

*A Normal*

# NUCLEAR PAKISTAN

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## EXECUTIVE SUMMARY

Pakistan has worked hard and successfully to build diverse nuclear capabilities. It will retain these capabilities for the foreseeable future as a necessary deterrent against perceived existential threats from India. At this juncture, Pakistan's military leadership in Rawalpindi can choose to accept success in achieving a "strategic" deterrent against India — a nuclear force posture sufficient to prevent limited nuclear exchanges and a major conventional war. Alternatively, it can choose to continue to compete with India in the pursuit of "full spectrum" deterrence, which would entail open-ended nuclear requirements against targets both near and far from Pakistan. These choices would lead Pakistan to two starkly different nuclear futures and places in the global nuclear order.

Pakistan is now competing successfully with — and in some respects is outcompeting — India. Pakistan operates four plutonium production reactors; India operates one. Pakistan has the capability to produce perhaps 20 nuclear warheads annually; India appears to be producing about five warheads annually. But given its larger economy and sizable nuclear infrastructure, India is able to outcompete Pakistan in fissile material and warhead production if it chooses to do so. Pakistan has prepared for this eventuality by investing in a large nuclear weapons production complex. Whether New Delhi chooses to compete more intensely or not, it is a losing proposition for Pakistan to sustain, let alone expand, its current infrastructure to produce greater numbers of nuclear weapons and their means of delivery. Just as the Soviet Union's large nuclear arsenal was of no help whatsoever for its manifold economic and societal weaknesses, Pakistan's nuclear weapons do not address its internal challenges.

Pakistan seeks to be viewed as a "normal" state possessing nuclear weapons, as exemplified by membership in the Nuclear Suppliers Group (NSG). Its diplomats seek a civil-nuclear cooperation agreement similar to the one accorded to India. A commercial pathway to being mainstreamed into the global nuclear order is highly unlikely for Pakistan, which lacks the commercial leverage and support that resulted in a nuclear deal for India. A different path toward mainstreaming is available to Pakistan, via nuclear-weapon-related initiatives. Having succeeded in achieving the requirements of "strategic" deterrence, Pakistan is in a position to consider nuclear initiatives that would clarify its commitment to strengthening nuclear norms, regimes, and practices, and would address widely held perceptions that its nuclear deterrence practices are a major source of danger in South Asia.

We propose that Pakistan consider five nuclear weapon-related initiatives:

- Shift declaratory policy from "full spectrum" to "strategic" deterrence.
- Commit to a recessed deterrence posture and limit production of short-range delivery vehicles and tactical nuclear weapons.
- Lift Pakistan's veto on Fissile Material Cutoff Treaty negotiations and reduce or stop fissile material production.
- Separate civilian and military nuclear facilities.
- Sign the Comprehensive Test Ban Treaty without waiting for India.

None of these initiatives would impair Pakistan's successful accomplishment of strategic deterrence against India. They would, however, require difficult and fundamental adjustments to thinking about nuclear weapons and Pakistan's deeply ingrained habits of transactional bargaining. Precisely because these initiatives would be so difficult and unusual for Pakistan, they would change perceptions about Pakistan and its place in the global nuclear order. As such, they could facilitate Pakistan's entrance into the nuclear mainstream, while strengthening nonproliferation norms, bolstering global disarmament hopes, and setting the bar higher for new entrants into the NSG.

The global nuclear order will not be strengthened by trying to accommodate a Pakistan that is greatly increasing its nuclear capabilities while rejecting the Comprehensive Test Ban Treaty and Fissile Material Cutoff Treaty. Nor will Pakistan become a normal, nuclear state by competing with India or by harboring groups that could spark a war with India. The international community is unlikely to accommodate Pakistan's desire to enter the nuclear mainstream without corresponding steps by Pakistan to align aspects of its nuclear policy and practices closer with international norms. The steps we propose lend themselves to mainstreaming. More importantly, these steps would advance Pakistan's national, social, and economic security interests.

## A NORMAL NUCLEAR PAKISTAN

*By Toby Dalton and Michael Krepon*

This essay addresses the following questions: Where does Pakistan belong in the evolving global nuclear order? Will it always be an outlier, unable to join the Nuclear Non-Proliferation Treaty (NPT) because it tested nuclear devices after the treaty entered into force, and will it always be excluded from the NPT's ancillary bodies, such as the Nuclear Suppliers Group (NSG)? Will Pakistan be forever penalized because of the illicit activities of A. Q. Khan and his proliferation network? Will Pakistan remain outside the nonproliferation "mainstream" despite its concerted efforts to quash the Tehrik-e-Taliban Pakistan and other extremist groups, because it is viewed as an accomplice to still others that carry out acts of violence against India — acts that could escalate to the use of nuclear weapons? Or can Pakistan break from its past, change negative perceptions, and become a "normal" nuclear state — or at least as "normal" as India — one that is viewed as a responsible steward of its nuclear arsenal and a positive contributor to nonproliferation regimes? And what steps might Pakistani authorities consider to gain entry?

Those who supported the 2005 civil nuclear cooperation agreement between the United States and India argued that the nuclear order would be stronger if New Delhi took steps toward accommodation with existing regimes, accepted standard nonproliferation practices, and joined the mainstream. Pakistan argues that it should be accorded similar treatment, and in a June 2015 joint statement it elicited US support for "continued outreach to integrate Pakistan into the international nonproliferation regime."<sup>1</sup> The conjunction of Pakistan's interest in being mainstreamed and the global perceptions of rising nuclear dangers in South Asia presents an opportunity to examine Pakistan's alternate nuclear futures and its place in the global nuclear order.

In our view, it is in Pakistan's national security interests and the interests of the international community to find ways in which Pakistan can enjoy the rights and follow the obligations of other nuclear-weapon states recognized by the NPT, to include its incorporation into multilateral bodies that buttress the NPT regime. We support this outcome if the net result of mainstreaming Pakistan would strengthen nonproliferation norms, but not if it results in further erosion of norms that already face significant challenges.

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Finding ways to bring Pakistan into the mainstream will be very difficult. India managed to change — but not completely end — its outlier status in the nuclear order primarily because it was perceived broadly as a state with vibrant growth potential and as an attractive market for nuclear commerce, with the resulting promise of jobs for nuclear industry.<sup>2</sup> Some also advocated for the civil-nuclear agreement for geostrategic reasons, arguing for “transformation of US-India Relations on the core strategic principle of democratic India as a key factor in balancing the rise of Chinese power.”<sup>3</sup> The commercial and geostrategic arguments that worked in New Delhi’s favor have, however, weakened the global nuclear order because the price of India’s entry did not include the strengthening of key nuclear nonproliferation norms. If Pakistan were to be mainstreamed on similar terms, the nuclear order would, in our view, become further weakened. In any event, Pakistan’s prospects of gaining entry on terms similar to those offered to India are not good. The commercial and geopolitical conditions that facilitated India’s progress in mainstreaming do not apply to Pakistan, as it is a strategic ally of China and lacks the ability to pay for nuclear power plants except on concessionary terms that only Beijing seems willing to offer. If Pakistan is to succeed in being mainstreamed in the nuclear order and in gaining entry into the NSG and other bodies, it will need to employ a different strategy than India.

The Pakistani case for mainstreaming rests on three arguments. The first is basic fairness: Pakistan deserves the same treatment and status in the global nuclear order as India. The second is stability: the subcontinent will grow increasingly unstable if India and Pakistan are treated differently, with India accorded favored treatment and Pakistan remaining an outlier. Providing Pakistan with the same benefits and standing as India will, in this view, stabilize the nuclear competition on the subcontinent by promoting responsible nuclear stewardship in both states. The third is normative: the global nuclear order will remain abnormal as long as Pakistan is excluded.<sup>4</sup>

Few non-Pakistani analysts have found these arguments compelling. Absent market-oriented rationales, the international community is unlikely to accommodate Pakistan’s desires for mainstreaming unless Pakistan is willing to take corresponding steps that more closely align its nuclear policy and practices with international norms. We argue that Pakistan would become more secure by taking such steps than by continuing to compete militarily with a country whose economy is nine times larger. Moreover, if Pakistan were to take steps to strengthen nonproliferation norms — either unilaterally, or in some instances reciprocally — its case for entry into the NSG would be strengthened, with India being obliged to follow Pakistan’s lead. Pakistan would thereby paradoxically gain more leverage over Indian nuclear choices than by continuing a resource-draining nuclear competition. On the other hand, mainstreaming Pakistan into the global nuclear order without compensatory steps to buttress nonproliferation norms could increase nuclear dangers and exacerbate tensions between nuclear haves and have-nots, compounding damages resulting from the civil-nuclear agreement accorded India.

In addressing these issues, this essay offers an unsparing assessment of the challenges facing Pakistan in its quest to become a normal nuclear state. After parsing Pakistan’s nuclear narrative, we present two alternate futures that capture the dilemmas and consequences that Pakistan faces as it assesses how best to meet its national security requirements. The first future is a straight-line projection of the present, reflecting a widespread Pakistani belief that competing in nuclear-weapon-related capabilities is essential to counter Indian conventional military and nuclear modernization programs. The alternative we posit would reflect a willingness by Pakistan to accept its accomplishments in achieving strategic deterrence and to de-link its nuclear weapon requirements from this competition. We argue that only the second pathway offers the prospect of nuclear normalcy for Pakistan.

We conclude that mainstreaming cannot be negotiated on a transactional basis. Rather, it must derive from a fundamental reassessment by Pakistan's leaders — particularly Pakistan's military leadership, which appears to have a monopoly on nuclear policy matters — about their nuclear-weapon-related requirements, and ultimately a decision to disengage from a nuclear competition with India. If Pakistan continues on its current path, its attempts at mainstreaming are likely to lead to false expectations and eventual recriminations, as well as to growing nuclear dangers and greater instability for Pakistan, the subcontinent, and the global nuclear order.

## Pakistan's Nuclear Narrative

Pakistan describes itself as a reluctant entrant into the club of nations with nuclear weapons, compelled by India's 1974 conduct of a "peaceful" nuclear explosive test to develop a countervailing capability. National accounts of the decision-making around the country's nuclear program underscore that Pakistan's political and military leaders felt strongly obliged to acquire nuclear weapons because of profound perceptions of weakness and state fragility dating back to its painful history during and since the 1947 partition of the subcontinent. In particular, Pakistan's 1971 war with India, which resulted in the loss of half its territory (East Pakistan, which became the independent nation of Bangladesh) and the capture of 90,000 prisoners of war, carved a deep and lasting scar in the national psyche. Indeed, this war — and not India's 1974 nuclear test, as is commonly portrayed — prompted the initiation of Pakistan's work on nuclear weapons to protect the country from ever again suffering a traumatic defeat at the hands of India.

The perceived need to counter Indian regional hegemony and putative conventional military advantages became the foundational impulse behind Pakistan's prior work on nuclear weapons. The impulse endures, now wrapped in a narrative that nuclear weapons are the sole element of national power that will not only even the score with India, but also deter threats ranging from limited conventional war to existential conflict.<sup>5</sup> The allure of the Bomb has led Pakistan's national security managers to compete with — and in some important measures, to outcompete — India on nuclear weapon capabilities, even as Pakistan falls farther and farther behind India on nearly all other attributes of national power. The weaker Pakistan becomes as a state, the more Pakistan's military leadership in Rawalpindi seems to rely on nuclear weapons to bolster national security. And the weaker Pakistan becomes, the more the dangers associated with its growing stockpiles of nuclear weapons and fissile material will be compounded.

Many western analysts interpret Pakistan's embrace of "full spectrum" deterrence, including the development of short-range or tactical nuclear weapons such as the 60 km range Nasr and the long-range Shaheen III missile, as evidence of the growing nuclearization of Pakistan's national security

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# The Nuclear Arms Competition in South Asia



## Key

- Crises in South Asia
- Initial flight test of Indian nuclear-capable missile systems
- Initial flight test of Pakistani nuclear-capable missile systems
- Initial flight test of Pakistani nuclear-capable missile systems
- \* Unclear whether will be nuclear armed

Figure 1: The Nuclear Arms Competition in South Asia



policy.<sup>6</sup> Other evidence for this assessment includes enlarged infrastructure to make fissile material for weapon-related purposes that has permitted growth in Pakistan's nuclear weapon stockpile at a rate faster than India; refusal to sign the Comprehensive Test Ban Treaty (CTBT) until India does; blockage of negotiations on a Fissile Material Cutoff Treaty (FMCT) in the Conference on Disarmament; and periodic resort to nuclear-themed language to counter threats from India.<sup>7</sup>

Pakistan's national security managers typically plan on the basis of worst cases, and worst-case thinking with respect to fissile material production dedicated to bomb-making purposes has been considerable, as described below. In contrast, India's national security managers have adopted a relatively relaxed view of nuclear-weapon-related requirements. But, like Pakistan, India has not signed the CTBT, is unenthusiastic about the FMCT, is developing longer-range missiles, and has the capacity for more robust nuclear forces, if it chooses to build them.

Since 1998, as perceived and real disparities between Indian and Pakistani conventional military capabilities began to grow, Pakistan has built up its bomb-making capacity at a pace exceeding India's.<sup>8</sup> Pakistan's growing reliance on nuclear weapons has, in turn, sparked international concerns about the safety and security of its nuclear arsenal, which cannot be divorced from societal conditions. The increased reliance on nuclear capabilities also raises concerns that these weapons might be used through intentional, inadvertent, or accidental launch in a crisis or in limited warfare with India. A *New York Times* editorial on April 6, 2015, exemplified these concerns in stating that the "Pakistani Army's continuing obsession with India as the enemy" and "Pakistan's determination to continue developing short-range tactical nuclear weapons whose only purpose is use on the battlefield in a war against India" are dangerous.<sup>9</sup> The editorial concludes that "Pakistan, with the world's fastest-growing nuclear arsenal, is unquestionably the biggest concern" in South Asia.

To Pakistanis, editorials like this overstate nuclear dangers, fail to recognize Pakistan's legitimate need to deter aggression from India, and unfairly focus on Pakistan for risks that originate from and are shared with India. The prevailing attitude in Pakistan is to reject criticism focused on the legitimacy of its nuclear policy or dangers associated with its nuclear arsenal and to level counter-charges of bias. In a letter responding to the *New York Times*, for instance, a Pakistan embassy spokesman argued that

The editorial painted Pakistan as a country that is recklessly building its nuclear arsenal. But Pakistan was not the first to introduce nuclear weapons in South Asia; India did. Pakistan had to develop nuclear capability purely for self-defense. Regrettably, the editorial conveniently avoided referring to India's aggressive military posturing and its expanding nuclear and missile capabilities.<sup>10</sup>

Pakistani officials and experts argue that the steps Pakistan has taken with regard to its nuclear arsenal are defensive in nature and an unavoidable response to negative developments in the region — including the Indian Army's interest in a limited war doctrine and the 2005 civil-nuclear agreement between Washington and New Delhi — that weakened the basis for stable nuclear deterrence on the subcontinent. Pakistani officials regularly seek to reassure interlocutors that Pakistan has not engaged in and will not enter into an arms race because Pakistan could not afford to do so. As retired Lt. Gen. Khalid Kidwai, the head of Pakistan's nuclear-weapon-related programs from the inception of the Strategic Plans Division (SPD) in 1999 until 2014, has said, "beyond a certain number [of nuclear weapons] you lose the logic. It's not an open ended race."<sup>11</sup>

Pakistan's national security establishment similarly rejects contentions that its nuclear posture provides cover for militant proxy groups that act against India. The strongest of these groups has been the Punjab-based Lashkar-e-Taiba (LeT), which is dedicated to preventing normal relations between Pakistan and India. According to abundant evidence, the LeT carried out the spectacular mass-casualty attacks in Mumbai in November 2008. Pakistani officials argue that they do not discriminate between "good militants" and "bad militants" in Pakistan's campaigns against terrorism.<sup>12</sup> Pakistan's immediate focus is the Tehrik-e-Taliban Pakistan (TTP), which targets the military and other symbols of the state, and which is the primary focus of the Zarb-e-Azb campaign in North Waziristan. At the same time, the Pakistan Army and intelligence services have mounted lower-profile campaigns against other extremist groups. Although it is undeniably true that the LeT is not the immediate or near-term focus of the Pakistan military's counterterrorism campaign, government officials and military leaders have offered assurances that all extremist groups will be dealt with in due course.<sup>13</sup>

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Unlike the TTP, the LeT has not turned against the organs of the Pakistani state. It is widely believed to have acted in collusion with Pakistan's military and intelligence services in an attempt to undermine Indian rule in Kashmir,<sup>14</sup> and it has carried out major acts of terrorism in Indian cities.<sup>15</sup> Pakistan's judicial system has been unable to bring the perpetrators of the 2008 attacks in Mumbai to trial with reasonable due process. As a consequence, the belief is widely held in India and elsewhere that Pakistani officials continue to view the LeT as a necessary asset to be employed against India when circumstances dictate.<sup>16</sup> As such, the perception abounds that Pakistan finds utility in nuclear weapons as a shield to prevent retaliation when extremist groups carry out attacks on India, characterized colorfully by one analyst as "jihad under the nuclear umbrella."<sup>17</sup> This perception will only be undermined when Pakistan's military and intelligence services take visible action to demobilize the LeT.

For their part, Pakistani officials argue that this is a false narrative. A far more compelling narrative, in their view, is that Pakistan has been greatly victimized by extremist groups. For example, Pakistan has suffered tens of thousands of civilian and military casualties during the US War on Terror.<sup>18</sup> Further, Pakistani officials argue privately that Pakistan's growing effort to battle the Pakistani Taliban and other extremist groups takes precedence over any desire it might have to demobilize and delegitimize LeT. Pakistan does not receive sufficient credit for its efforts to tackle terrorism, they complain, nor do Western counterparts understand the difficulty Pakistan faces in confronting these groups at a time when it is suffering from multiple internal security challeng-

es. Moreover, Pakistani officials contend forcefully that India is directly involved in exacerbating Pakistan's internal security concerns through the support of extremist groups, especially in Balochistan. A May 5, 2015, statement from Pakistan's Corps Commanders, for instance, "took serious notice of RAW's [India's Research and Analysis Wing] involvement in whipping up terrorism in Pakistan."<sup>19</sup>

These Pakistani rejoinders undoubtedly contain some elements of truth. They are countered by Indian assertions that Pakistan is committing "nuclear blackmail" by lowering the threshold for nuclear use through full spectrum deterrence involving weapons such as the Nasr.<sup>20</sup> To Pakistan, the Nasr is a "weapon of peace"<sup>21</sup> because it deters India from contemplating actions at the tactical level that risk escalation.<sup>22</sup> But to others, Pakistan's embrace of short-range systems like the Nasr and perhaps other tactical nuclear weapons are emblematic of a risky strategy that would place weapons that are the least safe and secure close to the forward edge of battle<sup>23</sup> — a battle that could be triggered by actions taken by extremist groups such as the LeT.

