



Cambridge Centre for Risk Studies Seminar
Emerging Risks Scenarios for Risk Management

Emerging Risks – Threats and Opportunities

Centre for
Risk Studies



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'1-in-100' Emerging Risks Stress Test Scenarios



Geopolitical Conflict

China-Japan Conflict

Regional conflict in South China Sea embroiling multiple military powers



Cyber Catastrophe

Sybil Logic Bomb Cyber Attack

Major compromise of commercial IT systems by cyber attack



Human Pandemic

São Paulo Flu Pandemic

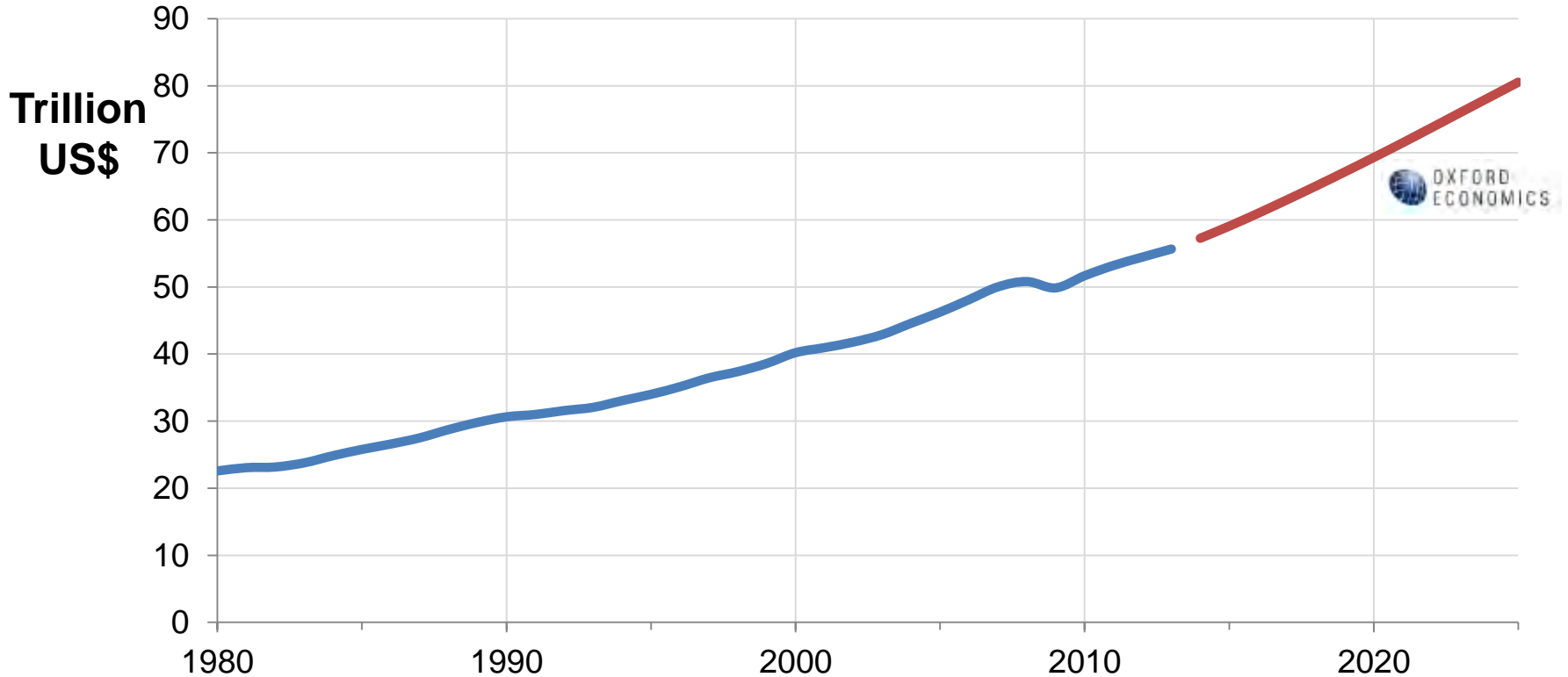
Virulent influenza pandemic causes months of absenteeism and economic disruption

Disclaimer

- These are hypothetical scenarios developed as stress tests for risk management purposes
- They are not predictions
- The Centre for Risk Studies develops hypothetical scenarios for use in improving business resilience to shocks
- These are contingency scenarios used for ‘what-if’ studies and do not constitute forecasts of what is likely to happen

