytimes.com/2023/07/18/world/asia/south-korea-us-nuclear-submarine.html (accessed April 11, 2025).

Choi, David. 2022. "Trump Considered 'Complete Withdrawal' of US Troops from South Korea, Former Defense Chief Says." *Stars and Stripes*, May 10. https://www.stripes.com/theaters/asia_pacific/2022-05-10/defense-secretary-mark-esper-memoir-president-trump-south-korea-troops-5954121.html (accessed April 11, 2025).

Curtis, Lisa, Evan Wright, and Hannah Kelley. 2024. "Forging a New Era of US-Japan-South Korea Trilateral Cooperation." Center for a New American Security, March 21. https://www.cnas.org/publications/reports/forging-a-new-era-of-u-s-japan-south-korea-trilateral-cooperation (accessed April 11, 2025).

Dalton, Toby, Kari Friedhoff, and Lami Kim. 2022. "Thinking Nuclear: South Korean Attitudes on Nuclear Weapons." Chicago Council on Global Affairs, February. https://globalaffairs.org/sites/default/files/2022-02/Korea%20Nuclear%20Report%20PDF.pdf (accessed April 11, 2025).

Davenport, Kelsey. 2022. "North Korea Passes Nuclear Law." *Arms Control Today*, October. Washington, DC: Arms Control Association. https://www.armscontrol.org/act/2022-10/news/north-korea-passes-nuclear-law (accessed April 11, 2025).

Draudt-Véjares, Darcie. 2025. "Beyond Historical Memory: South Korean Domestic Polarization and U.S.-ROK-Japan Trilateral Cooperation." *Asian Policy* 20 (1): 13-18. doi: 10.1353/asp.2025.a951448.

Dueck, Colin. 2010. *Hard Line: The Republican Party and US Foreign Policy Since World War II*. Princeton: Princeton University Press.

Einhorn, Robert. 2023. "South Korea's Nuclear Options." In *Deterring a Nuclear Armed North Korea*, ed. Brad Roberts, 7-24. Center for Global Security Research, Lawrence Livermore National Laboratory. https://cgsr.llnl.gov/sites/cgsr/files/2024-08/230427_CGSR_Deterring_Nuclear_Armed_North_Korea.pdf (accessed April 11, 2025).

Engel, Benjamin A. 2018. "5-18 and the Forgotten Lesson on Anti-Americanism in South Korea." *The Diplomat*, May 17. https://thediplomat.com/2019/05/5-18-and-the-forgotten-lesson-on-anti-americanism-in-south-korea/ (accessed April 11, 2025).

Erlanger, Steven. 2025. "Indifference or Hostility? Trump's View of European Allies Raises Alarm." *The New York Times*, February 27. https://www.nytimes.com/2025/02/27/world/europe/trump-eu-allies.html (accessed April 11, 2025).

Friedhoff, Karl. 2023. "Americans See South Korea's Influence at an All-Time High." Chicago Council on Global Affairs, October 22. https://globalaffairs.org/research/public-opinion-survey/americans-see-south-koreas-influence-all-time-high (accessed April 11, 2025).

Friedman, Uri. 2022. "A Third Nuclear Age is Upon Us." *The Atlantic*, August 2. https://

www.theatlantic.com/ideas/archive/2022/08/north-korea-kim-jong-un-third-nuclear-weapon-age/670993/ (accessed April 11, 2025).

Gallo, William. 2023. "South Korean Conservatives Lament 'Nuclear Shackles' Following Yoon-Biden Summit." *VOA*, April 27. https://www.voanews.com/a/south-korean-conservatives-lament-nuclear-shackles-following-yoon-biden-summit/7069107.html (accessed April 11, 2025).

Grossman, Derek. 2023. "US Cannot Count on South Korea's Yoon to Line Up Against China." *Nikkei Asia*, February 10. https://asia.nikkei.com/Opinion/U.S.-cannot-count-on-South-Korea-s-Yoon-to-line-up-against-China (accessed April 11, 2025).