This scenario is alien to classical Western deterrence theory, which holds that nuclear weapons are meant to deter nuclear exchanges and existential conventional military threats, but not lesser contingencies sparked by subconventional warfare.<sup>24</sup> Consequently, states that rely on nuclear deterrence — including states that still maintain the option of first use — are concerned by the intertwining of Pakistan's nuclear posture with the apparent continued toleration of some extremist groups that could trigger a war with India. This conjunction makes Pakistan's case for mainstreaming difficult to construct, since normal states possessing nuclear weapons do not collude with or provide enclaves to non-state actors whose actions can spark a crossing of the nuclear threshold. While Pakistan's desire to be treated as a normal state possessing nuclear weapons has been indirectly advanced by Rawalpindi's counterterrorism campaign in the tribal belt as well as by non-headline-generating efforts elsewhere in the country, it will be difficult for Pakistan to be perceived as a normal nuclear state unless it also takes steps to demobilize groups that target India.

To Pakistanis, the western narrative about nuclear dangers, and thus the basis for Pakistan's exclusion from the nuclear mainstream, is profoundly unfair and accentuates nuclear risks in the region.<sup>25</sup> As one former Pakistani diplomat aptly sums up, Pakistan cannot ignore that

India's growing conventional capabilities (further augmented by the west for commercial and geopolitical reasons) coupled with its provocative military doctrines continue to pose a wide-ranging threat for Pakistan. On its part, Pakistan seeks to balance its military capabilities by combination of nuclear and conventional strategies. The point is that Pakistan is merely responding to the threat environment being constructed around it as it did by conducting its nuclear tests in 1998.<sup>26</sup>

The logical extension of this argument is that the South Asian nuclear competition is generated by India's actions and the support New Delhi receives from exogenous forces. As long as Pakistan is kept outside the nuclear mainstream, Pakistani analysts argue, instability will grow because New Delhi maintains hegemonic aspirations that are immutable and will become more problematic with rising disparities in national power on the subcontinent. In the words of one Pakistani writer,

Grant[ing] of NSG membership to India while by-passing Pakistan would have predictable outcomes: emboldening India to significantly expand its nuclear arsenal and capabilities and turning down any meaningful disarmament/arms control offers from Pakistan. This could lead to an open-ended nuclear arms race in South Asia.<sup>27</sup>

Therefore, the Pakistan narrative concludes, the only way the international community can prevent an arms race and stabilize the nuclear balance is to adopt a criteria-based approach to nuclear normalization for both India and Pakistan. Criteria for Pakistan should be the same as — or as lax as — for India. In this view, the international community should adjust to Pakistan's nuclear requirements. As Brig. Gen. Zahir Kazmi, a senior SPD official, has written, "It is the nonproliferation regime that must be normalized, not Pakistan."<sup>28</sup> Suggestions that Pakistan take initiatives related to its nuclear arsenal that have not been demanded of India are summarily rejected as discriminatory and having an anti-Pakistan bias.

Some western analysts have given sympathetic but conditional consideration to "mainstreaming" Pakistan's role in the global nuclear order. Stephen P. Cohen of the Brookings Institution has advocated a civil-nuclear agreement for Pakistan because, in his view, it is a prerequisite to achieving strategic stability on the subcontinent as well as helping to normalize Indo-Pakistan relations.<sup>29</sup> In 2010, Christine Fair posited that Washington would be well advised to offer Pakistan a "conditions-based" civil-nuclear agreement in order to stabilize the US-Pakistan relationship, to incentivize Pakistan to fully address the legacy of the A. Q. Khan proliferation network, and to dismantle militant groups.<sup>30</sup> Mark Fitzpatrick of the International Institute for Strategic Studies offered the most extended conditional argument for mainstreaming Pakistan's place in the global nuclear order, contending that established powers should "be ready to recognize Pakistan as a normal nuclear state and to offer nuclear cooperation, if [Pakistan] adopts policies associated with responsible nuclear behavior."<sup>31</sup> Pakistani news accounts and commentaries on these proposals have tended to highlight the authors' interest in bringing Pakistan into the mainstream while giving little notice to the conditions.

These contending narratives about nuclear dangers in South Asia and the reasons to consider mainstreaming Pakistan frame terms of debate about how Pakistan relates to the global nuclear order. In the Pakistani view, correcting for the bias explicit in the 2005 Indo-US nuclear deal by opening a path to "normalcy" for Pakistan would stabilize deterrence and therefore strengthen the nuclear order. But for others, Pakistan cannot be considered a normal nuclear state as long as it builds up its stockpiles of warheads and fissile material for weapon-related purposes and continues to deflect questions about the legacy of A. Q. Khan's proliferation activities, and as long as Pakistan's military is entangled in relationships with militant organizations that target India.

## Pakistan's Place in an Evolving Nuclear Order

The term "global nuclear order" suggests stability and stasis. Yet the current nuclear environment possesses neither attribute, and this makes an assessment of how Pakistan might fit into an evolved, future order difficult to project.

The essence of nuclear order is the arrangement of states based on norms about the relationship between nuclear weapons, nuclear technology, and international political power and behavior. The existing order is undergirded by the NPT, which at the time of its negotiation in 1968 divided the world into states with nuclear weapons (the United States, the United Kingdom, Russia, France, and China) and states without nuclear weapons (the other 186 parties to the treaty). The NPT regime is framed by several bargains and promises that order the relations between nuclear-weapon states and non-nuclear-weapon states. There are serious and growing tensions surrounding these bargains, which relate both to the terms of the treaty (and in particular the nuclear-weapon states' promise to pursue disar-

mament) and to three states that never signed the treaty — India, Israel, and Pakistan. These tensions and the status of the outliers comprise the main centripetal and centrifugal forces that are driving the evolution of the existing order.

Aside from the bifurcated classification created by the NPT, hierarchy within the nuclear order can be inferred from nuclear capabilities. The top tier of today's order consists of two states whose deployed force structure is contracting marginally through negotiated arms control agreements. US and Russian nuclear forces are at their lowest levels in 60 years, with some 1,600 deployed nuclear warheads each. Moscow is investing heavily in new missiles and submarines; significant investments to recapitalize the US nuclear triad will be forthcoming.

The second tier in the nuclear order is comprised of the United Kingdom, France, and China, all of which maintain relatively small nuclear arsenals. The UK and France are estimated to possess 225 and 300 weapons, respectively, which are deployed on nuclear submarines and, in the case of France, in air-delivered weaponry. China has been the slowest strategic modernizer of the second tier, with an estimated force of 250 weapons. Beijing is picking up the pace and will soon eclipse French force levels as it modernizes its land-based missiles, builds new submarines carrying ballistic missiles, and mounts multiple warheads atop some long-range ballistic missiles.

A third tier consists of states that have advanced nuclear fuel cycle technology, which gives them a latent nuclear-weapon capability. Iran will retain the infrastructure to make nuclear weapons, even under the outlines of a nuclear agreement reached with the Permanent Five members of the Security Council plus Germany. Other states in the Middle East might respond to a nuclear limitation agreement with Iran by seeking enrichment capability to go along with new nuclear power plants, joining states such as Brazil, South Africa, and Japan as holders of sensitive fuel cycle technology capable of producing material usable in nuclear weapons. Much speculation centers on how Turkey, Egypt, and Saudi Arabia will react to an agreement with Iran that permits the infrastructure to make nuclear weapons. Speculation has been particularly rife about secret nuclear arrangements between Pakistan and Saudi Arabia, despite the absence of evidence to support it.<sup>32</sup>

Pakistan and India are on the path to match the nuclear force levels of the second tier of this hierarchy, but without the status or recognition that the NPT provides. These countries, along with Israel, never signed the NPT and thus are not bound by its nonproliferation and disarmament provisions. In time, India and Pakistan could surpass the nuclear inventories of the other states in the second tier. Currently, India is estimated to have about 100 nuclear weapons, and Pakistan about 120. Israel is estimated to have perhaps 80 warheads.<sup>33</sup> North Korea has its own place as an outlier, having broken its NPT commitments and ultimately withdrawing from the treaty. North Korea's nuclear program might over time reach three digits, although it is estimated today to amount to perhaps 10 weapons.<sup>34</sup>

These circumstances make for a dynamic and unsettled nuclear order. One of the reasons provided for granting India special exemption from the rules of nuclear commerce established by the NSG was that India would become a more responsible state possessing nuclear weapons, thereby strengthening the global nuclear order. This may yet prove to be the case, but in the first decade after President George W. Bush and Prime Minister Manmohan Singh announced their intention to pursue a civil-nuclear agreement, India's net contributions to stabilizing the global nuclear order have been modest, at best.

In return for being accorded the special exemption, India agreed, among other steps, to separate its civil and military nuclear facilities; to place civil facilities under safeguards; to harmonize its export



control system with multilateral trade control regimes; to maintain its nuclear test moratorium; and to support negotiations on an FMCT. New Delhi did not, however, agree to a fissile material production moratorium or to sign the CTBT. Its subsequent actions to implement the terms of the agreement and to bring its nuclear practices in line with international standards have fallen short of expectations. In particular, critics point out that India's separation of civilian and military facilities was logically inconsistent, as India left several reactors that produce power and are connected to the electricity grid on its "strategic" facilities list, meaning they could conceivably be used for nuclear weapons purposes.<sup>35</sup> In addition, the Additional Protocol that India negotiated with the International Atomic Energy Agency (IAEA) excludes several standard provisions, such as providing information on fuel cycle operations and material determined exempt from safeguards.<sup>36</sup> These exclusions weaken the practical and symbolic meaning of the Additional Protocol, creating a negative precedent for other states such as Argentina, Brazil, and Egypt that have yet to adopt this standard.<sup>37</sup> Finally, in bilateral nuclear cooperation agreements negotiated between India and several of its suppliers, including Canada, the United States, and Australia, India eschewed standard provisions related to providing information about nuclear material balance and inventory — data that are routinely shared among nuclear partners.<sup>38</sup> The net result is that India is able to conduct trade in nuclear-related materials and goods with NSG states, but New Delhi has not yet achieved its desire to gain full membership in the group.

The terms negotiated by the United States and accepted by the NSG for India's special exemption to the rules of international nuclear commerce do not set standards that limit weapon-related capabilities in meaningful ways. If the net result of India's exemption has been to weaken global norms and practices — especially relating to formalizing a willingness to forgo nuclear testing and accepting a moratorium on producing fissile material for stockpile growth — then granting an exemption to Pakistan on the same basis would erode these norms further. Moreover, Pakistan's track record on nuclear proliferation, as revealed by the dealings of A. Q. Khan, makes it harder for states to consider according treatment to Pakistan similar to that given to India. Pakistan's disadvantaged position need not preclude eventual membership in the NSG, but it does make accession more difficult. Pakistan has upgraded its export controls and made concerted diplomatic efforts to secure a civil-nuclear agreement similar to what has been accorded to India.<sup>39</sup>

The reasons why Pakistan wishes to join the NSG alongside India are straightforward. Membership would provide standing equal to India's, even if companies other than those from China are unlikely to invest in Pakistani nuclear power stations. Membership is also deemed to be essential because if India gains a seat at the NSG — which makes decision by consensus — it could block Pakistani membership, forever consigning Islamabad to remain an outsider. Pakistani analysts further argue that the 2008 NSG exception for India negatively impacted stable deterrence in South Asia and catalyzed nuclear competition on the subcontinent. These consequences would be accentuated further if India were granted membership in the NSG, they argue. Pakistan therefore calls for a criteria-based approach to membership that would be equitable and would facilitate arms control and adoption of additional confidence-building measures.<sup>40</sup> There are reasons to be sympathetic to Pakistani arguments, but on balance they are not persuasive. We agree with Pakistan's position that membership in the NSG should be criteria-based, but only if the criteria strengthen nonproliferation norms — well beyond those adopted by India to gain the NSG's stamp of approval in 2008 on the civil-nuclear agreement.<sup>41</sup>

## Pakistan's Alternate Nuclear Futures

In assessing Pakistani arguments for mainstreaming and its implications for nuclear dangers and the nuclear order, it is useful to consider how Pakistan's security environment might look a decade into the future. For the sake of parsimony and bringing the choices involved into sharper relief, we consider two alternate nuclear futures for Pakistan. One is for Pakistan to continue its nuclear competition with India, utilizing nuclear weapons for full spectrum deterrence and seeking to exceed or compete with India to offset current and/or future conventional force disparities and strategic modernization programs. This future would be an extrapolation of the past and present; over time, this path would suggest requirements to carry out exacting nuclear-war-fighting plans if deterrence fails. This "stay the course" option would be costly in terms of financial commitments, as it would require funding not just for significant annual growth of warhead and fissile material stocks, but also for the growth of a diverse array of delivery systems, command and control, and intelligence support, as well as greater outlays for nuclear safety and security. This path does not bode well for Pakistan's desire for mainstreaming, as it would be contrary to nonproliferation norms.

An alternate future would result from a decision by Pakistan's leaders to acknowledge their success in accomplishing strategic deterrence against India and to redirect spending to more pressing concerns; in effect, to de-link Pakistan's nuclear requirements and capabilities from India's military programs. We define strategic deterrence as possessing the capabilities necessary to deter worst cases (nuclear exchanges and major conventional warfare) but not lesser threats (such as limited conventional war, proxy wars, subconventional warfare, sponsored acts of terrorism, and extreme crises) for which the track record of nuclear deterrence is poor, particularly on the subcontinent.<sup>42</sup> In this alternate future, Pakistan would retain a powerful nuclear deterrent. Existing capabilities could meet this requirement, and there would be no perceived need to offset qualitative or quantitative improvements in Indian military capabilities.

This alternate path is conducive to joining the mainstream and reinforcing nonproliferation norms. It would be consistent with the assured destruction requirements associated with "strategic" deterrence, and inconsistent with open-ended requirements, including short- and longer-range delivery vehicles inherent in "full spectrum" deterrence. This path would reflect acknowledgment that larger and more diversified nuclear capabilities would not help with threats other than nuclear attack and large-scale conventional war, and that to depend on larger stockpiles, more diversified, or more powerful nuclear weapons to prevent lesser threats in the future when they have failed to do so in the past constitutes wishful thinking. This alternate future would offer potential dividends to Pakistan's national, social, and economic security by facilitating expenditures for civilian and military needs that provide greater return on investments than do increments of nuclear weapons. This option would also facilitate Pakistan's objectives to be perceived as and to become a normal nuclear state. Coincidentally, it would provide Pakistan with more leverage on India's nuclear choices than by means of competitive behavior.

### *A Competitive Nuclear Future*

Pakistan has been in a security competition with India since 1947, when the violent partition of the British Raj divided the subcontinent into the independent countries of India and Pakistan. During the first five decades of their independence, both states were relatively evenly matched in military capability. With the major exception of the 1971 war mentioned above, military confrontations between India and Pakistan over this period did not fundamentally change the status quo in Kashmir or elsewhere. The balance of



power has shifted over the last 15 years, as India’s economy strengthened while Pakistan’s flagged, and as India’s conventional military capabilities grew relative to Pakistan’s. There is debate about whether India has gained useful military advantages from these expenditures. However, the perception in Pakistan, and the widespread assumption outside of South Asia, is that growing conventional military asymmetry has eroded Pakistan’s conventional deterrence to the point that it can only be offset by nuclear capabilities.

India’s larger economy has permitted an average of 11 percent nominal annual growth in defense spending over the past 15 years, from a Gross Domestic Product (GDP) base that grew from \$476 billion in 2000 to \$2.2 trillion in 2015.<sup>43</sup> Pakistan’s military spending has also increased significantly, by an average of 15.1 percent each year over the past six years, from a GDP that grew from \$169 billion in 2009 to \$246 billion in 2015.<sup>44</sup> India’s military expenditures, which constitute approximately 13.2 percent of budgetary expenditures, have the capacity to increase far more than Pakistan’s, where defense expenditures already constitute no less than 17 percent — and perhaps a good deal more — of national expenditure.<sup>45</sup>

In reality, Pakistan’s defense expenditures are likely even higher than these numbers suggest. Pakistan’s official defense budget figures do not include its military pension fund, which exceeds \$1 billion annually.<sup>46</sup> Nor does it include funds for government agencies affiliated with the country’s nuclear arsenal<sup>47</sup> or the military’s private sector activities, which have been documented elsewhere.<sup>48</sup> Finally, the official defense budget does not include the contingent liability fund, which the Ministry of Finance admits “cannot be overlooked in order to gain a holistic view of a country’s fiscal position.”<sup>49</sup> Current contingent liabilities total \$6.3 billion.<sup>50</sup> If we assume a quarter of the fund goes to the military, total defense-related spending in Pakistan would actually approach \$11 billion, or 4.5 percent of GDP and 25 percent of total government expenditures.<sup>51</sup> If more than a quarter of the contingent liabilities fund goes toward military purposes, these percentages would increase accordingly.

