

# **Bubbles, Manias and Market Failures: the Unintended Consequences of Regulatory Responses**

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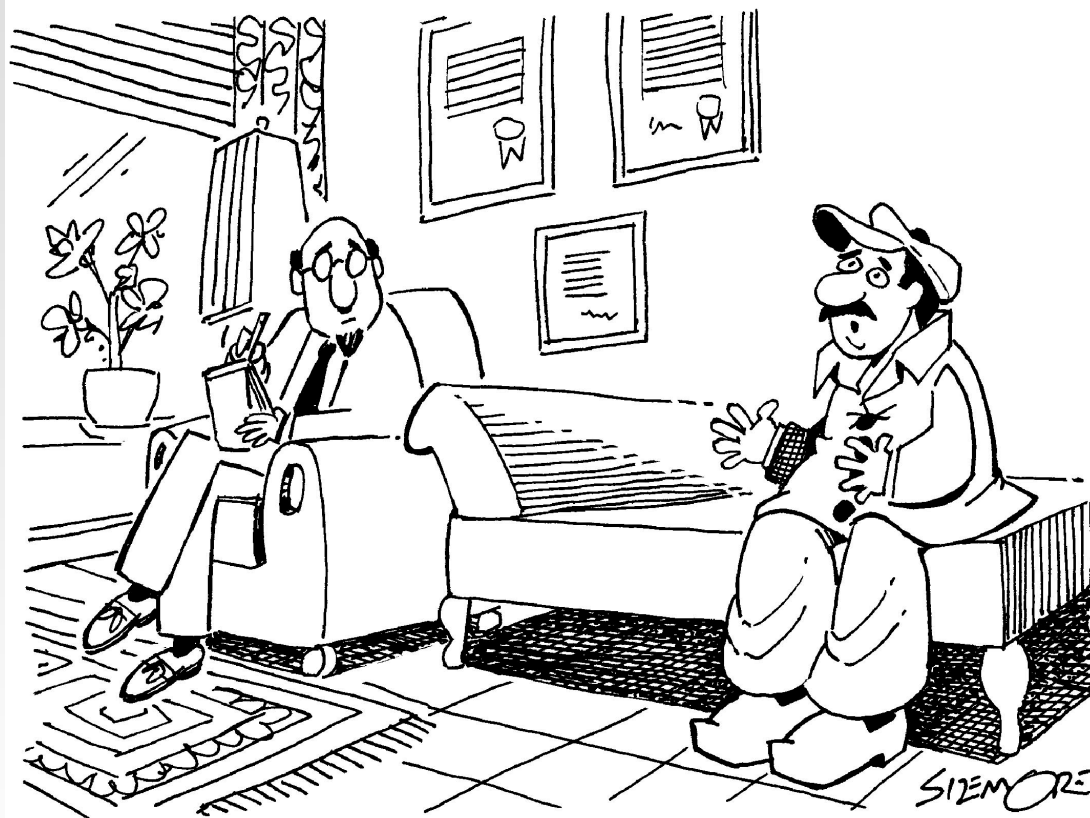
7 February 2019

# Tulipmania: the paradigmatic crisis



## Elements of the myth today

- Tulips as ‘fetish’ objects in Holland;
- Irrational bubble with outlandish prices (over £10,000 a bulb in 1637 money);
- Prices crash to 3-5% of high;
- Entire society involved in some way, especially poor who were preyed upon;
- Pitched as a cause - or alternatively - as a symptom of Dutch decline.



"Lately I've been seized by a mania to wear strange clothes and speculate in tulip futures."

## Sources of the myth

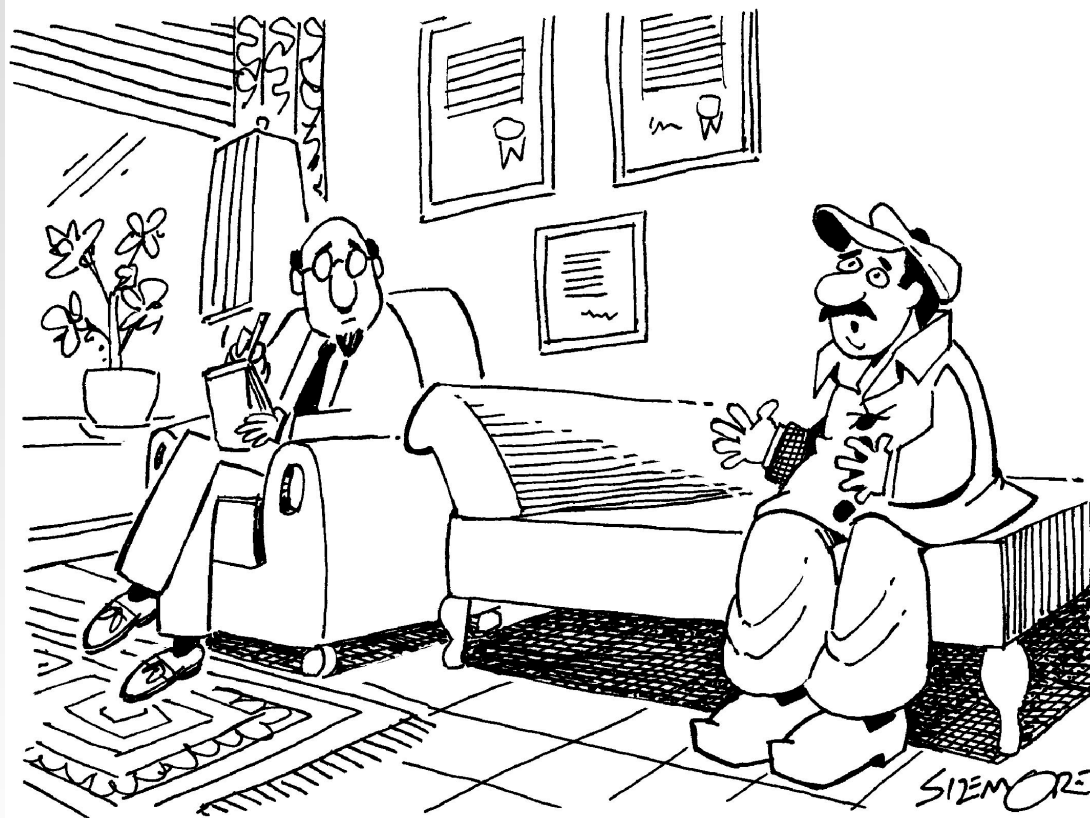
- ‘Great Mirror of Folly’ (1720) – different context
- Charles MacKay, *Extraordinary Popular Delusions and the Madness of Crowds*.
- Johann Beckmann, *A History of Inventions, Discoveries and Origins* (1797).
- Contemporary Dialogues (One between *Waermond* and *Gaergoedt*). Religious bias.
- Keynesians: Galbraith and Kindleberger.
- Perpetuated frequently in financial press. First scholarly article by N.W. Posthumus just before crash of 1929.
- What’s at stake? More than *Schadenfreude*?

