

# The Oil Drum

DISCUSSIONS ABOUT ENERGY AND OUR FUTURE



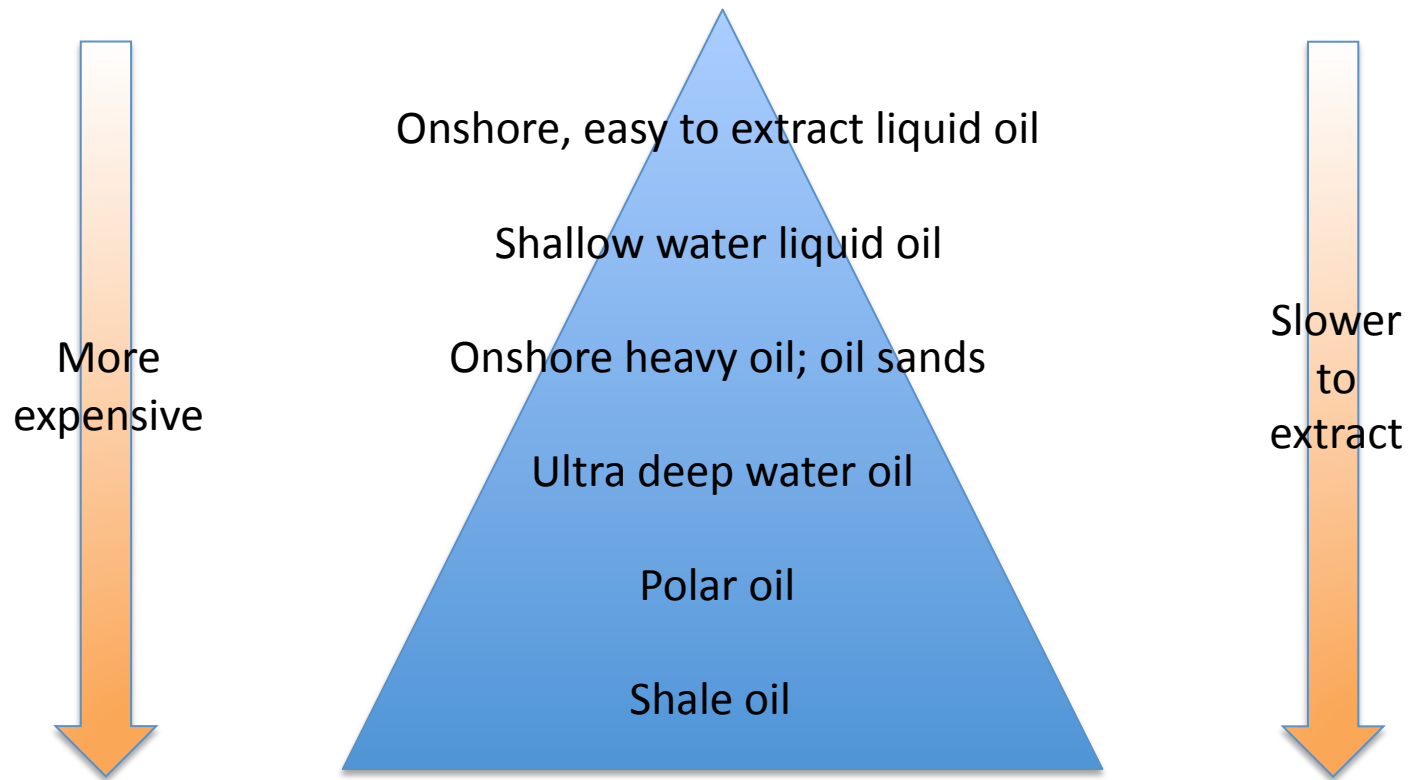
We have lots of oil, but . . .