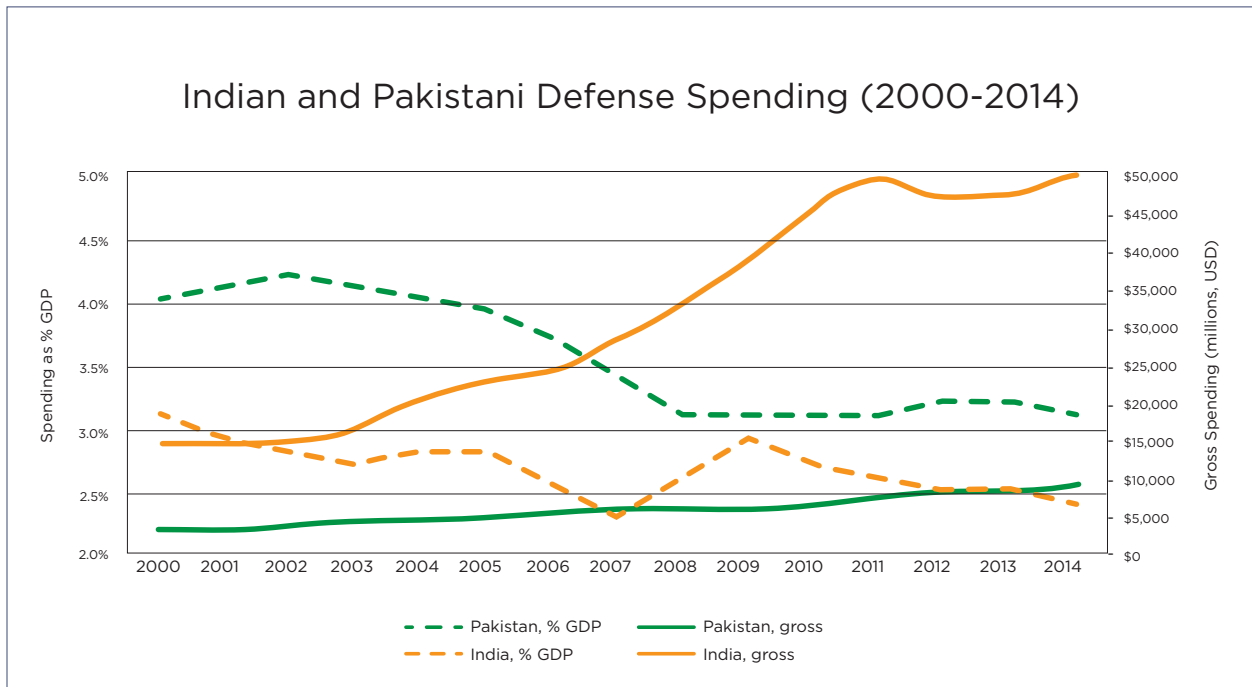


Figure 2: Indian and Pakistani Defense Spending (2000-2014)  
 Source: SIPRI Military Expenditure Database ([http://www.sipri.org/research/armaments/milex/milex\\_database](http://www.sipri.org/research/armaments/milex/milex_database)).

In the future, Pakistan’s ability to grow its conventional forces relative to India will be even more constrained. Whereas the Indian economy is more than nine times larger than Pakistan’s and is projected to sustain higher growth rates in the years ahead, Pakistan’s economic growth outlook is modest.<sup>52</sup> As the graph of baseline defense spending below demonstrates, Indian defense spending will grow at a faster pace than Pakistan’s in the years ahead, even as Pakistan spends more on defense as a percentage of GDP. Meanwhile, US military aid to Pakistan, which has been a significant source of budgetary support, will decline over the long term. Washington has provided Pakistan with more than \$31 billion in military and economic assistance since 2002.<sup>53</sup> Direct US military aid to Pakistan totaled \$353 million in 2014, notwithstanding an additional \$861 million in reimbursements under the coalition support fund.<sup>54</sup> As the US footprint in Afghanistan recedes in the years ahead, Pakistan will almost certainly have to make do with smaller amounts of American assistance.

The bulk of India’s defense budget goes toward its army, which at 1.1 million troops is by far the largest military service in India and the fourth largest army in the world.<sup>55</sup> Conventional military upgrades proceed at a slow pace in India, although the country has embarked on several major system procurements, such as new fighter aircraft from France, battle tanks, and submarines and surface vessels.<sup>56</sup> It will take considerable time for Indian military forces to integrate new hardware and to realize significant operational gains.<sup>57</sup> Discussion among experts is divided about whether India’s expenditures constitute a

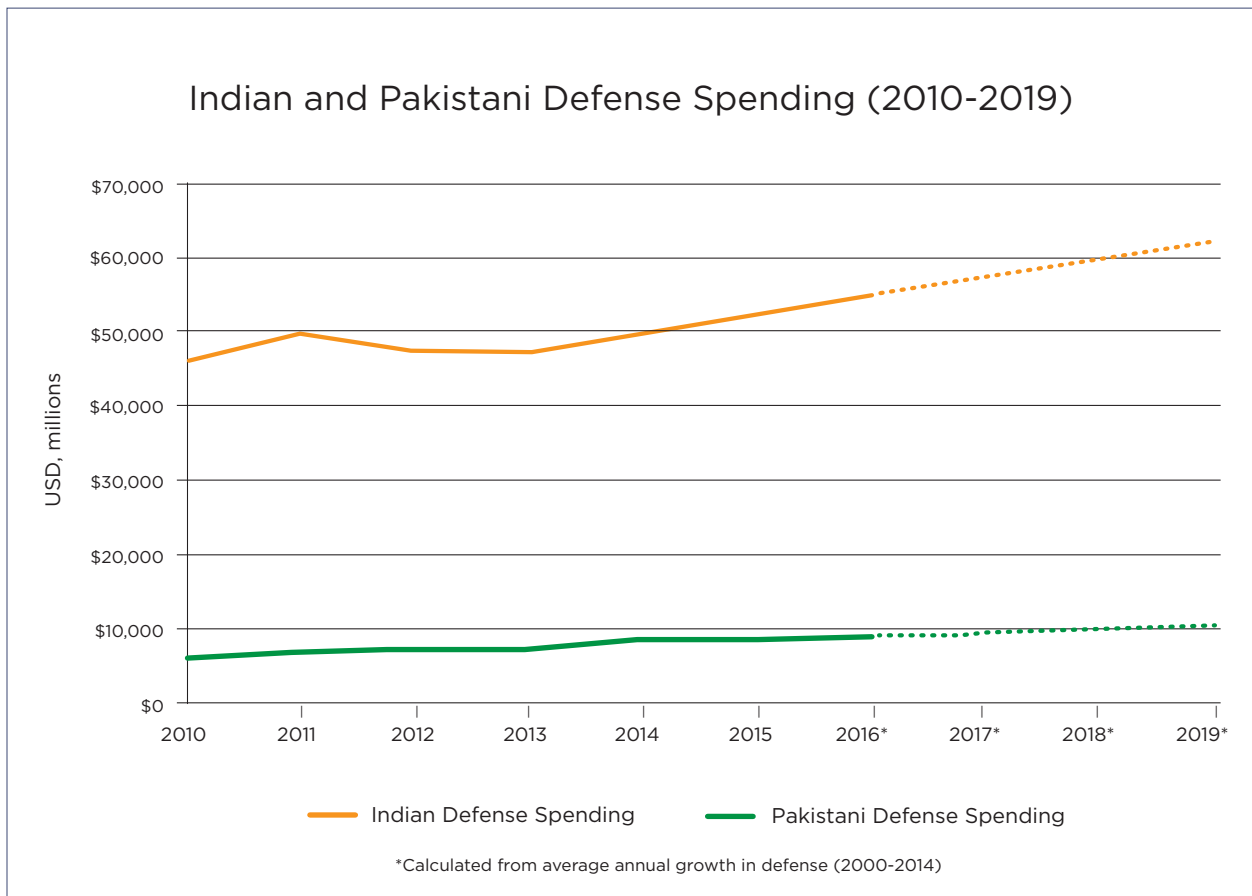


Figure 3: Indian and Pakistani Defense Spending (2010-2019)  
 Source: SIPRI Military Expenditure Database ([http://www.sipri.org/research/armaments/milex/milex\\_database](http://www.sipri.org/research/armaments/milex/milex_database)).

recapitalization of depleted and obsolete hardware, or provide a technological leap forward promising a revolution in military affairs. As noted above, some assessments suggest that Pakistan is not as conventionally weak today as is commonly assumed and that the relative military balance in some areas may actually favor Pakistan.<sup>58</sup> Nonetheless, projecting growing financial disparities a decade or more into the future suggests that conventional military asymmetries will continue to grow in India's favor, while Pakistan's military will see force ratios worsen, particularly in air and naval platforms.

One under-appreciated aspect of the asymmetric competition on the subcontinent is that India's conventional military capabilities are forecast to grow relative to Pakistan's, whereas Pakistan's nuclear capabilities are forecast to grow relative to India's. India has a latent capacity growth in the nuclear arena, but has opted not to sacrifice electricity generation by prioritizing plutonium production in its nuclear enterprise. India's stockpile of weapons-grade plutonium is estimated today at about 600 kilograms.<sup>59</sup> India possesses a far larger stockpile of so-called reactor-grade plutonium, about 3.4 metric tons in total, which because of the isotopic content is much less desirable for use in nuclear weapons. It is also producing highly enriched uranium (HEU), but this is assessed to be for naval propulsion, not nuclear weapons.<sup>60</sup> India continues to operate just one reactor for plutonium production, the Dhruva reactor at the Bhabha Atomic Research Center near Mumbai, which may yield between 12-25 kilograms of additional plutonium per year. India plans to commence construction on a similarly sized production reactor in 2017, most likely to replace the existing one. If so, it appears unlikely that New Delhi will dramatically scale up its plutonium production for nuclear weapons in the immediate future.<sup>61</sup> Assuming 5 kilograms of plutonium in each weapon, at this level of production India could add two to five nuclear weapons per year to its stockpile, a modest rate of growth. This level of capability remains consistent with a political decision to observe continued restraint in the nuclear arsenal based on the belief that these weapons primarily have political instead of military utility.

If India were to change its nuclear posture and decide to compete harder against Pakistan, to pursue multiple independently targetable reentry vehicles (MIRVs), or to adapt its doctrine to include limited nuclear options with counterforce targeting, the number of weapons required and the fissile material dedicated to this purpose would have to increase significantly. In this event, New Delhi would need to turn to new sources of fissile material beyond the Dhruva reactor to grow its arsenal. India retains eight large nuclear power reactors outside of IAEA safeguards, and one or more of them could be used to produce plutonium for weapons.<sup>62</sup> New Delhi also could produce weapons-grade plutonium in its prototype fast breeder reactor, which may commence operations in 2015 and will not be under IAEA safeguards. If India so chose, it could breed up to 140 kilograms of weapons-grade plutonium per year in this reactor, using its stockpile of reactor-grade plutonium as fuel and producing weapons-grade plutonium in the reactor's blanket — assuming that India's fast-breeder reactor, unlike those built by other countries, could operate successfully.<sup>63</sup> Both of these scenarios, however, would require strong political direction by India's civilian leadership to shift infrastructure devoted to electricity to bomb-making, as well as a commitment by the Department of Atomic Energy, which tends to focus more on building reactors as part of India's three-stage fuel cycle plan than on producing plutonium for nuclear weapons.<sup>64</sup>

New Delhi apparently has yet to make a strategic decision to significantly build out its nuclear forces, content for now with a limited nuclear arsenal while it focuses on conventional arms modernization. To be sure, New Delhi is pursuing new, high-profile strategic capabilities, most notably with the flight-testing of the longer range Agni-5 missile and the sea trials of a new ballistic-missile-carrying submarine, the Arihant. India's Defence Research and Development Organization (DRDO) has cham-

pioned the development of technologies for MIRVs and anti-satellite capabilities, conducted limited testing of ballistic missile defense capabilities, and tested a short-range battlefield missile system, the Prahaar, which, according to assertions from Pakistan, gives India a tactical nuclear weapons capability. However, these tests are not necessarily indicative of policy decisions to build and induct these capabilities into India's strategic forces in the immediate future or longer term. The DRDO has established a track record of promising much and delivering far less with long delays, while also making assertions seemingly at odds with India's stated nuclear policies.<sup>65</sup> Consequently, there is reason to be skeptical that all of these technology demonstrations will mature into production-line capabilities, even though the DRDO may be turning the corner on its poor track record.

Indian civilian leaders from varied parts of the political spectrum have heretofore been skeptical of the utility of more robust or advanced nuclear capabilities and changes in India's nuclear posture, despite clamoring from the nuclear enclave and some retired military officers.<sup>66</sup> China's strategic modernization programs and Pakistan's embrace of full spectrum deterrence may, however, prod India toward more robust nuclear capabilities and a more "credible" deterrent posture. As retired Lt. Gen. B. S. Nagal, the former head of India's Strategic Forces Command, has written, "The actual size [of India's nuclear arsenal] has to be dynamic, because, the adversaries' arsenals are increasing by the year... Our arsenal will increase based on availability of fissile material and delivery systems."<sup>67</sup>

Arms competitions gain impetus when asymmetries in capability feed perceptions of insecurity that drive efforts to address existing or prospective shortfalls. One of the most important and dynamic asymmetries in South Asia today is in fissile material production — where India enjoys latent advantages, with its large power and prototype fast-breeder reactors discussed above, but where Pakistan has an advantage in the ongoing production of fissile material dedicated for nuclear warheads. In terms of total stockpiles of plutonium and HEU for nuclear weapons, India has about 600 kilograms of plutonium, while Pakistan has about 170 kilograms of plutonium and 3.1 metric tons of HEU.<sup>68</sup> Assuming that each nuclear weapon would require five kilograms of plutonium or 15 kilograms of HEU, with existing stockpiles of fissile material India could theoretically construct up to 120 weapons, while Pakistan could construct up to 240.<sup>69</sup> Actual current stockpiles of nuclear weapons are probably lower than these maximal figures suggest — somewhere between 50 to 110 for India and 110 to 120 for Pakistan.<sup>70</sup>

These figures tell just part of the story. Pakistan's large stockpile of HEU provides it an absolute advantage in the total number of weapons it could construct today (if it chose to, assuming no other constraints), but it has a smaller stockpile of plutonium than India. Plutonium is in most respects more desirable than HEU as a material for nuclear weapons, given that less of it is required for an equivalently powerful fission bomb, which makes plutonium warheads lighter and more suitable for delivery by ballistic missile. Pakistan's investment in HEU production in the 1970s resulted from available technology and bureaucratic choices, not an optimized strategy for a nuclear weapon stockpile. Thus, Pakistan is trying to "catch up" to India in plutonium, even though every year it outproduces Indian plutonium dedicated for nuclear warheads, and even though it is far ahead in HEU. In the last decade, Pakistan has constructed four production reactors at Khushab, the last of which appears to have become operational in late 2014 or early 2015.<sup>71</sup> In total, these reactors can produce 25 to 50 kilograms of plutonium per year dedicated for weapon purposes, which is four times as much as India is currently producing.<sup>72</sup> When added to Pakistan's continuing HEU production, this total level of fissile material production gives Pakistan the ability to construct between 14 and 27 nuclear weapons per year, whereas India can build between two and five nuclear weapons per year from current production. Thus, today,

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Pakistan continues to assert that India maintains a much larger stockpile of fissile material, which is the basis for its significant increase in plutonium production. Its estimates appear to include both India's reactor-grade plutonium and HEU for naval propulsion, although most independent assessments of India's nuclear program discount the potential for these materials to be used in nuclear weapons. Pakistan is also aware that India has the latent capability to make large amounts of plutonium for nuclear weapons if it chooses. Whether Pakistan's assertions about India's stockpile are post-hoc justification or a worst-case assessment is unknowable, but it is clear that real or perceived asymmetries could sustain a lengthy, open-ended nuclear competition.

Pakistan has exceeded India's dedicated nuclear-weapon-related production capabilities, consistent with reliance on full spectrum nuclear deterrence to offset perceived conventional military disadvantages. It has also surpassed India's near-term potential to redirect fissile material production capacity to military uses. Rawalpindi seems to have adopted a nuclear posture more attuned to leveraging a favorable nuclear order of battle during crises with intimations of war-fighting capabilities in the event that deterrence fails. Vipin Narang has described this as an "asymmetric escalation" posture.<sup>73</sup>

Pakistan's success in this regard is due not only to its own exertions, but also to New Delhi's reluctance and ambivalence to invest greater urgency and more resources in this competition. Indian leaders continue to view nuclear weapons largely in political terms and remain profoundly ambivalent about the wisdom of building upon the minimum, credible nuclear capabilities they possess. While New Delhi continues on a slow pace to increase the size of its nuclear weapon stockpile, it pursues high-profile strategic modernization programs geared more toward China than Pakistan. The INS Arihant will be the first of five planned domestically built nuclear-powered, ballistic missile-carrying submarines. It was launched in 2009 and is still undergoing sea trials. India is also developing a series of missiles to be launched from these submarines, beginning with the Sagarika, a 700-kilometer-range missile that the DRDO tested 12 times between 2007 and 2013.<sup>74</sup> Even though the Indian government has yet to make a decision (at least publicly) on deploying MIRVs, procuring longer-range missiles, and deploying limited ballistic missile defense capabilities, it is clear that New Delhi is committed to fielding a nuclear triad and will begin operational deployments of the Arihant in the near future. Whether this hastens a move toward a larger nuclear arsenal or shifts in India's nuclear posture as its military becomes more involved in nuclear operations remains to be seen.<sup>75</sup>

In Aesopian terms, as long as Pakistan remains the hare and India the turtle, Pakistani security managers believe they can continue to compete successfully against India. But if India were to choose to MIRV some of its missiles so as not to fall further behind China as well as Pakistan, or to compete against both by redirecting fissile material toward stockpile growth, or if India deploys limited ballistic missile defenses, then Pakistan would be faced with having to compete even harder to sustain (or not lose) the advantages it has accrued through what appears to be an asymmetric escalation strategy.

Pakistan’s nuclear force planning appears to be based on several assumptions. One is that by competing effectively in this domain, New Delhi has been deterred from retaliating on Pakistan’s soil during the 1999 Kargil conflict, the 2001-2002 Twin Peaks crisis, and the 2008 Mumbai crisis. Another assumption appears to be that Pakistan’s adoption of short-range nuclear weapons and shift to full spectrum deterrence after 2008 has further diminished space for the Indian military to consider kinetic options below the nuclear threshold, such as those its Army contemplated with the putative “Cold Start” limited war doctrine. Pakistan’s military and intelligence services, unable or unwilling to demobilize the extremist groups that target India, might also view the growth of nuclear capabilities as an insurance policy if these groups were to carry out further large-scale attacks on Indian soil. In that event, future progress in bilateral relations with India would continue to be held hostage to extremist groups, and progress in increasing bilateral trade, resolving the Kashmir dispute, or undertaking serious confidence-building or arms-restraint measures that would temper the dangers of nuclear escalation would remain subject to disruption.

