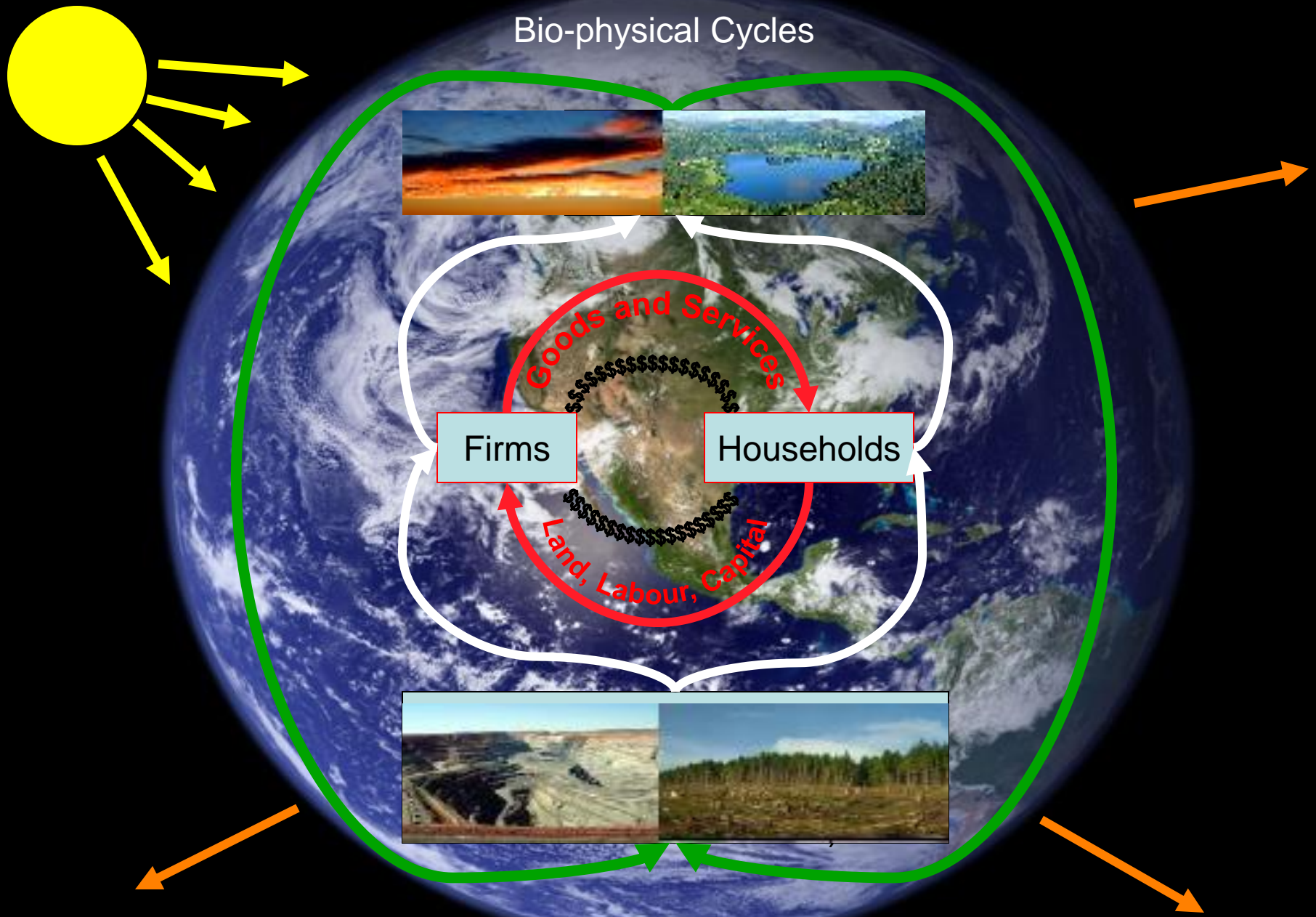


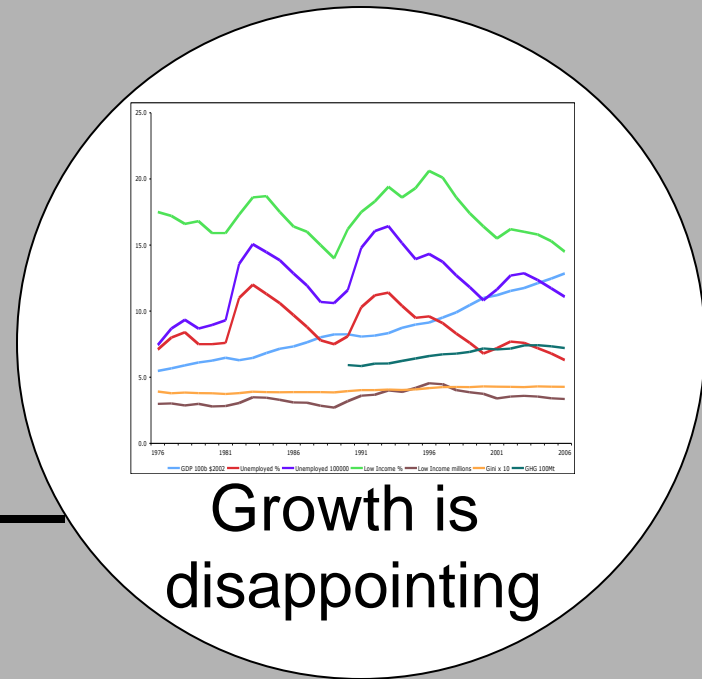
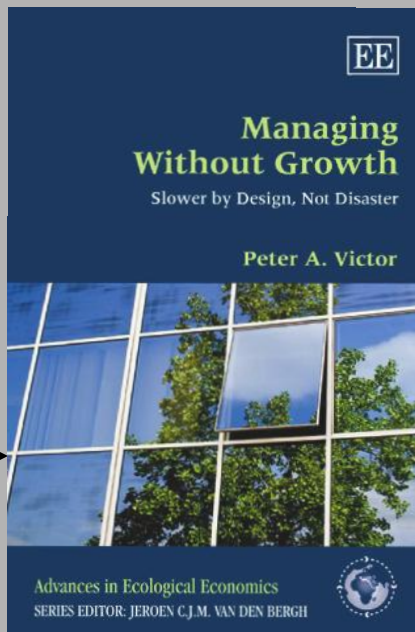
# Macroeconomics for Sustainability