Hancocks, Paula. 2023. "Why are South Koreans Losing Faith in America's Nuclear Umbrella?" *CNN*, January 21. https://www.cnn.com/2023/01/21/asia/us-nuclear-umbrella-south-korea-analysis-intl-hnk-dst/index.html (accessed April 11, 2025).

Hankyoreh. 2017. "Trumpui 'miguk useonjuui' oegyo jeongchaegeul gyeonggyehaneun hanguk" [South Korea Wary of Trump's 'America First' Foreign Policy]. May 14.

Hankook Ilbo. 2018. "Bukanui ginjang sogeseo migugui yaksoge uimuni jegidoeeotda" [U.S. Commitment Questioned Amid North Korea Tensions]. September 22.

Henry, Iain D. 2022. *Reliability and Alliance Interdependence: The United States and Its Allies in Asia, 1949-1969*. Ithaca, NY: Cornell University Press.

Herskovitz, Jon. 2024. "How North Korea is Building a Nuclear Attack Arsenal." *Bloomberg*, September 13. https://www.bloomberg.com/news/articles/2024-09-13/how-north-korea-s-kim-jong-un-is-preparing-for-war-nuclear-weapons-missiles?embedded-checkout=true (accessed April 11, 2025).

Hersman, Rebecca K. C., and Robert Peters. 2006. "Nuclear U-Turns: Learning from South Korean and Taiwanese Rollback." *Nonproliferation Review* 13 (3): 539-53. doi: 10.1080/10736700601071629.

Hong, Sung Gul. 2011. "The Search for Deterrence: Park's Nuclear Option." In *The Park Chung Hee Era: The Transformation of South Korea,* eds. Byung-kook Kim and Ezra Vogel, 483-510. Cambridge, MA: Harvard University Press.

Huth, Paul K. 1988. *Extended Deterrence and the Prevention of War*. New Haven, CT: Yale University Press.

Jang, Se Young. 2016. "The Evolution of US Extended Deterrence and South Korea's Nuclear Ambitions." *Journal of Strategic Studies* 39 (4): 502-20. doi:10.1080/01402390.2016.1168012.

Ji, Da-gyum. 2024. "Over 60% of S. Koreans Lack Trust in US Nuclear Umbrella: Survey." *The Korea Herald*, February 5. https://www.koreaherald.com/view.php?ud=20240205000663 (accessed April 11, 2025).

Kelly, Robert E. 2023. "Why North Korea May Use Nuclear Weapons First, and Why Current US Policy toward Pyongyang is Unsustainable." *Bulletin of the Atomic Scientists*, November 21.

Kelly, Robert E., and Min-Hyung Kim. 2024. "Why South Korea Should Go Nuclear: The Bomb Is the Best Way to Contain the Threat from the North." *Foreign Affairs*, December 30. https://www.foreignaffairs.com/north-korea/why-south-korea-should-go-nuclear-kelly-kim (accessed April 14, 2025).

Kim, Arin. 2024. "Defense Minister Says 'Options Open' on Seoul Getting Nukes." *The Korea Herald*, August 16. https://m.koreaherald.com/view.php?ud=20240816050512 (accessed April 11, 2025).

Kim, James. 2025. "Upgrading US-ROK Nuclear Deterrence: The Role of the Nuclear Consultative Group." National Bureau of Asian Research, March 6. https://www.nbr.org/publication/upgrading-u-s-rok-nuclear-deterrence-the-role-of-the-nuclear-consultative-group/ (accessed April 11, 2025).

Kim, James, Kang Chungku, and Ham Geon Hee. 2023. "Transitioning Attitudes on North Korea: Perceived Threat and Preferred Response." Asan Report, April 21. *The Asan Institute for Policy Studies.* https://en.asaninst.org/contents/transitioning-attitudes-on-north-korea-perceived-threat-and-preferred-response/ (accessed April 11, 2025).

Kim, Ji-eun. 2018. "Is the U.S. Commitment to South Korea's Defense Waning?" *Korea JoongAng Daily*, November 19.

Kim, Lami. 2018. "South Korea's Nuclear Hedging?" *Washington Quarterly* 41 (1): 115-33.

