



# Sustainability based on Resilience

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13/06/06

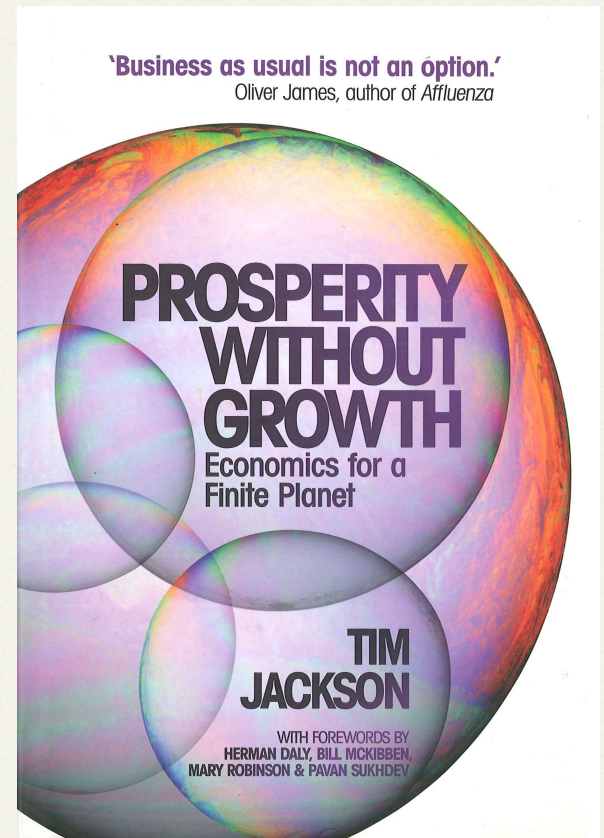
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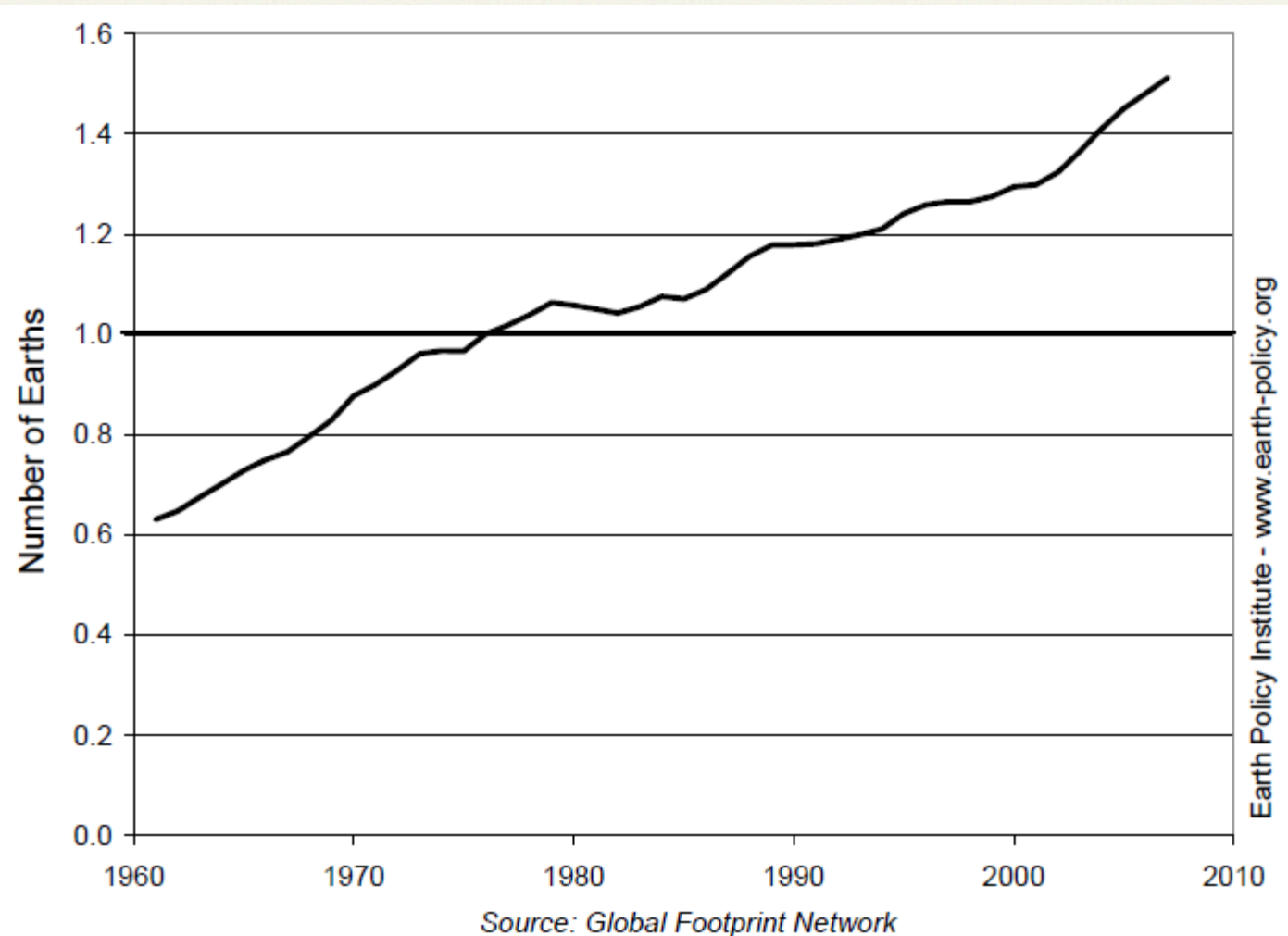
# The Dilemma of Growth