# Changing narratives of financial crises

## Early modern bubbles as 'morality tales'

- Greed, pride, idolatry, religious uniformity
- Whig historiography: bubbles as 'irrational' in the Enlightenment sense [Charles MacKay]
  - Financial panics on par with the superstitions of unenlightened eras (witchcraft, alchemy, mesmerism)
- Bubbles as irrational in the psychological sense
- Modern psychological theories
  - Behavioral finance / Emotional finance
  - Extraordinary claims: 'derivatives as fetish objects'



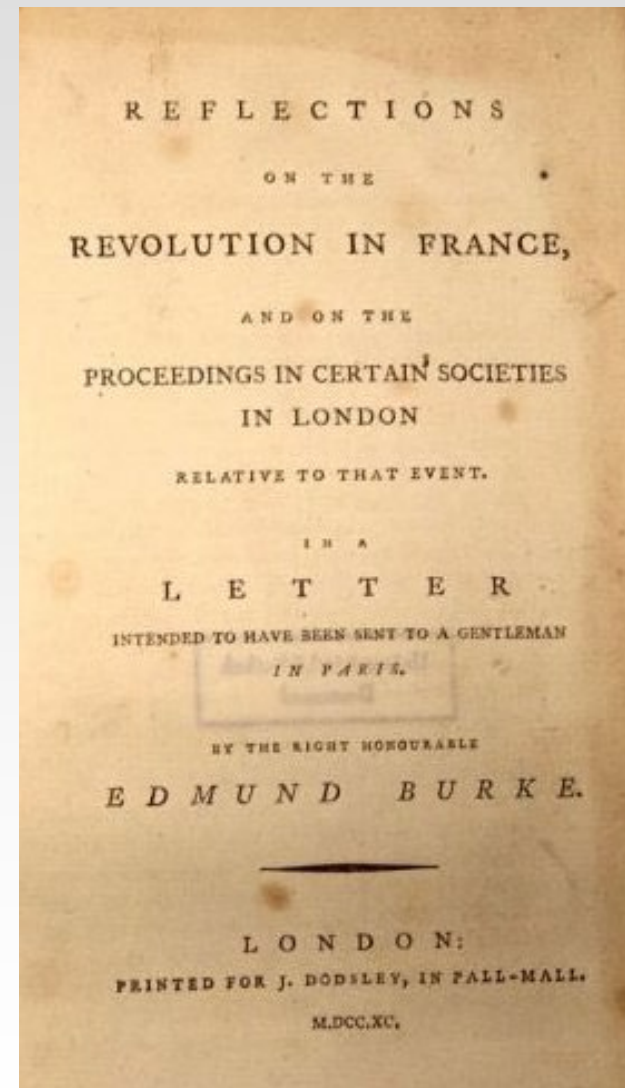


"Lately I've been seized by a mania to wear strange clothes and speculate in tulip futures."

‘Success explains itself; we use narrative to make sense of failure.’ (Anonymous)

‘Nonsense is nonsense, but the history of nonsense is a very important science.’ (Saul Lieberman)



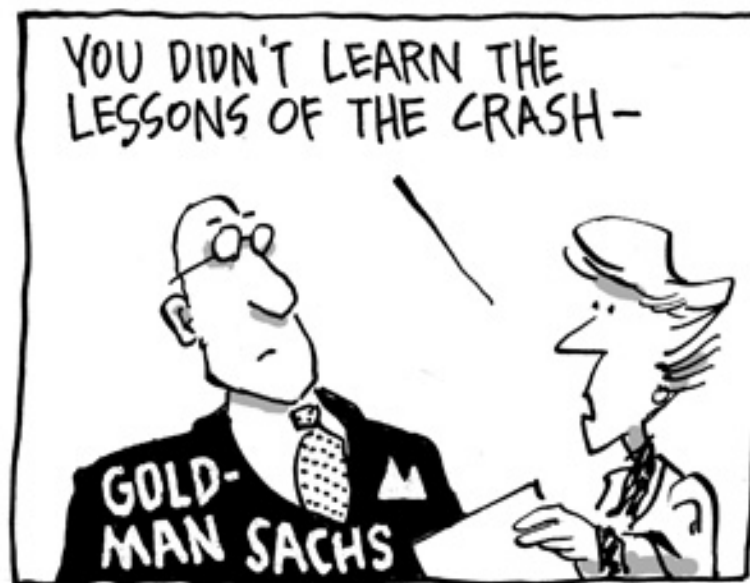


# Edmund Burke

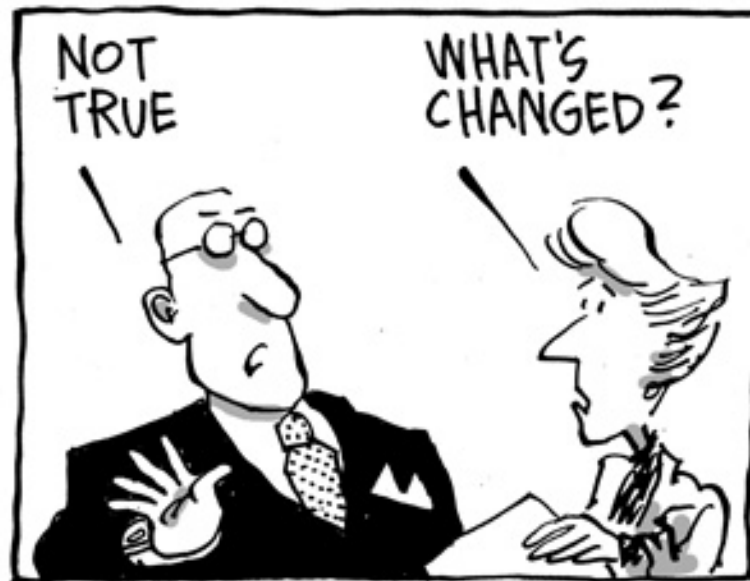
- ‘No man, who is not inflamed by vain-glory into enthusiasm, can flatter himself that his single, unsupported, desultory, unsystematic endeavours are of power to defeat the subtle designs and united Cabals of ambitious citizens. When bad men combine, the good must associate; else they will fall, one by one, an unpitied sacrifice in a contemptible struggle.’
- ‘that which in the first instance is prejudicial may be excellent in its remoter operation; and its excellence may arise even from the ill effects it produces in the beginning. The reverse also happens: and very plausible schemes, with very pleasing commencements, have often shameful and lamentable conclusions.’