Gail Tverberg

Evolver Atlanta Peak Oil Event

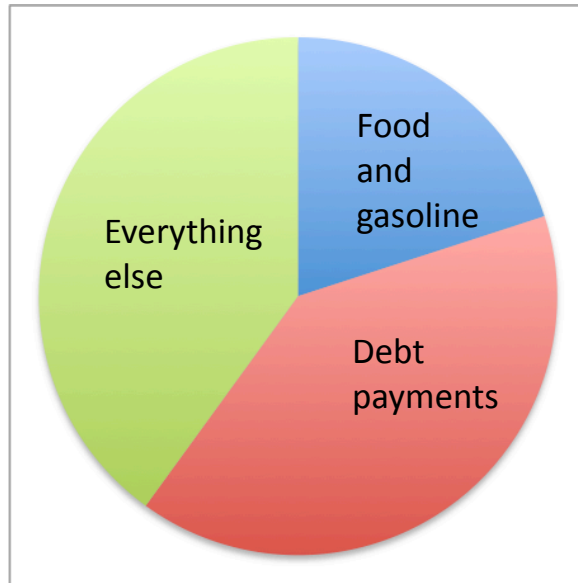
December 15, 2009

# A huge amount of oil is available

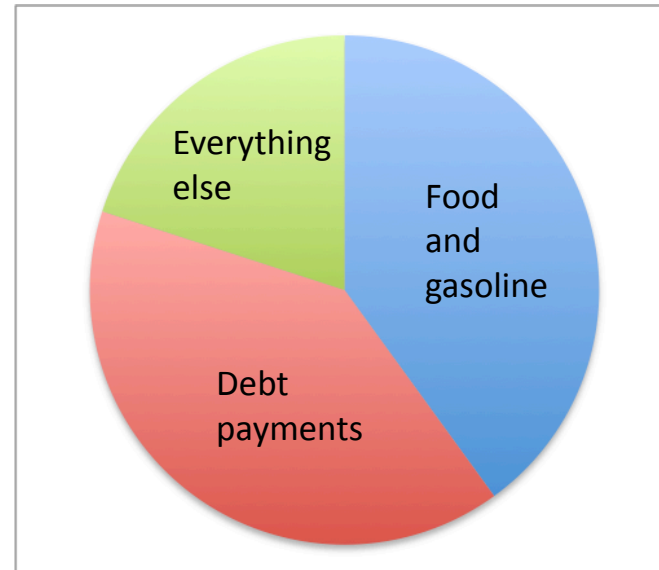


# Theory says oil price can increase— but our pocketbooks disagree

Low oil price budget



High oil price budget

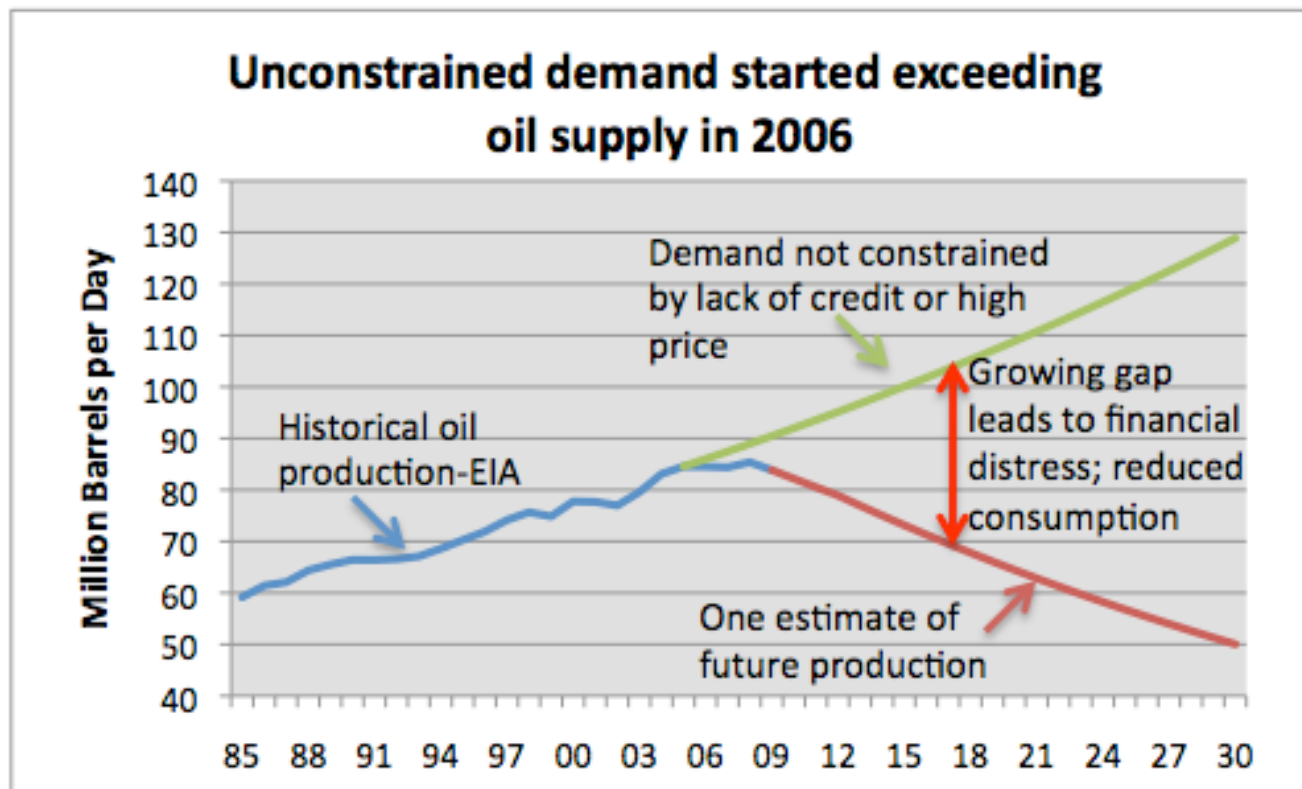


