Systemic cyber risks

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systemic cyber risk

**DYN**
DDOS attack on major domain name provider

Disabled Amazon, Twitter, Spotify, Netflix, PayPal, CNN, Box, Swedish government

**WannaCry/NotPetya**
Malware attack
Global reach
High cost to diverse sector

**Power grid attacks**
Russian intrusion into U.S. power grid
2016 Russian attack on Ukrainian power grid
cascading systemic cyber risk

Domino effect across firms connected by supply chains and computer networks
common cause systemic cyber risk

Common software or hardware vulnerability exploited across multiple firms
Importance of firm-level networks
Systemic Risk in the Broad Economy

- AMAZON.COM, INC.
- COMCAST CORPORATION
- UNITEDHEALTH GROUP INCORPORATED
- WALMART INC.
- PRUDENTIAL FINANCIAL, INC.
- CVS HEALTH CORPORATION
- APPLE INC.
- THE ALLSTATE CORPORATION
- AT&T INC.
- AMERISOURCEBERGEN CORPORATION
- BANK OF AMERICA CORPORATION
- EXXON MOBIL CORPORATION
- INTERNATIONAL BUSINESS MACHINES CORPORATION
- CITIGROUP INC.
- THE PROGRESSIVE CORPORATION
- ANTHEM, INC.
- MCKESSON CORPORATION
- THE BOEING COMPANY
- GENERAL DYNAMICS CORPORATION
- TECH DATA CORPORATION

$ Billions
The pandemic has driven a rapid economic transition.
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https://www.rand.org/pubs/research_reports/RR4185.html

https://www.rand.org/pubs/working_papers/WR1311.html