# Theories of Regulation

- Public Interest Hypothesis
  - Prices to be affordable to consumers; the risk associated with financial assets to be reasonably priced and transparent.
  - Regulation should improve and sustain service levels
  - Regulation should address market failures and externalities, especially social impacts
- Private Interest Hypothesis
  - Regulation as a response to lobbying by producers
  - Regulatory capture is commonplace



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# South Sea Bubble: Ground Zero in the UK



# British Government Debt

- In 1720, stands at ~£50 m. pounds
- Debt service is eating up revenue from Excise
- £18.3 held by three companies
  - 3.4 by Bank of England
  - 3.2 by East India Company
  - 11.7 by South Sea Company
  - Redeemable bonds in private hands at 16.5 million
  - 15 million in irredeemable annuities

Figure 2. British Debt Service Ratio, 1694-1775

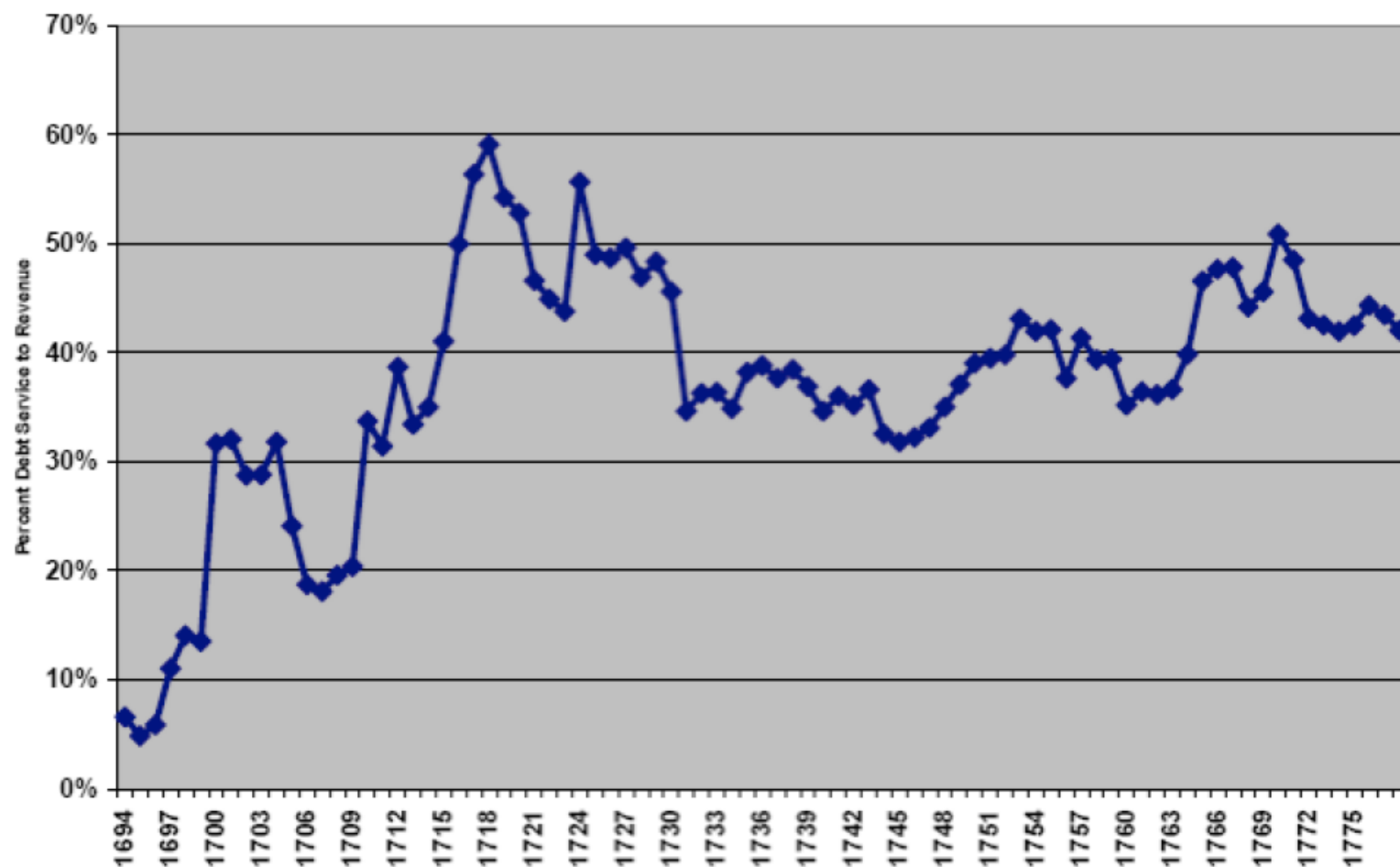


Figure 3. Components of British Debt Service Changes, 1694-1774



# South Sea Company

- Established in 1711 to take advantage of the Commercial Treaty of Utrecht. After 1720, its main revenue was its finance operations
- On 21 March 1720, it won the right to acquire the £31 million in debt.
- Debt-for-equity swaps and subscription shares both were forms of financial innovation.
- In 1720/21 there was a 'mega-bubble' in South American trade; many corporate treasuries invested in shares; the directors became very worried and lobbied for the Bubble Act. That signaled to the market that something's amiss.
- The Bubble Act (1720-1825) incorporated the Royal Exchange and London Assurance Companies, but it required all new joint-stock companies to have a royal charter. Subscription shares separately banned until 1840s.
- But the Bubble did not bankrupt the company which was not wound up until 1854