Kim, Lami. 2025. "The Risks of South Korea's Nuclear Armament under a Troubled Democracy." United States Institute of Peace, February 10. https://www.usip.org/publications/2025/02/risks-south-koreas-nuclear-armament-under-troubled-democracy (accessed February 10, 2025).

Kim, Min-hyung. 2023. "Hedging between the United States and China? South Korea's ideology-driven behavior and its implications for national security." *International Relations of the Asia-Pacific* 23 (1): 129-58. doi: 10.1093/irap/lcab020.

Klingner, Bruce. 2022. "Now is Not the Time for South Korea to Go Nuclear." Heritage Foundation, August 4. https://www.heritage.org/china/commentary/now-not-the-time-south-korea-go-nuclear (accessed April 11, 2025).

Klingner, Bruce, Jung H. Pak, and Sue Mi Terry. 2019. "Trump Shakedowns are Threatening Two Key US Alliances in Asia." Brookings, December 18. https://www.brookings.edu/articles/trump-shakedowns-are-threatening-two-key-u-s-alliances-in-asia/ (accessed April 11, 2025).

Kohl, Wilfrid. 1965. "Nuclear Sharing in NATO and the Multilateral Force." *Political Science Quarterly* 80 (1): 88-109.

Kristensen, Hans, Matt Korda, Eliana Johns, and Mackenzie Knight. 2024. "United States Nuclear Weapons, 2024," *Bulletin of Atomic Scientists*, May 7. https://thebulletin.org/premium/2024-05/united-states-nuclear-weapons-2024 (accessed April 11, 2025).

Kristensen, Hans M., and Robert S. Norris. 2017. "Worldwide Deployments of Nuclear Weapons, 2017." *Bulletin of the Atomic Scientists* 73 (5): 289-97. doi:10.1080/00963402.2017.1363995.

Kroenig, Matthew, and Dan Negrea. 2024. *We Win, They Lose: Republican Foreign Policy and the New Cold War*. New York: Republic Book Publishers.

Kwon, Jaebeom. 2020. "Taming Neighbors: Exploring China's Economic Statecraft to Change Neighboring Countries' Policies and Their Effects." *Asian Perspective* 44 (1): 103-38. doi: 10.1353/apr.2020.0006.

Lee, Jung-min. 2019. "Hanmidongmaengui chwiyakseong" [The Fragility of the U.S-South Korea Alliance]. *Hankyoreh*, August 4.

Lee, Michelle Ye Hee. 2017. "More than Ever: South Koreans Want Their Own Nuclear Weapons." *The Washington Post*, September 13. https://www.washingtonpost.com/news/worldviews/wp/2017/09/13/most-south-koreans-dont-think-the-north-will-start-a-war-but-they-still-want-their-own-nuclear-weapons/ (accessed April 11, 2025).

Lewis, Jeffrey. 2015. "North Korea's Nuclear Weapons: The Great Miniaturization Debate." *38 North*, February 5. http://38north.org/2015/02/jlewis020515/ (accessed April 11,

2025).

Lieber, Keir A., and Daryl G. Press. 2013. "The Next Korean War: Conflict with North Korea Could Go Nuclear—But Washington Can Reduce the Risk." *Foreign Affairs*, April 1. https://www.foreignaffairs.com/articles/north-korea/2013-04-01/next-korean-war (accessed April 11, 2025).

Lieber, Keir A., and Daryl G. Press. 2017. "The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence." *International Security* 41 (4): 9-49. doi: 10.1162/ISEC_a_00273.

Lieber, Keir A., and Daryl G. Press. 2023. "The Return of Nuclear Escalation: How America's Adversaries Have Hijacked Its Old Deterrence Strategy." *Foreign Affairs*, October 24. https://www.foreignaffairs.com/united-states/return-nuclear-escalation (accessed April 11, 2025).

Lind, Jennifer. 2012. "Between Giants: South Korea and the U.S.-China Rivalry". *The Atlantic*, July 19. https://www.theatlantic.com/international/archive/2012/07/between-giants-south-korea-and-the-us-china-rivalry/260060/ (accessed April 11, 2025).

