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The Problem: Finance 101

- How to get what we want out of the financial system?
- Supporting economic growth and other policy objectives like inequality, environment and political stability
- Without too many costly crises and abuse

- How to find optimal risk-return trade-off?

- The technical problem is how do we identify and then measure risk?
- When we have so little data on what matters most

How can we control an infinitely complex system?

Outcomes

Worst ← Typical → Best

Almost no data
Events very infrequent
And unique in detail

Plenty of data
Events very frequent
And similar

Almost no data
Events very infrequent
And unique in detail

Learning hard
Control hard

Learning easy
Control easy

Learning hard
Control hard

The big temptation is to learn from the data abundant middle
and use that to control the data scarce extremes

The Illusion of Control

We need to agree on risk so we can control it

Nuclear war destroying all assets

Confiscation of all private assets

Loosing pension

Loosing job

War destroying most assets

1929 style depression

Chinese debt

Italy

Environment

Real estate crash

Major financial and economic recession

Inflation

Extremism

2008 style crisis

Banking crisis

AI

CDS spreads

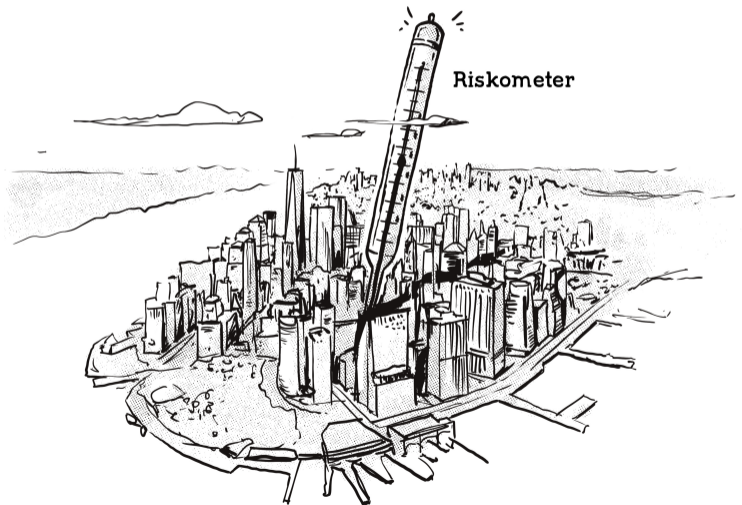
Value-at-risk

Volatility

Paralysis by analysis

We need a riskometer (i.e. a model) to measure risk

All models are wrong, some are useful



Day-to-day risk is not important to the vast majority of human beings

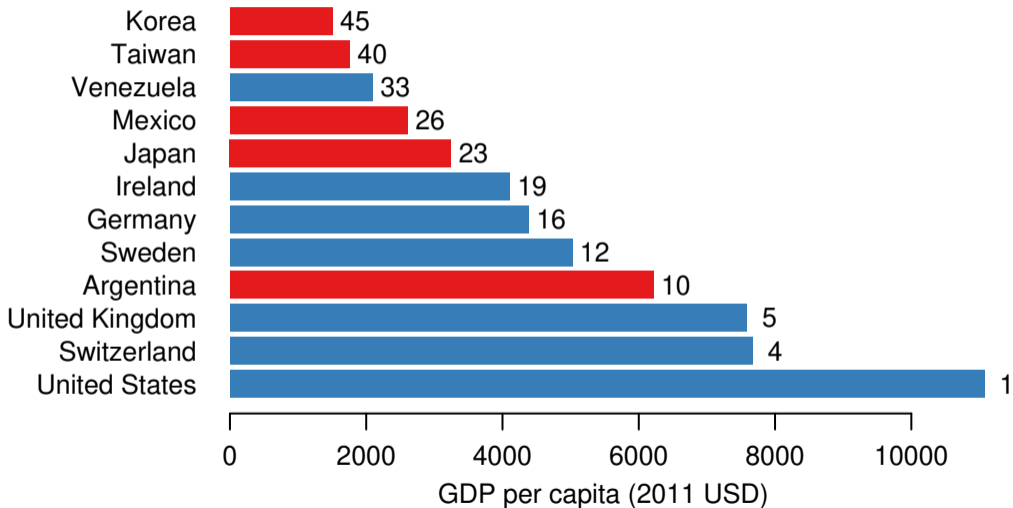
Volatility, Value-at-Risk, VIX, CDS and the like are mostly irrelevant