**Hope for the best.
Plan for the worst.**

The Baseline Outlook is Positive



Global GDP 1980:

\$22.5 Trillion

Historical Average Annual Growth Rate 1980-2006:

3.0%

Global GDP 2013:

\$55.6 Trillion

OE Economic Forecast Global GDP 2025:

\$80.5 Trillion

Forecast Size of Global Economy in 2025, relative to today:

145%

Forecast Average Annual Growth Rate 2014-2025:

3.2%

But the Road to Growth is Rocky

South Sea Bubble
1720



American Revolution
1775-1783



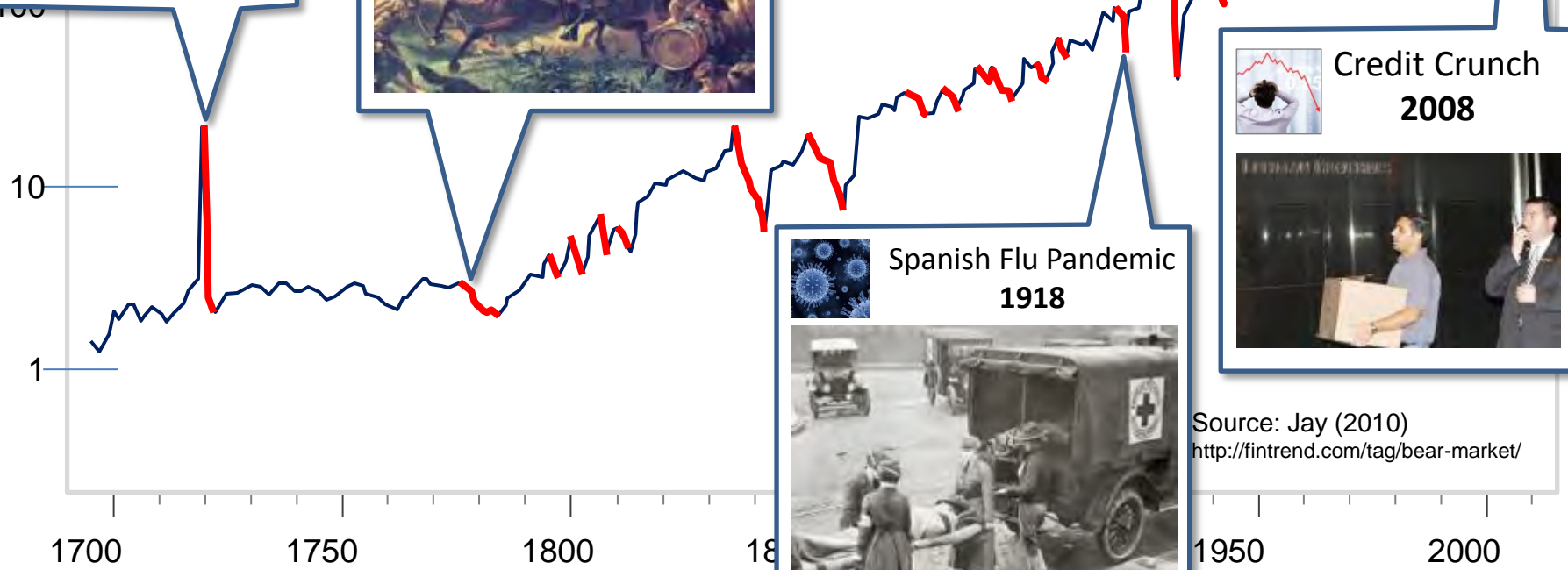
World War II
1939



Credit Crunch
2008



Spanish Flu Pandemic
1918



Source: Jay (2010)
<http://fintrend.com/tag/bear-market/>

Taxonomy of Threats to Macroeconomic Growth

Financial Shock

FinCat

Asset Bubble
Financial Irregularity
Market Crash
Sovereign Default
Bank Run

Trade Dispute

TradeCat

Labour Dispute
Trade Sanctions
Cartel Pressure
Nationalization
Tariff War

Geopolitical Conflict

WarCat

External Force
Civil War
Nuclear War
Conventional War
Asymmetric War

Political Violence

HateCat

Organized Crime
Assassination
Civil Disorder
Terrorism
Separatism

Natural Catastrophe

NatCat

Volcanic Eruption
Flood
Tsunami
Earthquake
Windstorm

Climatic Catastrophe

WeatherCat

Tornado & Hail
Electric Storm
Heatwave
Drought
Freeze

Environmental Catastrophe

EcoCat

Wildfire
Pollution Event
Atmospheric System Change
Sea Level Rise
Ocean System Change