# If oil prices rise, something has to “give”

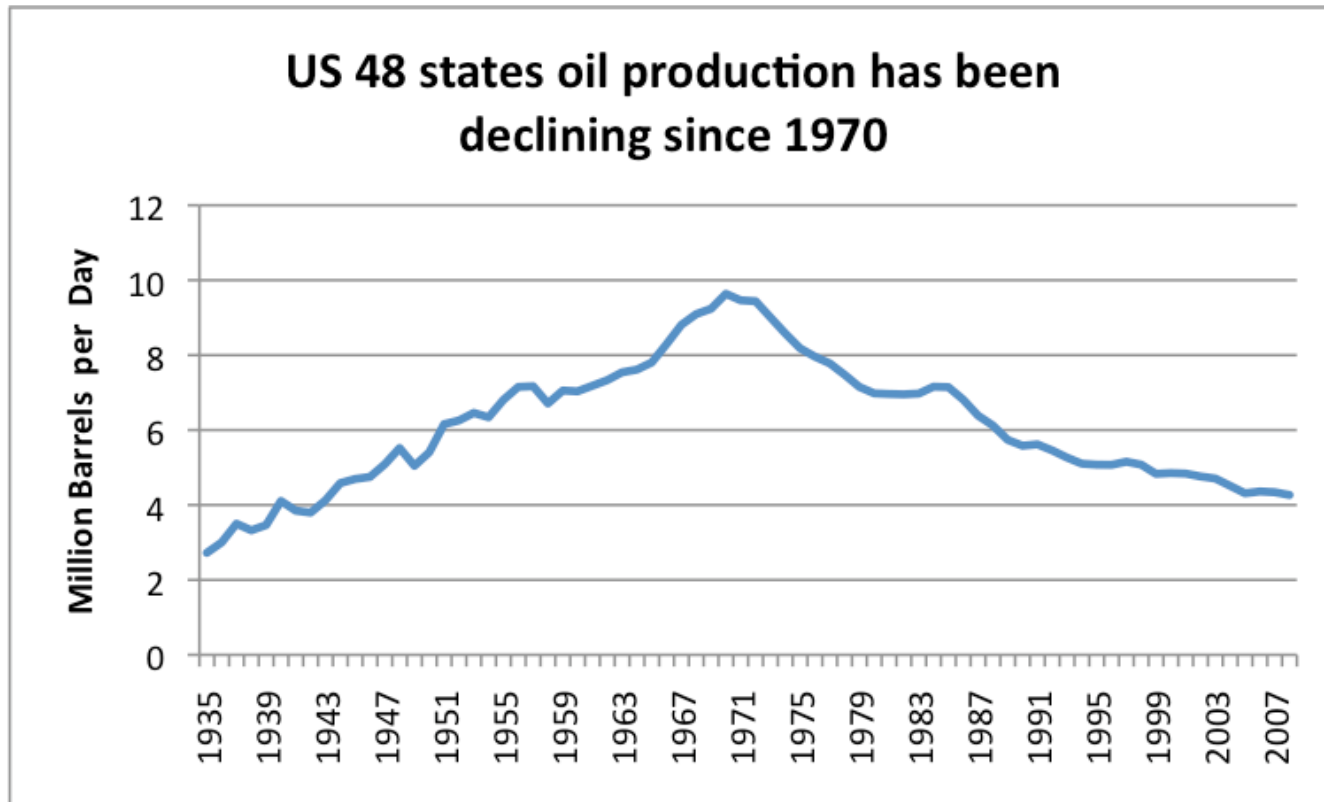
- Either we miss debt payments
  - Banks do badly
  - Cut back on debt availability
- Or we cut back on everything else
  - Fewer new cars
  - Fewer new houses
  - Fewer restaurant meals; donations; etc.
  - Looks like a recession