Dr. Peter A. Victor

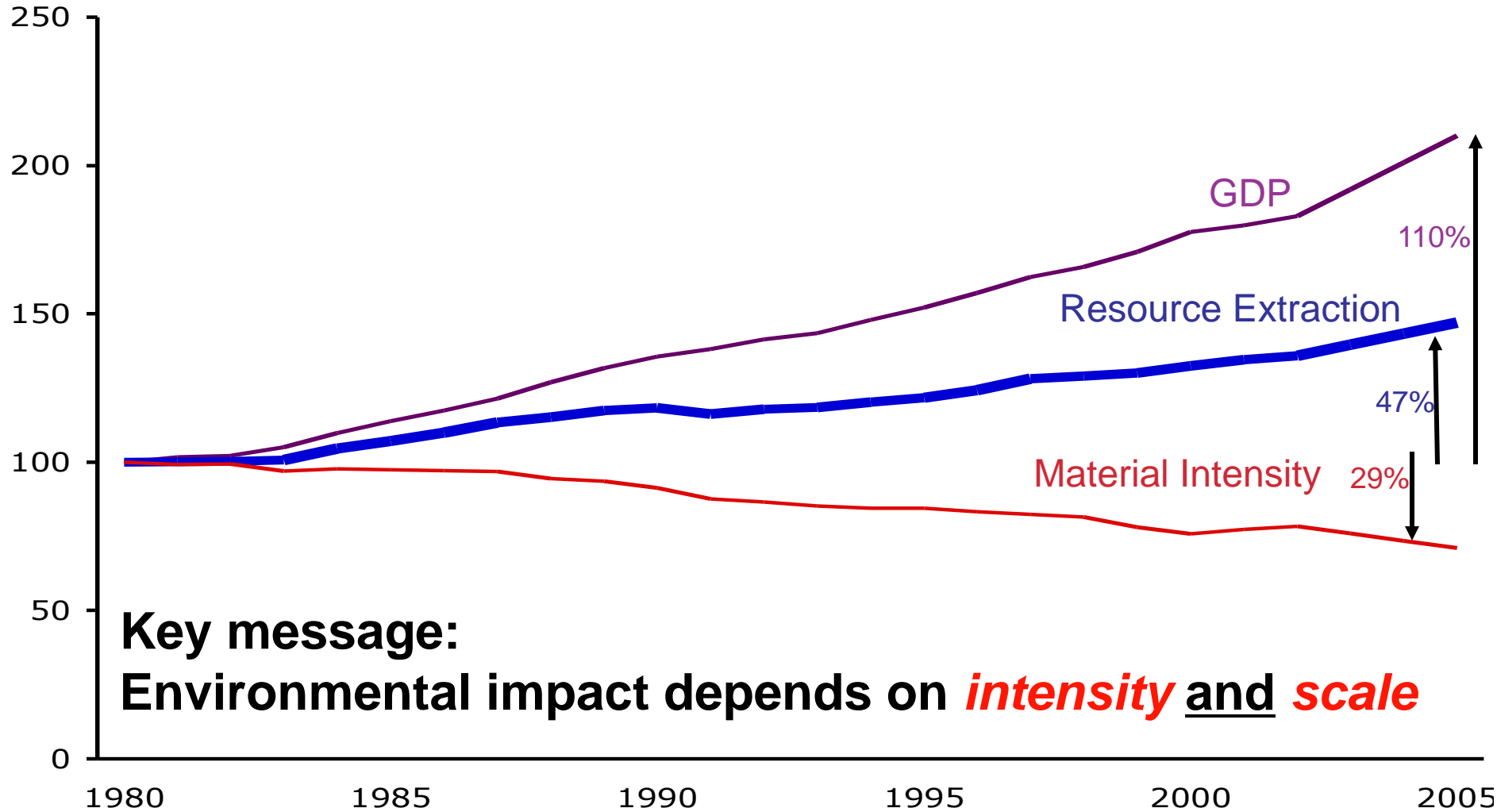
29 January, 2010

# Bio-physical Cycles

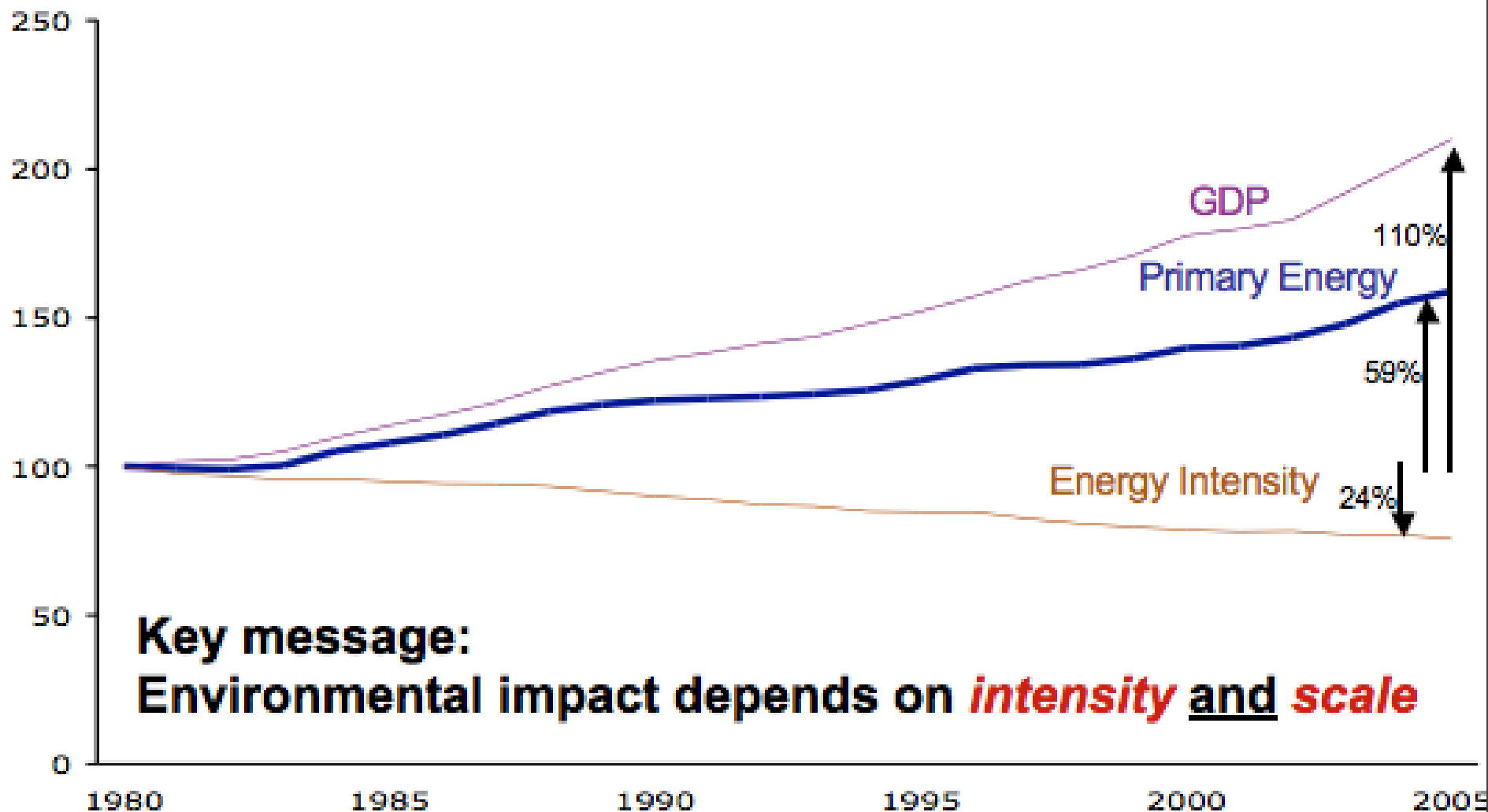




# Material intensity is declining, but not fast enough



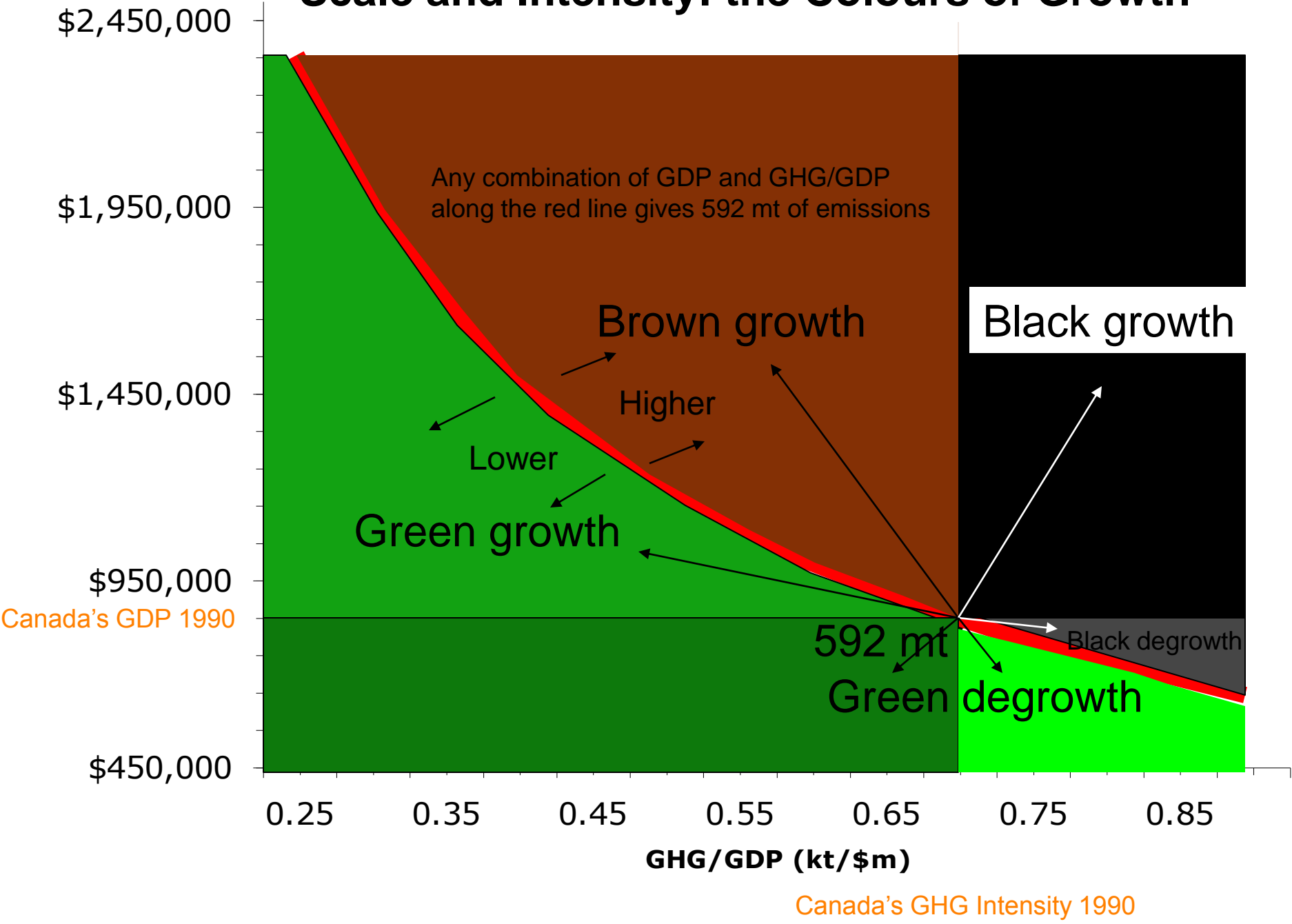
# Energy consumption - same story



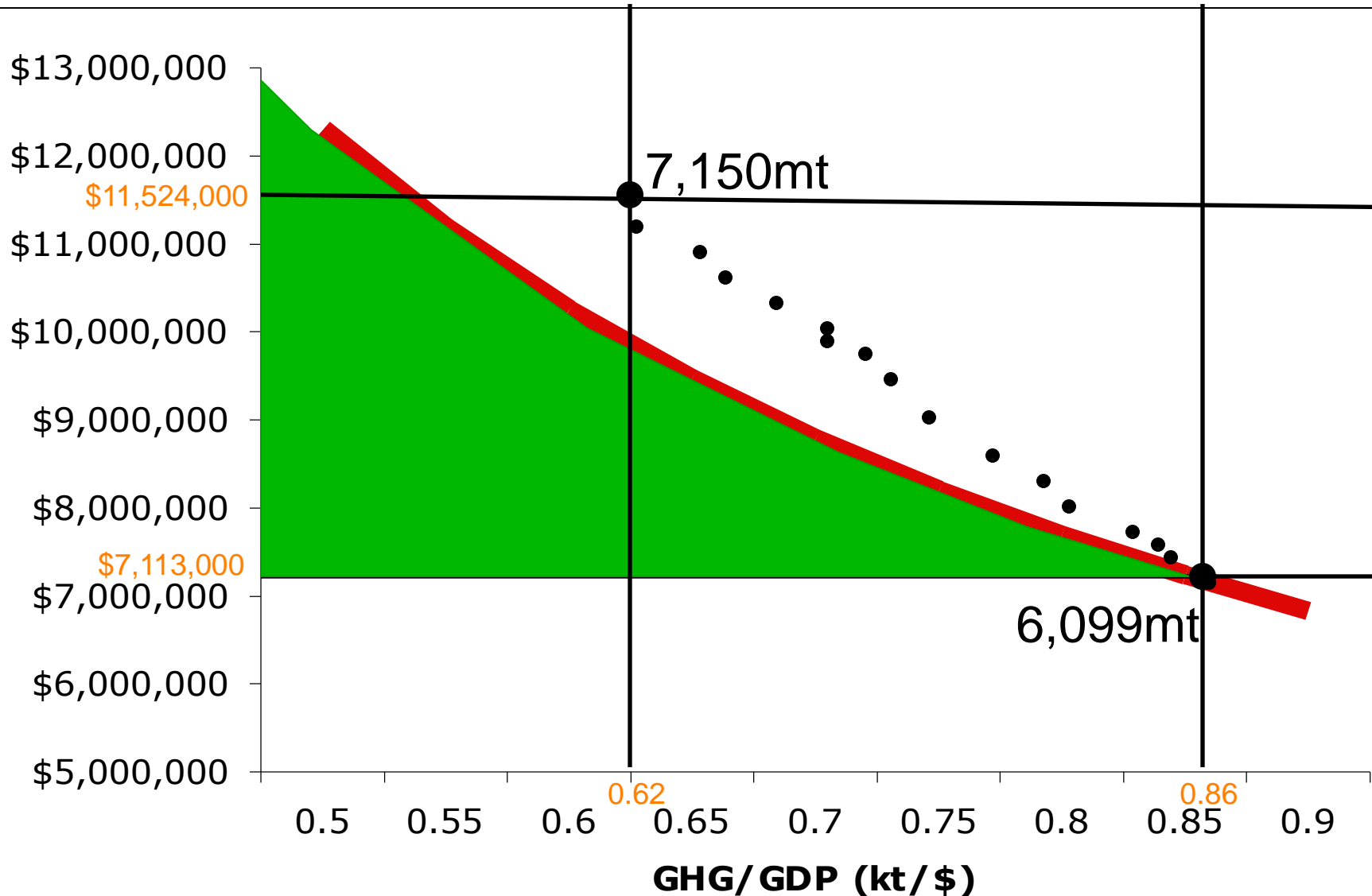