Technological Catastrophe

TechCat

Cyber Catastrophe
Technological Accident
Infrastructure Failure
Nuclear Meltdown
Industrial Accident

Disease Outbreak

HealthCat

Waterborne Epidemic
Zoonosis
Plant Epidemic
Human Epidemic
Animal Epidemic

Humanitarian Crisis

AidCat

Child Poverty
Welfare System Failure
Refugee Crisis
Famine
Water Supply Failure

Externality

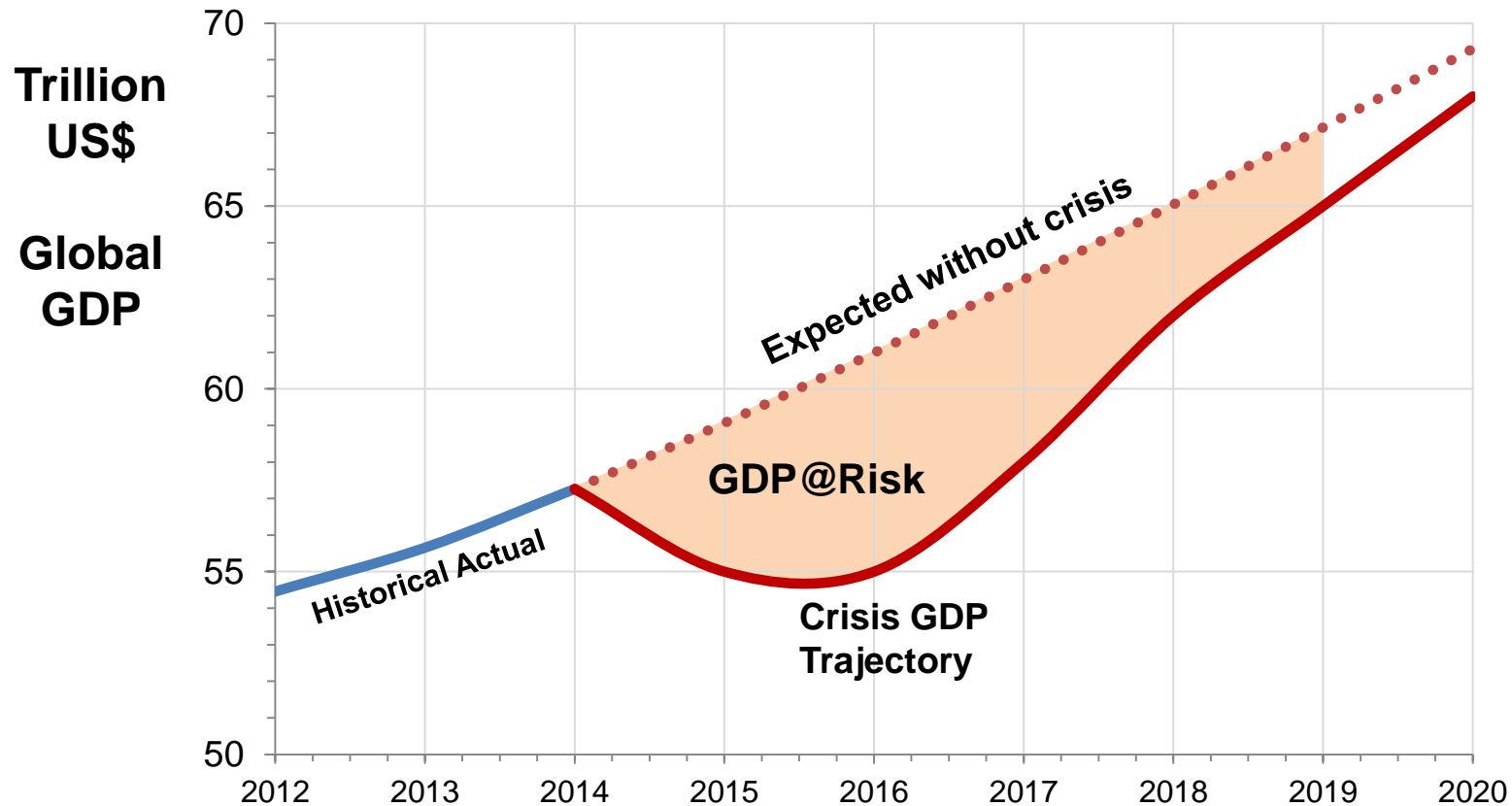
SpaceCat

Space Threat
Ozone Layer Collapse
Satellite System Failure
Meteorite
Solar Storm

Other

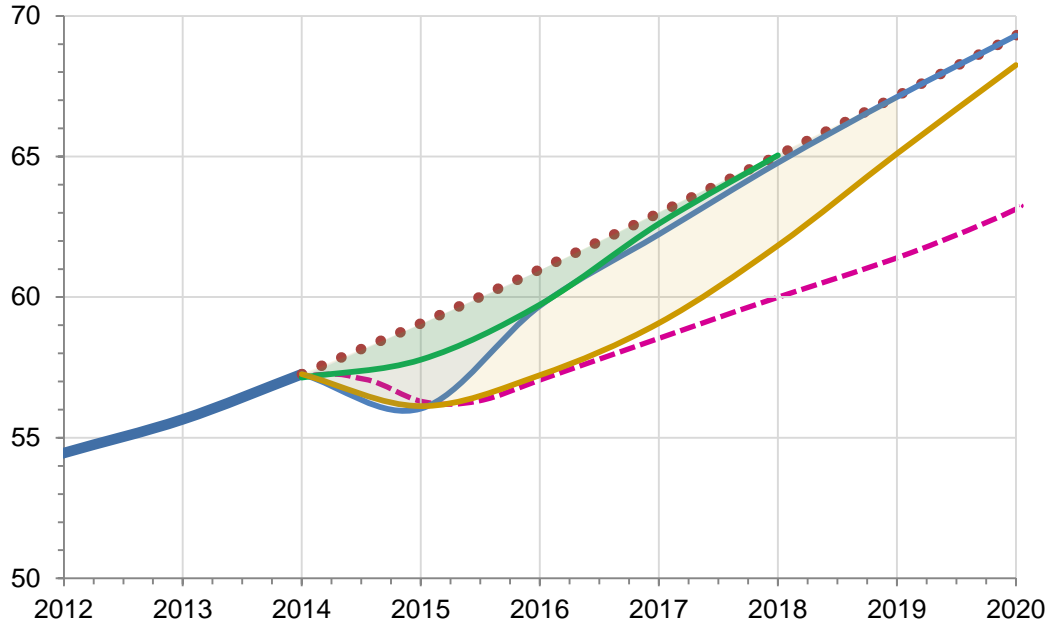
NextCat

Introducing 'Catastromomics'



GDP@Risk: Cumulative first five year loss of global GDP, relative to expected, resulting from a catastrophe or crisis