- Growth is unsustainable
- De-growth is unstable
- Decoupling won't fix it



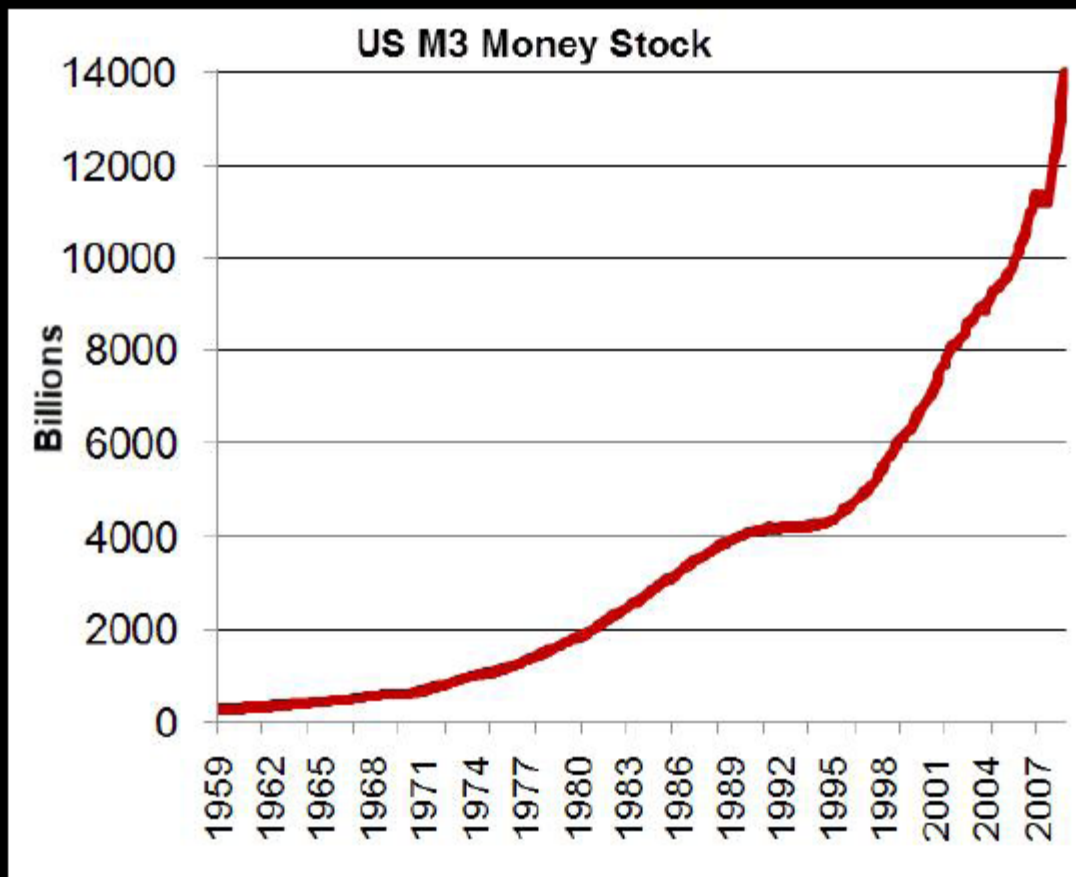


# Global Ecological Footprint: Over 1.5 Earths, still increasing...





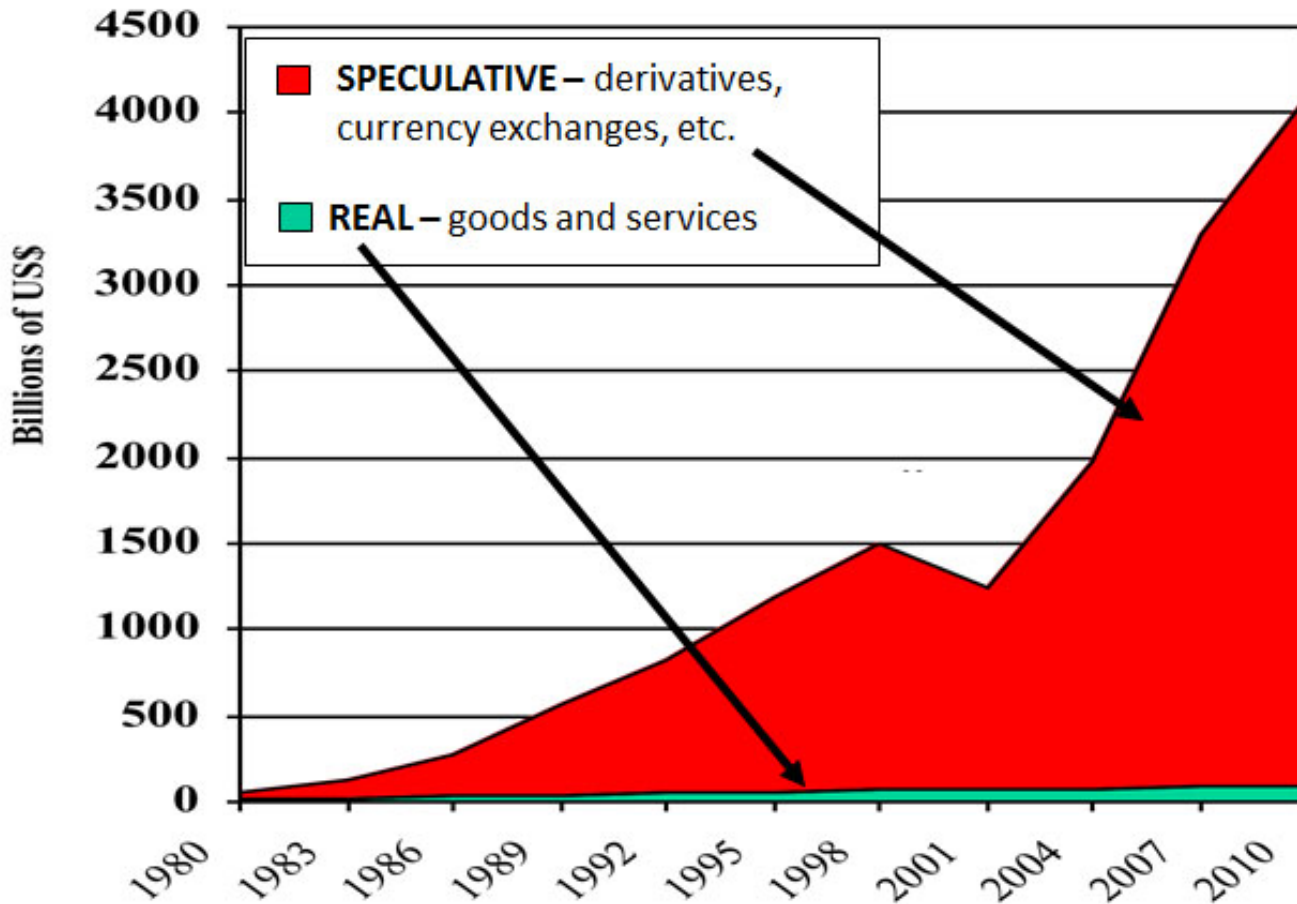
# Money



Source: Federal Reserve, St. Louis "FRED" system

# Exponential Growth in Foreign Currency Speculation

Billion \$/Day





