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**Remarks Prepared for the CFA Institute Systemic Risk Council**  
**“Systemic Risk and Crossing the Hellespont”**  
**October 25, 2024**

In his book *On Grand Strategy*, John Lewis Gaddis opens with a story about Xerxes, the King of Persia.<sup>1</sup>

It is 480 BCE and Xerxes has amassed his army at the Hellespont—a narrow stretch of water now known as the Dardanelles, separating Asia from Europe. Having conquered much of Asia, Xerxes is debating whether to cross the Hellespont to conquer Greece and avenge his father. His uncle Artabanus urges caution, noting the challenges of logistics, weather, supply routes, food, and water. Xerxes listens, but eventually objects: “If you were to take account of everything... you would never do anything.” Xerxes decides to cross the Hellespont and march on Greece. Despite initial victories, his forces are stretched thin and repelled. They eventually retreat to Persia, defeated and the empire weakened.<sup>2</sup>

Gaddis’s point is not that Artabanus was right—for Xerxes’ objection is clearly correct: taking everything into account is a path to “analysis paralysis.” Rather, Gaddis argues that good

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<sup>1</sup> John Lewis Gaddis. *On Grand Strategy*. Penguin Random House, 2018.

<sup>2</sup> Gaddis notes that Napoleon would make a similar mistake centuries later marching on Moscow in 1812, a mistake [famously visualized by Charles Minard](#). Accessed October 8, 2024.

strategy requires a balance of both, a combination of Xerxes’s clear, ambitious vision *and* Artabanus’s “sensitivity to surroundings.”<sup>3</sup>

In my experience, the process of identifying and addressing systemic risk can, at times, be boiled down to whether to cross the proverbial Hellespont. Some examples may help illustrate the point.

In the early to mid-2000s, before the 2008 Global Financial Crisis (GFC), the financial regulatory community coalesced around two systemic risks: hedge fund counterparty credit risk and risks from equity tranches of securitizations. The Financial Stability Oversight Council (FSOC) and the Financial Stability Board did not yet exist, but there was an international group at the time called the Financial Stability Forum (FSF), which consisted of regulatory agencies from across the globe. It was at those meetings that these topics were discussed.

Back then I was at the Securities and Exchange Commission (SEC), supervising Goldman Sachs, Merrill Lynch, and their peers, and providing analytical support to the agency’s FSF engagement. Conceptually, the FSF’s focus made sense. What surprised me, though, was the crowding out of other risks and inertia that would attach to each issue. For instance, once hedge funds were on the agenda, each agency had to brief its principal, setting in motion analyses, memos, presentations, and meetings. The principals attending multilateral meetings were action oriented and wanted to *do something* about the identified risk. So there would be action items, takeaways, follow-ups, workstreams, and more meetings. In the end, all those efforts were quite effective in improving awareness and coordination across regulators and in

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<sup>3</sup> Gaddis’s telling of the story of the Hellespont is interspersed with another about the philosopher Isaiah Berlin and his book *The Hedgehog and the Fox*. As Berlin notes, hedgehogs “relate everything to a single central vision” while foxes “pursue many ends, often unrelated and even contradictory, connected, if at all, only in some de facto way.” Gaddis sees Xerxes as a hedgehog, a leader with a singular vision of empire, and Artabanus as a fox, hyper-attuned to the environment and the immediate possibilities.

mitigating the risks that hedge funds and equity tranches of securitizations posed to financial stability.

But the 2008 GFC was driven by opposite forces. Instead of hedge funds and equity tranches threatening the financial system, banks, money funds, insurance companies, and AAA-rated securities did.

Some may see this as an example of blind spots or misdiagnosis by the international regulatory community. I see it differently, as more of a Hellespont crossing than bad analysis. The regulatory community's prioritization of hedge funds and equity tranches effectively committed their armies of analysts, supervisors, and policymakers to the task of defeating those particular risks to the financial system. Like Xerxes, we succeeded in winning many of *those* battles, but as the GFC showed, we lost the financial stability war. This raises two interesting questions.

First, what if we had acted like Artabanus rather than Xerxes? What if we had heeded the instinct to stay back and gather more data and do more analysis? Would we then have correctly identified the growth and spread of shadow banking vulnerabilities and their interconnectedness to the banking system? I doubt it. I recall working at the time on a project with the New York Fed to measure financial institutions' aggregate exposures to monoline insurers—a risk that *did* end up threatening financial stability. We were like Artabanus, gathering data and analyzing it and repeating the process to be certain and ironclad in our views. By the time we had something we felt was actionable, Merrill Lynch (to take but one example) had built up an exposure to super senior collateral debt obligations (CDOs) that would eventually force it into the arms of Bank of America the weekend that Lehman Brothers failed. Artabanus without Xerxes was no better.