Green Growth  
and  
Climate Change

# Scale and Intensity: the Colours of Growth

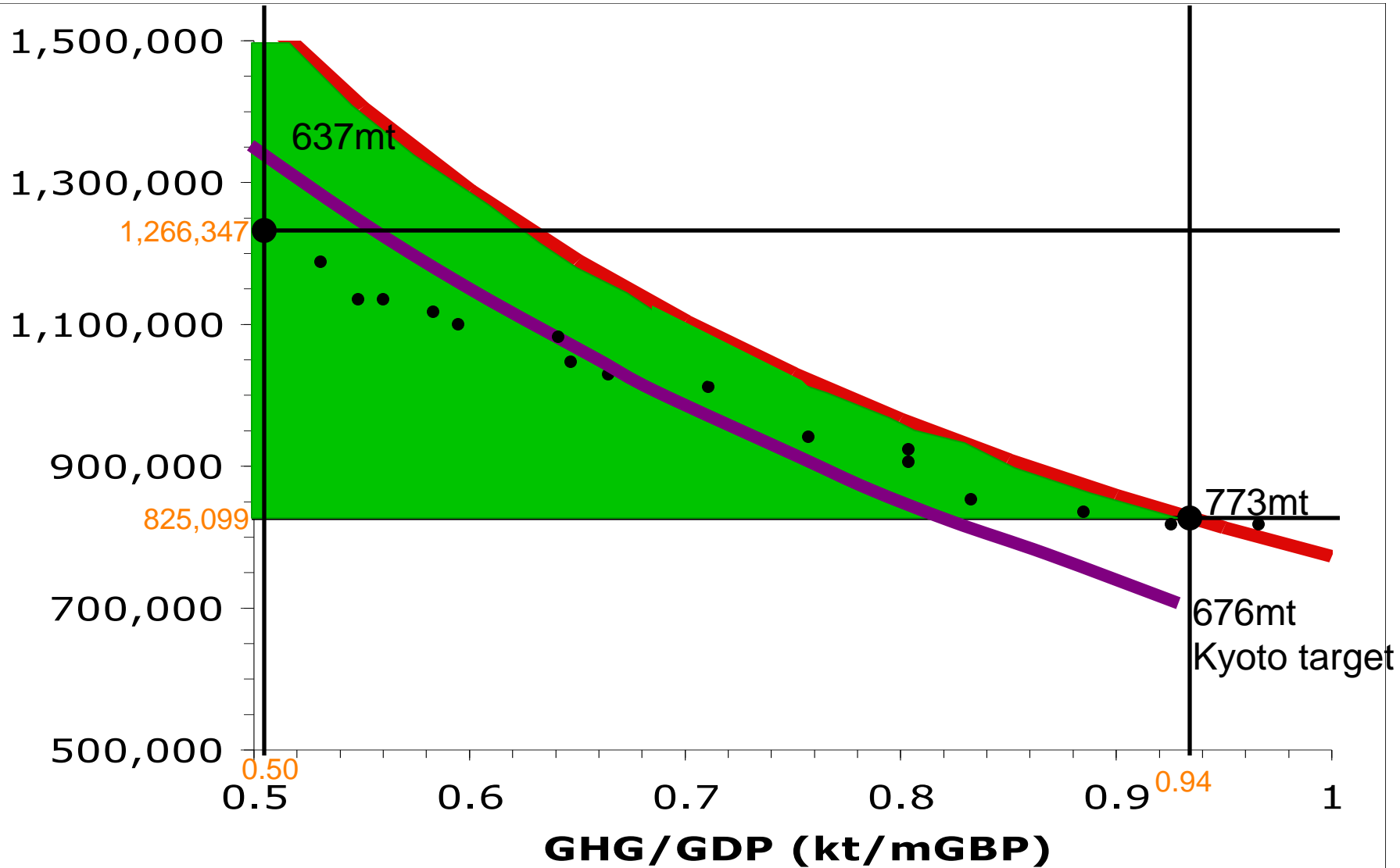


# USA's Economic Growth Scale and Intensity 1990-2007

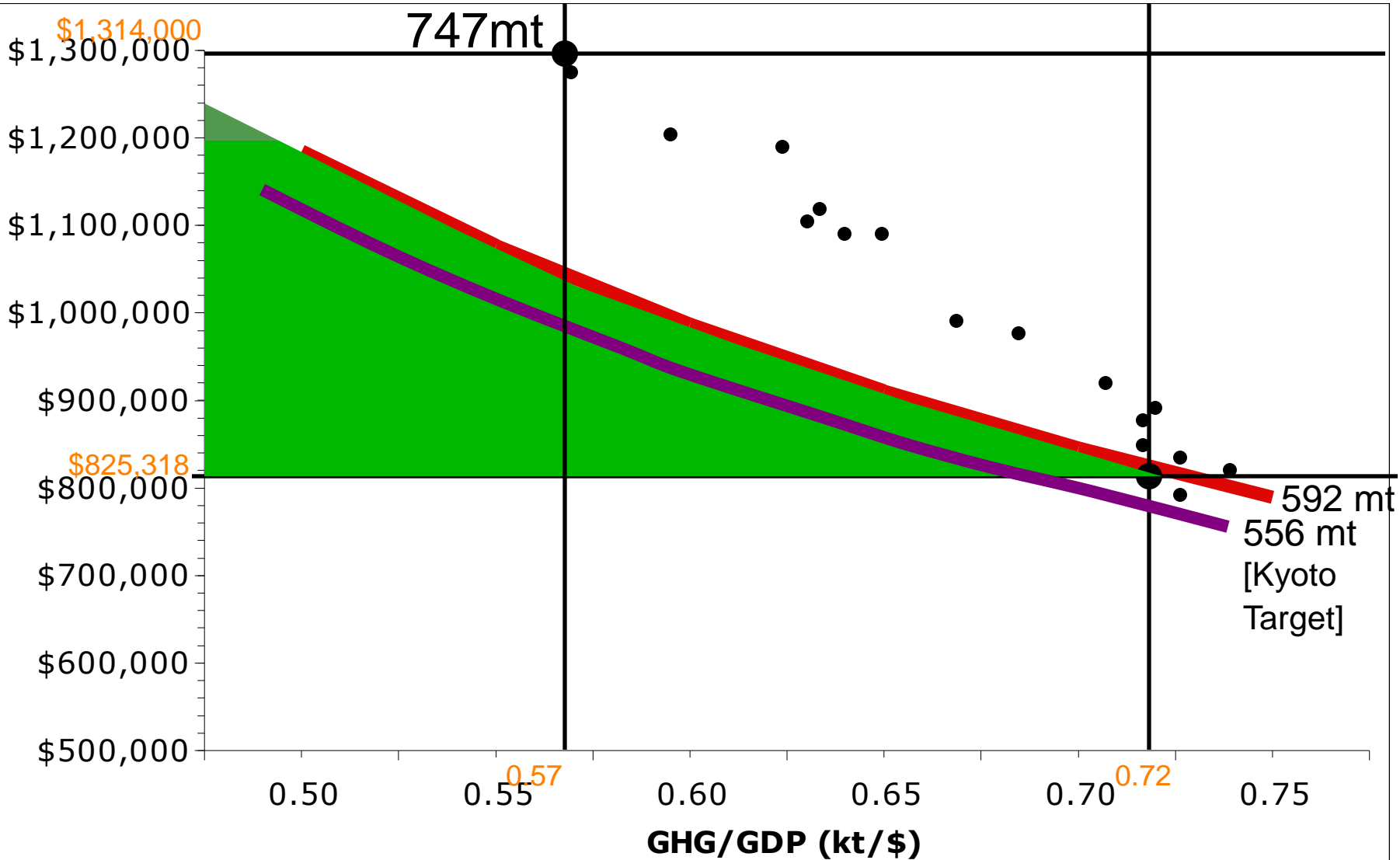




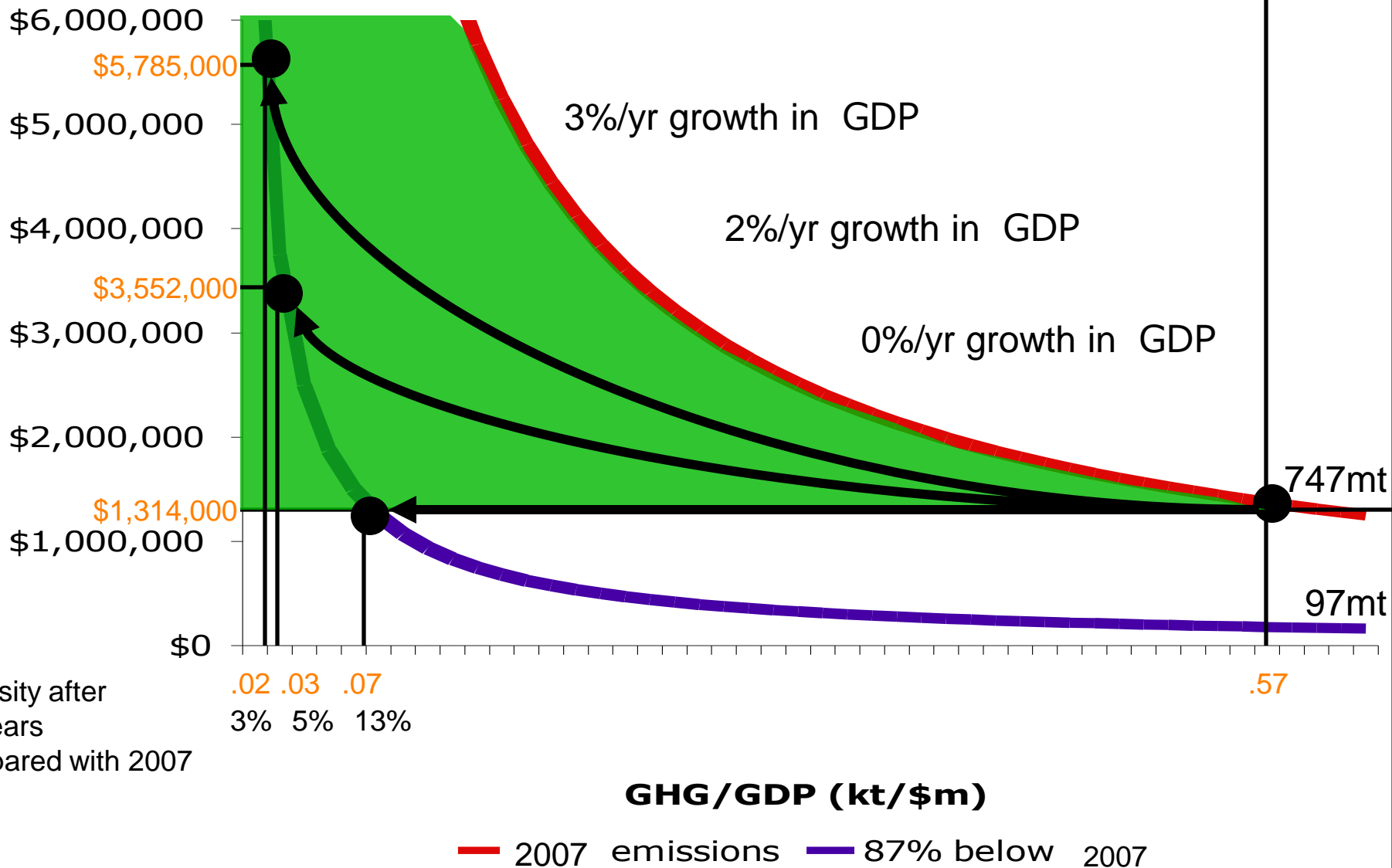
# Britain's Economic Growth Scale and Intensity 1990-2007



# Canada's Economic Growth Scale and Intensity 1990-2007



# An 87% reduction in Canada's GHG emissions from 2007 level in 50 years: Scale and Intensity



Managing  
without  
growth?

Can we have full employment, no poverty, fiscal balance, reduced GHG emissions without relying on economic growth?