# Growth is Unsustainable

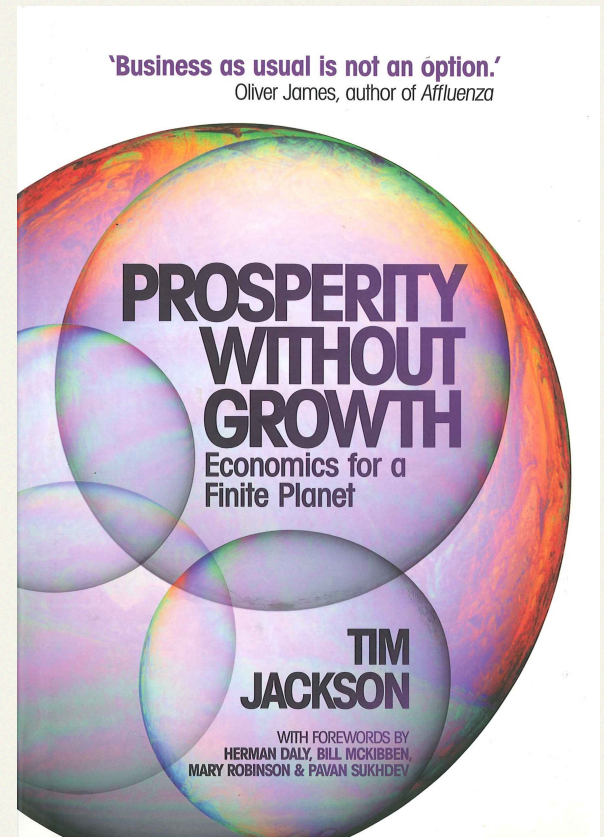
1960s to 2010s: World economy grew **5 times** larger

- If the economic growth continues at current pace
  - World economy will grow **80 times** larger in 2100 compared to 1950 level
- If 9 billion people live with OECD countries' living standard
  - World economy will grow **2000 times** larger in 2011 compared to 1950 level
- What kind of economy is that?



