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Eliza Gheorghe. "Proliferation and the Logic of the Nuclear Market." *International Security* 43:4 (Spring 2019): 88-127. DOI: https://doi.org/10.1162/isec_a_00344.

Published by ISSF on **24 April 2020**

<https://issforum.org/to/iar136>

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In her article "Proliferation and the Logic of the Nuclear Market," Eliza Gheorghe argues that the distribution of power in the international system and the intensity of great power rivalries shape the supply-side environment for nuclear weapons proliferation. Her article offers an international system-level explanation for why potential proliferators were more successful at acquiring foreign support for their nuclear weapons programs during the early part of the Cold War but were less so during the détente period of the Cold War and the unipolar period after its conclusion. Notably, Gheorghe predicts that the multipolar period into which the international system is emerging poses the greatest supply-side risks for nuclear weapons proliferation.

Gheorghe's study makes an innovative contribution to the supply-side literature on nuclear weapons proliferation. Previous arguments had focused more on bilateral explanations for nuclear assistance or on the role played by international institutions.¹ Her theory argues that nuclear proliferation "thwarters" will have the most success in imposing nuclear supplier cartels capable of preventing transactions that pose proliferation threats during unipolar distributions of power. The efforts of thwarters will be less effective during bipolar distributions of power, with periods of intense great power rivalry further limiting thwarters' efforts compared to periods of détente. Last, Gheorghe theorizes that thwarters will be the least effective at using supplier cartels to prevent nuclear proliferation in multipolar systems (99).

Employing descriptive statistics and qualitative analyses of the international system from 1939-2014, Gheorghe finds empirical support for her theory's expectations that nuclear proliferation behavior was more intense during the rivalrous bipolar period from 1945-1974. During the détente period of the Cold War (1975-1990) and the ensuing period of U.S.-led unipolarity (1991-2014), the number of transfers involving uranium enrichment and fuel reprocessing (ENR) capabilities declined precipitously, as did the number of states pursuing nuclear weapons or hedging status. Given the

¹ Matthew Kroenig, *Exporting the Bomb: Technology Transfer and the Spread of Nuclear Weapons* (Ithaca: Cornell University Press, 2010); Matthew Fuhrmann, *Atomic Assistance: How 'Atoms for Peace' Programs Cause Nuclear Insecurity* (Ithaca: Cornell University Press, 2012); Robert Brown and Jeffrey Kaplow, "Talking Peace, Making Weapons: IAEA Technical Cooperation and Nuclear Proliferation," *Journal of Conflict Resolution* 58:3 (2014): 402-428.

lack of observation, Gheorghe's hypotheses concerning nuclear weapons proliferation in multipolar systems could not be tested.

While Gheorghe makes a persuasive case that the distribution of power in the international system influences proliferators' ability to obtain foreign nuclear assistance, I think that the systemic trends she observes (101-102) can be more easily explained by the growing strength of the nuclear nonproliferation regimes over time. For example, one could interpret the steep downward trend on the number of aspiring nuclear states, aspiring hedgers, and hedgers in Gheorghe's *Figure 2* (102) as being the result of first the Nuclear Nonproliferation Treaty and then a growing set of regimes and norms that sought to prevent nuclear weapons proliferation.² This includes the Zangger Committee and Nuclear Suppliers Group (NSG), which Gheorghe references, but also the global spread of nuclear weapons-free zones and the *Comprehensive Test Ban Treaty* (1996). While United Nations Security Council Resolution 1540 (2004) obligated all countries to adopt strategic trade controls in order to prevent proliferation and weapons of mass destruction terrorism by non-state actors, it has also made it harder for state-based proliferators to obtain dual-use goods and technologies. A credible alternative explanation for the trends in *Figure 2* is that the emergence and maturing of the nuclear nonproliferation regime complex—one that is distinct from the distribution of power in the international system—is responsible for the systemic decline in the amount of nuclear weapons proliferation.

A related explanation for the initial rise in nuclear transfers and proliferation behavior followed by a steep decline is that nuclear weapons possessors faced a learning curve in understanding what nuclear capabilities it is safe to share. Nuclear weapons states, generally, have incentives to preserve nuclear weapons capabilities for themselves. While the U.S. actively promoted the proliferation of nuclear capabilities via the Atoms for Peace program, for example, the U.S. eventually realized the proliferation risks that proactively sharing nuclear technology posed. As Gheorghe's analysis highlights, India was a recipient of nuclear assistance from many willing nuclear suppliers in the 1950s and 1960s. India's peaceful nuclear test in 1974 was a shock to the supplier community. This led to the creation of the NSG, the U.S. government's adoption of deterrent sanctions threats, and greater investments in supporting the Nuclear Nonproliferation Treaty.³ This counter-explanation suggests that the rise in "thwarting" behavior occurred in response to increased awareness of proliferation risks and that nuclear suppliers will never be as willing to share the ENR capabilities as they were in the period immediately after nuclear weapons were introduced into the international system.

The existence of these rival explanations means that the most novel value-added of Gheorghe's theory relates to her prediction that nuclear weapons proliferation will become more rampant when the international system transitions from being unipolar to multipolar. Notably, the recent Treaty on the Prohibition of Nuclear Weapons (2017) came into existence after Gheorghe argues that the transition to a multipolar system began, which she expects to be associated with greater nuclear weapons proliferation. Her theory could decisively demonstrate its superiority to the rival explanations I outlined if we observe a sharp increase in the amount of ENR transfers and nuclear proliferation within the emerging multipolar system over the next 10 to 20 years. As such, we will have to be patient in fully judging Gheorghe's contribution but also nervous about what it portends. She has given us a useful framework for understanding why global progress in nuclear nonproliferation efforts might be reversed in the coming years.

² Matthew Fuhrmann and Yonatan Lupu, "Do Arms Control Treaties Work? Assessing the Effectiveness of the Nuclear Nonproliferation Treaty," *International Studies Quarterly* 60:3 (2016): 530-539. Maria Rublee, *Nonproliferation Norms: Why States Choose Nuclear Restraint* (Athens: University of Georgia Press, 2009).

³ Daniel Verdier, "Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime," *International Organization* 62:3 (2008): 439-476. Nicholas Miller, "The Secret Success of Nonproliferation Sanctions," *International Organization* 68:4 (2014): 913-944.

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