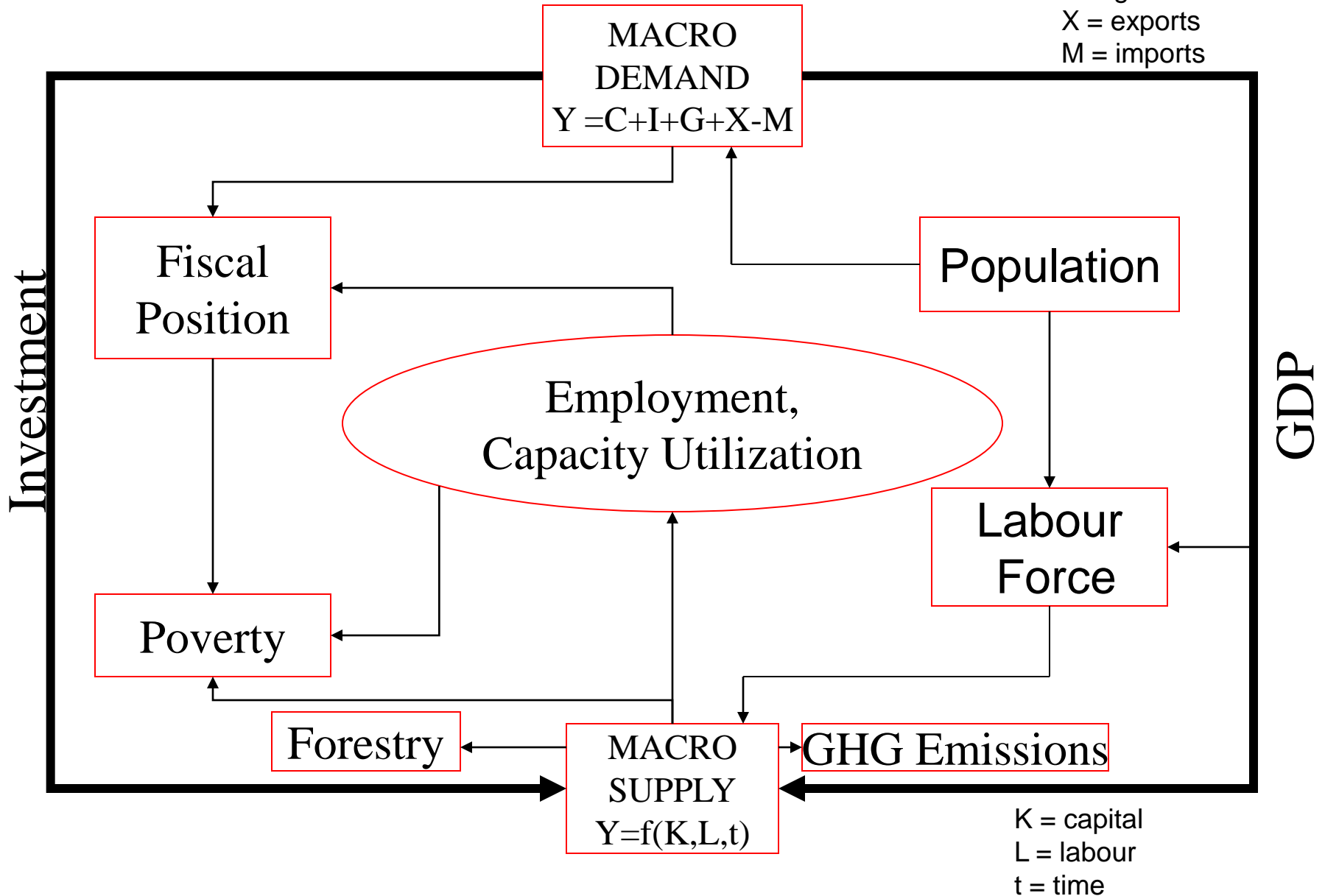
A cartoon illustration of a man in a white shirt and red tie, smiling broadly with his arms raised in celebration. He is standing next to a computer monitor. The monitor's screen displays the text 'LowGrow Canada' in a green box. A thought bubble above the man's head contains the text 'You bet!'.

You bet!

LowGrow  
Canada

# LowGrow - simplified structure

Y = GDP  
C = consumption  
I = investment  
G = government  
X = exports  
M = imports



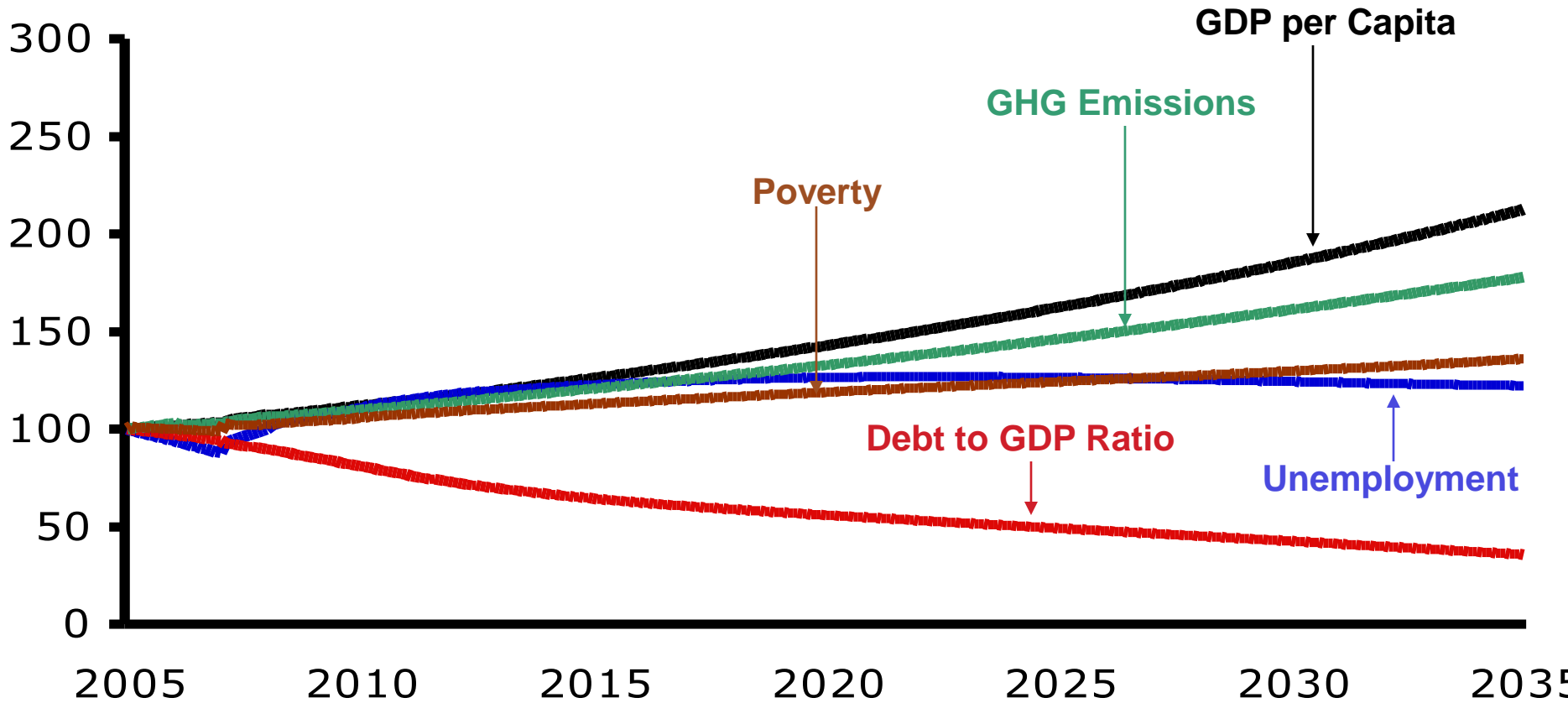
# What makes an economy grow?

- Macro demand (what we spend money on):
  - Consumption
  - Investment
  - Government
  - Trade
- Macro supply (what we can produce):
  - Labour
  - Capital
  - Productivity





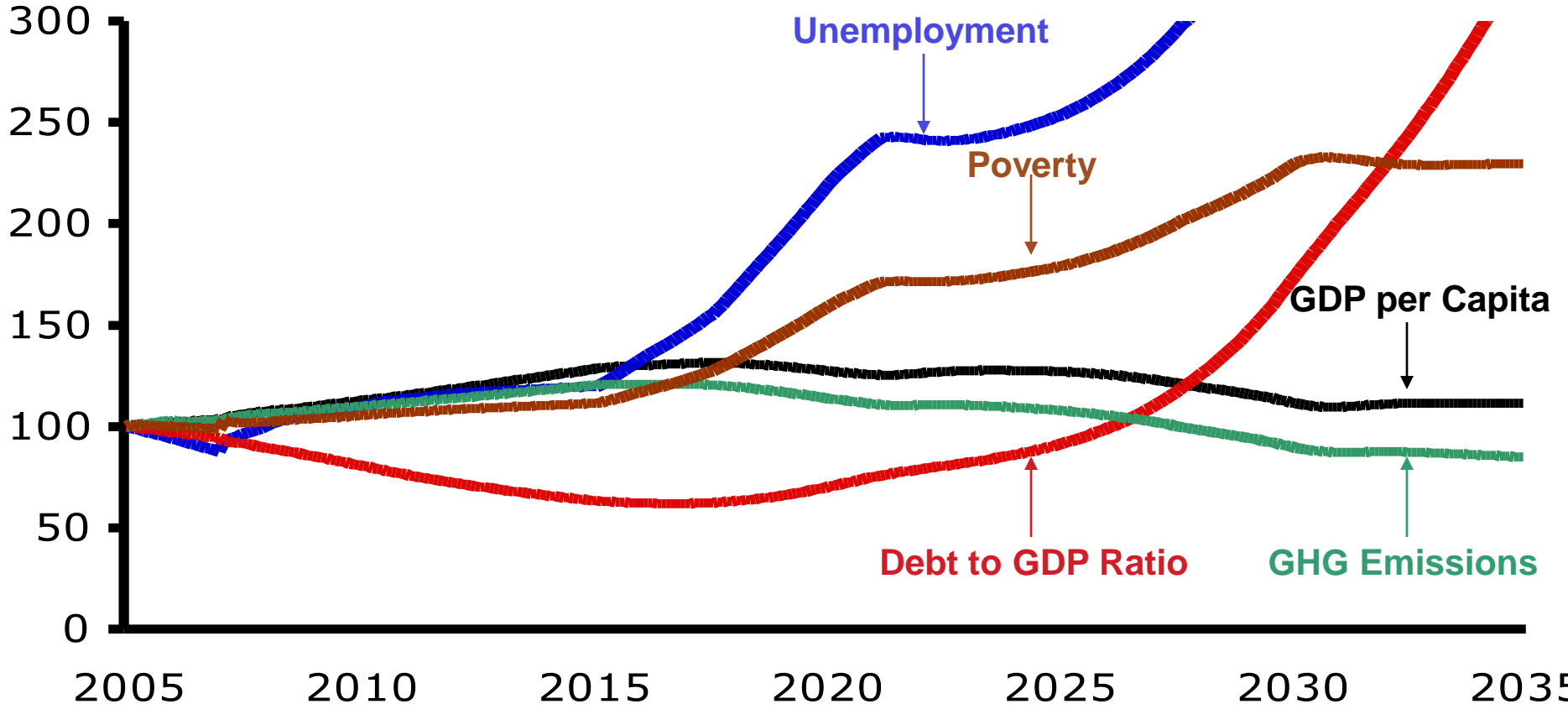
# 'Business as usual'