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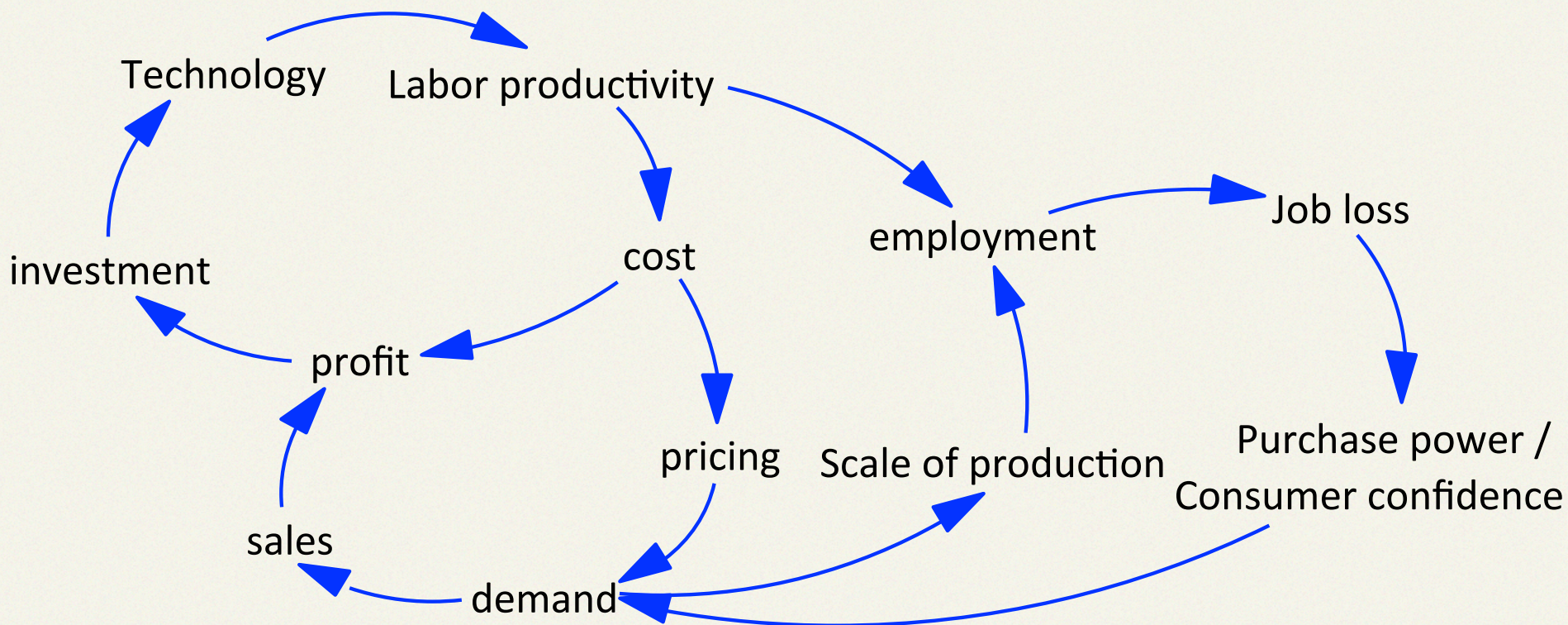






# Whether growth functional for stability ?

Economic growth rate  $>$  labor productivity: No problem  
Economic growth rate  $<$  labor productivity: lead to job loss



Once the economy slows down, this system increase job losses and fall into a spiral of recession



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# Is technology solution!?

“Continuous economic growth is necessary but impossible”

What can be done?

“Decoupling is the solution!”