Second, and more interestingly, did the prioritization of hedge funds and equity tranches have a role in *exacerbating* systemic risk by forcing it into less visible forms? Consider, for instance, equity tranches. Regulators had identified them as a systemic risk because they are the riskiest parts of securitizations, which were growing exponentially at the time. That focus almost certainly helped mitigate the risks that equity tranches posed to bank and broker-dealer balance sheets. However, I believe that focus likely contributed to the financial engineering of securitization structures that pushed risk up the capital stack into more highly rated tranches, where investors and regulators got lulled into a false sense of security.<sup>4</sup>

Thus, Gaddis's Hellespont story reminds us of the importance of balancing conviction and a bias toward action with humility, awareness, and respect for the dynamic nature of markets. This point has application today, which I will come back to later.

First, though, we need to ensure that we have good situational awareness of potential systemic risks. Heuristics can be helpful. Former Defense Secretary Donald Rumsfeld once quipped about known knowns, known unknowns, and unknown unknowns. I have found this to be a surprisingly useful lens through which to analyze systemic risk. Think of it as a way to channel Artabanus, i.e., a way to scan broadly for systemic risks and develop a strong “sensitivity to surroundings.”

## **Known Knowns**

Known knowns are familiar to us because we have seen and experienced them. To the extent that history repeats itself (or rhymes), prudence demands that we start with what we know.

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<sup>4</sup> See, for example, “[Report on Asset Securitisation Incentives](#),” The Joint Forum (July 2011); “[The Financial Crisis Inquiry Report](#),” The Financial Crisis Inquiry Commission (January 2011); “[Bank Investment in Securitizations: The New Regulatory Landscape in Brief](#),” Federal Deposit Insurance Corporation (Summer 2015).

Last year’s banking turmoil, for instance, was driven by three known knowns: *interest rate risk*, *liquidity risk*, and the *concentration* of both in certain banks. Shortly after the failures of Silicon Valley Bank, Signature Bank, and First Republic, attention quickly turned to *commercial real estate* (CRE), one of the most familiar known knowns of financial stability. Stubbornly high vacancy rates for certain types of properties in certain cities mean that banks and regulators will likely need to maintain heightened monitoring of such exposures for some time.

In 2022, Russia’s invasion of Ukraine reminded everyone of *geopolitical risk*, another known known. Today, the potential impacts from a broadening of the war in the Middle East and of confrontation over Taiwan also fall into this known known category.

Finally, I would also include *regulatory arbitrage* and financial engineering as a known known. In the lead-up to the 2008 financial crisis, there was an explosion of supposedly risk-reducing instruments and structures—from credit default swaps (CDS) to risk-weighted assets optimization transactions. These were used, often in creative combinations with each other, to give the appearance of risk mitigation, when in fact risk was simply converted into more opaque forms. The recent growth of *synthetic risk transfers* (SRT) has echoes of this and warrants close monitoring. While the majority of SRTs are done in fully funded form, repo funding of such paper by banks could bring those risks back into the banking system.<sup>5</sup>

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<sup>5</sup> See [Letter from CFA Institute Systemic Risk Council to The Honorable Jerome Powell, Chair, Board of Governors of the Federal Reserve System](#), September 18, 2024 (recommending that the Federal Reserve Board address “growing systemic vulnerabilities posed by credit derivatives known as ‘credit risk transfer’ transactions”).

## Known Unknowns

Known unknowns are less familiar to us and carry more uncertainty because we have yet to experience them at the financial stability level. We can imagine, stress-test, and “war-game” these “severe but plausible”<sup>6</sup> risks, but we have few historical data points to ground them in. As such, the tendency is to under-calibrate to these risks until it is too late, especially if proper calibration means having to take expensive or inconvenient actions. Fortunately, awareness of this danger can be helpful.

Take, for instance, *cyber risk* and the *operational resilience* of banking services that are critical to the functioning of the financial system (“critical operations”). While a cyber attack has not yet crippled a critical operation and caused financial instability, there is broad agreement that one could and that preparations need to be made accordingly. Joint exercises like the Hamilton Exercise Program and the FS-ISAC Cyber Attack Against Payment Systems exercise are a testament to that. Similarly, non-cyber-related disruptions can cripple a wide range of operations, as the recent CrowdStrike incident demonstrated. The OCC is currently developing an advance notice of proposed rulemaking on operational resilience standards for critical operations, and we recently finalized updated guidelines regarding recovery plan expectations.<sup>7</sup>

In terms of financial risks, I would also characterize “*crowded trades*”—where a critical mass of sell-side trading desks take a similar position—as a known unknown. In the 2008 GFC, the popular “negative basis trade” combined CDOs, CDS, and monolines into a toxic mix that

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<sup>6</sup> “Severe but plausible” is a widely used phrase in the context of stress testing and assessment of resilience. See, for example, OCC Bulletin 2020-94, “[Operational Risk: Sound Practices to Strengthen Operational Resilience](#)” (October 30, 2020); OCC [Semianual Risk Perspective \(Spring 2024\)](#); “[Principles for sound stress testing practices and supervision,](#)” Basel Committee on Banking Supervision (May 2009).