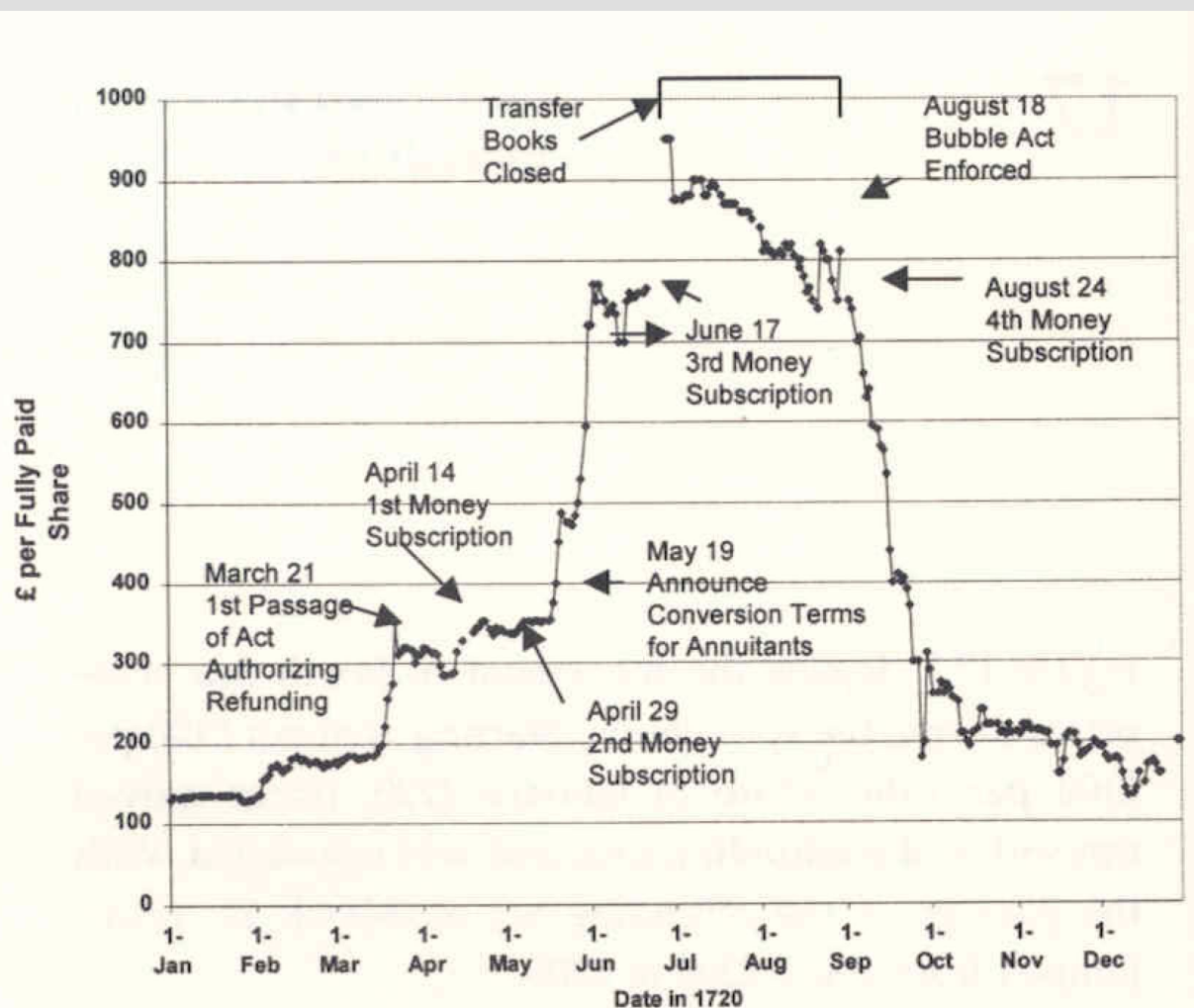


Figure 17.1

Daily South Sea Share Prices, 1720. Data courtesy of Larry Neal.

STOCK.

the 15<sup>th</sup> Day of April 1728

**R**ecieved of the *Rev. Mr. Allen Cowper*  
 the Sum of *fifty pounds sixteen shillings & three pence*  
 being in full for *forty six pound*  
*Shilling & pence* in the Capital and Principal Stock  
 of the Governor and Company of Merchants of Great-Britain,  
 Trading to the South-Seas, and other Parts of America, and for  
 Encouraging the Fishery, &c. this Day Transferr'd in the said  
 Company's Books, unto the said *Rev. Mr. Allen Cowper*

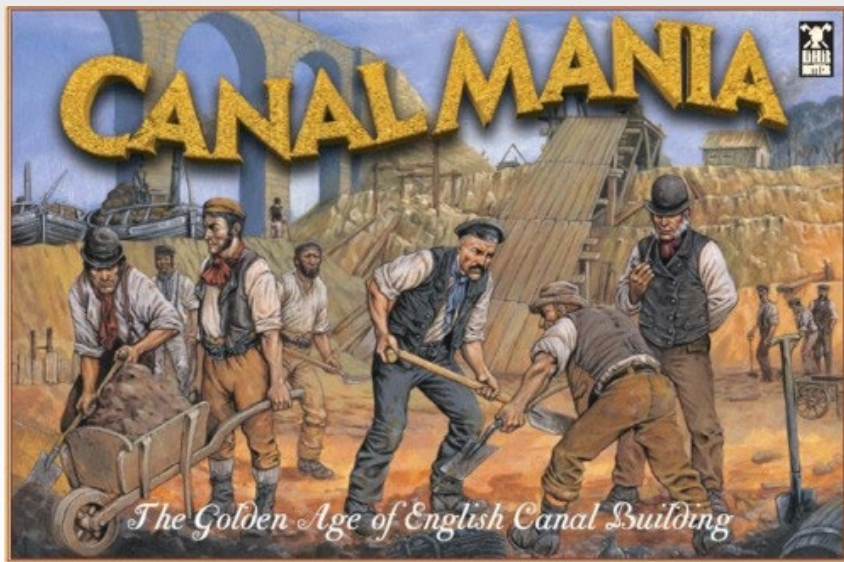
361  
 Witness, *Deane* By *Charles Walton*