# What happens if we eliminate increases in all sources of economic growth? (starting in 2010 over 10 years)

- Consumption
  - Investment
  - Government
    - Trade
- Population/labour
  - Productivity

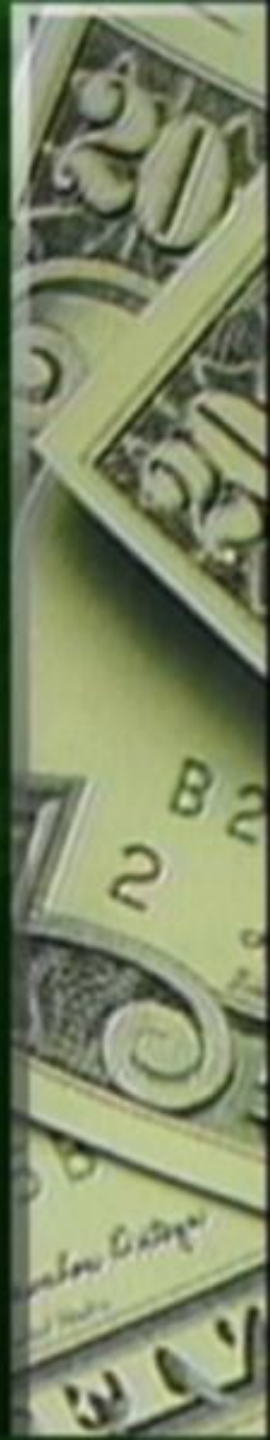
# A no growth disaster





Larry Elliot (economics editor)  
The Guardian Weekly 29th August 2008

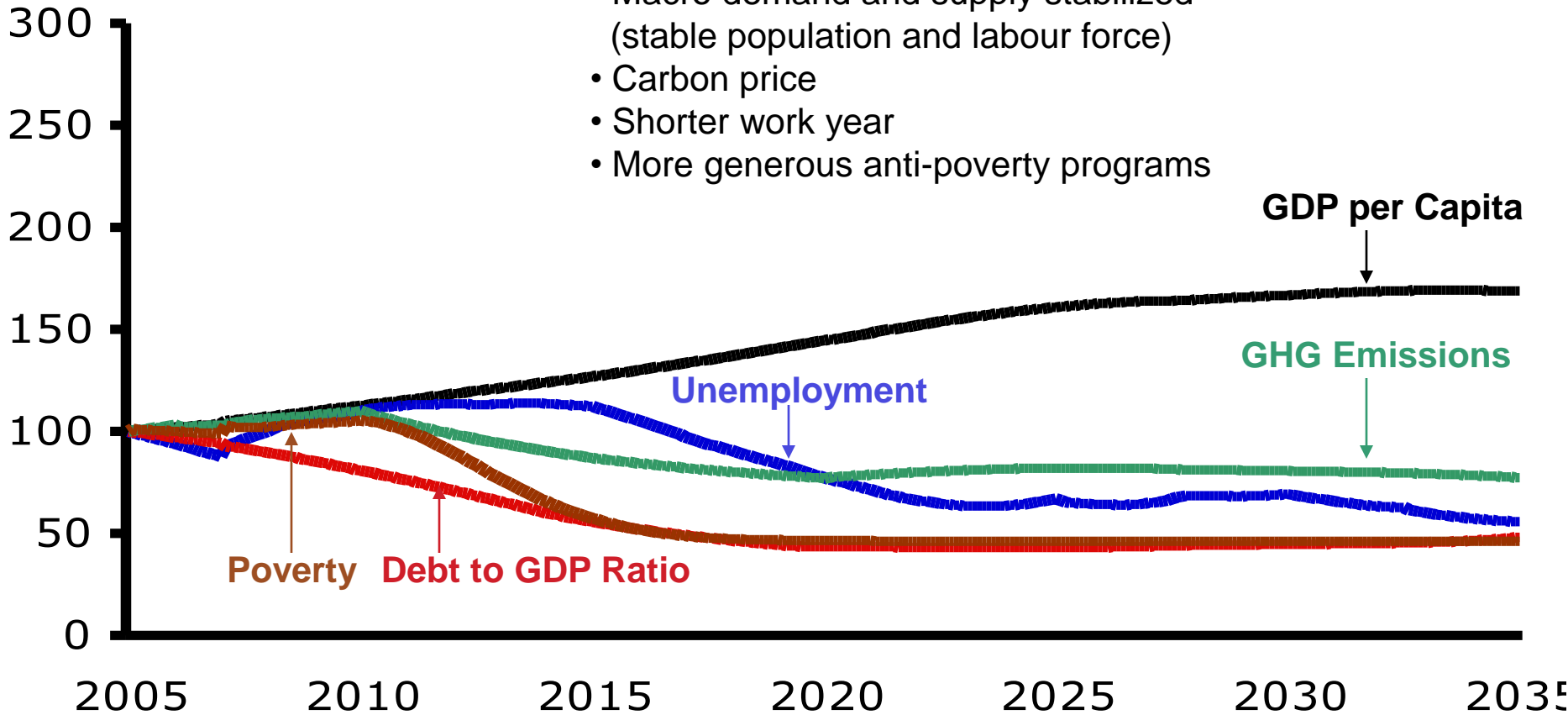
‘The real issue is whether it is possible to challenge the “growth-at-any-cost model” and come up with an alternative that is environmentally benign, economically robust and politically feasible.’



# A better low/no growth scenario

How?

- Macro demand and supply stabilized (stable population and labour force)
- Carbon price
- Shorter work year
- More generous anti-poverty programs

