

# Denuclearization Again? Lessons from Ukraine's Decision to Disarm

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[Commentary](#)

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On Dec. 25, 1991, Soviet President Mikhail Gorbachev announced his resignation and handed off his nuclear strike authorization unit, the so-called *Cheget* briefcase, to Russian President Boris Yeltsin. With this final act, the Soviet Union was no more. What remained, however, was Soviet Union's gargantuan nuclear arsenal and the military-industrial complex that produced it. The problem was that now it was situated not in one, but in four sovereign states: Belarus, Kazakhstan, Russia, and Ukraine. This unprecedented development spurred fears that the biggest wave of nuclear proliferation in history was in the offing, fears that fortunately failed to materialize.

Amid proliferation gloom about North Korea, Iran, and possibly Saudi Arabia, it seems fitting to recall past nonproliferation successes. Ukraine's case is the most instructive of the Soviet nuclear inheritors. The United States and its allies formulated an expectation that only one nuclear state should emerge from the Soviet collapse, and everyone understood that state to be Russia. While Belarus and, after a short hesitation, Kazakhstan complied with this expectation, Ukraine followed a more convoluted and difficult path.

Ukraine's initial intention to become a nuclear-free state, recorded in its 1990 Declaration of Sovereignty, gave way to a more nuanced stance soon after the country became independent the following year. As a successor state of the Soviet Union, Ukraine claimed, it was the rightful owner of what amounted to the world's third-largest nuclear arsenal deployed on its territory: 176 intercontinental ballistic missiles (ICBMs) armed with 1,240 nuclear warheads and 44 strategic bombers armed with hundreds of nuclear-tipped cruise missiles.

Heated internal deliberations and intense international negotiations ensued. In mid-1993 it seemed far from certain that Ukraine would agree to denuclearize. Yet by 1994, Ukraine joined the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as a non-nuclear-weapons state, proceeding to transfer all nuclear warheads to Russia and dismantle, with U.S. technical assistance, ICBMs, silos, bombers, and cruise missiles. In exchange, the young country received compensation for fissile material contained in warheads and security assurances from recognized nuclear states.

What can we learn from Ukraine's path to denuclearization? Bearing in mind that all historical parallels are necessarily tenuous, we offer three insights that may help deal with today's proliferation challenges.

## **Insight 1. Supply-Side Abundance? So What?**

*While Soviet weapons were less useful than supposed, Ukraine nonetheless inherited the foundation to build its own. But it wasn't interested.*

Scholars of nuclear proliferation tentatively sort drivers of nuclear acquisition into two buckets: supply-side, or technological capacity to develop nuclear weapons, and demand-side, or political motivations to do so. In enforcing the nonproliferation regime, the United States and its allies have focused on controlling the supply-side of nuclear proliferation: buttressing the International Atomic Energy Agency safeguards regime, discouraging states from pursuit of indigenous enrichment capacity, instituting and enforcing export controls for sensitive technology, and going after illicit trade networks. This is good and necessary work. Yet curbing nuclear proliferation is not reducible to choking a potential proliferator's technology supply lines.

The case of Ukraine underscores that, when it comes to nuclear proliferation, the availability of technology is far from determinative. Counterintuitively, it was not the inheritance of a cache of strategic weaponry that was the biggest proliferation opportunity, since at the moment of Soviet dissolution, Ukraine's strategic armaments were looped into a centralized command and control system, the keys to which remained in Moscow. Rather, Ukraine's most important asset was the extent of scientific know-how and military-industrial capacity that contributed to the Soviet nuclear enterprise. This technological capacity would have allowed Ukraine to establish direct control over parts of its arsenal and complete the missing elements of the nuclear fuel cycle, had it chosen to do so.

Ukraine's city of Dnipropetrovsk (now Dnipro) was home to the Yuzhnoie design bureau and the Yuzhmash missile plant, the largest producer of ICBMs for the Soviet arsenal. Yuzhmash produced 46 of the 176 missiles deployed in Ukraine, the SS-24s, and could continue to maintain and modernize them. Kharkiv, an important node in Soviet military-industrial complex, was home to Khartron, the designer of guidance and targeting systems for SS-19 ICBMs, 130 of which were deployed in Ukraine. Bruce Blair, writing in 1995, estimated that, despite technological challenges, "the initial direct costs [for Ukraine] of cobbling together a deterrent force out of inherited or seizable assets would be relatively small."