Global GDP@Risk from 1% Annual Probability Scenarios



US\$ Trillion



Geopolitical Conflict

16.8



Pandemic

6.8



Cyber Catastrophe

2.9

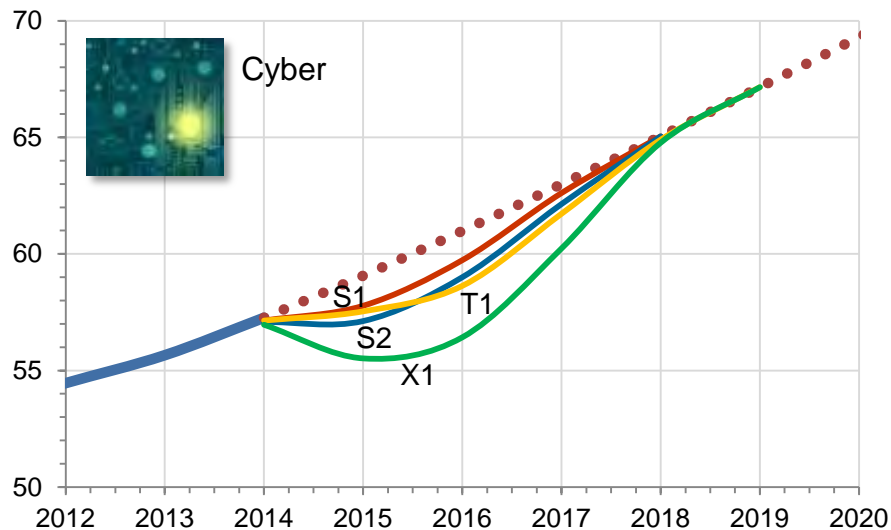
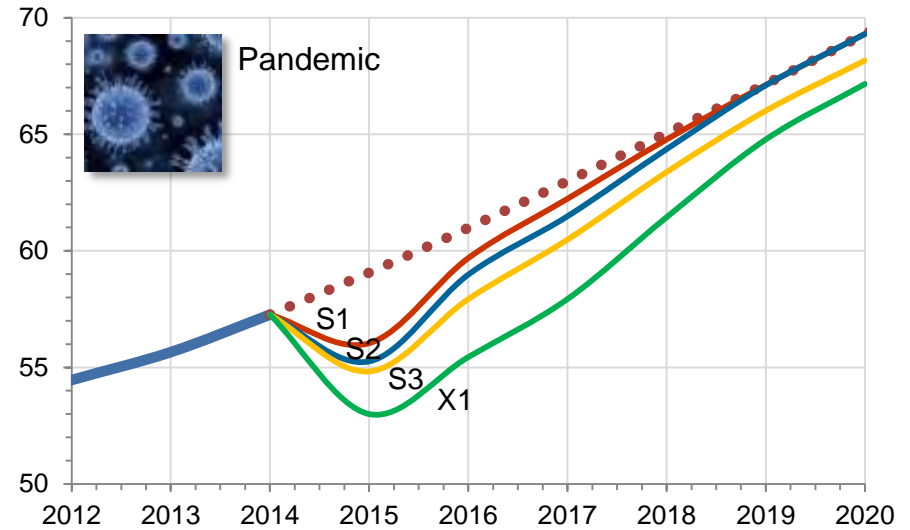
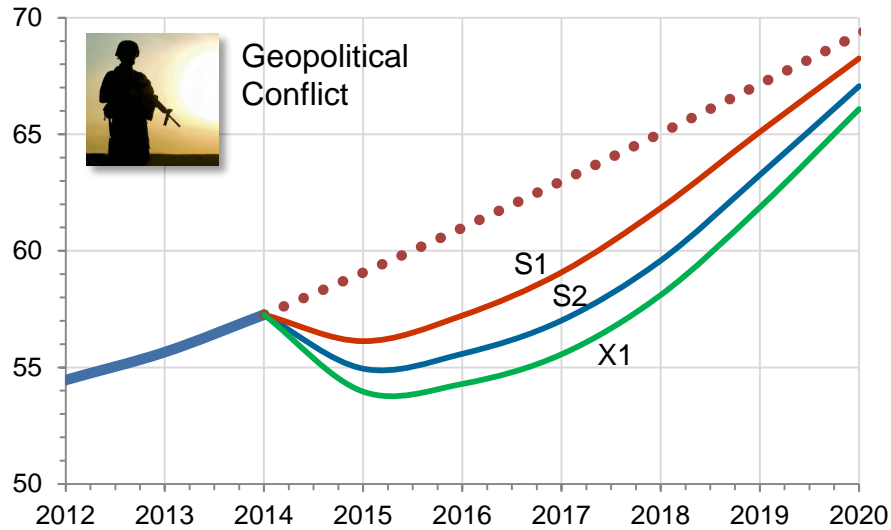
2007-2012 Great Financial Crisis

18.1

----- Great Financial Crisis as if at 2014

19.7

Scenarios and Their Variants: Shape of Impacts



How Can You Use These Stress Tests?

■ Insurance companies

- Multi-line underwriting losses + Operational risks + Investment risk
 - Example data points on correlation
- Complex accumulations and portfolio management
- Identify new product offerings and business opportunities

■ Corporate businesses

- Challenging management assumptions about status quo
- Crisis preparedness and contingency planning
- Supply chain and counterparty risk

■ Financial Risk Managers

- ‘Exogenous shock’ stress test scenarios for investment portfolios

■ Policy makers

- Prioritization of resources for civil emergency preparedness
- National security of food, energy, infrastructure and essential services

Scenario Reports Coming Soon

Complete



Currently in Draft



First Draft May