What matters is extreme risk

The driver of extreme risk/fortune/disaster is politics

- 2008, Italy, Trump, Ukraine, Taiwan, Venezuela, Middle East, real estate, inflation, . . .
- Because politics allows the risk to emerge and prevents timely solutions
- The inability to deal with environmental risk is entirely political
- As is the demographic challenge
- Politics works against those who want to prevent undesirable outcomes
- Booms deliver short term tangible benefits
- And not many want to pay now to solve possible future problems

GDP and rank in 1923



How financial institutions optimise

- Maximise profits subject to not going bankrupt
 - Roy (1952) *Econometrica*
- That means financial institutions optimise for profits most of the time, perhaps 999 days out of 1,000
- However, on that one last day, when great upheaval hits the system, and a crisis is on the horizon, survival, rather than profit, is what they care most about
- The “one day out of a thousand” problem
- That behavioural shift is both at the root of why crises are so difficult to prevent and also explains the economic damage from crises

Events or fundamentals

- There are a handful of fundamental drivers of large losses
 1. leverage
 2. self-preservation
 3. complexity
- And an infinite number of events that affect those fundamentals
- Crises are fundamentally the same and unique in detail

- Axiomatic that crises happen where the authorities are not looking

The policy objective again

- The objective of financial regulations should be to maximise economic growth
- Subject to
 - protecting the users of the system (micropru)
 - and not have many costly financial crises (macropru)
 - and other social objectives like equality, environment
- It is not
 - de-risk, financial stability, compliance, reporting, ...
 - these are only instruments to meet the objective

Policy options: Buffers vs. resiliency

- Current macro prudential policies based on creating large buffers to protect society from financial institutions
- Leading to a cat and mouse game where the buffers are progressively made larger
- At ever more cost to society

- It would be better to leverage the inherent ability of the financial system to absorb shocks
- To build resilience

What takes us towards buffers and away from resiliency?

- Anything that makes financial institutions more similar in outlook and action
- Regulations now, by and large, do that by harmonising beliefs and action
- Level playing fields increase the fixed cost of complying →, increasing returns to scale
- The thrust of financial regulations since 2008 has been to control the measurable, not what matters
- After all, the financial system is effectively infinitely complex, so any control put on it only affects a small part of the action space
- And hence increase systemic risk

There will be another crisis, and it will happen where nobody is looking.

Better to use Finance 101: Diversification

- The more heterogeneous financial institutions are:
 - a. the higher the shock absorption capacity of the system
 - b. the better financial services are tailored to the user
 - c. the lower the cost of regulating
- The best way to address *The Illusion of Control* is diversity in the type of financial institutions we have

How can the authorities do this?

- Actively encourage financial institutions to be as different from each other as possible
- And regulate them differently
- Eliminate barriers to new entrants, especially for those with new business models
- Embrace FinTech and DeFi (via CBDCs)
- Shadow banking is not the enemy

And why don't we?

- Conservatism — prefer what we know instead of the new
- Risk aversion — collective failure covers individual failure
- Lobbying — the incumbents prefer the existing set-up

AI crisis

Danielsson & Uthemann (2024)

- Speed is of the essence
- The first to react gets the best prices
- The last to act faces bankruptcy
- Sell, calls in loans, run others as quickly as possible
- Makes the crisis worse in a vicious cycle
- Extreme volatility
- AI will significantly speed up and strengthen responses, making crises particularly quick and vicious
- AI acts as a crisis amplifier
- *Days or weeks to minutes or hours*

For regulations to be effective

- The authorities must have a solid understanding of the distribution of extremes (the tails)
- Have effective technical tools for dealing with them
- And the political support to wield them

- Better to design regulations that work with the problem instead of against it
- Why diversification is a win-win-win

Friedrich August von Hayek (1945)

“Use of knowledge in society”, American Economic Review

Writing about central planning, but could just as easily have been discussing risk.

“*If* we possess all the relevant information, *if* we can start out from a given system of preferences, and *if* we command complete knowledge of available means, the problem which remains is purely one of logic... This, however, is emphatically *not* the economic problem which society faces.”