<sup>7</sup> OCC News Release 2024-120, “[OCC Finalizes Revisions to Its Recovery Planning Guidelines](#)” (October 21, 2024).

eventually crippled confidence in Wall Street banks when it blew up. More recently, the unwindings of the U.K. liability-driven investments trade and the yen carry trade spooked markets and required action by authorities.

Finally, the financial history of the U.S. suggests that systemic risks can build during periods when the line between banking and commerce blurs.<sup>8</sup> The Panic of 1907 was preceded by a decade-long rise of New York state trust companies. The Great Crash of 1929 was preceded by years of banks' aggressive forays into securities lending. And the 2008 GFC was preceded by the steady and rapid growth of shadow banking. Today, risks in *private credit, banking supply chains*, and, possibly, *mortgage servicing*—areas that are being closely monitored by regulators<sup>9</sup>—are associated with this blurring.

## Unknown Unknowns

Unknown unknowns are risks we have yet to seriously contemplate or that seem fanciful or even ridiculous to consider.

Take, for instance, *undersea cables*.<sup>10</sup> The vast majority of international internet traffic is carried by such cables. Cutting them could cause massive disruption to commerce, with highly uncertain impacts on the financial system. Satellite capacity to pick up the slack is limited. To

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<sup>8</sup> See Acting Comptroller of the Currency Michael J. Hsu, [“Preventing the Next Great Blurring,”](#) Vanderbilt University (February 21, 2024).

<sup>9</sup> See *ibid.*; Acting Comptroller of the Currency Michael J. Hsu, [“Size, Complexity, and Polarization in Banking,”](#) Remarks Before the Exchequer Club (July 17, 2024); Financial Stability Oversight Council, [“Report on Nonbank Mortgage Servicing”](#) (2024); International Monetary Fund, [“The Last Mile: Financial Vulnerabilities and Risks”](#) (April 2024) (chapter 2 assesses vulnerabilities and potential risks to financial stability in corporate private credit).

<sup>10</sup> Daniel Runde, Erin Murphy, and Thomas Bryja, [“Safeguarding Subsea Cables: Protecting Cyber Infrastructure Amid Great Power Competition,”](#) Center for Strategic and International Studies, August 2024; Katrina Manson, [“NATO Backs Efforts to Save Internet by Rerouting to Space in Event of Subsea Attacks,”](#) *Bloomberg*, updated July 9, 2024.

most observers, the likelihood of such an event occurring is too low-probability to warrant attention and preparation—on par with a high-impact solar flare or a San Andreas fault earthquake.

*Quantum computing* has a similar feel.<sup>11</sup> Warnings of so-called “Q-Day,” or the point when quantum computing renders all pre-quantum encryption algorithms moot, have been around for some time. The impacts from such a development would be extraordinarily wide-ranging given our reliance on encryption to safeguard all things digital.

These types of risks can be overwhelming to ponder. Where does one start? What if risk mitigation is impossible or would take extraordinary resources, time, and coordination? What if the risk sits outside of any agency’s authority to address?

A key challenge with unknown unknowns is that the instinct to problem solve can create blind spots. These risks, almost by definition, defy easy solutions and categorization. Just because there isn’t a solution, however, doesn’t mean there isn’t a problem.

## **Conclusion**

Frameworks provide a way to think systematically about risk. A systematic approach is necessary, otherwise we are just chasing whims or making things up as we go. The systemic risk identification processes that the FSOC and bodies like the Systemic Risk Council go through provide invaluable insights into the range of risks that should be considered. The known known framework I just described operates in a similar manner.

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<sup>11</sup> Tahsin Saadi Sedik, Majid Malaika, Michael Gorbanyov, and José Deodoro, [“Quantum Computing’s Possibilities and Perils.”](#) International Monetary Fund, *Finance & Development Magazine* (September 2021); BIS Innovation Hub, [“Project Leap: Quantum-Proofing the Financial System.”](#) (January 11, 2024).



By design, good risk identification processes should result in overinclusive lists. Done right, that should then give rise to the challenge of figuring out what to prioritize and focus on.

Taking decisive action against an emerging systemic risk warrants careful thought. Whether, when, and how to cross the Hellespont and declare war on a specific emerging systemic risk carries high opportunity costs and may have unintended consequences. At the same time, analyzing and discussing risks endlessly can result in costly inaction.

In my experience, there is a healthy mix of both Xerxes and Artabanus perspectives and personalities in the financial stability space. Effective financial stability policymaking requires heeding both voices and balancing them accordingly.