Despite repeated statements by Pakistan’s civilian and military leaders that they will not engage in an arms race with India and that they are within reach of national requirements for credible, minimal deterrence, there is considerable evidence to suggest that Pakistan has adopted a very different, highly competitive posture.<sup>76</sup> As the fissile material production figures above indicate, in the next five to 10 years Pakistan could have a nuclear arsenal not only twice the size of India’s but also larger than those of the United Kingdom, China, and France, giving it the third-largest arsenal behind the United States and Russia. Many observers have concluded that Pakistan’s rate of fissile material production (and assumed construction of nuclear weapons) gives it the fastest-growing nuclear weapons stockpile.<sup>77</sup>

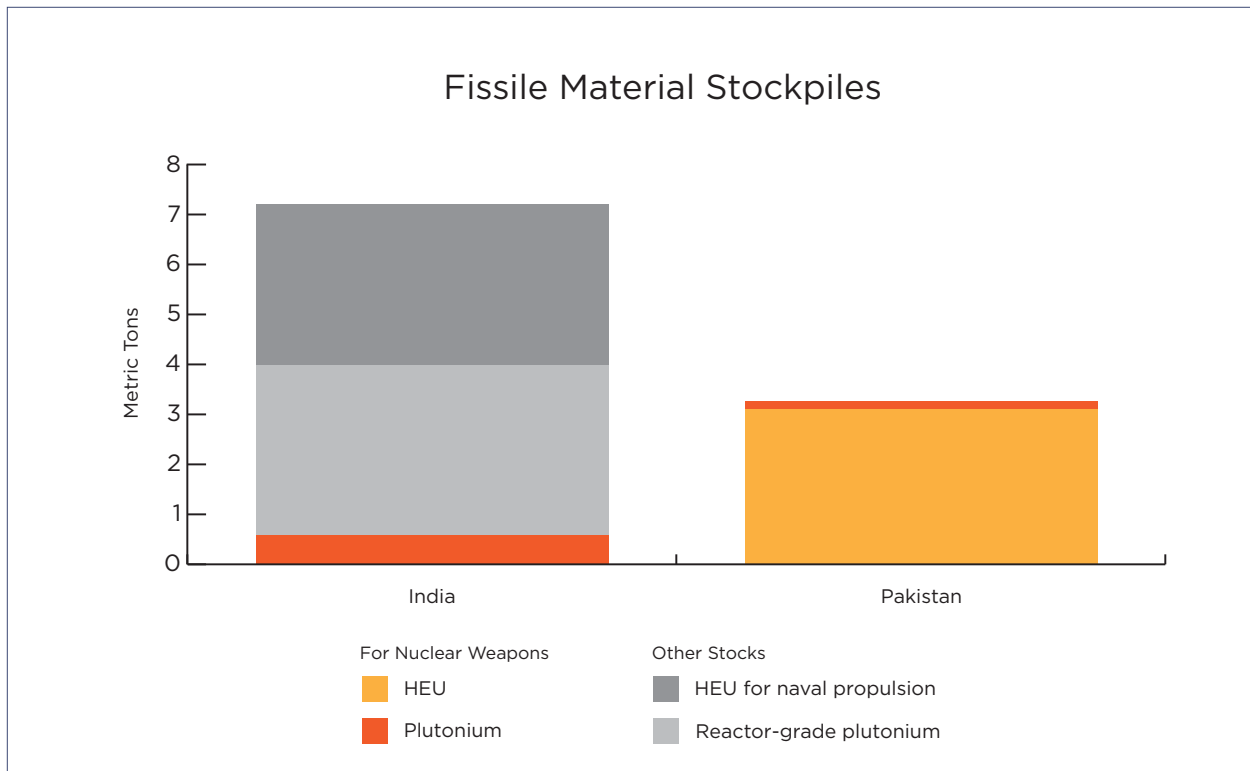


Figure 4: Fissile Material Stockpiles  
Source: International Panel on Fissile Materials



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Pakistan's actions to date reflect a commitment to outcompete an India that is ambivalent about nuclear weapons capabilities, and to compete with an India that decides to pick up the pace of its fissile material capacity dedicated to bomb-making. The requirements for Pakistan's nuclear deterrence are relative, rather than fixed — as is the case for India. In his speech before the 2015 Carnegie International Nuclear Conference, Gen. Kidwai affirmed that “a certain degree of dynamism” already exists in Pakistan's program in response to India's nuclear programs and potential:

If ... the other side is driving a certain — I won't call it a race, a competition or something which is being developed as a destabilizing element — then Pakistan has to come up with its minimum safeguards. And those minimum safeguards, in our situation today where there is a drive for second strike capability on the other side, Pakistan cannot be oblivious to it.<sup>78</sup>

Pakistan has thus far exceeded India's warhead production totals and has developed a panoply of nuclear-weapon delivery vehicles. These include the short-range Nasr missile and perhaps other tactical nuclear weapons such as nuclear artillery and atomic demolition munitions. At the other end of the spectrum, Pakistan has flight-tested the long-

range Shaheen III ballistic missile, which can target the entirety of Indian territory. It has also inducted the ground- or sea-launched Babur and air-launched Ra'ad cruise missiles into its arsenal. To have maximal deterrent effect, the Nasr and possibly other short-range nuclear systems would be garrisoned or deployed in proximity to potential battlefields to deter and, if necessary, blunt a potential Indian armored thrust into Pakistani territory. A nuclear-armed Babur could be deployed on submarines or surface ships, to counter growing Indian naval capabilities.<sup>79</sup> Presumably Pakistan is developing low-yield nuclear warheads for some of these systems.<sup>80</sup> After testing nuclear devices in 1998, Pakistan reportedly has maintained a “recessed” nuclear deterrence posture, with warheads and delivery vehicles stored separately. Some elements of full spectrum deterrence, to include forward-stationed short-range missiles and nuclear weapons deployed at sea, would likely entail the mating of warheads with launchers and maintaining a higher level of alert. (The same would apply to India's sea-based deterrent.) In a decade, Pakistan might field a dozen nuclear-weapon-capable delivery systems to cover the full spectrum of assessed deterrence requirements against India.

The growth path of Pakistan's nuclear arsenal, enabled by existing infrastructure, goes well beyond the assurances of credible minimal deterrence provided by Pakistani officials and analysts after testing nuclear devices.<sup>81</sup> If Pakistan continues on its current path, and if there is no reassessment of its presumed need to compete effectively with India, in 10 years' time Pakistan could possess a nuclear arsenal nearing 350 weapons (or at least a stockpile of fissile material sufficient for an arsenal of this size). If Pakistan has defined production requirements for approximately 20 nuclear warheads annually against an India that competes haphazardly, it is unlikely to diminish annual production requirements for an India that



competes seriously. Consequently, if New Delhi picks up the pace of this competition and Rawalpindi responds accordingly, Pakistan's future nuclear stockpile could grow well beyond 350 nuclear warheads. If deterrence fails, it appears that Pakistan has no intention of "losing" a nuclear war with India.

By staying its present course, Pakistan faces very long odds against entering the nuclear mainstream. NSG members — especially its non-nuclear-weapon state members — are likely to view Pakistan's rapid growth in fissile material stocks and warheads as contrary to the norms of responsible nuclear stewardship. Pakistan's case will not likely be advanced by its refusal to sign the CTBT until India does or to lift its solitary veto on beginning FMCT negotiations. Even if Pakistan were to lift its veto for cosmetic reasons, it would presumably slow-roll the FMCT negotiations by, among other actions, continuing to insist that an eventual treaty cover existing stocks of fissile materials — a position rejected by other states possessing nuclear weapons.<sup>82</sup>

A nuclear future in which Pakistan seeks to exceed or at least match or offset the growth in India's nuclear and conventional military capabilities appears far bleaker for Pakistan than for India. Both countries have immense social needs, but by virtue of its faster-growing economy and expanding international trade, India has far more resources to devote to them. Moreover, nuclear dangers relating to the safety and security of greater amounts of nuclear warheads and fissile material on the subcontinent would be borne disproportionately by Pakistan, given its internal security challenges. Finally, trade-offs between rupees spent for conventional as opposed to nuclear capabilities would either become more acute, or Pakistan's military would require an ever-greater appropriation as a percentage of national budget allocations, to the detriment of Pakistan's social and economic development.<sup>83</sup> And if Pakistan's nuclear competition strategy continued to be accompanied by subconventional warfare options against India, prospects for deterrence stability would remain remote, while the potential for another major crisis would persist. The probability of escalation would grow, however, as a result of the presence of short-range, nuclear-capable systems, and perhaps other tactical nuclear weapons within or just beyond zones of conflict. In short, a straight-line projection of Pakistan's nuclear policies reflecting a commitment to sustained competition with India could well result in the further deterioration of Pakistan's security as well as regional security over the next decade.

### *Acceptance of Success in Achieving Strategic Deterrence Against India*

An alternate nuclear future for Pakistan is one that would reflect an acceptance of nuclear sufficiency, thereby allowing Pakistan to reallocate resources to more pressing nonmilitary and military needs. Although this nuclear future appears unlikely at present, the arguments for considering it bear stating, not least because there is very little discourse in Pakistan along these lines. No political leader in Pakistan can engineer this outcome, and it seems that members of civil society who might advocate it risk losing employment opportunities and being ostracized. A decision to de-link Pakistan's nuclear-weapon-related requirements from India's can come only from the army leadership, with support from corps commanders who value conventional and counterterrorism capabilities more than additional nuclear capabilities, which ultimately have an adverse bearing on the paramount internal security threats facing Pakistan.

The narrative accompanying a decision to declare success in achieving strategic deterrence against India would reflect a confident Pakistan that has overcome great odds. Because of successful strategic deterrence, never again will the existence of Pakistan be threatened, and never again will Pakistan

suffer a humiliating defeat like that in 1971. Pakistan's nuclear deterrent prevents these worst-case outcomes — unless and until deterrence fails, and the nuclear threshold is crossed, in which case Pakistan's nuclear posture would not prevent a far greater disaster than 1971. Having achieved strategic deterrence, Pakistan would retain capabilities achieved at great cost, allowing the prominence given to nuclear weapons in Pakistan's national security calculus to be lessened in ways that would facilitate resource allocation toward more pressing needs.<sup>84</sup> Pakistan's case for mainstreaming into the global nuclear order would be advanced, and Pakistan's affirmations that it has no intention of engaging in an arms competition with India, and that it seeks only minimal deterrence rather than war-winning or war-fighting capabilities, would become credible. With its nuclear deterrence requirements met, Pakistan could focus increasingly on conventional and counterterrorism capabilities to regain sovereign control over disaffected areas of the country and to increase national security. Under a strategic deterrence posture, Pakistan could modernize existing nuclear capabilities without expanding them, as is now the practice in the United States, Russia, Great Britain, and France.

A decision to de-link Pakistan's nuclear-weapon-related requirements from India's can come only from the army leadership.

Accepting this alternate path — the maintenance of assured destruction capabilities under a strategic deterrence posture, while rejecting an open-ended nuclear competition with India — is inconceivable without a high-level reassessment of the reasons for Pakistan's nuclear build up. One assumption behind this build up appears to be that a nuclear-weapon capability equal to or better than India's is required for dissuasion, especially during crises. In this view, Indian restraint during the 1999 Kargil War, as well as during the 2001-2002 Twin Peaks and 2008 Mumbai crises, was due to Pakistan's nuclear capabilities. Extending this logic, Pakistan cannot afford to stand pat and must continue to grow its nuclear arsenal to deal with a rising India. In the seven years between the Twin Peaks and Mumbai crises, Pakistan's nuclear capabilities grew favorably compared with India's, as has been the case in the seven years since the Mumbai crisis. As long as Pakistan competes effectively in this manner, including via the induction of tactical nuclear weapons, Pakistan's security managers believe New Delhi would not risk military operations, however limited.

There are alternative hypotheses for New Delhi's restraint during the Kargil War and subsequent crises.<sup>85</sup> These accounts of Indian decision-making indicate that Pakistan's nuclear posture did play a role in shaping Indian options, but that New Delhi's restraint was undergirded by the value its leadership placed on sustaining economic growth, raising its international profile, and isolating Pakistan.<sup>86</sup> In this latter regard, it is notable that Prime Minister Manmohan Singh was reelected just five months after the 2008 Mumbai attacks, even though he was bitterly criticized for not authorizing punitive strikes against Pakistan.

Also reinforcing New Delhi's restraint during previous crises was a lack of compelling conventional military options. To be sure, concerns over escalation control also constrained Indian leaders, but these concerns would be present regardless of the size of Pakistan's nuclear arsenal. In the future, Indian leaders will have more military options in the event of a crisis triggered by violent extremist groups based in Pakistan

— though these options will be less ambitious than the Indian Army’s proactive military plans to engage in army-centric “limited conflict under the nuclear overhang.”<sup>87</sup> Indian decision-makers have not demonstrated great enthusiasm for these proposals in the past,<sup>88</sup> and have lately hinted at a different strategy of reprisal involving support for proxies disaffected by the Pakistan Army’s counterterrorism campaigns.<sup>89</sup>

Pakistan’s nuclear narrative about the need for full spectrum deterrence and to “close gaps” in war-fighting capabilities might not, therefore, withstand close scrutiny. If New Delhi’s forbearance during Kargil as well as the Twin Peaks and Mumbai crises was motivated in significant measure by economic or diplomatic reasons, rather than because of specific numbers and features of Pakistan’s nuclear arsenal, it follows that the dynamism associated with Pakistan’s nuclear-weapon-related programs would not appreciably change New Delhi’s calculus. Put another way, if New Delhi is persuaded that striking Pakistan is not worth the escalation risks and costs, additions to the quantity and quality of Pakistan’s nuclear arsenal are immaterial. And if India’s leadership decides on a riposte despite Pakistan’s nuclear arsenal, the size and composition of Pakistan’s nuclear stockpile will not be a determining factor. Either way, size does not matter for the weaker, nuclear-armed adversary.

The stronger economy in a nuclear competition can more easily afford unwise budgetary outlays, whereas the weaker party always faces harder choices. Declaring success in assuring strategic deterrence against India would entail the rejection of assumptions that nuclear weapons beyond a certain number and variety have military utility, and that the more weapons one possesses the more secure one’s nation is. To the contrary, larger stocks of fissile material and nuclear warheads could actually detract from a weaker state’s well-being if that state lacked internal cohesion and had anemic economic growth. Because Pakistan’s nuclear posture is focused on worst-case war-fighting assumptions regarding India, these social and economic priorities have been accorded secondary importance.

An alternate nuclear future would be predicated on very different worst-case assumptions, in which internal security and economic growth are given primacy over strengthening nuclear capabilities against India. Pakistan has already begun to internalize a reprioritization of threats, begun under the former Army chief, Gen. Ashfaq Kayani, and accelerated by his successor, Gen. Raheel Sharif. The military campaign in North Waziristan against the TTP, and lower-profile undertakings elsewhere, are significant manifestations of reoriented priorities. Even so, the assumptions behind Pakistan’s nuclear posture appear not to have been reexamined. With contesting nuclear arsenals in excess of 100 warheads, a nuclear war between Pakistan and India would have devastating effects regionally and globally. To escape horrific damage expectancies, both sides need to be willing and able to control escalation. Alternatively, one side might seek a nuclear-war-winning posture based on successful preemptive strikes and damage limitation. These ambitions would presume extraordinary intelligence, surveillance, and targeting capabilities — as well as extreme adversarial malfeasance, marked by the willingness to place retaliatory capabilities at risk. Even with Chinese assistance, which seems improbable, a strategy of preemption would risk national suicide as long as New Delhi retains secure retaliatory nuclear capabilities.

An alternate nuclear future for Pakistan rests on the recognition that additional nuclear firepower does not provide military or diplomatic utility against a stronger adversary. This alternate nuclear future is inconceivable if military leaders in Rawalpindi continue to believe that growing nuclear capabilities deter New Delhi; if they seek to achieve escalation dominance; or, if conflict breaks out, they seek to “win” or at least “not lose” a nuclear war with India. If Pakistan’s military leaders do not harbor these ambitions, success can be acknowledged because Pakistan has already achieved the capability and operational requirements to maintain strategic deterrence.

If Pakistan were content with “strategic” rather than “full spectrum” deterrence, it could choose an off-ramp from nuclear competition that would have significant positive budgetary implications. The cost of Pakistan’s nuclear enterprise has not been revealed. (Nor, for that matter, has a rigorous assessment of the nuclear program been revealed, if one exists, in India or in any other state possessing nuclear weapons except for the United States.<sup>90</sup>) Despite a lack of credible data on nuclear-related expenditures, it is clear that Pakistan has invested major resources in building a large-scale nuclear complex consisting of uranium mining, milling, and conversion facilities; reactors and reprocessing facilities to produce plutonium; facilities to enrich uranium; criticality-safe facilities for the machining of uranium and plutonium into weapons pits; and weapons assembly and storage facilities. Moreover, the presumed dictates of full spectrum deterrence have resulted in the development and production of ten types of ballistic and cruise missiles, and the stand-up of three strategic forces commands to operationalize deterrence. Maintaining this enterprise, providing for safety and security, dealing with environmental consequences, and ultimately dismantling and decommissioning obsolete facilities and systems will add greatly to estimated costs. Much of this infrastructure constitutes sunk cost, but each additional gram of plutonium or enriched uranium created, each warhead and missile produced, and each expansion of capability creates additional downstream life-cycle costs and financial burdens for a country whose economic growth prospects remain questionable absent fundamental reforms.<sup>91</sup>

By staying the present course, Pakistan’s civilian and military leaders will face very hard budgetary decisions going forward. Pakistan’s nuclear arsenal requires large mortgage payments within a baseline security budget (\$7 billion) that officially consumes 2.8 percent of Pakistan’s GDP, but, as discussed above, is assuredly much higher. According to published government documents, expenditures for atomic energy programs this past year — which may include some, but probably not all, of the activities related to Pakistan’s nuclear weapons program — were roughly \$650 million.<sup>92</sup> With a growing population, major social and education requirements, severe energy shortfalls and rising needs, as well as requirements to bolster law enforcement and a judiciary that can stabilize Pakistan’s internal security, Islamabad can ill-afford nuclear mortgage payments that will balloon in the decades ahead. These expenses will crowd out more pressing requirements to improve conventional armaments that military commanders are far more likely to use, whether in North Waziristan or elsewhere.

De-linking would not only reduce Pakistan’s nuclear mortgage payments in future years, but also would facilitate the reorientation of some elements of Pakistan’s nuclear complex into ventures that could generate revenue and provide much-needed social goods. For example, Pakistan is estimated to have a stockpile of HEU estimated at 3.1 metric tons (MT), sufficient for at least 125 nuclear weapons.<sup>93</sup> Given the scale of its plutonium production, Pakistan could cease producing HEU for weapons without degrading its ability to maintain strategic deterrence. One idea previously proposed by Pakistan is to convert uranium enrichment facilities for civilian use, open them to IAEA safeguards, and thereafter produce low-enriched uranium (LEU) fuel for commercial nuclear power reactors, whether Pakistan’s own or those of others, such as China.<sup>94</sup> Similarly, Pakistan could consider converting plutonium production reactors at Khushab for other purposes, to include research and development, medical isotope production, or potentially even power generation (although the technical hurdles involved may render conversion not economically sensible). Pakistan could also make a virtue of the security of the Khushab site to build interim spent fuel storage and low-level nuclear waste facilities for its civilian nuclear activities. These illustrative possibilities and others could open up with a decision to de-link.