Although Ukraine lacked uranium enrichment and plutonium reprocessing facilities, fuel fabrication, and warhead production, it mined and missile uranium ore and operated two research and 15 civilian nuclear power reactors. This included one RBMK reactor at Chernobyl, in operation until 2000, which produced irradiated fuel rich in weapons-grade plutonium. Ukraine had the metallurgical and chemical expertise, precision electronics, two prominent physics institutes in Kyiv and Kharkiv, and a heavy water plant in Driprodzerzhinsk. Ukrainians might also have had access to a Soviet nuclear warhead design, shared with Yuzhmash as part of a missile development program before the Soviet collapse. A feasibility study conducted by Ukrainian scientists in 1993 concluded that Ukraine had sufficient technological capacity to establish centrifuge production and uranium enrichment in five to seven years.

In short, beyond weaponry, Ukraine inherited considerable scientific, technological, and industrial capacity that would have made an enviable starter package for any aspiring proliferator. Ukraine is not a nuclear weapons state today, not because it lacked technology or scientific expertise, but because it lacked political motivation for a nuclear deterrent.

## **Insight 2: Nuclear Weapons Are Nice; A Good Reputation is Better.**

*Ukraine wanted international recognition, not the isolation that would come with nuclear weapons.*

Political motivations that drive nuclear acquisition are notoriously difficult to ascertain. We know that adverse security environments, status considerations, and domestic lobby groups that benefit from a nuclear program are all conducive to nuclear proliferation. Ukraine's story

suggests that motivations for a nuclear program are also shaped by how the country defines itself in relation to the Western-led international order.

After the Soviet collapse, Ukraine found itself in a perilous security environment as Ukrainian-Russian relations became increasingly acrimonious. As we found through archival research and chronicled in a recent paper, Ukraine aspired to be recognized as an equal successor state to the Soviet Union, on par with Russia, and thought this equality should obtain also in the nuclear realm. As such it demanded, successfully, to be included as a party to the Strategic Arms Reduction Treaty (START), signed by the United States and the Soviet Union just weeks before the latter collapsed. Finally, Ukraine had a prominent missile lobby, which, given that procurements from Moscow dried up following the Soviet collapse, supported the retention of the 46 SS-24 ICBMs produced in Ukraine and development of replacement systems after their service life expired in early 2000s.

Yet this dangerous combination of an adverse security environment, desire for status, and domestic interests nonetheless failed to produce a Ukrainian nuclear deterrent, because there were equally powerful political motivations that inhibited the acquisition of nuclear weapons. Had Ukraine pursued a nuclear program, it surely would have been subject to international isolation and sanctions that would have prevented the country's integration into the world economy and affect Russian supply of nuclear fuel to Ukraine's power stations. Acceding to the NPT, on the other hand, meant Ukraine could maintain its peaceful nuclear energy under International Atomic Energy Agency safeguards. Moreover, Ukraine, a fledgling sovereign emerging from a communist empire, aspired to become a European liberal democracy and an international citizen in good standing. It did not only relinquish nuclear weapons because of what it wanted to get or avoid, but also because it wanted to become a certain kind of state.

Threats of sanctions and isolation will not have the same effect on those regimes that define themselves in opposition to the Western-led international order. In North Korea, for instance, sanctions have done little to thwart the autarchic regime's determination to get a nuclear deterrent. The penalties may even have backfired by supporting the narrative of besiegement by the West and making illicit trade networks more sophisticated. This is not to say that sanctions should be lifted but rather that we shouldn't expect a change of heart in Pyongyang solely because of them. On the other hand, in Iran, the lesson from Ukraine may be that the faction of leadership that seeks engagement with the West should be encouraged and supported — it was, after all, instrumental to making a nuclear deal possible.

### **Insight 3: A Deterrent? Or Just a Fair Deal?**

*Western and Russian officials projected their own abstract deterrence thinking. Ukrainians thought of nuclear warfare in concrete terms and recoiled.*

Statesmen and analysts often become prisoners of the concepts and modes of thinking that are most familiar to them. Western understandings of nuclear weapons, dominated by theories of deterrence, had difficulty explaining why countries would renounce a nuclear option. Indeed, it was partly through the West's disproportionate attention to the nuclear issue in Ukraine, to the exclusion of all other areas of engagement, that Ukrainians learned the value of their nuclear inheritance. Combined with an increasing perception of the Russian threat, this led Ukraine to qualify its initial renunciation with a more nuanced stance that demanded recognition of Ukraine a legitimate "owner" of nuclear weapons as an equal successor of the Soviet Union.