*£50:17.3*



# Canal Mania (1790-1815)

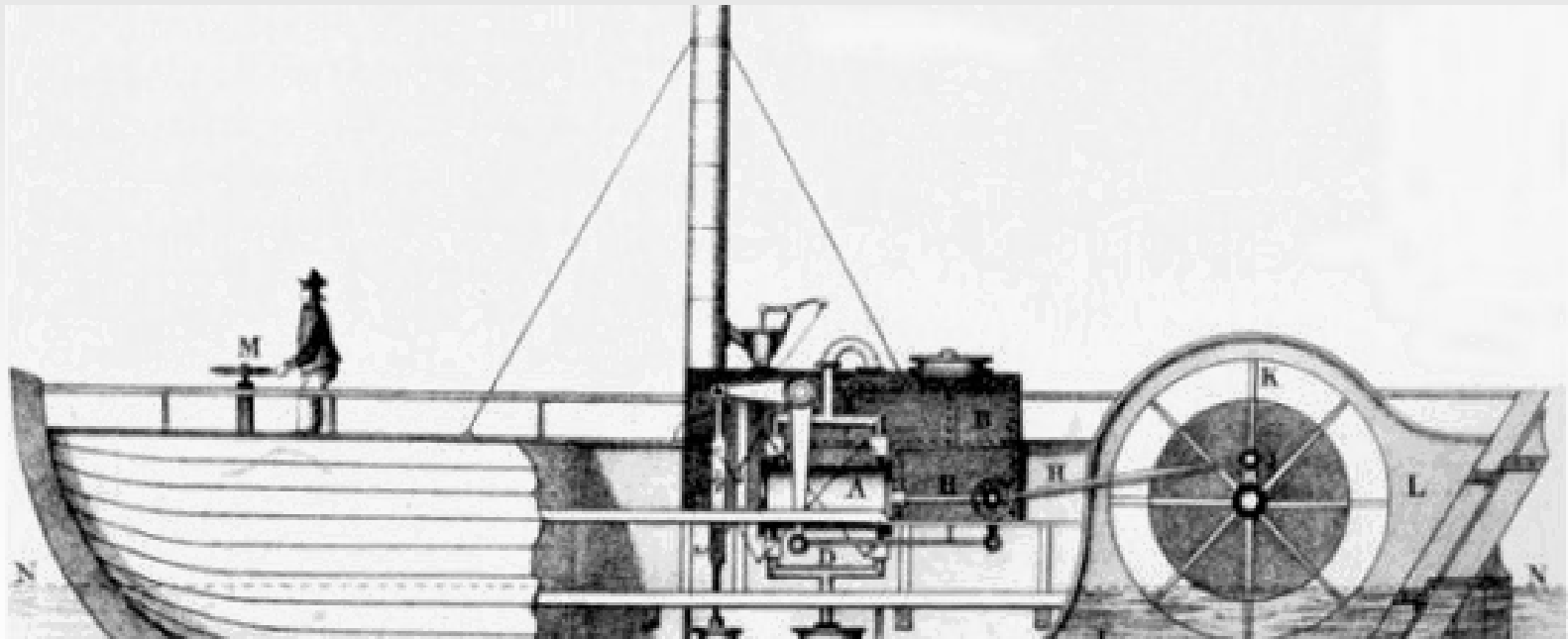
## Popular Imagination



## Example: Herefordshire and Gloucestershire Canal



# Steamship Mania: After the Repeal of the Bubble Act

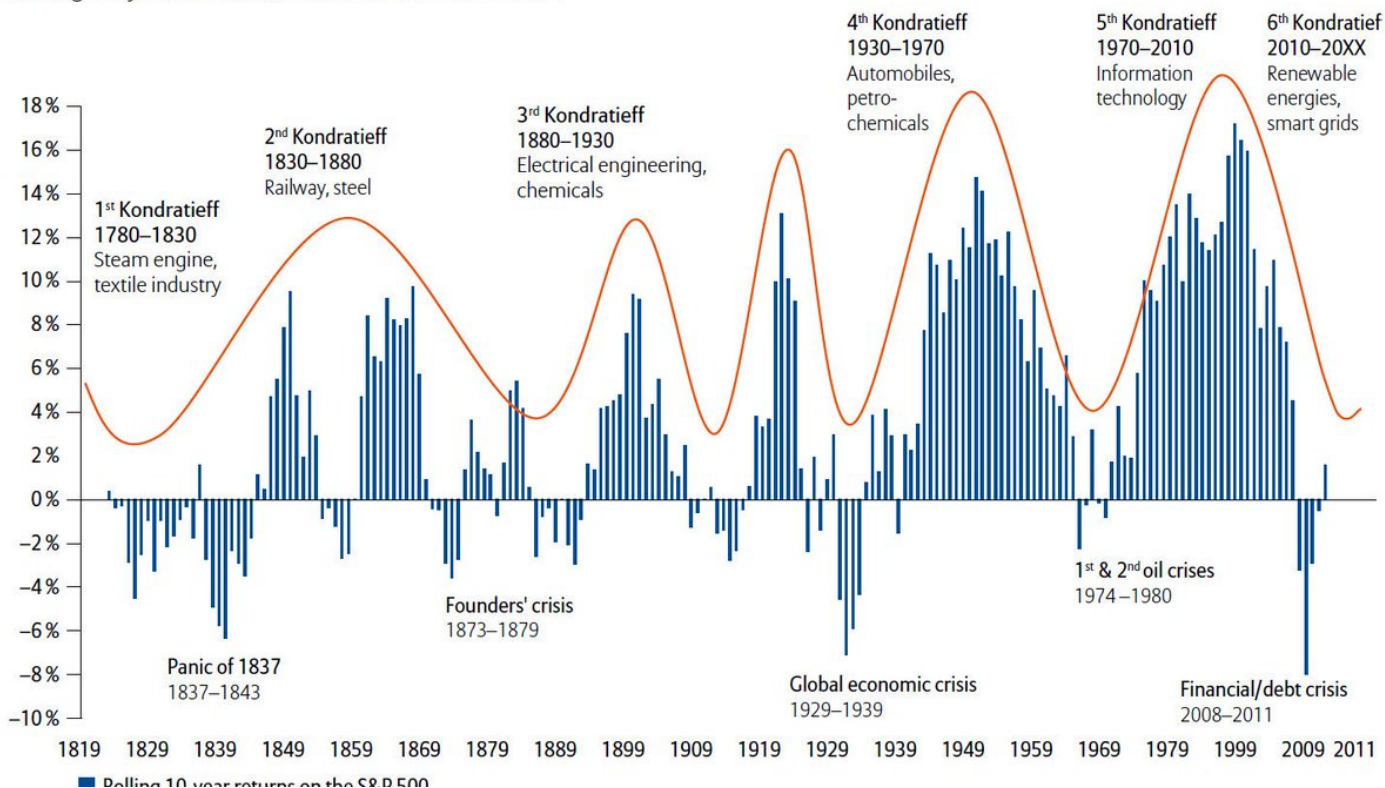


# Steamship Mania: Facts and Figures

- In 1824/5, after the repeal of the Bubble Act, there were 624 companies trying to raise £372m through the issuance of 6m shares.
- This is equivalent to a market cap of about £40t in today's money by a simple NPV calculation.
- Of the 70 steamship companies promoted, only 3 were in existence in 1827.
- Yet by from 1824 to 1827, the number of steamships almost doubled to 318 (from 168) and by 1834, there were 481 steamships with 38,109 tonnage.

**Figure 1: Crises – The Power of Creative Destruction**

Rolling 10-year returns on the S&P 500 since 1814





SPECIAL REPORT

## Global Warming of 1.5 °C

An IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

“ Increasing investment in physical and social infrastructure is a key enabling condition to enhance the resilience and the adaptive capacities of societies.” - IPCC 2018