In this alternate future, where Pakistan publicly embraces its success in acquiring a secure, survivable strategic deterrent, de-linked from the strictures of competition with India, Islamabad could position itself for mainstreaming into the global nuclear order, seizing the diplomatic initiative, and complicating India's diplomacy by affirming norm-based criteria for NSG membership. In so doing, Pakistan would replace nuclear arsenal dynamism with dynamic nuclear diplomacy, removing the shackles of offering stale, blame-shifting initiatives that have not served Pakistan's immediate or long-term interests well. Pakistan's present diplomatic posture has reinforced its distance from entering the nuclear mainstream. In this alternate future based on a decision to de-link, Islamabad would open a path toward becoming a normal, nuclear state, while challenging New Delhi to follow suit.

## Entering the Nuclear Mainstream

Pakistan's outlier status in the global nuclear order begins with simple chronology. The terms of the NPT were finalized in 1968; the treaty entered into force in 1970. The very next year, after a war that broke the country in half, Pakistan's leaders made the unalterable decision to acquire nuclear weapons, recognizing that conventional means of deterring India would no longer suffice. Therefore, Pakistan has had no place in the NPT, which recognized as nuclear-weapon states (NWS) only the five states (the United States, the Soviet Union/Russia, the United Kingdom, France, and China) that had tested nuclear devices before the treaty was negotiated. Latecomers have the choice of joining as non-nuclear-weapon states (NNWS) or remaining as outliers.

Pakistan was still welcomed into ancillary bodies associated with the NPT regime by virtue of its membership in the United Nations. It joined the IAEA when it was established in 1957. And it became a member of what is now known as the Conference on Disarmament (CD) when this group was expanded in 1969. Pakistan remains an active participant in the UN General Assembly First Committee on Disarmament and International Security, where it sponsors annual resolutions on negative security assurances, conventional arms control, regional confidence-building measures, and regional disarmament. Participation in these UN bodies has not, however, been sufficient to bring Pakistan into the nonproliferation mainstream. In particular, by not joining the NPT, Pakistan was frozen out of the treaty's regular review process, as well as the associated Zangger committee for nuclear exporters. Pakistan's outsider status extends to participation in other multilateral trade control regimes not linked with the NPT, of which Pakistan has long been a target rather than a participant.

The ultimate and clearest mechanism for nuclear normalcy would be to amend the NPT to permit entry by Pakistan, as well as India and Israel, as recognized NWS. But the treaty's amendment process requires that any alterations in the text be approved by a majority of NPT parties, all five recognized NWS, and all 35 of the then-members of the IAEA Board of Governors. Amended rules would then enter into force after being ratified by a majority of states, again including the five NWS and all of the IAEA Board members. It is reasonable to expect that most if not all of the NNWS would reject changes they would perceive as weakening the treaty by opening the doors to latecomers whose behavior does not help facilitate global disarmament or strengthen nonproliferation norms. Moreover, to open the doors for some might encourage nuclear proliferation by others seeking similar status. The idea of amending the NPT is periodically raised in expert circles, but always dismissed as unworkable and ill-advised. The chances of passing an amendment to modify the terms that permit certain states to retain nuclear weapons under the treaty are effectively nil.



Absent belated recognition under the NPT as a nuclear-weapon state, Pakistan has two potential paths to join the global nuclear mainstream. The first is by means of commerce in civil nuclear energy technology and equipment. The second is by taking initiatives to reinforce key global nonproliferation norms. These paths are in some ways linked because the first is inconceivable without the second. But even if the second pathway is chosen, it might not open the first, for reasons that are explained as follows.

### *Civil Nuclear Commerce*

With accession to the NPT blocked, membership in the NSG has become the primary pathway sought by Pakistan to be accorded nuclear normalcy. Entry into the NSG does not require that states be NPT signatories, although this is one of the major “factors” that NSG participating governments consider when assessing candidates for entry. For example, both France, which possesses nuclear weapons, and Argentina, which does not, joined the NSG prior to joining the NPT. Thus, for India, Pakistan, and Israel, for whom NPT membership is foreclosed by the amendment process described above, the next most important means of achieving nuclear normalcy is entry into the NSG.

India has successfully blazed the commercial trail toward nuclear normalcy. India, like Pakistan, never joined the NPT and thus was frozen outside of the nuclear mainstream from the 1970s on, even though it was active in NPT and even CTBT negotiations. The promise of a large market for nuclear-reactor technology sales was among the primary motivations for nuclear suppliers to agree to open the door to the possibility of India becoming a nearly normal nuclear state. In 2005, the United States and India issued a joint statement proclaiming that India was “ready to assume the same responsibilities and practices and acquire the same benefits and advantages as other leading countries with advanced nuclear technology, such as the United States.”<sup>95</sup> In return for US support to change domestic and international laws and policies that prohibited nuclear trade with India, New Delhi agreed to undertake steps to bring its nuclear practices closer to conformity with those of other nuclear-weapon states. Following substantial US diplomatic effort, the 48 participating states in the NSG agreed to make an exception to its rules in September 2008 to allow civil nuclear trade with India.

While permitting civil-nuclear commerce with India, the NSG exemption did not actually open a pathway to Indian membership in the group, leaving New Delhi’s effort to join the mainstream in the nuclear order incomplete. In 2010, the Obama administration announced that it would support India membership in the NSG and the three other technology-control regimes — the Wassenaar Arrangement, the Australia Group, and the Missile Technology Control Regime. The communiqué from the January 2015 US-India summit asserted that India was “ready” to join the NSG and “meets the requirements” to join the others.<sup>96</sup> Other participating governments in the NSG, which must reach consensus to invite new members, have yet to agree that India should join solely on the basis of its actions taken to secure civil-nuclear transactions.<sup>97</sup> While India and the United States support an India-specific decision on membership, some governments appear to favor a criteria-based approach to membership, including criteria that New Delhi resists, such as signing the CTBT.<sup>98</sup>

The NSG, for all intents and purposes, defines the terms of global nuclear trade, giving its member states considerable sway over which nuclear commodities may and may not be transferred, and to whom. Given that almost all holders of both nuclear reactor and fuel cycle technology — with the exception of Iran, India, Pakistan, Israel, and North Korea — are NSG participants, it is understandable that many in the past have viewed the group as a cartel of “nuclear haves” that discriminates against the “nuclear have-nots.” It remains a rather small body, just 48 governments who participate by invitation

only, so membership denotes exclusive status in the nuclear order and provides an opportunity to partake in one of the most important deliberative bodies in nuclear governance. By virtue of the group's consensus operating principle, if India precedes Pakistan into the NSG, New Delhi effectively would be able to block Islamabad's subsequent admission. Thus, Pakistan's hope for admission rests on finding a strategy that could facilitate simultaneous entry with India.

The NSG pathway to nuclear normalcy will remain exceedingly difficult for Pakistan — unless, as suggested below, national security managers are willing to take new initiatives that alter perceptions of Pakistan's place in the nuclear order. Pakistan lacks the financial incentives and major-power backing that India enjoys. Whereas India is seen as an important market for nuclear energy, Pakistan lacks market incentives for foreign companies wishing to sell nuclear power plants. Pakistan is unlikely to be able to pay the major capital costs of nuclear power plants except on the concessionary terms that have been offered thus far only by China.<sup>99</sup> Despite Pakistan's strong nuclear safety record, few states would be willing to accept the liability of building nuclear power plants in Pakistan that would be at heightened risk of accident from natural or man-made disaster. Thus, no state can plausibly argue for Pakistan's admission to the NSG on commercial grounds, and no state can promote Pakistan's admission on prospective profit-taking. India was able to negotiate exceptions to the rules of nuclear commerce because major powers with lagging nuclear-power industries saw export opportunities, and because of the hope harbored by some of India's geostrategic realignment to counter the rise of China. The commercial and geostrategic factors that trumped nonproliferation norms in favor of India are missing for Pakistan, which does not have commercial allure and is becoming a stronger strategic ally of China.

Moreover, the bar is higher for Pakistan's membership into the NSG because of its past record of leakage of nuclear technology to the weapons-of-mass-destruction programs of Iran, Libya, and North Korea. As has been well documented, A. Q. Khan, who was instrumental in setting up Pakistan's uranium enrichment program in the 1970s, began to shop that technology to potential overseas clients beginning in the 1980s.<sup>100</sup> Following his dismissal from official duties in 2004, he confessed that he had provided uranium enrichment technology and equipment to Iran, Libya, and North Korea. Khan also transferred some of Pakistan's nuclear weapon -design documents to Libya, and perhaps others. The question of complicity by the Pakistani state and senior officials in Khan's activities has never been settled conclusively. Pakistani government officials, up to and including then-President Pervez Musharraf, have stated that Khan acted independently and without the blessing or assistance of the Pakistani state. This narrative may be more explicable in the case of Khan's transfers to and procurements for Libya, and perhaps even Iran, but less so in the case of North Korea, which involved transactions of enrichment for missile technology.<sup>101</sup>

The NSG pathway to nuclear normalcy will remain exceedingly difficult for Pakistan — unless ...national security managers are willing to take new initiatives that alter perceptions of Pakistan's place in the nuclear order.



Subsequent to his confession, President Musharraf pardoned A. Q. Khan, but also signed orders that he be kept under de facto house arrest and not made available for interviews by IAEA personnel investigating Iran's and Libya's undeclared enrichment programs. Pakistani authorities clearly learned from the Khan affair and, beginning with passage of an exemplary weapons-of-mass-destruction control law in 2004, have put in place export control and nuclear security systems that could prevent future technology leakage. These measures extend to the setting up of an interagency-staffed export control division within the Ministry of Foreign Affairs, a personnel reliability program for scientists and technicians involved in the nuclear program, and a range of technical access and control measures at nuclear facilities. These efforts have been lauded by the IAEA and many governments; they also form a central element of Pakistan's case that it deserves membership in multilateral trade control regimes. Unfortunately for Pakistan, the severity of the consequences of Khan's proliferation activities means they are not so quickly forgotten, particularly because Khan was never made available to assist IAEA investigations in his client states. This means Pakistan continues to face a higher bar than India in convincing states to look past these transgressions and grant Pakistan membership to regimes that Khan brazenly undermined.

Pakistan therefore cannot expect to have sufficient leverage in the United States or in major world capitals other than Beijing to generate support for NSG membership on the basis of prospective commercial gains, its current export control credentials, or grounds of "fairness." To sum up, despite its major energy needs, Pakistan offers insufficient commercial promise to leverage a deal similar to that obtained by India. NSG members are also unlikely to be sympathetic to Pakistan's calls for fair treatment equal to that accorded India — notwithstanding the many laudable compensatory steps Pakistan has taken in recent years — given Pakistan's proliferation record and the perception that it is more to blame than India for rising nuclear dangers in South Asia. Initiatives by Pakistan to increase the attractiveness of commercial transactions and foreign investment will take time. Even if or when these steps are taken, investments in the civil-nuclear power sector are likely to lag far behind investments in other business sectors. Lastly, the Indian-American lobby, working closely with US companies expecting to reap dividends from investments in India ranging from insurance to military hardware, played an important role in convincing members of Congress to support the Indo-US nuclear deal. The clout of the Pakistani diaspora in the United States is considerably less than its Indian counterpart. For all of these reasons, Pakistan's pursuit of the civil-nuclear commerce path to nuclear normalcy is unlikely to achieve results.

### *Nuclear-Weapon-Related Initiatives*

A second pathway to join the nuclear mainstream arises from an initiatives-based strategy that reinforces norms of responsible ownership and stewardship of nuclear weapons. This pathway is likely to find greater resonance among nuclear regime stakeholders, but it will be very difficult for Rawalpindi to accept, even though it offers considerable promise for national and economic security, as well as far greater potential for Pakistan to shed its outlier status. In contrast to Pakistan's absence of commercial leverage, its weapon-related programs provide ample leverage to join the mainstream — but not in the way that Pakistan's national security managers typically project.

Pakistan's nuclear arsenal has prevented worst cases of conflict and escalation from occurring, but not lesser cases that have injured Pakistan's national security and international standing. By accepting the requirements of strategic deterrence, Pakistan would reaffirm a nuclear posture of minimal, credible

deterrence. As we have argued, the political and military utility of the Bomb is limited to two extreme cases — deterring a major conventional war and deterring nuclear exchanges. For lesser cases, such as deterring proxy war, subconventional war, and leveraging favorable outcomes in crises, nuclear weapons have little utility because they are too powerful to use. Thus, for a weak state possessing nuclear weapons, like Pakistan, a posture of “strategic” deterrence makes sense, while sustaining “full spectrum” deterrence invites further negative — and perhaps catastrophic — consequences.

How might Pakistan convey in persuasive, concrete terms that it understands the logic of strategic deterrence and rejects the logic and requirements of an open-ended nuclear competition with a far stronger state? How might Pakistan demonstrate that it has de-linked its nuclear program from India’s military modernization programs? Given Pakistan’s declaratory posture that it does not intend to engage in an arms race with India, what steps would confirm this intention in ways that would open a path to becoming a normal nuclear state?

The following five initiatives would convey unambiguously an alternate nuclear strategy quite different from the one that Pakistan is currently pursuing. They would clarify that Pakistan is a responsible state possessing advanced nuclear capabilities and that it acknowledges the folly of engaging in an arms race with India. They would also underscore that in relying on “strategic” deterrence instead of “full spectrum” capabilities, Pakistan is not lowering the threshold to nuclear use, even though it would retain the option to use nuclear weapons first. The initiatives below would express Pakistan’s commitment to strengthen nuclear norms and practices, and they would position Pakistan for entry into the nuclear mainstream. These initiatives would also reframe the terms of debate about Pakistan’s status in the global nuclear order. A normalization strategy based on nuclear-weapon-related initiatives would advance Pakistan’s quest for entry into bodies such as the NSG. The five initiatives proposed below would have a related benefit in setting standards that India would be obliged to meet for its own NSG candidacy. This course of action would be consistent with Pakistan’s stance that candidacy for new NSG membership ought to be criteria-based. These initiatives are listed below in a logical progression, not by ease of implementation. Indeed, none of these initiatives would be easy for Pakistan to accept.

*Shift declaratory policy from “full spectrum” to “strategic” deterrence.* A major international concern about Pakistan’s nuclear competition with India derives from Pakistan’s use of nuclear weapons to deter less-than-existential threats, which lowers the nuclear threshold and invites high risks of escalation from confrontations or crises that are sparked at the subconventional level. Moving away from “full spectrum” to “strategic” deterrence would not alter Pakistan’s first use doctrine, which reflects the growing or perceived disparity in conventional capabilities on the subcontinent. By adopting the formulation of “strategic” deterrence, reverting to the formulation of “credible, minimum deterrence” and by dropping the “full spectrum” terminology, Pakistan could signal that it had de-linked nuclear requirements from India’s military modernization programs and would no longer continue to compete with or outcompete India. It would also make clear Pakistan’s rejection of nuclear-war-fighting plans and capabilities in favor of maintaining capabilities reflective of “strategic” deterrence.

“Full spectrum” deterrence could have catalytic consequences because it sets requirements for short-range nuclear delivery vehicles and perhaps other tactical nuclear weapons which are, by disposition, the least safe and secure of any warheads in Pakistan’s possession during periods of intense crisis and limited warfare.<sup>102</sup> To be sure, even if Pakistan ceased to rely on short-range and tactical nuclear weapons to “shore up” and “fill gaps” in deterrence, catalytic dangers would remain if groups based in Paki-

stan that target India are left unfettered by Pakistan's military and intelligence services. These dangers are greatly compounded, however, when Pakistan maintains ties with violent extremist groups focused against India *and* relies on short-range and tactical nuclear weapons. By dropping the phraseology of "full spectrum" deterrence along with associated nuclear requirements, Pakistan's nuclear posture would be more in keeping with a state that faces severe economic and domestic challenges and which seeks to avoid catalytic risks of nuclear war.

*Commit to a recessed deterrence posture and limit production of short-range delivery vehicles and tactical nuclear weapons.* As noted above, "full spectrum" deterrence has been linked with the induction of short-range or tactical nuclear weapons, which are unavoidably the least safe and secure weapons in Pakistan's nuclear arsenal. (If and when Pakistan deploys nuclear weapons on surface ships, this problem becomes invariably more complicated. The same holds true for India.) Adoption of a posture of "strategic" deterrence would diminish the requirement for these capabilities. Consequently, Pakistan could adopt a recessed deterrence posture for short-range nuclear-weapon delivery systems or tactical nuclear weapons, limit their production, and refrain from deploying them in close proximity to the forward edge of prospective battlefields. Pakistan could seek reciprocal nondeployment restraints from India, which has not announced plans to induct short-range nuclear systems with ranges comparable to the Nasr. For instance, Pakistan could announce that it would not store Nasr missiles within 100 km of the border during peacetime, but would only agree to nondeployment within that zone on the condition that India reciprocates.

This initiative does not constitute unilateral nuclear disarmament in short-range systems. Pakistan already possesses some short-range, nuclear-capable delivery vehicles; by limiting further production of short-range systems, by accepting a recessed deterrence posture, and by not deploying them, Pakistan would acknowledge the realities that short-range, nuclear-weapon delivery vehicles and tactical nuclear weapons raise extremely difficult command and control problems, and pose a greater risk of theft or, worse, accidental, inadvertent, or unauthorized use. Pakistan would still retain some deterrence value from the limited possession and flight tests of the Nasr. Pakistan's willingness to develop these capabilities comprises what Thomas C. Schelling has described as "a threat that leaves something to chance."<sup>103</sup> Even so, many Indian strategists dismiss Pakistan's threat to use short-range nuclear-weapon delivery systems against advancing Indian tanks on Pakistani territory as lacking credibility. The US Army realized belatedly that the incorporation of tactical nuclear weapons into any planning and operations for ground combat posed insurmountable challenges.<sup>104</sup> Unless Rawalpindi can figure out solutions that eluded the Pentagon, it, too, will face insurmountable challenges associated with operations involving tactical nuclear weapons.

