Global Risk Digest

Potential Disruptors to Organizations, Markets & Wider Society

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Distilling insights from some of the world’s finest research and think tanks: the unaffiliated World Economic Forum, OECD, the US National Intelligence Council, and the Economist Intelligence Unit. The Global Risk Digest provides concise abstracts / excerpts on current and emerging disruptors and likely impacts with “drill-down” access to deeper analysis with links to original works.

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Global Risk Digest
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Global Risk Digest

The goal of this special project of the Global Resilience Network & the Metropolitan Resilience Network is to assist members and project participants in sorting through the diversity of risk information to identify the emerging strategic risks of which you and your organization should be aware.

This digest provides in large part summaries and excerpts with direct links to the substantial work and insights of leading organizations and think tanks: the World Economic Forum, OECD, the US National Intelligence Council, and the Economist Intelligence Unit. We highly recommend these core works to all readers.

The Global Risk Digest Project has two key activities:

1. Distillation of leading research from key forums and think tanks
2. Ongoing filtering and exploration of risks by corporate leaders and risk experts at Global Risk Forums in Europe, Asia & the Americas

Core Deliverables / Products:

- Periodic Global Risk Digests with
  - brief high level summaries of key risks / disruptors and
  - drill-down links back to the source materials if greater detail is of interest
  - targeted additional research, based on priorities set by member outreach, to include:
    a. potential impacts of specific risks / disruptors
    b. precursors / red flag indicators that a risk is imminent
    c. strategies to address the risk (capitalizing on opportunities / mitigating threats)
    d. interdependencies likely between these risks / disruptors

- Ongoing Global Risk Forums to leverage the “human filter” to prioritize and explore risks through convening senior corporate and public sector risk leaders and subject matter experts in focused facilitated discussion.

*We welcome your feedback* on how we can better develop this as a resource for you and your organization. Please contact us at intercep@nyu.edu
Environmental

Natural Environmental Risks:

Extreme Weather Events (e.g. Floods, Storms, etc.) (Link pg. 9, 34, 45)
“Major property, infrastructure and environmental damage as well as human loss caused by extreme weather events”¹

Major Natural Catastrophes (e.g. Earthquake, Tsunami, Volcanic Eruption, Geomagnetic Storms) (Link pg. 53)
“Major property, infrastructure and environmental damage as well as human loss caused by geophysical disasters such as earthquakes, volcanic activity, landslides, tsunamis or geomagnetic storms”²

Solar Geomagnetic Storms (Link pg. xi, 49)
“Solar geomagnetic storms could knock out satellites, the electric grid, and many sensitive electronic devices. The recurrence intervals of crippling solar geomagnetic storms, which are less than a century, now pose a substantial threat because of the world’s dependence on electricity.”³

Man Made Environmental Risks:

Failure of Climate Change Adaptation (Link pg. 13, 34)
“Governments and businesses fail to enforce or enact effective measures to protect populations and to help businesses impacted by climate change to adapt”⁴

Man-Made Environmental Catastrophes (e.g. Oil Spill, Radioactive Contamination, etc. (Link pg. 21, 53)
“Failure to prevent major man-made catastrophes causing harm to lives, human health, infrastructure, property, economic activity and the environment”⁵


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Major Biodiversity Loss and Ecosystem Collapse (Land or Ocean) (Link pg. 18)
“Irreversible consequences for the environment resulting in severely depleted resources for humankind as well as industries such as fishing, forestry, pharmaceuticals”

Infectious Disease Risks:

Severe Pandemic (Link pg. xi, 110)
“No one can predict which pathogen will be the next to start spreading to humans, or when or where such a development will occur. An easily transmissible novel respiratory pathogen that kills or incapacitates more than one percent of its victims is among the most disruptive events possible. Such an outbreak could result in millions of people suffering and dying in every corner of the world in less than six months.”

Rapid and Massive Spread of Infectious Diseases (Link pg. 13)
Bacteria, viruses, parasites or fungi cause uncontrolled spread of infectious diseases (for instance due to resistance to antibiotics, antivirals and other treatments), leading to widespread fatalities and economic disruption

Technological/ Infrastructure

General Technological Risks:

Failure/Shortfall of Critical Infrastructure (Link pg. 54)
“Failure to adequately invest in, upgrade and secure infrastructure networks leads to a breakdown with system-wide implications”

Massive and Widespread Misuse of Technologies (e.g. 3D Printing, Artificial Intelligence, Geo-Engineering Synthetic Biology, etc.) (Link pg. 54)
“Massive and widespread misuse of technologies such as 3D printing, artificial intelligence, geo-engineering and synthetic biology, causing human, environmental and economic damage”

Vulnerable Supply Chains (Link pg. 8)
“Events such as the Great East Japan Earthquake of the floods in Thailand have highlighted the vulnerability of current supply chain systems, where the disruption

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in a critical element of the chain led to the shutdown of entire manufacturing processes.\textsuperscript{11}