# HOW WILL NEXT TIME BE DIFFERENT?

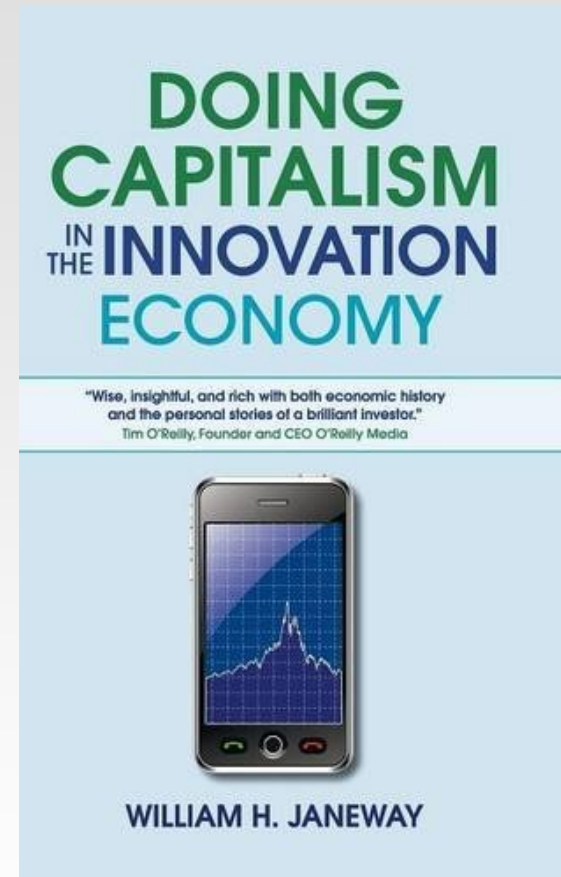
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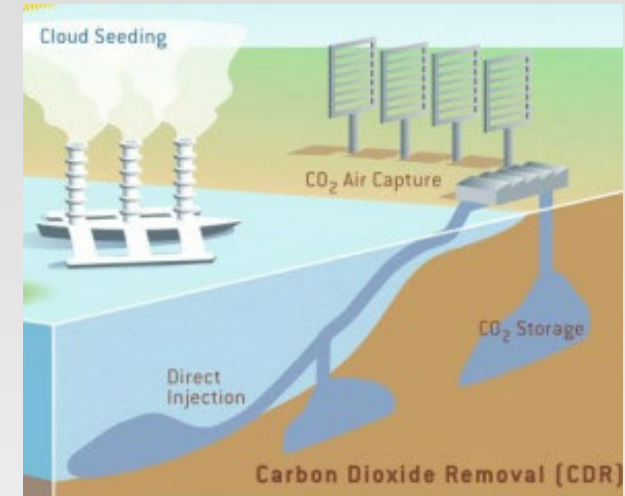
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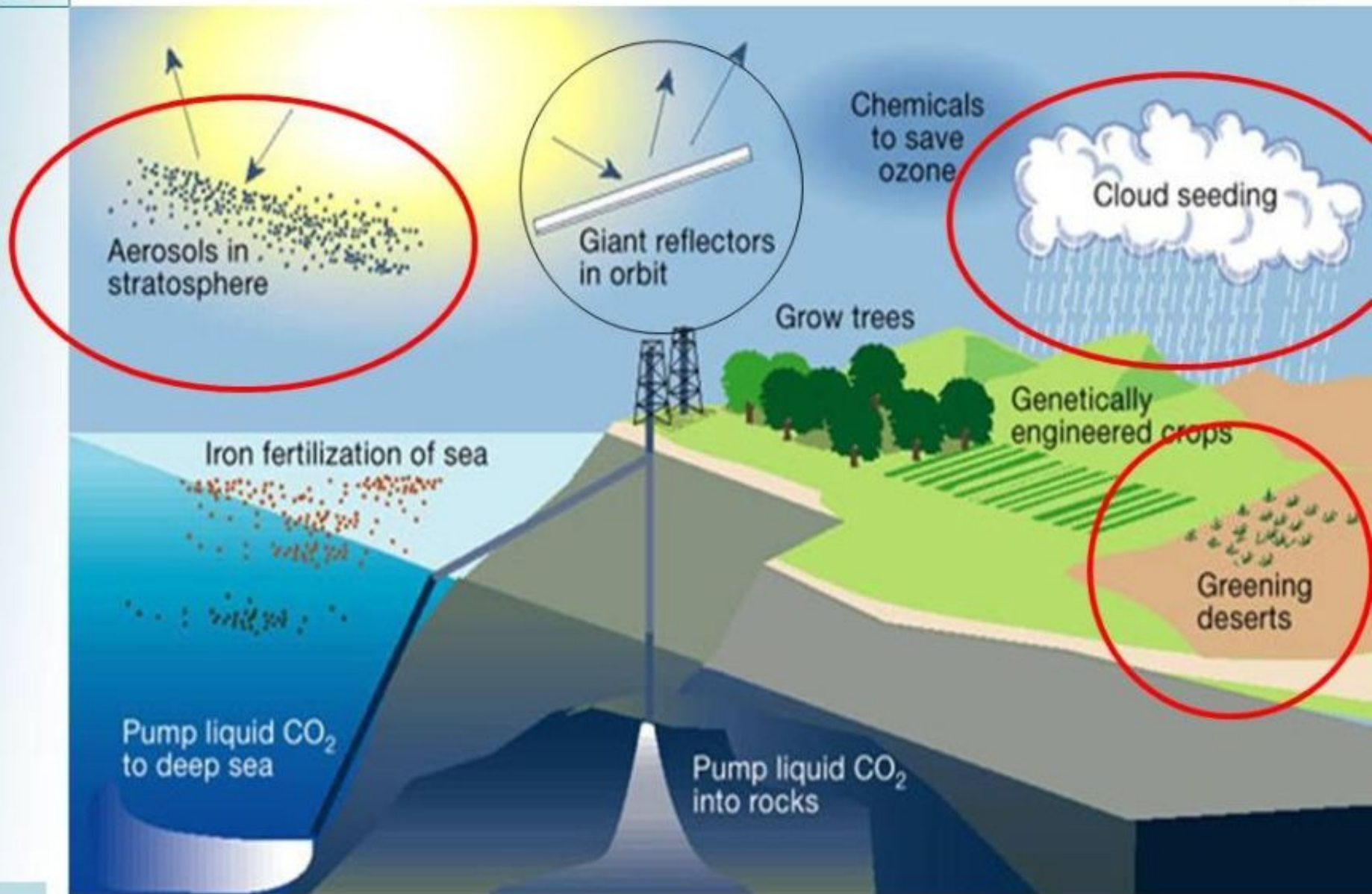