Lind, Jennifer. 2024. "Do Friends Let Friends Go Nuclear?" *Lawfare*, May 5. https://www.lawfaremedia.org/article/do-friends-let-friends-go-nuclear (accessed April 11, 2025).

Lind, Jennifer, and Daryl G. Press. 2021. "Five Futures for a Troubled Alliance." *Korean Journal of Defense Analysis* 33 (3): 357-80.

Lind, Jennifer, and Daryl G. Press. 2023. "South Korea's Nuclear Options." *Foreign Affairs*, April 19. https://www.foreignaffairs.com/united-states/south-koreas-nuclear-options-north-korea-deterrence (accessed April 11, 2025).

Lind, Jennifer, and Michael A. Mastanduno. 2025. "Hard Then, Harder Now: Technology Control Regimes in the Old Cold War and the New." *Texas National Security Review* 8 (4). Forthcoming.

Lissner, Rebecca, and Mira Rapp-Hooper. 2020. *An Open World: How America Can Win the Contest for Twenty-First Century Order*. New Haven, CT: Yale University Press.

Liu, John, and Jin Yu Young. 2023. "What the US-China Chip War Means for a Critical American Ally." *The New York Times,* September 23. https://www.nytimes.com/2023/09/27/business/samsung-hynix-south-korea.html (accessed April 11, 2025).

Maddock, Shane. 1998. "The Fourth Country Problem: Eisenhower's Nuclear Nonproliferation Policy." *Presidential Studies Quarterly* 28 (3): 553-72.

Mearsheimer, John. 1983. *Conventional Deterrence*. Ithaca, NY: Cornell University Press.

Miller, Nicholas L. 2025. "How Nixon Pushed Allies to Build the Bomb." *Foreign Policy*, March 20. https://foreignpolicy.com/2025/03/20/nixon-bomb-trump-nuclear-proliferation/ (accessed April 11, 2025).

Nam Hyun-woo. 2023. "North Korea Unveils Tactical Nuclear Warheads." *Korea Times*, March 28. https://www.koreatimes.co.kr/foreignaffairs/northkorea/20230328/north-korea-unveils-tactical-nuclear-warheads (accessed May 4, 2025).

Nassauer, Otfried. 2001. "Nuclear Sharing in NATO: Is it Legal?" Berlin Information Center for Transatlantic Security, April. https://www.bits.de/public/articles/sda-05-01.htm (accessed April 11, 2025).

National Committee on North Korea. 2021. "On Report Made by Supreme Leader Kim Jong Un at Eighth Party Congress of WPK." January 9. https://www.ncnk.org/

resources/publications/kju_8th_party_congress_speech_summary.pdf/file_view (accessed April 11, 2025).

Oberdorfer, Don, and Robert Carlin. 2014. *The Two Koreas: A Contemporary History*. New York: Basic Books.

O'Neill, Barry. 2006. "Nuclear Weapons and National Prestige." Cowles Foundation Discussion Paper No. 1560. https://ssrn.com/abstract=887333 (accessed April 11, 2025).

Panda, Ankit. 2023. "The Washington Declaration is a Software Upgrade for the U.S.-South Korea Alliance." Carnegie Endowment for International Peace, May 1. https://carnegieendowment.org/posts/2023/05/the-washington-declaration-is-a-software-upgrade-for-the-us-south-korea-alliance?lang=en (accessed April 11, 2025).

Pardo, Ramon Pacheco. 2023. *South Korea's Grand Strategy: Making Its Own Destiny*. New York: Columbia University Press.

Park Hwee-Rhak, and Wooyun Jo. 2025. "Nuclear Chess on the Korean Peninsula: Analysing North Korea's 'Second Mission' and Strategic Implications." *Defense and Security Analysis* 41 (1): 29-48. doi: 10.1080/14751798.2024.2434317.

Payne, Keith B. 2009. "On Nuclear Deterrence and Assurance." *Strategic Studies Quarterly* 3 (1): 43-80.

Pollack, Jonathan D. 2011. *No Exit: North Korea, Nuclear Weapons, and International Security*. Washington DC: Brookings Institution Press.