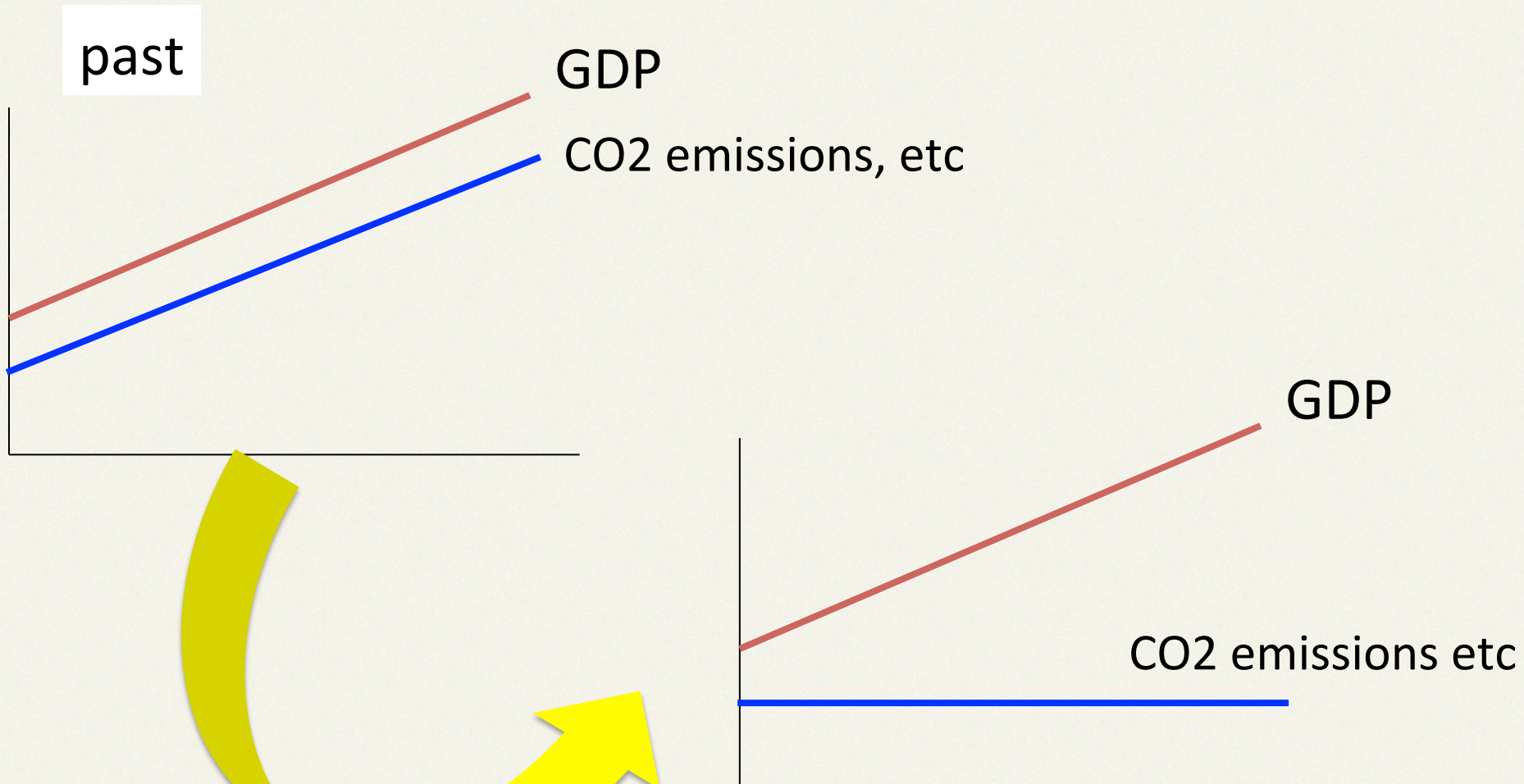
Economic growth ≠

Increase of environmental impacts

such as consumption of resources and energy, CO2 emissions



# Is technology solution!?

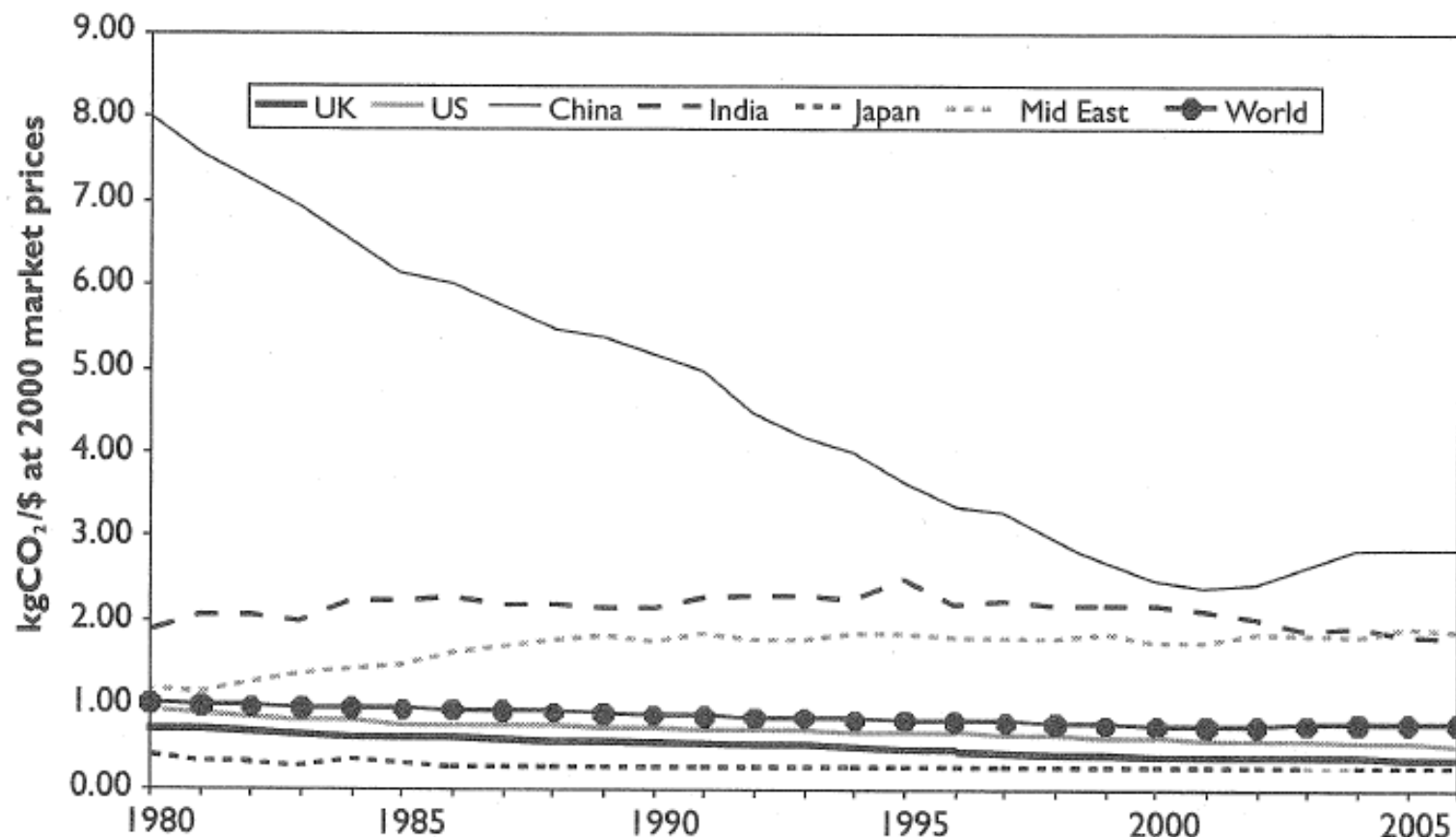