10 Auction Rounds    21 Bidders    12 Countries

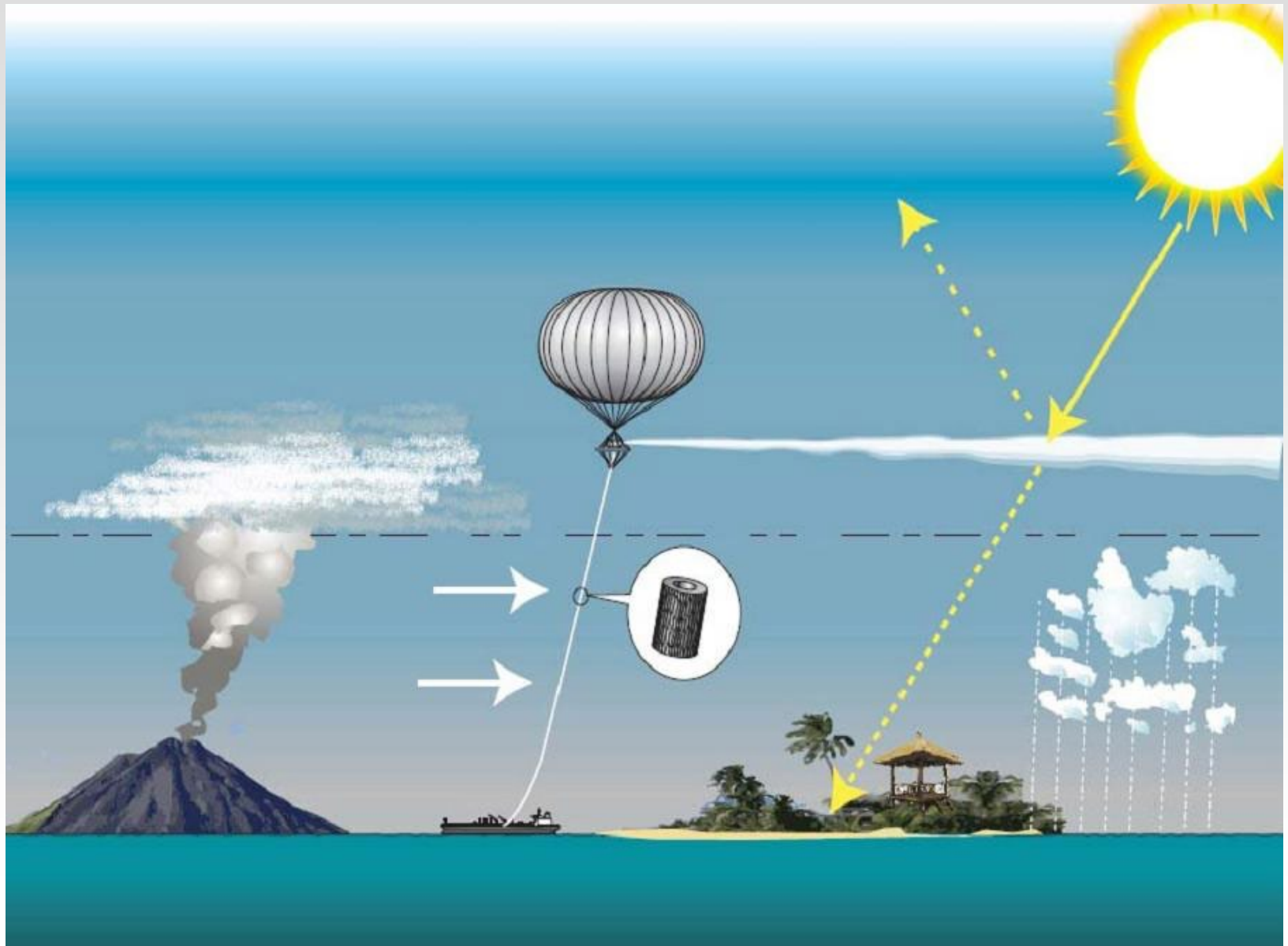


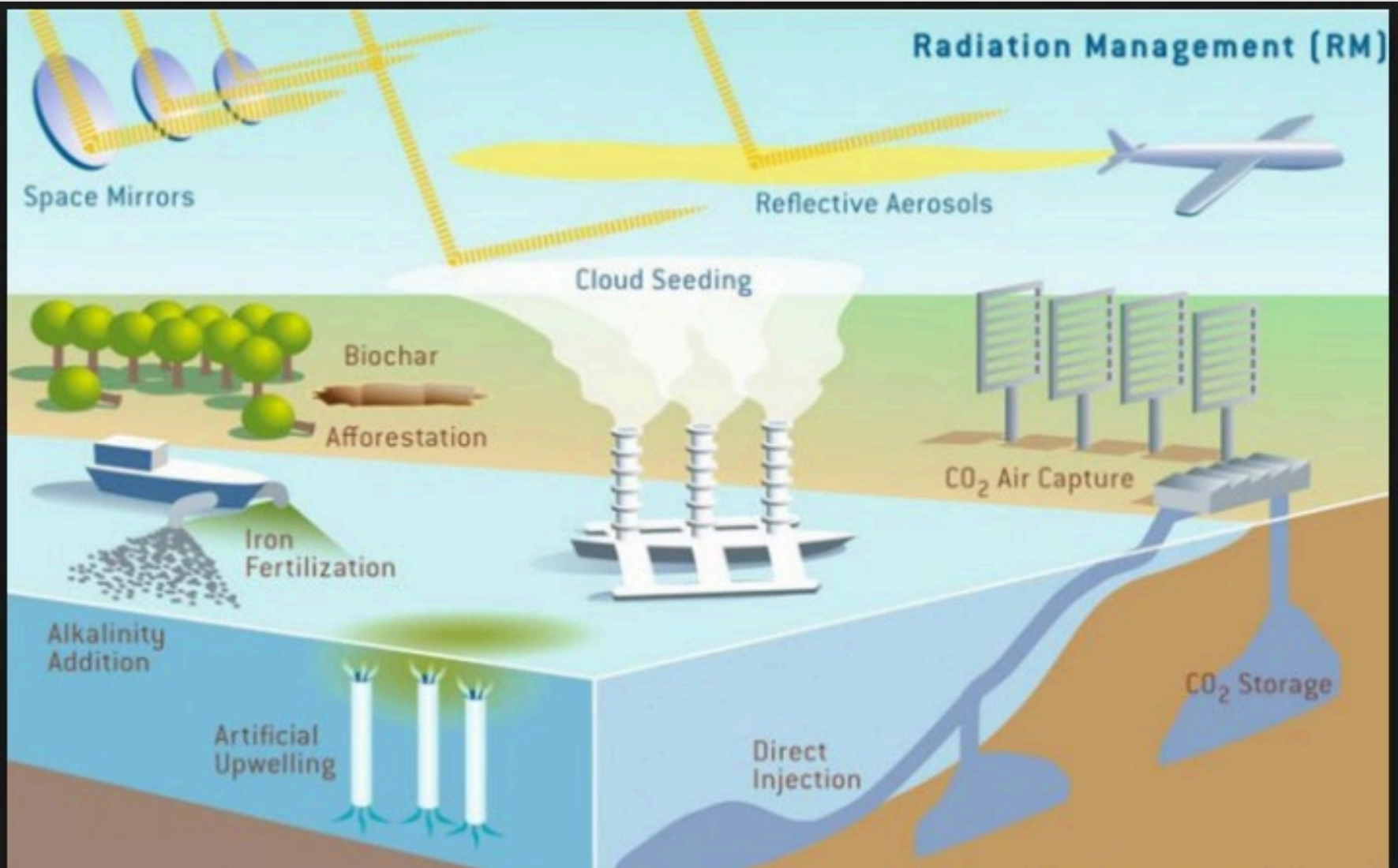


# Geoengineering to Counteract GHG Warming



Schematic representation of various climate-engineering proposals (courtesy B. Matthews).