Nondeployment of short-range nuclear weapons may not affect New Delhi's choice to retaliate for terrorist acts originating in Pakistan for the reasons discussed above. It would, however, affect and diminish concerns raised by the international community about nuclear dangers in South Asia. Parallel steps taken against violent extremist groups in Pakistan that carry out high-profile attacks on Indian soil would further decrease the potential for uncontrolled escalation in a future confrontation with India. As with changes in declaratory policy, this initiative would place Pakistan's nuclear posture in the mainstream of those states in the nuclear order that practice "strategic" deterrence against worst cases. This initiative would also align Pakistan with the United States, which retains tactical nuclear weapons more for symbolic than for war-fighting purposes. An initiative not to deploy short-range, nuclear-capable systems could be accompanied by a call for India to practice similar restraint. This nuclear-risk-reduction measure could be monitored by national technical means as well as by space-based capabilities employed by third parties. Cooperative monitoring arrangements by India and Pakistan could also be investigated.

*Lift Pakistan's veto on FMCT negotiations and reduce or stop fissile material production.* Expert analysis indicates that Pakistan is producing new fissile material dedicated for nuclear weapons at a rate faster than any other state.<sup>105</sup> Pakistani spokespersons have denied this, but have not provided evidence to the contrary. Although India has also been assessed as producing plutonium for nuclear weapons, analysis indicates it is doing so at a significantly lower rate than Pakistan — adding quantities to its stockpile sufficient for perhaps five nuclear weapons per year, compared to 20 or more for Pakistan. None of the countries recognized by the NPT as nuclear-weapon states are believed to be producing fissile material, while Israel's rate of plutonium production is assessed to be minimal. North Korea is also increasing its nuclear material stockpile, but no comparison with North Korea is a good comparison for Pakistan.

Given Pakistan's concerns about India's ability to sprint ahead, an FMCT would appear to be in Pakistan's national security interest.

One way to change the perception that Pakistan has the fastest-growing arsenal would be to announce readiness to cease fissile material production. With a nuclear arsenal already in excess of 100 weapons, de-linked from India, Pakistan's future fissile material requirements to operationalize strategic deterrence need not be great. It could cease or slow its production today with no diminution in credibility of its strategic deterrent now or in the future. One of the primary reasons that Pakistan continues to object to negotiation of an FMCT at the CD is that the treaty desired by other nuclear-weapon states would not address existing stocks, which Pakistan assesses are tilted in India's favor. Although a near-term, verifiable moratorium would disadvantage Pakistan with regard to weapons-grade plutonium, it would also constrain India's "breakout" capability inherent in its unsafeguarded power reactors and the prototype fast-breeder reactor.

If a unilateral moratorium is a bridge too far, Pakistan could champion a halfway measure by declaring its readiness to join the other states with nuclear weapons in a voluntary moratorium, and participate in studies to monitor compliance with this step, consistent with the prior initiative. Conditioning cessation of production on compliance by other states would at least produce diplomatic gain for Pakistan's gesture, while placing the onus on other states that are unready to follow suit. One way to affirm and lend credence to such a decision would be to cease production at two of the Khushab reactors, which could be verified by national technical means employed by third parties. Such a step would, of course, be reversible, but would clearly signify serious intent to support diplomatic efforts toward a production moratorium. Similarly, Pakistan could announce that it would cease production of HEU for a certain period (e.g., five years) and instead produce LEU for nuclear reactor fuel. At the end of that period, Pakistan could assess whether India or others had taken similar steps toward ending fissile material production for nuclear weapons, before making its cessation of HEU production more permanent.

The logical next step would be agreement to commence FMCT negotiations. Pakistan's stance on blocking the start of negotiations on an FMCT appears to be both unnecessary given the requirements of strategic deterrence and unnecessarily harmful to Pakistan's diplomatic standing. Given Pakistan's concerns about India's ability to sprint ahead, an FMCT would appear to be in Pakistan's national security interest — if Pakistani officials are secure in their belief that they can exercise strategic deterrence for the foreseeable future with existing fissile material stocks.

By adopting initiatives relating to fissile material production, Pakistan would clarify that it intends to de-link its nuclear posture from India's military modernization programs. Doing so would dramatically change Pakistan's nuclear narrative, placing it among those seeking to strengthen non-proliferation norms. New Delhi would then have to decide whether to join Pakistan or to thwart an FMCT. If India fails to take reciprocal steps, Pakistan's chances of entering the NSG would be advanced and India's would be retarded.<sup>106</sup>

***Separate civilian and military nuclear facilities.*** One of the major steps India undertook as part of its civil nuclear agreement with the United States was to separate its "civilian" facilities from "military" ones and to place all the former under IAEA safeguards. As described above, India's actual separation was not reassuring, with a number of nominally civilian facilities that produce power and are connected to the electric grid remaining outside of safeguards. The separation challenge for Pakistan is far less complicated, and in most respects has already been done. All of its nuclear research and power reactors imported from China (and Canada in the case of the small power reactor in Karachi) are already under IAEA safeguards.<sup>107</sup> Pakistan could thus make a virtue of existing practice by formally declaring this separation.

This step alone is unlikely to gain Pakistan much currency, given that it imposes no new restraint. But a decision to separate civilian from military facilities could have greater impact if it were accompanied by a declaration of intent to place uranium enrichment facilities under IAEA safeguards, and to reconfigure them to produce LEU for nuclear power reactor fuel for sale on the international market. This dramatic step — as with the US purchase of Russian former-weapon uranium to fuel nuclear power reactors under the "megatons to megawatts" program — would be a powerful symbol of intent to convert an excess of fissile material production capacity into much-needed electricity and foreign exchange. Although a powerful symbol, converting enrichment facilities alone would not necessarily reflect a decision to disengage from a nuclear competition with India. To convey the latter, Pakistan would need to take steps regarding its four plutonium production reactors at Khushab. Whether these reactors might be converted to civilian purposes (e.g., electricity or medical isotope production) and thereafter placed under IAEA safeguards is an issue that merits cost-benefit analysis.

***Sign the Comprehensive Test Ban Treaty without waiting for India.*** One of the most symbolic initiatives Pakistan could undertake is to sign the CTBT and challenge New Delhi to follow suit. In taking this step, Pakistan would be meeting the same standard as the United States and China, which have signed but not ratified the treaty. (Russia, France, and the United Kingdom have all signed and ratified the treaty.) In doing so, Pakistan's leadership would upend long-standing policy to wait for India before taking steps of consequence relating to nuclear testing, a stance it recently reaffirmed in a Joint Statement with the United States, in which it promised it would "not be the first in its region to resume nuclear testing."<sup>108</sup> A Pakistani decision to sign the CTBT might be accompanied by a statement that it would reserve the right to resume testing in the event that India tested again, and that it would not submit its instrument of treaty ratification except in tandem with India.

To be sure, this step would be especially hard for Pakistan to accept. Taking nuclear initiatives only in tandem with India has been a cardinal rule for Pakistani diplomacy, and resentments still linger from the post-1998 test period, when the United Nations (and the United States) placed strong pressure on Pakistan and India to sign the CTBT. Why, then, might Pakistan be inclined to depart from a "waiting for India" approach to signing the CTBT now? One reason is that this dramatic diplomatic initiative would change perceptions of Pakistan and its moribund nuclear diplomacy, and lift Pakistan's standing in the international community. An end to nuclear testing would constrain India's strategic modern-



ization programs more than Pakistan's. Therefore, by signing the CTBT first, Pakistan would place India in a bind. The 17-year moratorium on testing has served Pakistan's national security interests; few would argue otherwise in Pakistan. Its continuation would, as well. This being the case, a bold but conditional diplomatic initiative to strengthen the testing moratorium by signing the CTBT without waiting for India would help Pakistan while forcing difficult choices on New Delhi. It would also assist Pakistan's entry into the NSG while setting criteria that India would be obliged to follow.

## A Hard Sell

Taking all or some of these initiatives would be quite difficult for Pakistan's national security managers, who instead tend to rely on transactional bargaining techniques that condition steps on parallel actions, whether by India or by the United States. Pakistan's strategic culture is inherently reactive rather than proactive.<sup>109</sup> Pakistan has taken some symbolic and modest initiatives in the past — such as the release of Indian fishermen captured in disputed waters — to signal an interest in improved relations. But Pakistan's default approach to diplomacy regarding most national security interests is to wait for India to negotiate reciprocal steps.

Pakistan also engages in transactional bargaining with Washington for military assistance, but never over nuclear weapons, which are a core national security interest. Pakistani politicians and general officers alike have framed possession of the Bomb as a matter of national survival. Transactional bargaining with Pakistan over its nuclear deterrence requirements is therefore a non-starter. Pakistan does not gain anything *in* trade partly because it is not amenable *to* trade, and partly because nothing any state proposes to provide Pakistan is likely to change nuclear requirements set by Rawalpindi. Even if some in Pakistan were tempted to engage in transactional bargaining on its nuclear program, deal-makers would face a devastating critique of selling the nation's crown jewels for the proverbial bowl of porridge — thin gruel that may never be consumed because of the difficulties in securing NSG membership.

Unilateral Pakistani steps can constrain New Delhi's choices more than by engaging in a continued nuclear arms competition.

There is little evidence that those who set Pakistan's nuclear weapon requirements are ready to reassess belief systems that have hardened since the 1998 tests. Indeed, there is much evidence to the contrary — that the stewards of Pakistan's nuclear arsenal feel compelled to compete with (or, if possible, out-compete) India, even as they tell others that they have no intention or cannot afford to do so. Moreover, there are almost no hints of divergent thinking in Pakistani elite discourse, which presents a unified view of requirements for deterrence.<sup>110</sup>

Why, then, might Pakistan's national security managers ever consider an initiatives-based strategy to seek entry into the nuclear mainstream? First, Pakistan risks much by competing with a rival that enjoys a much stronger economy and can step up the competition whenever it chooses. Second, unilateral Pakistani steps can constrain New Delhi's choices more than by engaging in a continued nuclear arms competition. In addition, the more effectively Pakistan competes, the more it may prompt Indian leaders to acceler-

ate the pace and extent of strategic modernization programs — especially since India must also factor in Chinese nuclear capabilities. Moreover, the steps proposed above would reinforce Pakistan’s strongly held view that entry into the nuclear mainstream be criteria-based. By taking these initiatives, Pakistan would enhance its prospects for entry into the NSG while setting criteria for India’s entry. Most of these initiatives would be unilateral. Only ratification but not signature of the CTBT and some steps related to the FMCT would be conditional on parallel Indian action. Public support would be required for all of these steps, and is achievable only with the emphatic public endorsement of Pakistan’s military leaders.

Whether Pakistan adopts any of these initiatives, unilaterally or on more conditional terms, will depend in part on how strongly Pakistan’s national security managers desire to be viewed as a normal state that possesses nuclear weapons. Pakistan’s current nuclear posture — that of a troubled state trying to compete with or outcompete a neighbor whose economy is far larger — is not normal. Nor is it normal to allow violent extremist groups that could spark another nuclear-tinged crisis with India — or worse — to operate unfettered on Pakistani soil. Pakistan’s current military and diplomatic posture on nuclear issues reinforces its separation from, rather than its integration into, the global nuclear order.

It is very difficult for even the most eloquent Pakistani spokespersons to argue that Pakistan’s existing policies strengthen the nuclear order as long as the size of its nuclear arsenal grows appreciably; it refuses to sign the CTBT; it blocks negotiation of an FMCT; it seeks nuclear capabilities more suggestive of war-fighting than of minimal, credible deterrence; and it does not take actions against violent extremist groups that could spark a war with India. The nuclear-weapon-related initiatives suggested above, on the other hand, offer a game-changing pathway for Pakistan to enter the nuclear mainstream. Under the initiatives we propose, Pakistan would retain an effective strategic deterrent against India. Even so, Pakistan’s sovereignty and security will remain at risk unless all violent extremist groups within its borders are tackled.

Pakistani strategic analysts typically redirect such proposals toward India. Why, they ask, does the international community focus on the pace and extent of Pakistan’s strategic modernization programs and stockpile growth instead of India’s, which are also significant? Why further discriminate against Pakistan, which will only exacerbate deterrence instability in the region? And why ask the weaker state to take initiatives that, if unreciprocated, would only diminish Pakistan’s strategic capabilities? These are valid questions. One answer, however unsatisfactory it may be, is that India’s nuclear weapons are widely perceived to be less threatening than Pakistan’s. This perception is fed in part by India’s no-first-use posture and by its absolute civilian control of the nuclear program to the point that there are major questions about whether India can operationalize deterrence effectively.<sup>111</sup> Furthermore, India lacks a history of outward proliferation, has a relatively more secure domestic environment that presents fewer assessed risks of nuclear terrorism, and is not perceived as the aggressor in the 1947, 1965, and 1999 conflicts or as the initiator of the 2001-2002 and 2008 crises. India is also proceeding with stockpile growth at a slower pace than Pakistan. And New Delhi has not declared requirements for full spectrum deterrence, particularly those associated with short-range, nuclear-capable systems or tactical nuclear weapons along a disputed border. Pakistan’s nuclear developments, on the contrary, have lent credence to a widely held perception outside of South Asia that Pakistan, rather than India, is the primary source of the subcontinent’s nuclear competition as well as its associated nuclear risks.

Our suggested nuclear-weapon-related initiatives would not, in our view, diminish Pakistan’s capabilities for “strategic” deterrence against worst cases. Thus, Pakistani initiatives, even if unreciprocated, would not harm Pakistan’s national security while they could improve Pakistan’s diplomatic standing and econ-



omy. They could also enhance prospects for the resumption of dialogue with India, including serious discussions about the Kashmir dispute. These nuclear initiatives could similarly broaden diplomatic space for the deepening of trade relations and the development of cross-border energy projects on the subcontinent. If New Delhi fails to reciprocate, it will diminish its national security and international standing.

Very little or none of this agenda is possible without an important shift in the way that Pakistan's national security managers view nuclear weapons. We readily acknowledge that an initiatives-based strategy toward nuclear mainstreaming is contrary to Pakistan's standard transactional bargaining techniques. Moreover, Pakistan's nuclear requirements do not appear to be subject either to domestic or external bargaining. Thus, an initiatives-based strategy is feasible only if Pakistan's national security managers conclude that their arsenal is sufficient in both quantitative and qualitative dimensions. We believe this to be the case, but this case has not received much of a hearing in Pakistan.

A decision to de-link Pakistan's nuclear program from India's military modernization programs must be perceived as being aligned to Pakistan's national security interests. This recognition awaits far-sighted military leaders willing to break with the past, recognizing that their nuclear arsenal is sufficient in both quantitative and qualitative dimensions — regardless of whatever steps India may take in the future to bolster its nuclear and conventional military capabilities. Pakistan's prospects for gaining entry into the NSG would grow as a result of aligning its policies with other states in the nuclear mainstream. If India does not reciprocate these initiatives, its prospects for gaining entry into the NSG would diminish. And Pakistan's initiatives would serve to strengthen nonproliferation norms in ways that would help stabilize the nuclear order and move Pakistan from nuclear outlier to nuclear normalcy.

## Conclusion

Pakistani strategic analysts want their country to be mainstreamed into the global nuclear order, but do not offer a realistic strategy to accomplish this goal. We offer such a strategy. Our proposed initiatives will be widely viewed as unrealistic within Pakistan, but they offer greater national security, diplomatic standing, and economic growth than Pakistan's present course. The extent to which our proposed initiatives may appear to be unrealistic is, in actuality, the extent to which Pakistan's nuclear posture has traveled away from credible minimum deterrence.

A Pakistan that is confident in its success in achieving strategic deterrence would no longer need to adjust to changes in Indian military capabilities. Instead, Pakistan could focus on improving conventional and counterterrorism capabilities, and dedicate greater effort and resources to Pakistan's domestic and internal security challenges. Conversely, if Pakistan's national security managers lack confidence in nuclear deterrence with an arsenal of more than 100 nuclear weapons, they will lack confidence in deterring India with an arsenal twice or three times this size. A Pakistan intent on competing with India — or outcompeting India, where possible — will never have enough nuclear weapons because India's nuclear and conventional capabilities will continue to grow.

The question facing Pakistan, with its troubled economy and growing social and economic pathologies, is when to disengage from a nuclear competition with India. Pakistan's current course ensures an open-ended nuclear competition with a country whose economy is nine times larger than Pakistan's. The sooner Pakistan's national security managers recognize their accomplishment in achieving strategic deterrence, the sooner they will be able to disengage. Pakistan's nuclear arsenal offers utility only in deterring worst cases, and if deterrence fails, that utility is lost.

Having succeeded in achieving the requirements of “strategic” deterrence, Pakistan is in a position to consider nuclear-weapon-related initiatives that would not impair Pakistan’s ability to deter existential threats. Taking even some of the five initiatives we propose would clarify Pakistan’s commitment to adopt similar practices as other “normal” nuclear states. They would facilitate investments, both military and nonmilitary, that would address Pakistan’s national, social, and economic security interests in more practical ways. They would reduce risks of escalation that could lead to nuclear war. And they could facilitate Pakistan’s entrance into the nuclear mainstream, while strengthening nonproliferation norms, bolstering global disarmament hopes, and setting the bar higher for new entrants into the NSG.