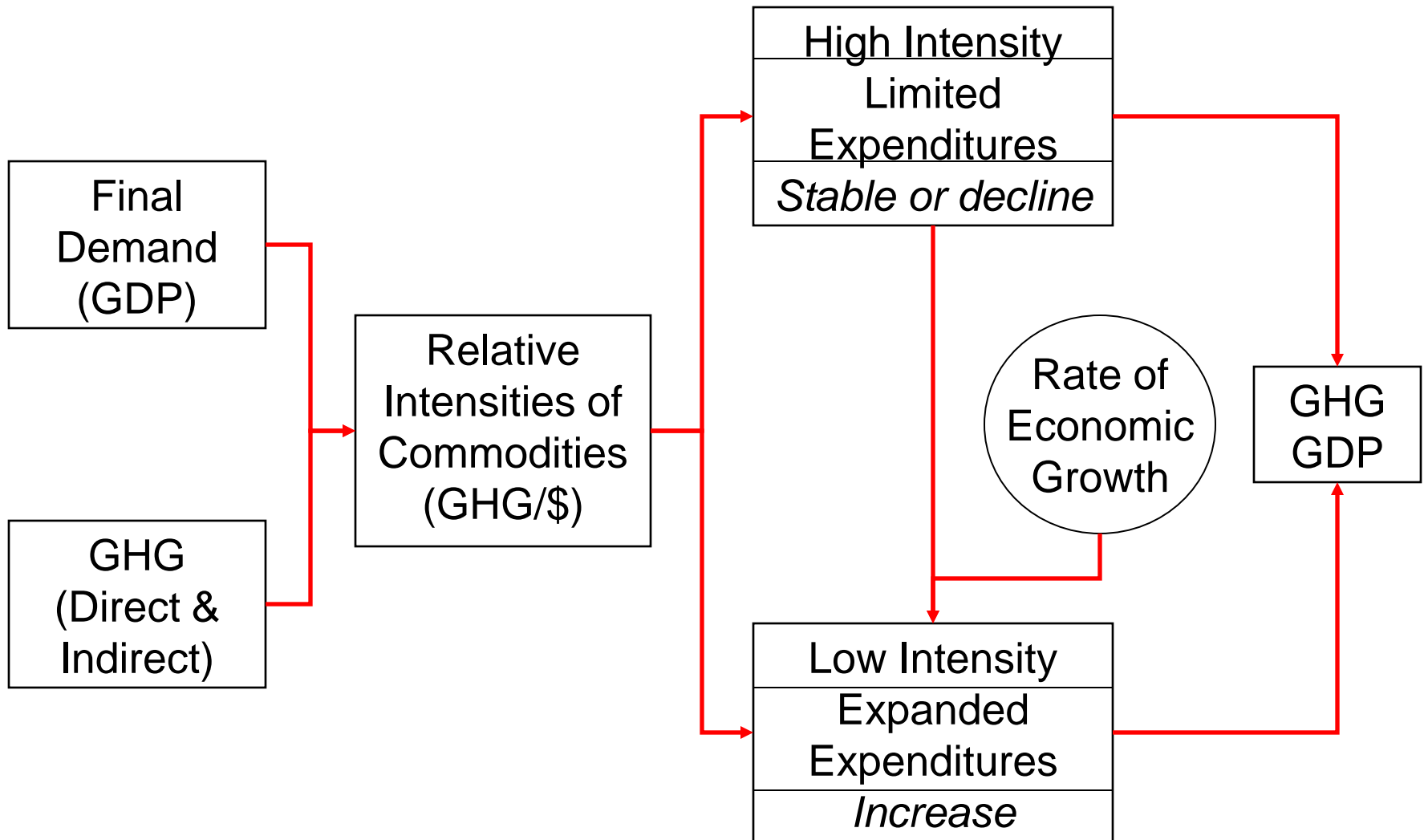


# What would change?

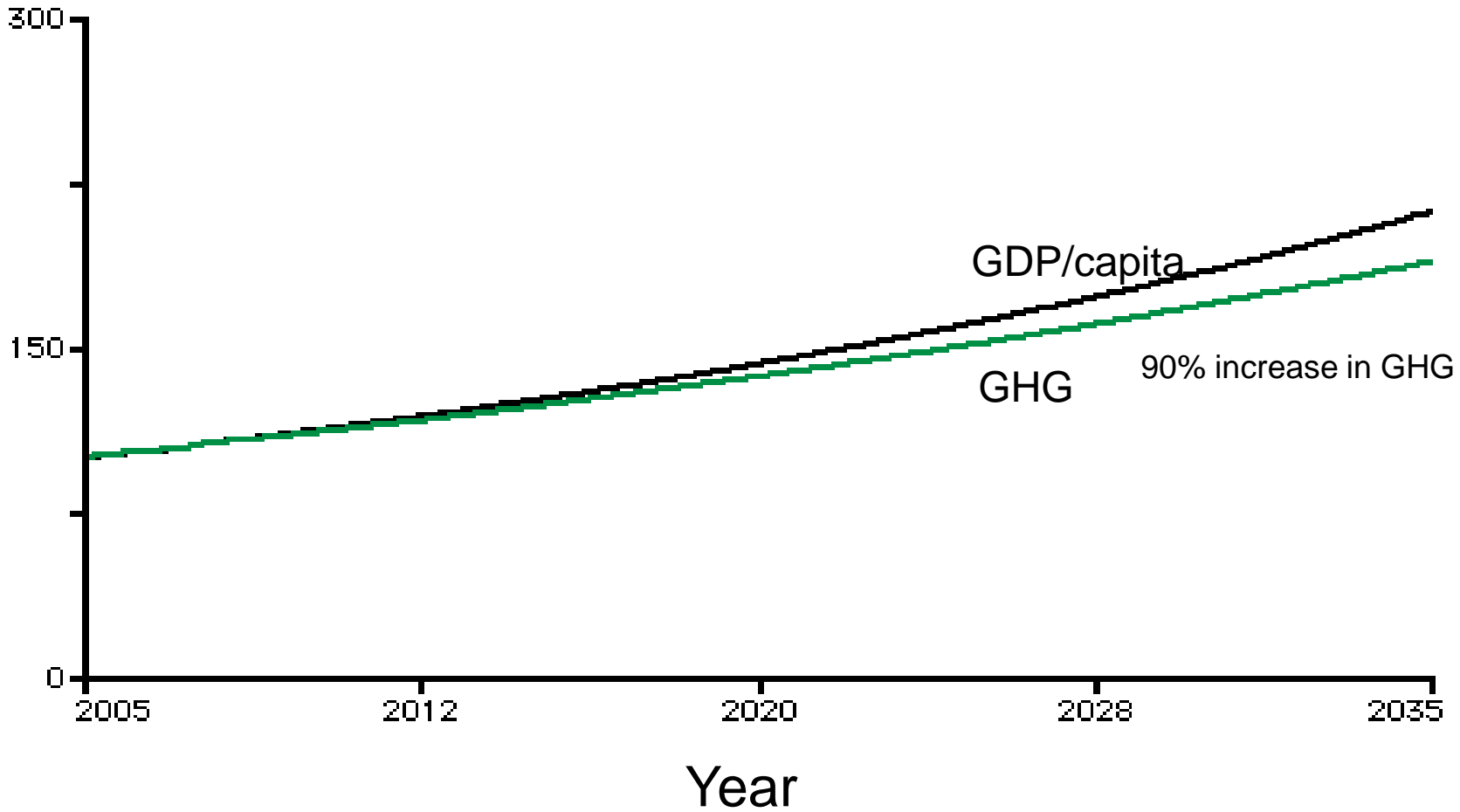
- New meanings and measures of success
- Limits on materials, energy, wastes and land use
- More meaningful prices
- More durable, repairable products
- Fewer status goods
- More informative advertising
- Better screening of technology
- More efficient capital stock
- More local, less global
- Reduced inequality
- Less work, more leisure
- Education for life not just work



