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Pushing through undercurrents

Technology's impact on systemic risk: A look at insurance

As more financial institutions embrace digital innovation, risks emerge that could threaten the stability of the financial system. Some of these risks originate from a single sector. Either way, they could proliferate and become systemic without appropriate management.

To understand what these technology-driven risks look like, the World Economic Forum (the Forum) and Deloitte consulted over 100 financial services and technology experts in the development of a new report, Pushing through undercurrents. This group shared more specific perspectives on the forces behind technology-driven systemic risk in the insurance sector. You can learn more in the *full report from the Forum, and the executive summary from Deloitte.*

Risk 1: Vulnerabilities in parametric insurance smart contracts

What could go wrong?

Because smart contracts are designed to automatically execute, any programming flaws or security vulnerabilities could result in substantial insurance losses. The risk is growing because:

- Smart contracts could be undermined by coding errors in their blockchain networks
- The immutability feature of smart contracts makes it harder to resolve errors in a timely manner
- Reliance on external data sources that could be manipulated exposes smart contracts to risks
- The evolving regulatory and legal landscape creates uncertainty around the enforcement of smart contract agreements

This risk could become systemic if, for example, a breach in third-party data causes multiple insurers to make wrongful payouts on their smart contracts.

What sectoral and regional forces could amplify the risk?

- Unclear legal and regulatory standards governing digital contracts
- Underdeveloped technological infrastructure
- Limited knowledge of how smart contracts operate

How can the industry mitigate it?

Goal	Mitigation opportunities
Cyber and operational resilience	• Audit smart contract source codes • Adopt best practices and use safe programming languages
Robust governance	• Reinforce governance mechanisms in smart contracts
Regulatory and legal coverage	• Include smart contracts in existing regulatory and legal frameworks

Risk 2: Growing protection gap for catastrophic cyberattacks

What could go wrong?

Financial institutions' ability to recover from large-scale cyberattacks may be diminishing as insurers begin to limit their exposure. The risk is growing because:

- Cyberwarfare tactics are increasingly being used to accelerate geopolitical tensions between nation states
- Generative AI is lowering barriers to entry for cyber criminals (e.g., using ChatGPT to create malware)
- Funding from nation states enables sophisticated, high-impact attacks
- Limited ability to predict and defend against large-scale cyberattacks is helping to make cyber insurance less affordable

This risk could become systemic if, for example, a cyberattack cripples multiple banks or critical third-party providers that are covered by the same insurer.

What sectoral and regional forces could amplify the risk?

A large network of third-party service vendors

- Limited availability of cybersecurity diagnostic data
- Lack of cross-border coordination between governments

How can the industry mitigate it?

Goal	Mitigation opportunities
Alternative sources of capital to cover growing cyber risks	• Raise funds in private markets through insurance-linked securities
Public-Private support to prevent or absorb cyberattack damage	• Stress-test cyber underwriting risk and financial resilience • Create resource centers that offer access to cybersecurity tools and services
Intelligence on cyberattack damage	• Quantify cyber risk damage to measure portfolio exposure to cyber threats

To learn more about technology's impact on systemic risk in banking, including examples, please see pages 71-81 of the full report.

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