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*The authors express gratitude to the Carnegie Corporation of New York, the John D. and Catherine T. MacArthur Foundation, the Smith Richardson Foundation, the UK Foreign and Commonwealth Office, the US Department of State, the US Naval Postgraduate School, and the National Nuclear Security Administration for their support of programming on nuclear issues in South Asia. The views contained herein are those of the authors and do not necessarily reflect those of sponsors. At the Carnegie Endowment for International Peace, we wish to thank program assistant Elizabeth Whitfield, junior fellow Lauryn Williams, and Jocelyn Soly and Courtney Griffith of the communications team. The cover art is the work of Stimson’s Lita Ledesma. We also wish to thank the Stimson Center’s communications team — Jim Baird and Greg Lachapelle — and copy editor Jenny Moore, research associates Shane Mason and Julia Thompson, and interns Sachchal Ahmad and Melanie Campbell.*

## Notes

1. US Department of State, “Joint Statement between Pakistan and United States on Security, Strategic Stability, and Nonproliferation Issues,” June 3, 2015, <http://www.state.gov/r/pa/prs/ps/2015/06/243127.htm>.
2. PR Newswire, “US-India Business Council Supports 123 Approval,” July 27, 2007, <http://www.prnewswire.com/news-releases/us-india-business-council-supports-123-approval-52778472.html>; Condoleezza Rice, “The US-India Civilian Nuclear Cooperation Agreement,” hearing before the US Senate Foreign Relations Committee, April 5, 2006, <http://2001-2009.state.gov/secretary/rm/2006/64136.htm>.
3. Robert D. Blackwill, “The Future of US-India Relations” (speech before the Confederation of Indian Industries, May 5, 2009), <http://www.stratpost.com/the-future-of-us-india-relations-blackwill>.
4. Similar considerations apply to Israel, also a non-NPT state with nuclear weapons, but those are beyond the scope of this paper.
5. See, for example, Haider K. Nizamani, *The Roots of Rhetoric: Politics of Nuclear Weapons in India and Pakistan* (Westport, CT: Praeger, 2000), 14; Pervez Hoodbhoy and Zia Mian, “Nuclear Fears, Hopes and Realities in Pakistan,” *International Affairs* 90, no. 5 (2014): 1129.
6. Evan Braden Montgomery and Eric S. Edelman, “Rethinking Stability in South Asia: India, Pakistan, and the Competition for Escalation Dominance,” *Journal of Strategic Studies* 38, no. 1-2 (2015): 159-182.
7. As an example, Pakistan’s defense minister warned India in June 2015 that “the Pakistani atom bomb is not for firecrackers.” See Tim Craig and Karen DeYoung, “Leaders of India and Pakistan Make Gestures to Calm Tensions,” *Washington Post*, June 16, 2015, [http://www.washingtonpost.com/world/asia\\_pacific/leaders-of-india-and-pakistan-make-gestures-to-calm-tensions/2015/06/16/c35cf968-144b-11e5-8457-4b431bf7ed4c\\_story.html](http://www.washingtonpost.com/world/asia_pacific/leaders-of-india-and-pakistan-make-gestures-to-calm-tensions/2015/06/16/c35cf968-144b-11e5-8457-4b431bf7ed4c_story.html).
8. Some scholarship suggests that conventional deterrence between India and Pakistan has not eroded as much as is commonly assessed by analysts in both South Asia and the West. If true, this would suggest that Pakistan’s nuclear growth is driven more by perceptions of growing disparity in military capability, or that Pakistan uses this widely held perception as post-hoc justification for its nuclear decision-making. See, for example, Walter C. Ladwig III, “Indian Military Modernization and Conventional Deterrence in South Asia,” *Journal of Strategic Studies*, 38, no. 4 (May 2015); and Christopher Clary, “Deterrence Stability and the Conventional Balance of Forces in South Asia,” in *Deterrence Stability and Escalation Control in South Asia*, ed. Michael Krepon and Julia Thompson (Washington, DC: Stimson Center, 2013).
9. *New York Times*, “Nuclear Fears in South Asia,” *New York Times*, April 6, 2015, <http://www.nytimes.com/2015/04/06/opinion/nuclear-fears-in-south-asia.html>.
10. Nadeem Hotania, “Pakistan’s Nuclear Arms,” *New York Times*, April 16, 2015, <http://www.nytimes.com/2015/04/16/opinion/pakistans-nuclear-arms.html>.
11. “A Conversation with Gen. Khalid Kidwai” (remarks at the 2015 Carnegie International Nuclear Policy Conference, March 23, 2015), <http://carnegieendowment.org/files/03-230315carnegieKIDWAI.pdf>.
12. See, for example, “No Discrimination between ‘Good’ and ‘Bad’ Taliban: PM,” *Express Tribune*, December 17, 2014, <http://tribune.com.pk/story/808258/no-discrimination-between-good-and-bad-taliban-pm-nawaz/>.
13. “Operation Zarb-e-Azb: All Terrorists Being Hit, Says Gen Raheel,” *Express Tribune*, January 17, 2015, <http://tribune.com.pk/story/823149/operation-zarb-e-azb-all-terrorists-being-hit-says-gen-raheel/>.
14. Praveen Swami, *India, Pakistan and the Secret Jihad: The Covert War in Kashmir, 1947-2004* (London: Routledge, 2007); Sebastian Rotella, “Mumbai Case Offers Rare Picture of Ties between Pakistan’s Intelligence Service, Militants,” *ProPublica*, May 2, 2011, <http://www.propublica.org/article/mumbai-case-offers-rare-picture-of-ties-between-pakistans-intelligence-serv>; Bruce Riedel, “Nuclear Pakistan’s Spies Target India – And Their Own Prime Minister,” *Daily Beast*, September 4, 2014, <http://www.thedailybeast.com/articles/2014/09/04/nuclear-pakistan-s-spies-target-india-and-their-own-prime-minister.html>; US Department of State, “Country Reports: South and Central Asia Overview,” Country Reports on Terrorism: 2014, <http://www.state.gov/j/ct/rls/crt/2014/239408.htm>.

15. Polly Nayak and Michael Krepon, "US Crisis Management in South Asia's Twin Peaks Crisis," Stimson Report 57, 2nd ed., September 2014, 15-16, [http://www.stimson.org/images/uploads/research-pdfs/Twin\\_Peaks\\_Crisis-FINAL-WEB.pdf](http://www.stimson.org/images/uploads/research-pdfs/Twin_Peaks_Crisis-FINAL-WEB.pdf).
16. Stephen Tankel, "Lashkar-e-Taiba, Mumbai, and the ISI," *Foreign Policy*, May 20, 2011, <http://foreignpolicy.com/2011/05/20/lashkar-e-taiba-mumbai-and-the-isi/>; Saroj Kumar Rath, *Fragile Frontiers: The Secret History of Mumbai Terror Attacks* (New York: Routledge, 2014).
17. C. Christine Fair, "The Militant Challenge in Pakistan," *Asia Policy* 11, January 2011, [http://www.nbr.org/publications/element.aspx?id=485#.Uibkyn\\_4uSo](http://www.nbr.org/publications/element.aspx?id=485#.Uibkyn_4uSo). Also see Brahma Chellaney, "Southern Asia – A Unique Nuclear Triangle," *Politics and Strategy*, September 18, 2013, <https://www.iiss.org/en/politics%20and%20strategy/blogsections/2013-98d0/september-2013-62a6/unique-nuclear-triangle-ab0e>; Dan Twining, "Pakistan and the Nuclear Nightmare," *Foreign Policy*, September 4, 2013, <http://foreignpolicy.com/2013/09/04/pakistan-and-the-nuclear-nightmare/>.
18. "Pak One of the Biggest Victims of Terrorism: Khar," *IBN Live*, July 1, 2015, <http://www.ibnlive.com/news/india/pak-one-of-the-biggest-victims-of-terrorism-khar-531819.html>.
19. Inter Services Public Relations, "Press Release No PR125/2015-ISPR," May 5, 2015, [https://www.ispr.gov.pk/front/main.asp?o=t-press\\_release&id=2868](https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=2868). See also Chief of Army Staff Raheel Sharif's remarks on June 13, 2015, in which he insinuated Indian hostile intent is behind cease-fire violations and "bloodletting" in Balochistan, FATA, and Karachi. (Inter Services Public Relations, "Press Release No PR170/2015-ISPR," June 13, 2015, [https://www.ispr.gov.pk/front/main.asp?o=t-press\\_release&id=2913](https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=2913).)
20. Shyam Saran, "Is India's Nuclear Deterrent Credible?" (speech at the Habitat Centre, New Delhi, April 24, 2013), 14, <http://krepon.armscontrolwonk.com/files/2013/05/Final-Is-Indias-Nuclear-Deterrent-Credible-rev1-2-1-3.pdf>.
21. "A Conversation with Gen. Khalid Kidwai" (remarks at the 2015 Carnegie International Nuclear Policy Conference, March 23, 2015), <http://carnegieendowment.org/files/03-230315carnegieKIDWAI.pdf>.
22. A chronicler of India's nuclear weapon-related programs has used the same terminology for India's nuclear weapons. See Raj Chengappa, *Weapons of Peace: The Secret Story of India's Quest to Be a Nuclear Power* (New Delhi: Harper Collins, 2000).
23. David O. Smith, "The US Experience with Tactical Nuclear Weapons: Lessons for South Asia," in *Deterrence Stability and Escalation Control in South Asia*, ed. Krepon and Thompson, 65-92, [http://www.stimson.org/images/uploads/research-pdfs/Deterrence\\_Stability\\_Dec\\_2013\\_web.pdf](http://www.stimson.org/images/uploads/research-pdfs/Deterrence_Stability_Dec_2013_web.pdf); Jeffrey D. McCausland, "Pakistan's Tactical Nuclear Weapons: Operational Myths and Realities," in *Deterrence Instability and Nuclear Weapons in South Asia*, ed. Michael Krepon et al. (Washington, DC: The Stimson Center, 2015), 149-175, [http://www.stimson.org/images/uploads/research-pdfs/Deterrence\\_Instability\\_WEB.pdf](http://www.stimson.org/images/uploads/research-pdfs/Deterrence_Instability_WEB.pdf).
24. Michael Quinlan, *Thinking About Nuclear Weapons: Principles, Problems, Prospects* (Oxford: Oxford University Press, 2009), 22; on how this is viewed in Pakistan, see Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton: Princeton University Press, 2014), 55-93.
25. Munir Akram, "Dangers of Nuclear Discrimination," *Dawn*, May 12, 2014, <http://www.dawn.com/news/1105561>; Shamshad Ahmad, "A Worrisome 'Alliance,'" *Express Tribune*, January 31, 2015, <http://tribune.com.pk/story/830264/a-worrisome-alliance/>.
26. Ali Sarwar Naqvi, "Seventeen Years of Deterrence," *The News*, May 28, 2015, <http://www.thenews.com.pk/Todays-News-9-320560-Seventeen-years-of-deterrence>.
27. K. Iqbal, "Expansion of Nuclear Suppliers Group," *The Nation*, July 14, 2014, <http://nation.com.pk/columns/14-Jul-2014/expansion-of-nuclear-suppliers-group>.
28. Zahir Kazmi, "Normalising the Non-proliferation Regime," *Survival* 57 (2015): 134.
29. Stephen P. Cohen, *Shooting for a Century: The India-Pakistan Conundrum* (Washington, DC: Brookings Institution Press, 2013), 194.
30. C. Christine Fair, "Pakistan Needs Its Own Nuclear Deal," *Wall Street Journal*, February 10, 2010, <http://www.wsj.com/articles/SB10001424052748704820904575056182586146948>. Fair's thinking on Pakistan has evolved since 2010. She would probably no longer support a civil-nuclear deal.

31. Mark Fitzpatrick, *Overcoming Pakistan's Nuclear Dangers*, IISS Adelphi Series 443 (London: Routledge, 2014), 14.
32. David E. Sanger, "Saudi Arabia Promises to Match Iran in Nuclear Capability," *New York Times*, May 13, 2015, <http://www.nytimes.com/2015/05/14/world/middleeast/saudi-arabia-promises-to-match-iran-in-nuclear-capability.html>; Pervez Hoodbhoy, "Pakistan, the Saudis' Indispensable Nuclear Partner," *New York Times*, April 21, 2015, <http://www.nytimes.com/2015/04/22/opinion/toward-a-saudi-pakistani-rift.html>.
33. Hans M. Kristensen and Robert S. Norris, "Worldwide Deployments of Nuclear Weapons, 2014," *Bulletin of the Atomic Scientists* 70, no. 5 (2014): 105.
34. David Albright, *Future Directions in the DPRK's Nuclear Weapons Program: Three Scenarios for 2020* (US-Korea Institute, 2015), <http://38north.org/wp-content/uploads/2015/02/NKNF-Future-Directions-2020-Albright-0215.pdf>.
35. John Carlson, "Nuclear Cooperation with India – Non-proliferation Success or Failure?," February 15, 2015, 3-4, [http://carnegieendowment.org/files/India\\_nuclear\\_cooperation\\_15\\_Feb\\_15\\_2.pdf](http://carnegieendowment.org/files/India_nuclear_cooperation_15_Feb_15_2.pdf).
36. Robert Kelley, "Unconditional Protocol – India's Exceptional Protocol," *Atomic Reporters*, June 25, 2014, <http://atomicreporters.com/2014/06/25/unconditional-surrender-indias-exceptional-protocol/>.
37. M. V. Ramana, "India Ratifies an Additional Protocol and Will Safeguard Two More Nuclear Power Reactors," *International Panel on Fissile Materials* (blog), July 1, 2014, [http://fissilematerials.org/blog/2014/07/india\\_ratifies\\_an\\_additio.html](http://fissilematerials.org/blog/2014/07/india_ratifies_an_additio.html).
38. John Carlson, "Nuclear Cooperation with India," 8-11.
39. Abdul Manan, "Nawaz Pushes Obama on NSG Membership for Pakistan," *Express Tribune*, February 12, 2015, <http://tribune.com.pk/story/837494/nawaz-pushes-obama-on-nsg-membership-for-pakistan/>; Consulate General of Pakistan in Zahidan, Iran, "Pakistan's Engagement with Multilateral Export Control Regimes," press release, February 20, 2013, <http://www.mofa.gov.pk/zahidan/pr-details.php?prID=35>.
40. Sardar Sikander Shaheen, "Granting India NSG Membership to Trigger Arms Race," *Daily Times*, January 29, 2015, <http://www.dailytimes.com.pk/national/29-Jan-2015/granting-india-nsg-membership-to-trigger-arms-race>; Waseem Qutab, "Fostering Nuclear Stability in South Asia," *Express Tribune*, March 6, 2015, <http://tribune.com.pk/story/848397/fostering-nuclear-stability-in-south-asia/>.
41. Toby Dalton et al., "A Criteria-Based Approach to Nuclear Cooperation with Pakistan," Carnegie Endowment for International Peace, June 22, 2011, [http://carnegieendowment.org/files/nsg\\_criteria.pdf](http://carnegieendowment.org/files/nsg_criteria.pdf); Pierre Goldschmidt, "NSG Membership: A Criteria-Based Approach for Non-NPT States," Carnegie Endowment for International Peace, May 24, 2011, <http://carnegieendowment.org/2011/05/24/nsg-membership-criteria-based-approach-for-non-npt-states/2rr>.
42. Michael Krepon, "Can Deterrence Ever Be Stable?" *Survival* 57, no. 3 (2015): 111-132.
43. Figures on Indian defense spending taken from official budget documents: Ministry of Finance, India, <http://finmin.nic.in/>; World Bank, "GDP Growth (Annual %)," [http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?order=wbapi\\_data\\_value\\_2010%20wbapi\\_data\\_value%20wbapi\\_data\\_value-first&sort=asc/](http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?order=wbapi_data_value_2010%20wbapi_data_value%20wbapi_data_value-first&sort=asc/); International Monetary Fund (IMF), <http://www.imf.org/external/index.htm>.
44. Figures on Pakistani defense spending taken from official budget documents: Ministry of Finance, Pakistan, <http://www.finance.gov.pk/>. Prior to 2008, Pakistan only released a single figure for defense spending, and did not permit debate on the defense budget in parliament. See Amir Wasim, "Parliament Breaks Taboo, Debates Defence Budget," *Dawn* (Pakistan), June 18, 2008, <http://www.dawn.com/news/307898/parliament-breaks-taboo-debates-defence-budget>. More detailed information on the defense budget is only available beginning in FY 2009-2010 (see Ministry of Finance, Pakistan, <http://www.finance.gov.pk/>).
45. According to India's official budget documents, the revised defense budget for FY 2014-2015 was Rs. (Indian rupees) 22 trillion, while total federal expenditures equaled Rs. 168 trillion. See "Expenditure Budget Vol. 1, 2015-2016: Total Expenditures of Ministries/Departments," Ministry of Finance, India, <http://indiabudget.nic.in/ub2015-16/eb/stat02.pdf>. According to Pakistan's official budget documents, the defense budget for the last fiscal year was Rs. (Pakistani rupees) 720 billion, while total federal expenditures equaled Rs. 4.2 trillion. See "Federal Budget (2015-2016): Budget in Brief," Ministry of Finance, Pakistan, p. 2 and p. 6. [http://www.finance.gov.pk/budget/Budget\\_in\\_Brief\\_2015\\_16.pdf](http://www.finance.gov.pk/budget/Budget_in_Brief_2015_16.pdf).



46. In response to a question during a parliamentary session on August 5, 2015, defense minister Khawaja Muhammad Asif provided military pension figures for the past three years. He also described how military pensions have not been in the defense budget since 2000. "Questions for Oral Answers and Their Replies," Senate Secretariat, Pakistan, August 5, 2015, [http://www.senate.gov.pk/uploads/documents/questions/1438762566\\_288.pdf](http://www.senate.gov.pk/uploads/documents/questions/1438762566_288.pdf).
47. These include the National Engineering and Scientific Commission, the Pakistan Atomic Energy Commission, and the Space and Upper Atmosphere Research Commission.
48. Ayesha Siddiqa-Agha, *Pakistan's Arms Procurement and Military Buildup, 1979-1999* (London: Palgrave, 2001) and *Military Inc.: Inside Pakistan's Military Economy* (London: Pluto Press, 2007).
49. Ministry of Finance, Pakistan, "Contingent Liabilities," Pakistan Economic Survey 2014-2015, [http://www.finance.gov.pk/survey/chapters\\_15/Annex\\_I\\_Contingent\\_Liabilities.pdf](http://www.finance.gov.pk/survey/chapters_15/Annex_I_Contingent_Liabilities.pdf).
50. Current contingent liabilities for public sector enterprises total Rs 600 billion, or roughly \$6.3 billion.
51. This figure includes estimates of military pensions, nuclear-related expenditures, and contingent liabilities.
52. The IMF expects real GDP in India to increase by 7.5 percent in both 2015 and 2016, while it projects real GDP in Pakistan to increase by 4.3 percent in 2015 and 4.7 percent in 2016. (IMF, "Country and Regional Perspectives," World Economic Outlook, <http://www.imf.org/external/pubs/ft/weo/2015/01/>).
53. Congressional Research Service, "Direct Overt US Aid Appropriations for and Military Reimbursements to Pakistan, FY2002-FY2016," February 10, 2015, <https://www.fas.org/sgp/crs/row/pakaid.pdf>.
54. Ibid.
55. "Defence Budget," Indian Army (official website), <http://indianarmy.nic.in/Site/FormTemplate/frmTempSimple.aspx?MnId=PGckNkQtaqOgS6AJSdfuFQ==&ParentID=RA5WDyEZ8oQwC5/YXHdoig>; "World's Largest Armies," Globalsecurity.org, <http://www.globalsecurity.org/military/world/armies.htm>; Ajai Shukla, "Needed – Defence Budgeting Structures," *Business Standard* (India), March 2, 2015, [http://www.business-standard.com/article/opinion/ajai-shukla-needed-defence-budgeting-structures-115030201355\\_1.html](http://www.business-standard.com/article/opinion/ajai-shukla-needed-defence-budgeting-structures-115030201355_1.html).
56. Walter C. Ladwig III, "India and Military Power Projection: Will the Land of Gandhi Become a Conventional Great Power?" *Asian Survey* 50, no. 6 (2010): 1162–1183; Gurmeet Kanwal, "India's Military Modernization: Plans and Strategic Underpinnings," National Bureau of Asian Research, September 24, 2012, <http://www.nbr.org/research/activity.aspx?id=275>.
57. Abhijit Iyer-Mitra, "Flying Blind: Limitations on Innovation in the Indian Air Force," Carnegie Endowment for International Peace, 2015.
58. Ladwig, "Indian Military Modernization and Conventional Deterrence in South Asia"; Christopher Clary, "Deterrence Stability and the Conventional Balance of Forces in South Asia."
59. Alexander Glaser and Zia Mian, "Global Fissile Material Report: Nuclear Weapon and Fissile Material Stockpiles and Production," International Panel on Fissile Materials, May 2015, <http://fissilematerials.org/library/ipfm15.pdf>.
60. M. V. Ramana, "An Estimate of India's Uranium Enrichment Capacity," *Science and Global Security* 12, no. 1-2 (2004).
61. Mihika Basu, "BARC Proposes Two New Research Reactors under 12th Plan," *Indian Express*, February 13, 2012, <http://archive.indianexpress.com/news/barc-proposes-two-new-research-reactors-under-12th-plan/911385/0>; M. V. Ramana, "India Plans New Research Reactors," *International Panel on Fissile Materials* (blog), February 13, 2012, [http://fissilematerials.org/blog/2012/02/india\\_plans\\_new\\_research\\_r.html](http://fissilematerials.org/blog/2012/02/india_plans_new_research_r.html).
62. Zia Mian, A. H. Nayyar, R. Rajaraman, and M. V. Ramana, "Fissile Materials in South Asia: The Implications of the US-India Nuclear Deal," International Panel on Fissile Materials, September 2006, 19-20, <http://fissilematerials.org/library/rr01.pdf>.