Russia construed these claims as a Ukrainian bid for a nuclear deterrent. Received wisdom in the West corroborated this suspicion — what state bereft of allies and facing a conventionally

superior nuclear-armed adversary wouldn't want a deterrent? In summer 1993, *The Economist* made this argument in an article entitled "Ukraine: a nuclear state" and prominent international relations scholar John Mearsheimer argued in *Foreign Affairs* that Ukraine would — and should — keep a nuclear deterrent, otherwise a war with Russia would be imminent.

As it turns out, Mearsheimer was eventually proven right about the war with Russia. It seems, however, that more Westerners were thinking about a Ukrainian nuclear deterrent than Ukrainians. Indeed, hardly anyone in Ukraine ever talked about nuclear weapons in terms of deterrence. Ukraine's intense contestation of the nuclear issue in mid-1993 was about the political, not military, value of nuclear weapons. For Ukraine's president Leonid Kravchuk and the country's diplomats, nuclear ownership simply meant entitlement to a fair compensation, both in terms of reimbursement for fissile material contained in warheads and in terms of security guarantees by United States and Russia. A faction in the Ukrainian parliament took a more assertive stance and attempted to delay denuclearization. Yet even they viewed Ukraine's nuclear inheritance not in military terms but rather as a political hedge: The continued presence of nuclear arms in Ukraine meant the West would continue to pay attention and mitigate a potential conflict with Russia.

The only outspoken Ukrainian advocate for a nuclear deterrent, was Gen.-Maj. Volodymyr Tolubko, a parliamentarian and former commander of a strategic missile division. He openly stated, according to archival sources, that Ukraine's unilateral renunciation was "romantic and premature" and that the country should keep the SS-24s, which would be sufficient to "deter any aggressor." Tolubko, however, was less specific on the subject of deterrence and on occasion referred to a joint Ukrainian-Russian operation of nuclear forces in Ukraine, a position the rest of the leadership found untenable.

Why was deterrence thinking so conspicuously marginal in Ukraine? As our paper describes, Ukraine's political leadership had little experience with the intricacies of nuclear strategy. Soviet defense intellectuals who could educate them remained in Moscow. Ukraine's own military, Tolubko notwithstanding, was preoccupied with multiple challenges associated with forging conventional national armed forces out of the large number of underpaid Soviet troops left in Ukraine.

Ukraine's powerful missile lobby focused on keeping production lines busy, rather on nuclear deterrence. When it saw that chances of retaining the 46 SS-24 ICBMs in Ukraine were dwindling, it threw its weight behind joining the NPT and the Missile Technology Control Regime that would allow Ukraine to enter international civilian space markets.

Finally, Kravchuk often came off as personally antipathetic toward all things nuclear. His rare comments on the military utility of nuclear weapons betray that he couldn't help but imagine them in war-fighting terms and, as the commander-in-chief who would be responsible for giving a launch order, immediately balked at such a proposition. That is, Kravchuk doubted his own credibility in carrying out a deterrent threat — he struggled to think the unthinkable. This attitude was, it seems, more sincere than naïve.

This reminds us that nuclear deterrence, as a set of concepts and practices, does not come automatically attached to nuclear weaponry. In fact, actors may struggle to grasp the military utility of nuclear weapons. This should alert Western analysts to be more attentive to the ways others conceive of nuclear capability. By projecting Western concepts and modes of thinking where they might not belong, we risk misreading our interlocutors' meanings and motivations, making diplomatic solutions that much more difficult.

Ukraine's denuclearization deal was forged in a relatively short time and at a rather low cost for the West. For Ukraine, the deal legitimized its claims to the Soviet nuclear inheritance as well as recognized its security concerns. Despite all the ingredients conducive to proliferation, Ukraine emerged as a great nonproliferation success story just at the time the NPT was going into its 1995 Review and Extension conference.

Today, Ukrainians are not so sure they did the right thing. Following Russia's annexation of Crimea and involvement in the war in Ukraine's east, in violation of its security commitments pledged to Ukraine exchange for denuclearization, public support for the renewal of Ukraine's nuclear status rose to almost 50 percent from the previous high of 33 percent in 1994. The final lesson of Ukraine's denuclearization might be that future such deals will come at a much higher cost and will require more robust security commitments on the part of nuclear states.

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