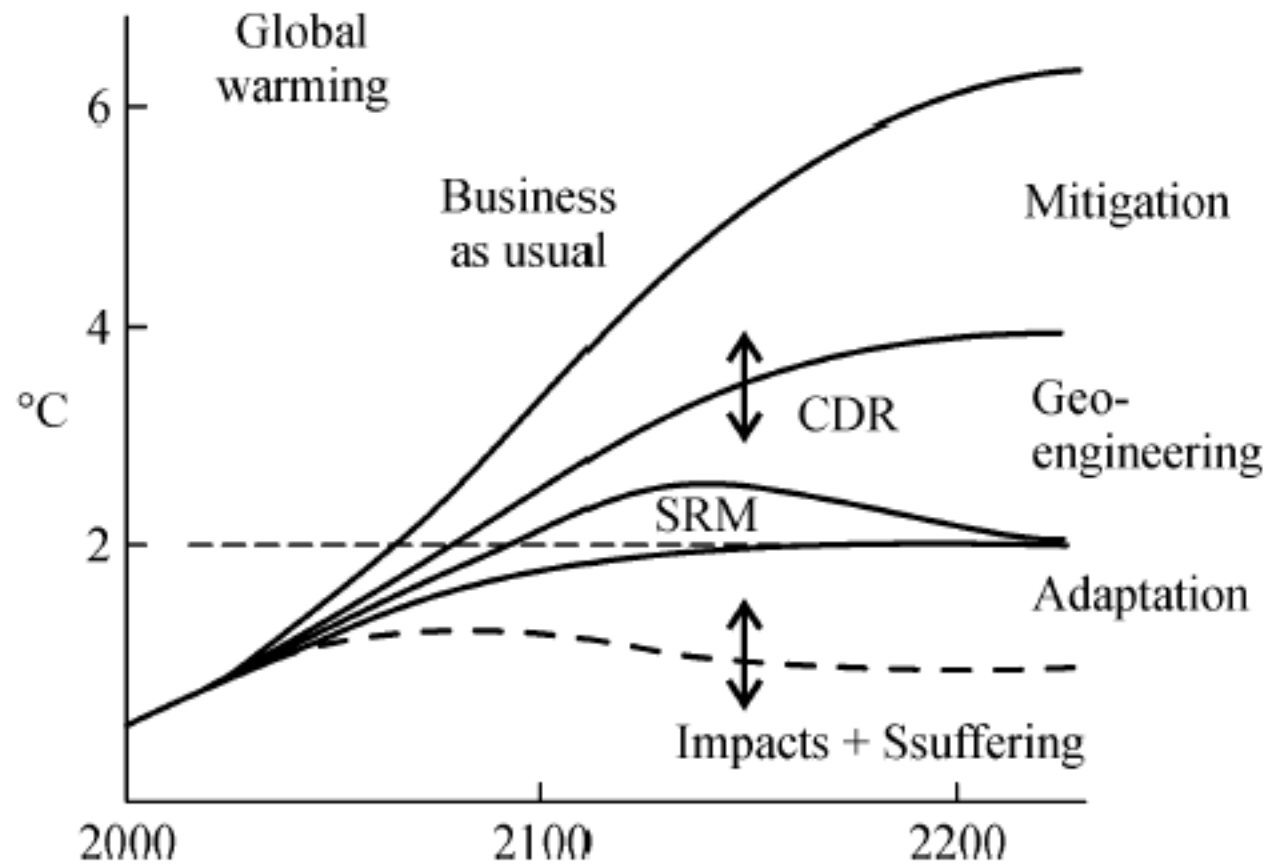




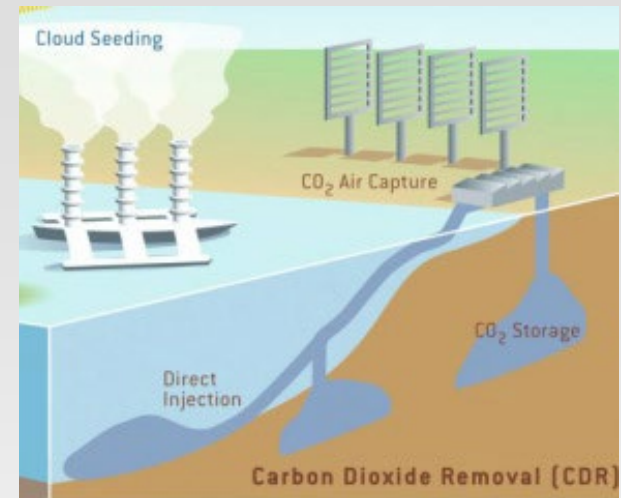


## Three immediate challenges

- Technological challenges, especially around ‘termination shocks’ associated with various solutions. SRM Bridge could potentially solve these issues in an elegant way.
- Who will finance and deploy these technologies?
- If individuals are meant to offset carbon footprints by buying carbon dioxide removal offsets, how should these products be structured? Futures, tradeable put options, the blockchain?

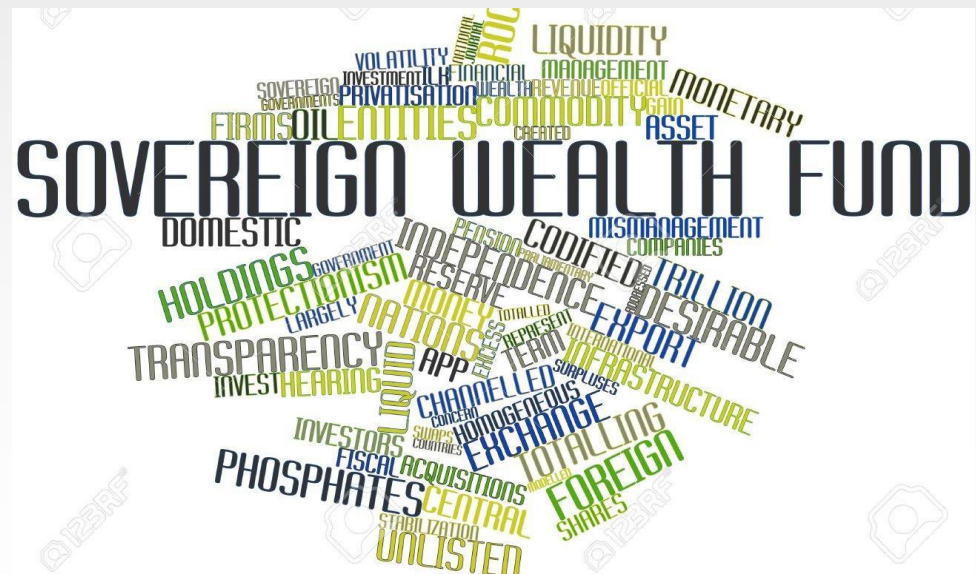


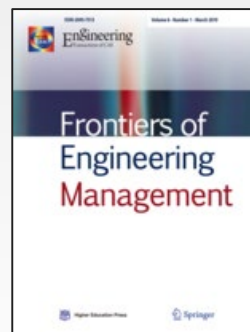
**Fig. 1** Shepherd's Napkin Diagram of SRM bridge



## Pilot Auction Facility Second Auction Results

10 Auction Rounds    21 Bidders    12 Countries





## Some regulatory issues

- Unlikely to be a share bubble in the same way as other bubbles based on technological innovation have been in the past.
- Safety issues are less about individual investors than as society as a whole. This is true both in terms of investment losses and in terms of the externalities associated with market failure.
- Regulations designed to guard against excessive bank leverage are not fit for purpose.