Decoupling will fix it!

# In reality:



## CO2 intensity in developed countries slightly improved



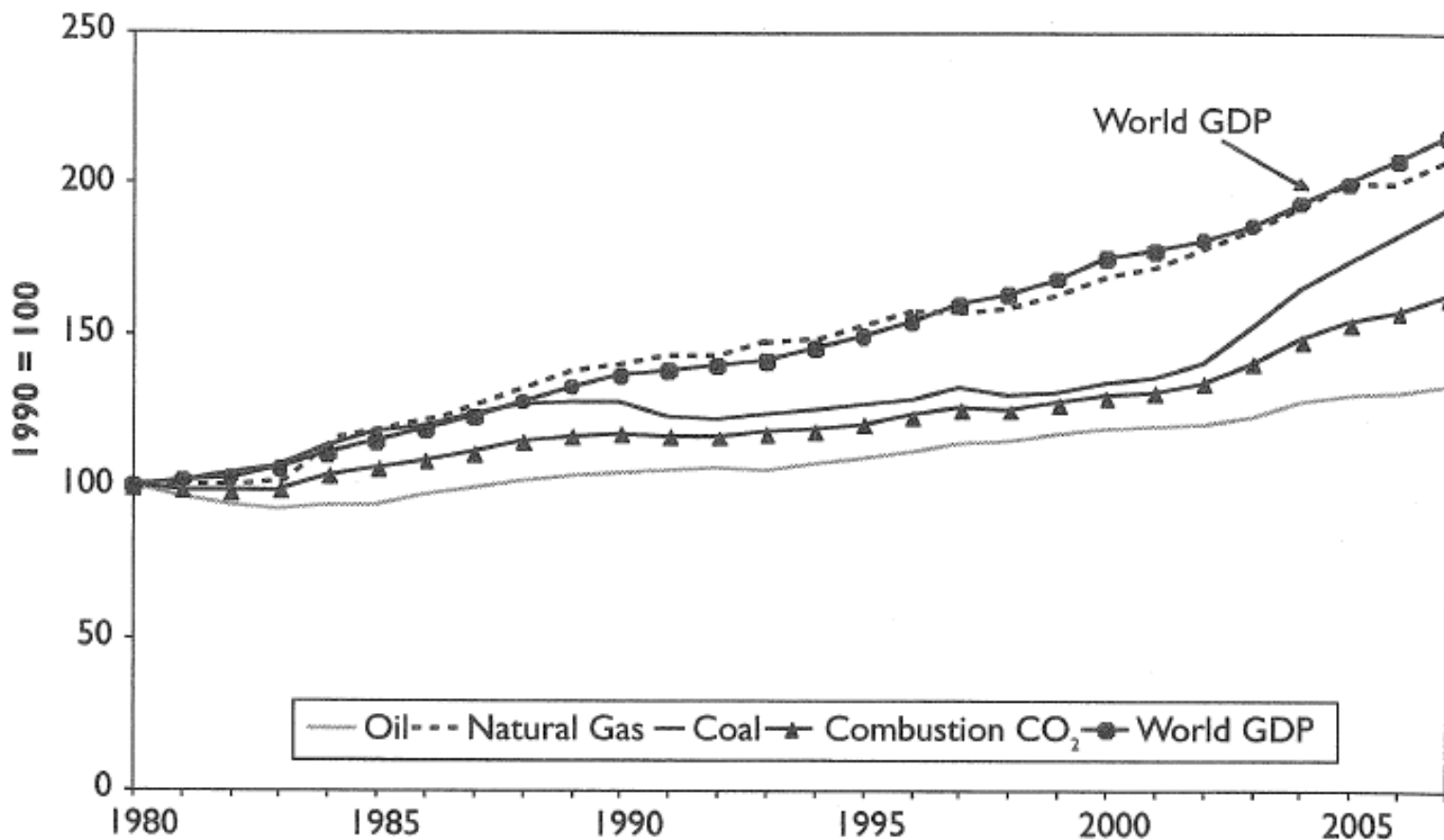
**Figure 5.2** CO<sub>2</sub> intensity of GDP across nations: 1980–2006<sup>8</sup>

Source: see note 8.