# Selective Growth



# Business as Usual

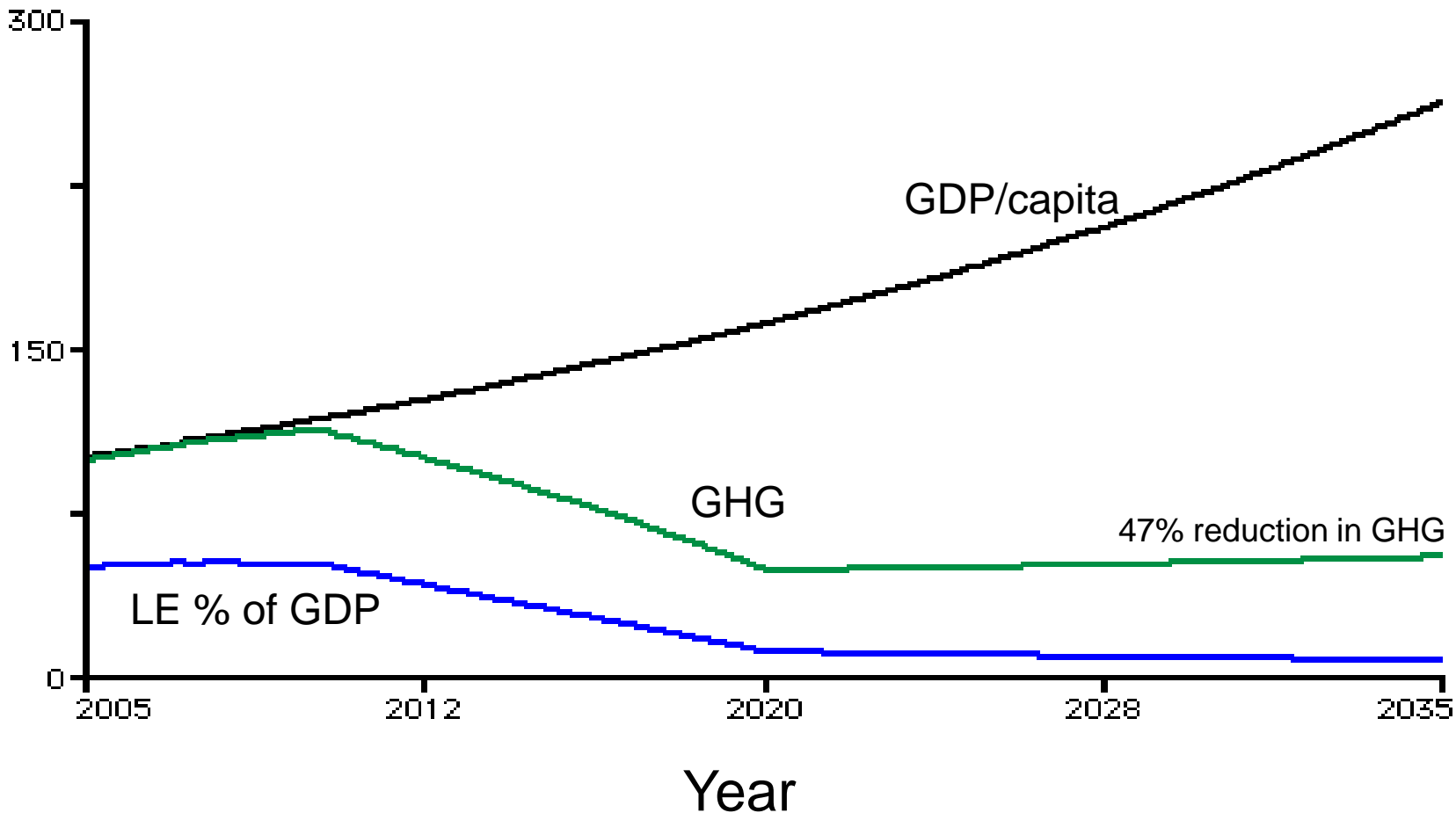




**Limited Expenditure: 50% GDP**

**Relative intensity: 10**

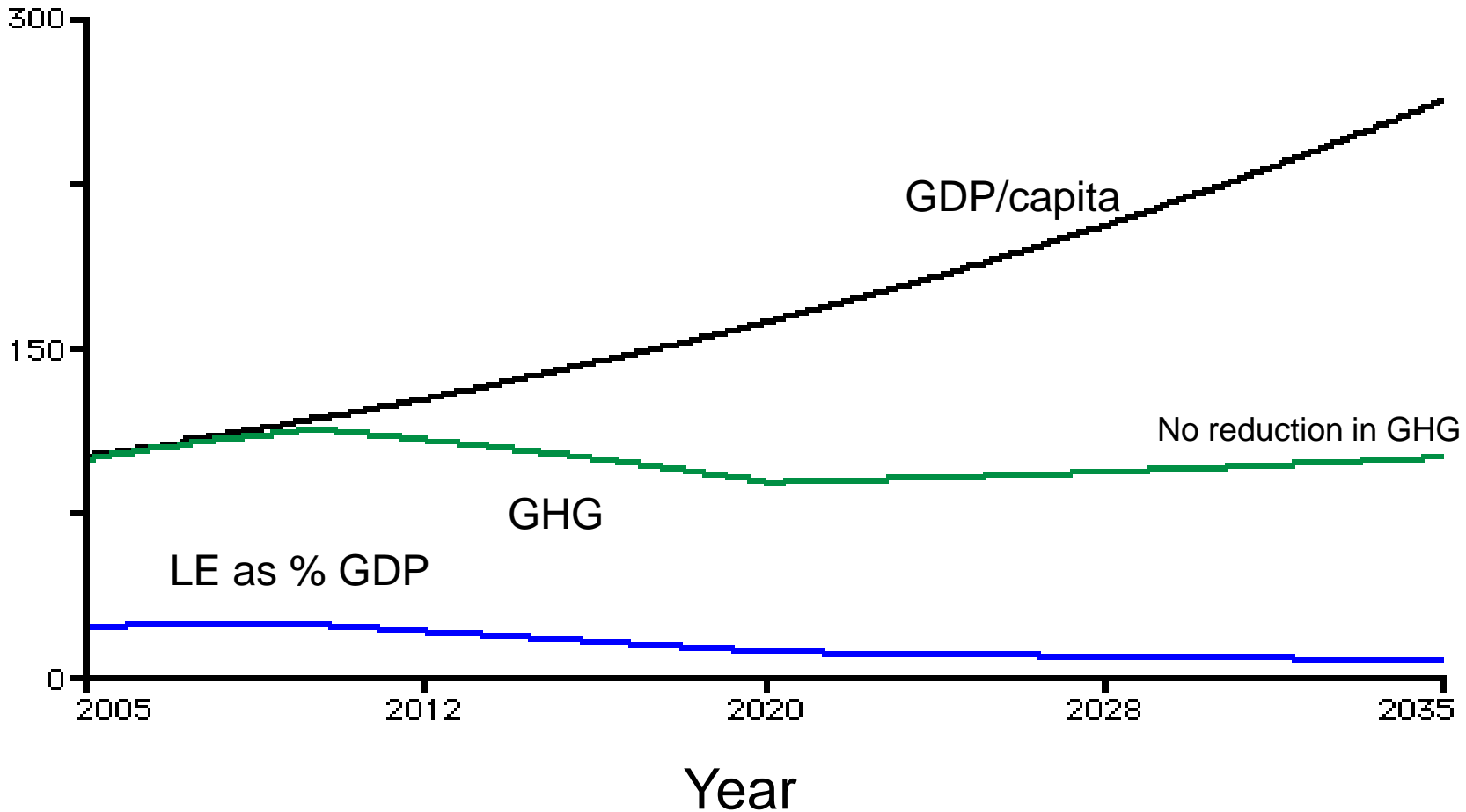
**Limited Expenditure Target: 10% in 2020**



**Limited Expenditure: 22% GDP**

**Relative intensity: 10**

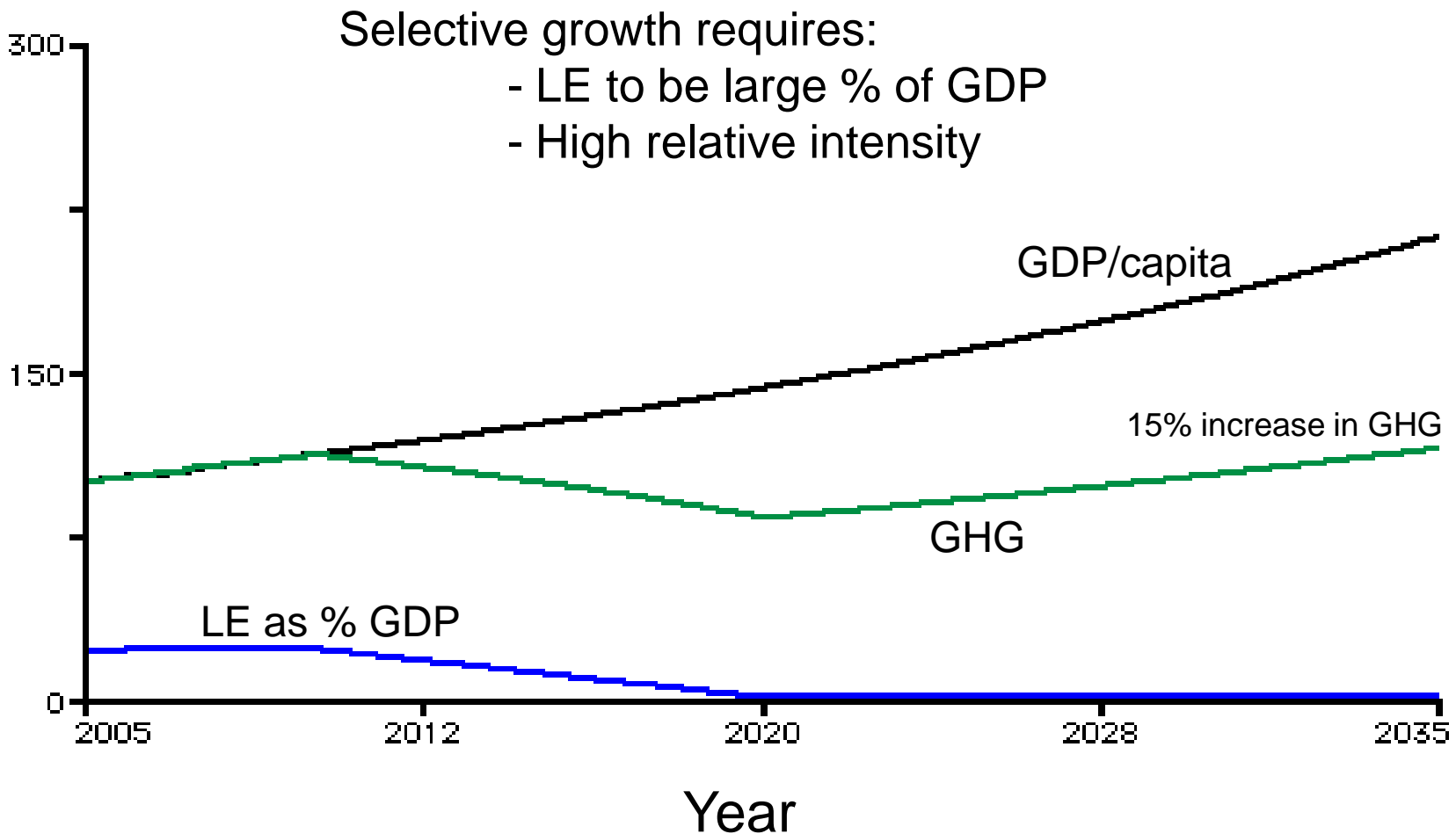
**Limited Expenditure Target: 10% in 2020**



# Limited Expenditure: 22% GDP

## Relative intensity: 4

### Limited Expenditure Target: 0% in 2020



# Entering the Mainstream

“It is possible that the US and Europe will find that...either continued growth will be too destructive to the environment and they are too dependent on scarce natural resources, or that they would rather use increasing productivity in the form of leisure...

There is no reason at all why capitalism could not survive with slow or even no growth.”

(Harper's Magazine, March 2008)



Robert Solow  
Nobel Laureate in Economics



Can we adapt?







Thank you