**Wider Access to Lethal and Disruptive Technologies** (Link pg. v)

“A wider spectrum of instruments of war—especially precision-strike capabilities, cyber instruments, and bioterror weaponry—will become accessible. Individuals and small groups will have the capability to perpetrate large-scale violence and disruption—a capability formerly the monopoly of states.”\textsuperscript{12}

**Cyber-Related Risks:**

**Breakdown of Critical Information Infrastructure and Networks** (Link pg. 54)

“Systemic failures of critical information infrastructure (e.g. Internet, satellites, etc.) and networks negatively impact industrial production, public services and communications.”\textsuperscript{13}

**Large-Scale Cyber Attacks** (Link pg. 54)

State-sponsored, state-affiliated, criminal or terrorist large-scale cyber attacks cause an infrastructure breakdown and/or loss of trust in the Internet”\textsuperscript{14}

**Massive Incident of Data Fraud/Theft** (Link pg. 54)

“Criminal or state-sponsored wrongful exploitation of private or official data takes place on an unprecedented scale”\textsuperscript{15}

**Political**

**Geopolitical Risks:**

**A Democratic or Collapsed China** (Link pg. xi, 50, 57)

“China is slated to pass the threshold of US$15,000 per capita purchasing power parity (PPP) in the next five years or so—a level that is often a trigger for democratization. Chinese “soft” power could be dramatically boosted, setting off a wave of democratic movements. Alternatively, many experts believe a democratic China could also become more nationalistic. An economically collapsed China would trigger political unrest and shock the global economy.”\textsuperscript{16}

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A Reformed Iran (Link pg. xi)
“A more liberal regime could come under growing public pressure to end the international sanctions and negotiate an end to Iran’s isolation. An Iran that dropped its nuclear weapons aspirations and became focused on economic modernization would bolster the chances for a more stable Middle East.”¹⁷

Diffusion of Power (Link pg. 15)
“There will not be any hegemonic power. Power will shift to networks and coalitions in a multipolar world.”¹⁸

Interstate Conflict with Regional Consequences (Link pg. 13, 54)
“A bilateral or multilateral dispute between states escalates into economic (e.g. trade/currency wars, resource nationalization), military, cyber, societal or other conflict”¹⁹

Non-State Actors and Terrorism (Link pg. ii, 19 Link pg. 13)
“Driven by new technologies, nonstate actors take the lead in confronting global challenges.”²⁰

“Individuals or non-state groups with political or religious goals successfully inflict large-scale human or material damage”²¹

Potential Scenario—Russia's Intervention in Ukraine Escalates, Leading to Cold War-Era Tension (Link)
“In Ukraine, where a separatist war fuelled by Russia has prompted the worst East-West crisis since the end of the cold war, a shaky ceasefire has not been sufficient to prevent the US from imposing a new round of sanctions in March and debating publicly whether to supply weapons to the Ukrainian government (prompting condemnation from Russia, which, despite evidence to the contrary, denies sending troops into eastern Ukraine).”²²

State Collapse or Crisis (e.g. Civil Conflict, Military Coup, Failed States, etc.) (Link pg. 13, 54)
“State collapse of geopolitical importance due to internal violence, regional or global instability and military coup, civil conflict, failed states, etc.”²³


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US Disengagement (Link pg. xi Link pg. ii, xii, xiii, 3, 110, 114)
“A collapse or sudden retreat of US power probably would result in an extended period of global anarchy; no leading power would be likely to replace the United States as guarantor of the international order.”

“In the most plausible worst-case scenario, the risks of interstate conflict increase. The US draws inward and globalization stalls.”

Weapons of Mass Destruction (Link pg. 13 Link pg. xi)
“Nuclear, chemical, biological and radiological technologies and materials are deployed creating international crises and potential for significant destruction”

“Nuclear powers such as Russia and Pakistan and potential aspirants such as Iran and North Korea see nuclear weapons as compensation for other political and security weaknesses, heightening the risk of their use. The chance of nonstate actors conducting a cyber attack—or using WMD—also is increasing.”

Economic

Asset Based Risks:

Asset Bubble in a Major Economy (Link pg. 18, 53)
“Unsustainably overpriced assets, such as commodities, housing, shares, etc., in a major economy or region”

Deflation in a Major Economy (Link pg. 18, 53)
“Prolonged ultra-low inflation or deflation in a major economy or region”

Unmanageable Inflation (Link pg. 53)
“Unmanageable increase in the general price level of goods and services in key economies”

General Economic Risks:


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Crisis-Prone Global Economy (Link pg. ii)
“Will global volatility and imbalances among players with different economic interests result in collapse? Or will greater multipolarity lead to increased resiliency in the global economic order?”31

Definitive Shift of Economic Power to the East and South (Link pg. v)
“The US, European, and Japanese share of global income is projected to fall from 56 percent today to well under half by 2030. In 2008, China overtook the US as the world’s largest saver; by 2020, emerging markets’ share of financial assets is projected to almost double.”32