In developing countries generally, relative decoupling isn't happening



# But, absolute consumption is increasing



**Figure 5.3** Trends in fossil fuel consumption and related CO<sub>2</sub>: 1980–2007<sup>9</sup>

Source: see note 9.



If we keep decreasing CO2 emissions per GDP with technology while economic growth continues..

1990 : 860g CO2/GDP

2007 : 760gCO2/GDP

====

2050 : 40gCO2/GDP

9 billion live with EU countries standards : 14gCO2/  
GDP

GDP per capita increases in developed nations : 6gCO2/GDP

Economic growth continues after 2050 :

0gCO2/GDP → negative gCO2/GDP!



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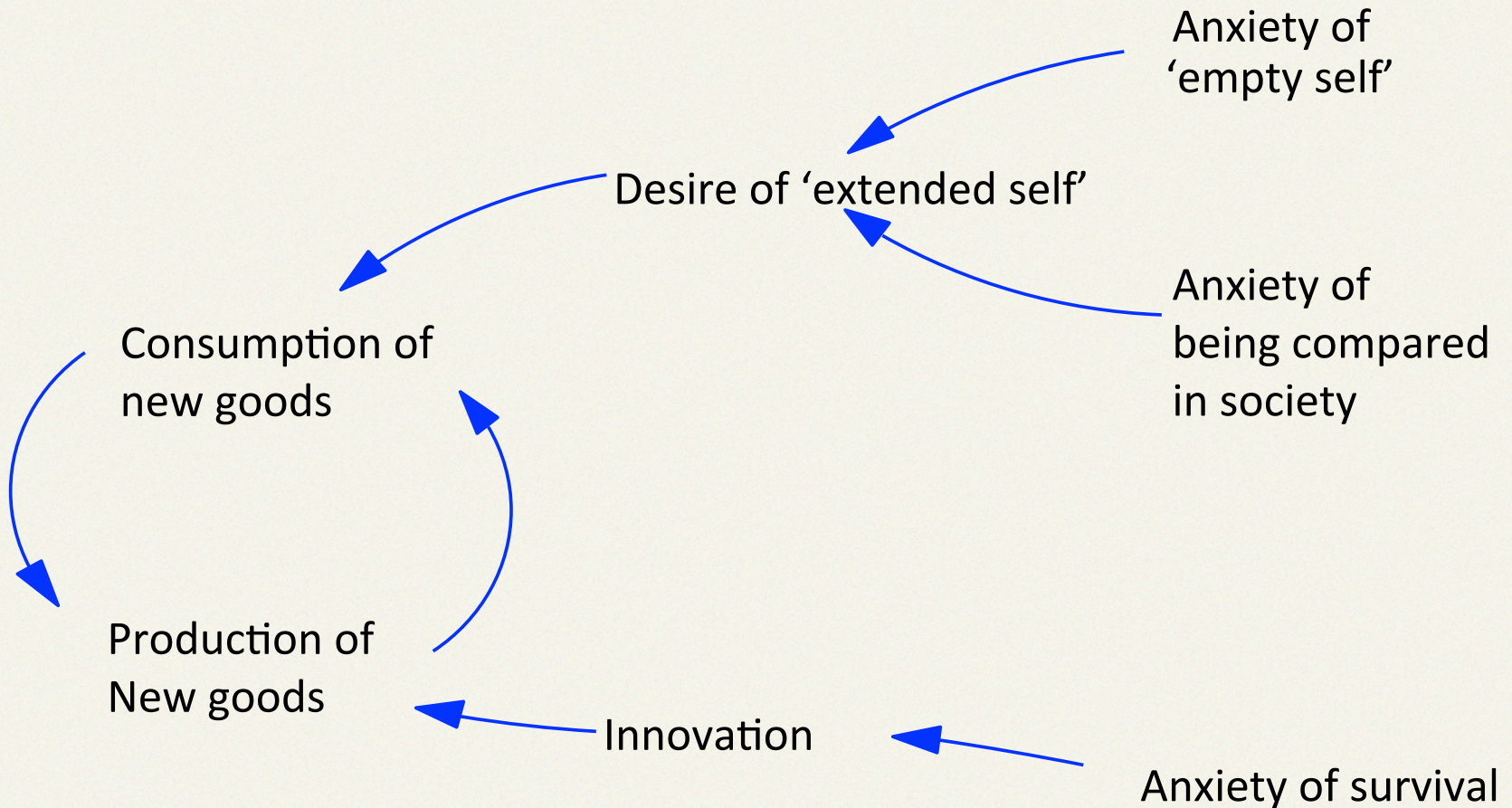