63. Alexander Glaser and M. V. Ramana, "Weapon-Grade Plutonium Production Potential in the Indian Prototype Fast Breeder Reactor," *Science and Global Security* 15, no. 2 (2007): 85-105, [http://www.princeton.edu/~aglaser/2007aglaser\\_sgsvol15.pdf](http://www.princeton.edu/~aglaser/2007aglaser_sgsvol15.pdf).
64. M. V. Ramana, *The Power of Promise: Examining Nuclear Energy in India* (New Delhi: Penguin, 2012).
65. On Agni-5, see Frank O'Donnell and Harsh V. Pant, "Evolution of India's Agni-V Missile: Bureaucratic Politics and Nuclear Ambiguity," *Asian Survey* 54, no. 3 (2014): 584-610; Stephen P. Cohen and Sunil Dasgupta, *Arming Without Aiming: India's Military Modernization* (Washington, DC: Brookings Institution Press, 2010); and B. S. Nagal, "Checks and Balances," *Force*, June 2014.
66. George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 2001); Shashank Joshi, "An Evolving Indian Nuclear Doctrine," in *Deterrence Instability and Nuclear Weapons in South Asia*, ed. Michael Krepon et al., 69-94, [http://www.stimson.org/images/uploads/research-pdfs/Deterrence\\_Instability\\_WEB.pdf](http://www.stimson.org/images/uploads/research-pdfs/Deterrence_Instability_WEB.pdf).
67. B. S. Nagal, "Perception and Reality," *Force*, October 2014, 9-10.
68. Zia Mian and Alexander Glaser, "Global Fissile Material Report 2015: Nuclear Weapon and Fissile Material Stockpiles and Production" (presentation at NPT Review Conference, May 8, 2015, United Nations, New York), <http://fissilematerials.org/library/ipfm15.pdf>.
69. Weapons-equivalent calculations are inherently inexact given lack of credible public information on weapon designs, as well as uncertainties about total fissile material production. The figures suggested here do not take into account fissile material consumed in the 1998 tests or material lost in production, and they assume no other constraints in weaponization. A first-generation fission nuclear weapon with a 20 kiloton yield might require 5-6 kilograms of plutonium or 15-18 kilograms of HEU, according to an assessment by the International Panel on Fissile Materials. See International Panel on Fissile Materials, "Global Fissile Material Report 2013," 94, <http://fissilematerials.org/library/gfmr13.pdf>.
70. In 2011, former Indian foreign minister Jaswant Singh stated in a speech before the Lok Sabha that "Pakistan is already in possession of about 100-110 nuclear warheads that are deliverable whereas I know that India has 50 to 60." (<http://164.100.47.132/debate/15/VII/z1503-Final.pdf>, 114-115.) Kristensen and Norris estimate 90-110 for India and 100-120 for Pakistan. (Hans Kristensen and Robert Norris, "Worldwide Deployments of Nuclear Weapons, 2014," *Bulletin of the Atomic Scientists*, August 2014, <http://bos.sagepub.com/content/early/2014/08/26/0096340214547619.full.pdf+html>.)
71. David Albright and Serena Kelleher-Vergantini, "Pakistan's Fourth Reactor at Khushab Now Appears Operational," *Institute for Science and International Security*, January 16, 2015, [http://isis-online.org/uploads/isis-reports/documents/Khushab\\_January\\_2015\\_reactor\\_four\\_operational\\_FINAL.pdf](http://isis-online.org/uploads/isis-reports/documents/Khushab_January_2015_reactor_four_operational_FINAL.pdf).
72. International Panel on Fissile Materials, "Countries: Pakistan," February 3, 2013, <http://fissilematerials.org/countries/pakistan.html>.
73. Vipin Narang, "Posturing for Peace? Pakistan's Nuclear Postures and South Asian Stability," *International Security* 34, no. 3 (Winter 2009/10): 39.
74. Y. Mallikarjun, T. S. Subramanian, "India Successfully Test-Fires Underwater Missile," *The Hindu*, January 27, 2013, <http://www.thehindu.com/news/national/india-successfully-testfires-underwater-missile/article4350553.ece>.
75. Frank O'Donnell and Yogesh Joshi, "India's Submarine Deterrent and Asian Nuclear Proliferation," *Survival* 56, no. 4 (2014): 157-174.
76. "A Conversation with Gen. Khalid Kidwai."
77. See, for example, Tom Shanker and David E. Sanger, "Pakistan Is Rapidly Adding Nuclear Arms, US Says," *New York Times*, May 17, 2009, [http://www.nytimes.com/2009/05/18/world/asia/18nuke.html?\\_r=0](http://www.nytimes.com/2009/05/18/world/asia/18nuke.html?_r=0).
78. "A Conversation with Gen. Khalid Kidwai."
79. Iskander Rehman, "Murky Waters: Naval Nuclear Dynamics in the Indian Ocean," Carnegie Endowment for International Peace, March 9, 2015, <http://carnegieendowment.org/2015/03/09/murky-waters-naval-nuclear-dynamics-in-indian-ocean/i3k5>; Jeffrey Lin and P. W. Singer, "New Chinese Submarines to Pakistan," *Popular Science*, April 7, 2015, <http://www.popsci.com/new-chinese-submarines-pakistan>.

80. Pakistan claimed to have tested “low yield” devices in 1998. See Feroz Hassan Khan, *Eating Grass: The Making of the Pakistani Bomb* (New Delhi: Cambridge University Press, 2013), 281.
81. See, for example, Rajesh M. Basrur, “India’s Escalation-Resistant Nuclear Posture,” in *Escalation Control And The Nuclear Option In South Asia*, ed. Michael Krepon, Rodney W. Jones, and Ziad Haider (Washington, DC: The Stimson Center, 2004), 56-74; *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict*, ed. Peter R. Lavoy (New York: Cambridge University Press, 2009).
82. Aside from the lack of support from other states, Pakistan’s FMCT position is also unsustainable insofar as verification of existing stocks would require Pakistan (and others) to declare and subject to inspection the amount of plutonium in weapons as well as the number of weapons in its stockpile, an idea that runs strongly counter to Pakistan’s own requirement for opacity to maintain deterrence.
83. Ahsan I. Butt, “Do Nuclear Weapons Affect the Guns-Butter Trade-off? Evidence on Nuclear Substitution from Pakistan and Beyond,” *Conflict, Security & Development* 15, no. 3 (2015): 229-257; Shane Mason, “Pakistan’s New Military Budget: By The Numbers,” *The National Interest*, July 5, 2015.
84. There are parallels here to China’s decision to limit the size and ambition of its nuclear weapons program. Beijing built and maintained a small arsenal sufficient for minimum deterrence against two superpowers, the Soviet Union and United States, while it focused on developing its economy. China’s nuclear policy therefore was de-linked from the extreme developments in US and Soviet conventional military and nuclear capabilities during the Cold War.
85. See, for example, *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict*, ed. Peter R. Lavoy (New York: Cambridge University Press, 2009).
86. Vipin Narang, “Posturing for Peace? Pakistan’s Nuclear Postures and South Asian Stability,” *International Security* 34, no. 3 (Winter 2009/10): 39.
87. V. R. Raghavan, “India, Pakistan and Nuclear Weapons,” *The Hindu*, September 8, 2014, <http://www.thehindu.com/books/books-reviews/book-review-india-pakistan-and-nuclear-weapons/article6391808.ece>; Ashley J. Tellis, C. Christine Fair, and Jamison Jo Medby, *Limited Conflicts Under the Nuclear Umbrella: Indian and Pakistani Lessons from the Kargil Crisis* (Santa Monica, CA: the Rand Corporation, 2001), [http://www.rand.org/pubs/monograph\\_reports/MR1450](http://www.rand.org/pubs/monograph_reports/MR1450).
88. George Perkovich and Toby Dalton, “Modi’s Strategic Choice: How to Respond to Terrorism from Pakistan,” *The Washington Quarterly* 38, no. 1 (Spring 2015), [https://twq.elliott.gwu.edu/sites/twq.elliott.gwu.edu/files/downloads/TWQ\\_Spring2015\\_Perkovich-Dalton.pdf](https://twq.elliott.gwu.edu/sites/twq.elliott.gwu.edu/files/downloads/TWQ_Spring2015_Perkovich-Dalton.pdf).
89. “Have to Neutralise Terrorists through Terrorists’: Defence Minister Manohar Parrikar,” NDTV, May 22, 2015, <http://www.ndtv.com/india-news/have-to-neutralise-terrorists-through-terrorists-defence-minister-manohar-parrikar-765218>; “Ajit Doval warns Pakistan ‘You do one more Mumbai, you lose Balochistan,’” YouTube video, 2:42, posted by “The Fearless Indian,” January 7, 2015, <https://www.youtube.com/watch?v=N7ESR5RU3X4>; “Rajyavardhan Singh Rathore Lauds Army Operation in Myanmar, Says It Is Beginning,” *Economic Times*, June 10, 2015, <http://economictimes.indiatimes.com/news/defence/rajyavardhan-singh-rathore-lauds-army-operation-in-myanmar-says-it-is-beginning/articleshow/47606435.cms>.
90. Stephen I. Schwartz, ed., *Atomic Audit: The Cost and Consequences of US Nuclear Weapons Since 1940* (Washington, DC: Brookings Institution Press, 1998).
91. Ahmed Sultan, “FMCT – The Odds Are Against Us,” *Dawn*, June 14, 2015, <http://www.dawn.com/news/1187552>.
92. The government does not disclose details on the nuclear weapons budget, and therefore the figure of \$650 million almost certainly understates Pakistan’s nuclear spending. (Ministry of Finance, Pakistan, “Budget in Brief,” [http://www.finance.gov.pk/budget/Budget\\_in\\_Brief\\_2015\\_16.pdf](http://www.finance.gov.pk/budget/Budget_in_Brief_2015_16.pdf); Ministry of Planning, Development and Reform, Pakistan, “Federal PSDP 2014-15,” [http://www.pc.gov.pk/wp-content/uploads/2015/02/Details\\_of\\_Releases\\_2014-1513-02-2015.pdf](http://www.pc.gov.pk/wp-content/uploads/2015/02/Details_of_Releases_2014-1513-02-2015.pdf); Ministry of Finance, Pakistan, “Demand No. 17: Atomic Energy,” Current Expenditures, Federal Budget 2014-2015, <http://www.finance.gov.pk/>).
93. Alexander Glaser and Zia Mian, “Global Fissile Material Report,” <http://fissilematerials.org/library/ipfm15.pdf>.

94. This proposal was contained in Pakistan's statement at the 2010 Nuclear Security Summit in Washington: "Pakistan National Statement," Nuclear Security Summit, April 12-13, 2010, [http://embassyofpakistanusa.org/news420A\\_a\\_04142010.php](http://embassyofpakistanusa.org/news420A_a_04142010.php).
95. Office of the Press Secretary, The White House, "Joint Statement Between President George W. Bush and Prime Minister Manmohan Singh," July 18, 2005, <http://georgewebush-whitehouse.archives.gov/news/releases/2005/07/20050718-6.html>.
96. Office of the Press Secretary, The White House, "US-India Joint Statement: Shared Effort, Progress for All," January 25, 2015, <https://www.whitehouse.gov/the-press-office/2015/01/25/us-india-joint-statement-shared-effort-progress-all>.
97. Mark Hibbs, "The Future of the Nuclear Suppliers Group," Carnegie Endowment for International Peace, 2011, <http://carnegieendowment.org/2011/12/13/future-of-nuclear-suppliers-group/8khf>; Mark Hibbs and Toby Dalton, "Nuclear Suppliers Group: Don't Rush New Membership," proliferation analysis, Carnegie Endowment for International Peace, June 14, 2012, <http://carnegieendowment.org/2012/06/14/nuclear-suppliers-group-don-t-rush-new-membership/btzo>.
98. Ananth Krishnan, "China Links India's Nuclear Suppliers Group Bid to Pakistan's," *India Today*, June 4, 2015, <http://indiatoday.intoday.in/story/india-china-pakistan-nuclear-suppliers-group/1/442086.html>.
99. Alizeh Kohari, "Going Nuclear," *Herald* (Pakistan), June 29, 2015, <http://herald.dawn.com/news/1153193/going-nuclear>.
100. See David Albright, *Peddling Peril: How the Secret Nuclear Trade Arms America's Enemies* (New York: Free Press, 2010); Gordon Corera, *Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A. Q. Khan Network* (New York: Oxford University Press, 2006); International Institute for Strategic Studies, *Nuclear Black Markets: Pakistan, A. Q. Khan and the Rise of Proliferation Networks – A Net Assessment* (London: International Institute for Strategic Studies, 2007).
101. International Institute for Strategic Studies, *Nuclear Black Markets: Pakistan, A. Q. Khan and the Rise of Proliferation Networks – A Net Assessment*.
102. Rizwan Asghar, "Our Nuclear Trajectory," *The News International* (Pakistan), June 30, 2015, <http://www.thenews.com.pk/Todays-News-9-326363-Our-nuclear-trajectory>.
103. Thomas Schelling, *Strategy of Conflict* (Cambridge: Harvard University Press, 1980), 187.
104. Jeffrey D. McCausland, "Pakistan's Tactical Nuclear Weapons," in *Deterrence Instability and Nuclear Weapons in South Asia*, ed. Krepon et al., 149-170, [http://www.stimson.org/images/uploads/research-pdfs/Deterrence\\_Instability\\_WEB.pdf](http://www.stimson.org/images/uploads/research-pdfs/Deterrence_Instability_WEB.pdf); David O. Smith, "The US Experience With Tactical Nuclear Weapons," in *Deterrence Stability and Escalation Control in South Asia*, ed. Krepon and Thompson, 65-92, [http://www.stimson.org/images/uploads/research-pdfs/Deterrence\\_Stability\\_Dec\\_2013\\_web.pdf](http://www.stimson.org/images/uploads/research-pdfs/Deterrence_Stability_Dec_2013_web.pdf).
105. Hans M. Kristensen and Robert S. Norris, "Pakistan's Nuclear Forces, 2011," *Bulletin of the Atomic Scientists* 67, no. 4, 91-99, <http://bos.sagepub.com/content/67/4/91.full>.
106. Hamid Ali Rao, "Statement by Ambassador Hamid Ali Rao, Permanent Representative to Conference on Disarmament at CD Plenary," February 3, 2009, <http://meaindia.nic.in/cdgeneva/?pdf0430?000>.
107. World Nuclear Association, "Nuclear Power in Pakistan," April 2015, <http://www.world-nuclear.org/info/Country-Profiles/Countries-O-S/Pakistan/>.
108. US Department of State, "Joint Statement between Pakistan and United States on Security, Strategic Stability, and Nonproliferation Issues," June 3, 2015, <http://www.state.gov/r/pa/prs/ps/2015/06/243127.htm>.
109. See Howard B. Schaffer and Teresita C. Schaffer, *How Pakistan Negotiates with the United States: Riding the Roller Coaster*, (Washington, DC: US Institute of Peace, 2011); and Stephen P. Cohen, *Shooting for a Century* (Washington, DC: Brookings Institution Press, 2013).
110. For one exception, see Ahmed Sultan, "FMCT – The Odds Are Against Us," *Dawn*, June 14, 2015, <http://www.dawn.com/news/1187552>.
111. See, for example, Verghese Koithara, *Managing India's Nuclear Forces* (Washington, DC: Brookings Institution Press, 2012).





*A Normal*

# NUCLEAR PAKISTAN

This report takes a hard look at Pakistan's nuclear weapon-related programs and its ambitions to be viewed as a normal state possessing advanced nuclear technologies. Pakistan's military leadership in Rawalpindi has several choices at this juncture. It can choose to accept success in achieving a "strategic" deterrent against India – a nuclear force posture sufficient to prevent limited nuclear exchanges and a major conventional war. Alternatively, it can choose to continue to compete with India in the pursuit of "full spectrum" deterrence, which would entail open-ended nuclear requirements against targets both near and far from Pakistan. These choices would lead Pakistan to two starkly different nuclear futures and places in the global nuclear order.

The global nuclear order will not be strengthened by trying to accommodate a Pakistan that is greatly increasing its nuclear capabilities while rejecting the Comprehensive Test Ban Treaty and Fissile Material Cutoff Treaty. Nor will Pakistan become a normal, nuclear state by competing with India or by harboring groups that could spark a war with India. The international community is unlikely to accommodate Pakistan's desire to enter the nuclear mainstream without corresponding steps by Pakistan to align aspects of its nuclear policy and practices closer with international norms. The steps we propose lend themselves to mainstreaming. More importantly, these steps would advance Pakistan's national, social, and economic security interests.