Globalization and Economic Integration (Link pg. 4)
“Accelerated urbanisation and increased global economic integration (Box 1), facilitated by transport mobility and communication, have equally contributed to the surge in intensity of disruptive shocks.”33

Potential Scenario—Economic Stagnation and Political Populism Prompt a Euro Zone Break-Up (Link)
“The victory of the far-left Syriza party in Greece’s parliamentary election in January has once again raised the prospect of a country withdrawing from the euro zone…. Such a scenario would be hugely destabilising for the global economy. The weaker former euro zone members would default as their currencies plummeted and funding costs soared, and banks globally would suffer large losses.”34

Potential Scenario—Economic Upheaval Leads to Widespread Social and Political Unrest (Link)
“The global economic downturn has had a severe social impact, which has been compounded periodically by high food and fuel prices as well as, in some cases, aggressive fiscal austerity.”35

Potential Scenario—The Deteriorating Security Situation in the Middle East Threatens Global Economic Stability (Link)
“The conflict in Syria (and the country's simultaneous disintegration) has spilled over its borders, with the sweeping gains in Iraq by Islamic State (IS; formerly the Islamic State of Iraq and al-Sham) precipitating a major regional security crisis.”36


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Potential Scenario—The US Economy Stumbles in the Face of Monetary Tightening and Political Dysfunction (Link)
“The markets have periodically been rattled by speculation surrounding the end of the Fed's QE programme and associated future rate rises, and by political deadlock in Washington over fiscal matters…A recession in the US, the largest economy in the world and a significant driver of global demand, would only compound the drag on global growth being exerted by the continued crisis in the euro zone, bringing the emerging-market economies down with it.”37

Energy and Commodity Based Risks:

Energy Price Shock to the Global Economy (Link pg. 16, 53)
Sharp and/or sustained energy price increases that place further economic pressures on highly energy-dependent industries and consumers”38

Potential scenario—A Collapse in Investment in the Oil Sector Prompts a Future Oil Price Shock (Link)
“The slump in oil prices has lifted hopes of a windfall for oil-importing states, potentially boosting consumer spending and raising global growth. However, the response of the world's oil companies should raise concerns about the long-term impact on future energy supplies.”39

Potential Scenario—A Commodity Price Slump and Investment Crunch in China Entrench the Emerging-Market Slowdown (Link)
“Having been the primary driver of global growth for more than a decade, particularly since the onset of the recession in 2008, emerging markets have suffered a substantial economic reverse over the past two years, as institutional and policy shortcomings in countries such as Brazil and South Africa have hindered development.”40

US Energy Independence (Link pg. v)
“With shale gas, the US will have sufficient natural gas to meet domestic needs and generate potential global exports for decades to come. Increased oil production from difficult-to-access oil deposits would result in a substantial

reduction in the US net trade balance and faster economic expansion. Global spare capacity may exceed over 8 million barrels, at which point OPEC would lose price control and crude oil prices would collapse, causing a major negative impact on oil-export economies.”41

**Failure of a Major Financial Mechanism or Institution** *(Link pg. 18, 53)*
“Collapse of a financial institution and/or inefficient functioning of a financial system with implications throughout the global economy”42

**Fiscal Crisis in Key Economies** *(Link pg. 13, 53)*
“Excessive debt burdens generate sovereign debt crises and/or liquidity crises”43

**High Structural Unemployment or Underemployment** *(Link pg. 13, 53)*
“A sustained high level of unemployment or underutilization of the productive capacity of the employed population”44

**Societal**

**Demographic Risks:**

**Demographic Shifts** *(Link pg. ii, 20-26)*
“The demographic arc of instability will narrow. Economic growth might decline in ‘aging’ countries. Sixty percent of the world’s population will live in urbanized areas; migration will increase.”

**Population Density** *(Link pg. 4)*
“...Increasing concentrations of people, especially a growing number of vulnerable populations (figure 2), such as marginalized and elderly, and economic assets in risk prone areas.”45

**Social Order Risks:**

**Failure of National Governance (e.g. Corruption, Illicit Trade, Organized Crime, Impunity, Political Deadlock, etc.)** *(Link pg. 13 Link pg. vii, 48-55)*
“Failure of National Governance (e.g. Corruption, Illicit Trade, Organized Crime, Impunity, Political Deadlock, etc.)”46

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“Will governments and institutions be able to adapt fast enough to harness change instead of being overwhelmed by it?” 47

**Large-Scale Involuntary Migration** *(Link pg. 54)*

“Large-Scale involuntary migration due to conflict, disasters, environmental or economic reasons” 48

**Profound Social Instability** *(Link pg. 13, 34 Link pg. ii, 122)*

“Major social movements or protests (e.g. street riots, social unrest, etc.) disrupt political or social stability, negatively impacting populations and economic activity” 49

“Inequalities explode as some countries become big winners and others fail. Inequalities within countries increase social tensions. Without completely disengaging, the US is no longer the ‘global policeman.’” 50

**Regulatory Challenges** *(Link pg. 7)*

“Risk Regulations have often not kept in pace with changing risk environments.” 51

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**Works Cited**


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