Reorganization or reorientation of the economic system is essential



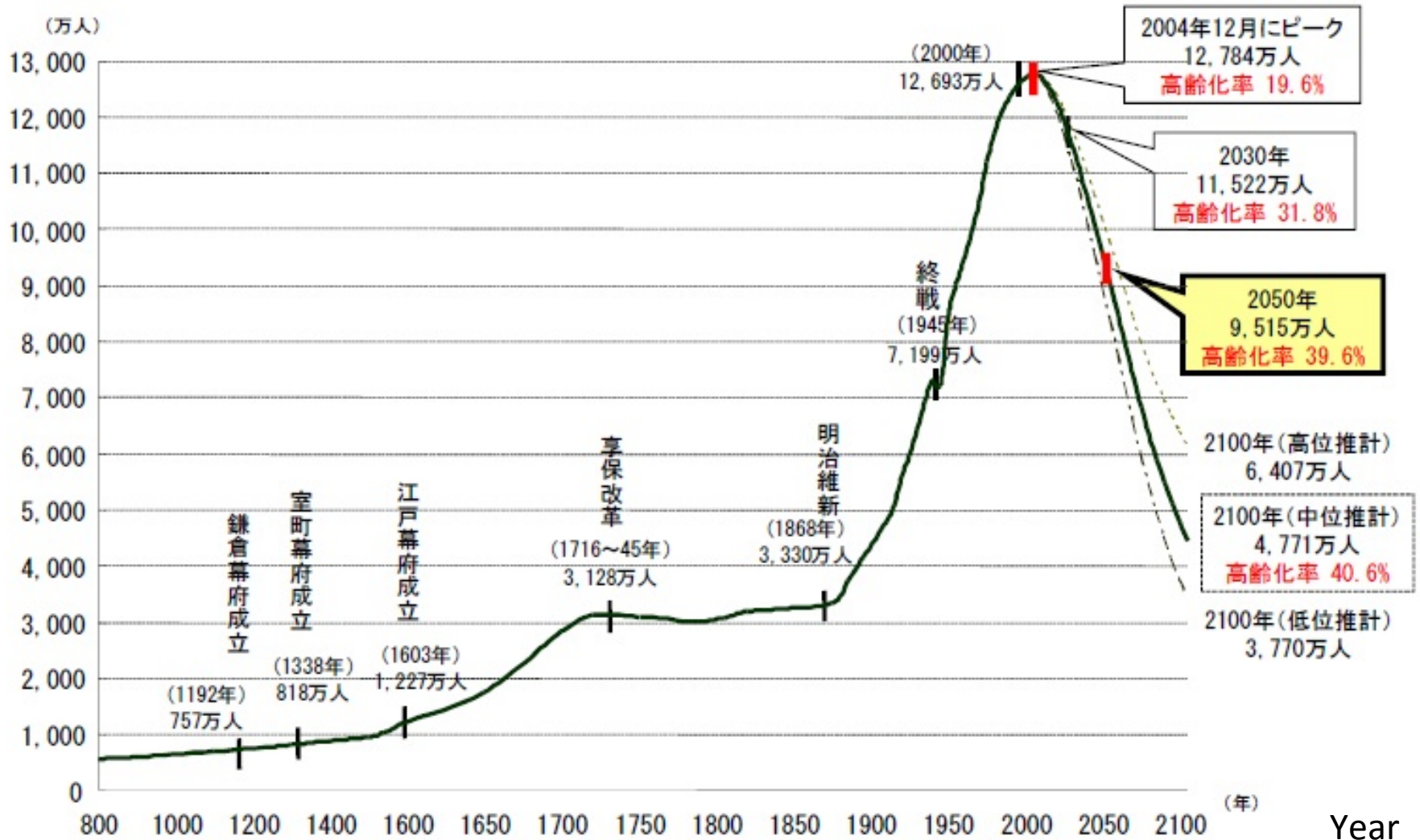


# Two reinforcing process → Drivers of economic growth



# Rapid Population Increase/ Decrease in Japan

Unit: million



(出典)総務省「国勢調査報告」、同「人口推計年報」、同「平成12年及び17年国勢調査結果による補間推計人口」、国立社会保障・人口問題研究所「日本の将来推計人口(平成18年12月推計)」、国土庁「日本列島における人口分布の長期時系列分析(1974年)をもとに、国土交通省国土計画局作成



# Solutions from local communities

- Resilience
- Dilemma of Growth
- Declining population -> smart delinea
- Well-being based society

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## [Newsletter] Creating Happier Communities: Over 22 Local Governments in Japan Preparing a "Happiness Index" to Measure Progress

JFS Newsletter No.121 (September 2012)

Japan for Sustainability (JFS) has, in its newsletters and other webpages, covered the topics of economic growth and true happiness, key issues when considering sustainability, from the aspect of using indexes to move society forward. The JFS newsletter issues that covered such subjects include:

▶ ["Institute for the Study of Happiness, Economy, and Society \(ISHES\)" Launched in](#)

have the same written character as in the name of Fujiwara, a clan that effectively controlled Japan during the Heian Period (AD 794 to 1185).

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Q 1

Your pencil is getting  
What would you do?

Q 2

What kind of green