Press, Daryl G. 2005. *Calculating Credibility: How Leaders Assess Military Threats*. Ithaca, NY: Cornell University Press.

Roehrig, Terence 2017. "The U.S. Nuclear Umbrella over South Korea: Nuclear Weapons and Extended Deterrence." *Political Science Quarterly* 132 (4): 651-84. doi:10.1002/polq.12702.

Roy, Denny. 2023. "South Korea Would Stay Out of a Taiwan Strait War." *The Diplomat*, March 21. https://thediplomat.com/2023/03/south-korea-will-stay-out-of-a-taiwan-strait-war/ (accessed April 11, 2025).

Sagan, Scott D. 1996. "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb." *International Security* 21 (3): 54-86.

Salmon, Andrew. 2019. "Is Anti-Americanism Rising Again in South Korea?" *Asia Times*, December 20. https://asiatimes.com/2019/12/is-anti-americanism-rising-again-in-south-korea/ (accessed April 11, 2025).

Santoro, David, and John K. Warden. 2015. "Assuring Japan and South Korea in the Second Nuclear Age." *Washington Quarterly* 38 (1): 147-65. doi: 10.1080/0163660X.2015.1038182.

Schelling, Thomas. 1966. *Arms and Influence*. New Haven, CT: Yale University Press.

Smeltz, Dina. 2023. "Americans Continue to See Benefits from US Alliances." The Chicago Council on Global Affairs, October 4. https://globalaffairs.org/research/public-opinion-survey/americans-continue-see-benefits-us-alliances (accessed April 11, 2025).

Snyder, Glenn. 1961. *Deterrence and Defense*. Princeton, NJ: Princeton University Press.

Snyder, Scott A. 2023. "The Washington Declaration: Expanding the Nuclear Dimension of the US-South Korean Alliance Response." Council on Foreign Relations, April 27. https://www.cfr.org/blog/washington-declaration-expanding-nuclear-dimension-us-south-korean-alliance-response (accessed April 11, 2025).

Sukin, Lauren, and Toby Dalton. 2021. "Why South Korea Shouldn't Build Its Own Nuclear Bombs." *War on the Rocks*, October 26. https://warontherocks.com/2021/10/why-

south-korea-shouldnt-build-its-own-nuclear-bombs/ (accessed April 11, 2025).

The Economist. 2023. "Are America's Allies the Holes in the Export Control Fence?" *The Economist*, October 16. https://www.economist.com/business/2023/10/16/are-americas-allies-the-holes-in-its-export-control-fence (accessed April 11, 2025).

Trachtenberg, Marc. 1999. *A Constructed Peace: The Making of the European Settlement, 1945-1963*. Princeton, NJ: Princeton University Press.

Van Diepen, Vann H. 2023. "North Korea 'Tactical Nuke Drill': Claims on Command/Control and Hints of a First-ever Silo Launch." *38 North*, March 29. https://www.38north.org/2023/03/north-korea-tactical-nuke-drill-claims-on-command-control-and-hints-of-a-first-ever-silo-launch/ (accessed April 11, 2025).

Vlahos, Kelley Beaucar. 2023. "How Kevin Roberts Flipped the Script at the Hawkish Heritage Foundation." *Responsible Statecraft*, February 28. https://responsiblestatecraft.org/2023/02/28/how-kevin-roberts-flipped-the-script-at-hawkish-heritage-foundation/ (accessed April 11, 2025).

Weisiger, Alex, and Keren Yarhi-Milo. 2015. "Revisiting Reputation: How Past Actions Matter in International Politics." *International Organization* 69 (2): 473-95. doi: 10.1017/S0020818314000393.

Wolf, Martin. 2025. "The US is Now the Enemy of the West." *Financial Times*, February 25. https://www.ft.com/content/b46e2e24-ca71-4269-a7ca-3344e6215ae3 (accessed April 11, 2025).

Wright, Thomas J. 2017. *All Measures Short of War: The Contest for the Twenty-First Century and the Future of American Power*. New Haven, CT: Yale University Press.

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