# Peak oil isn't a future event

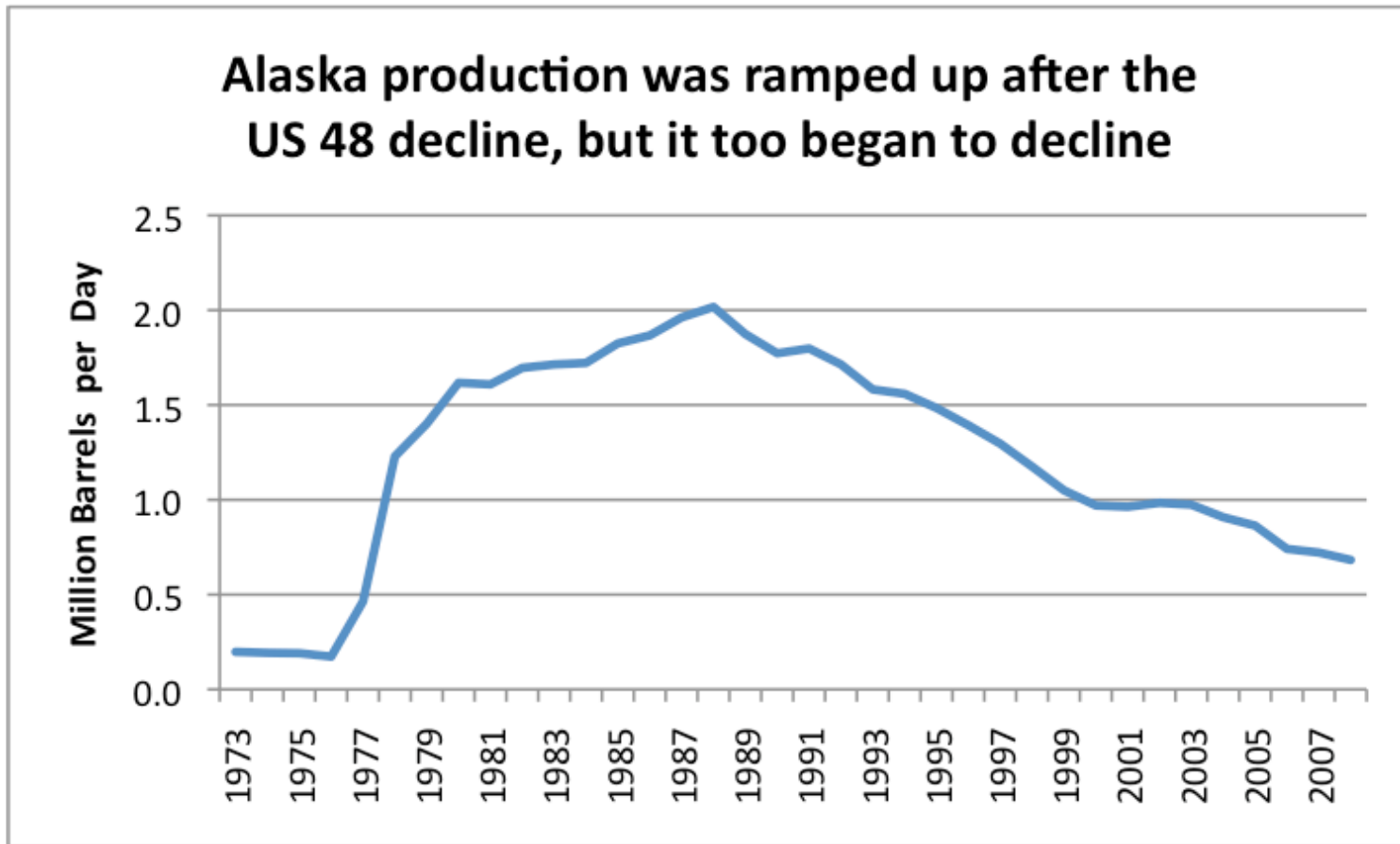
- It is what you have been living through!



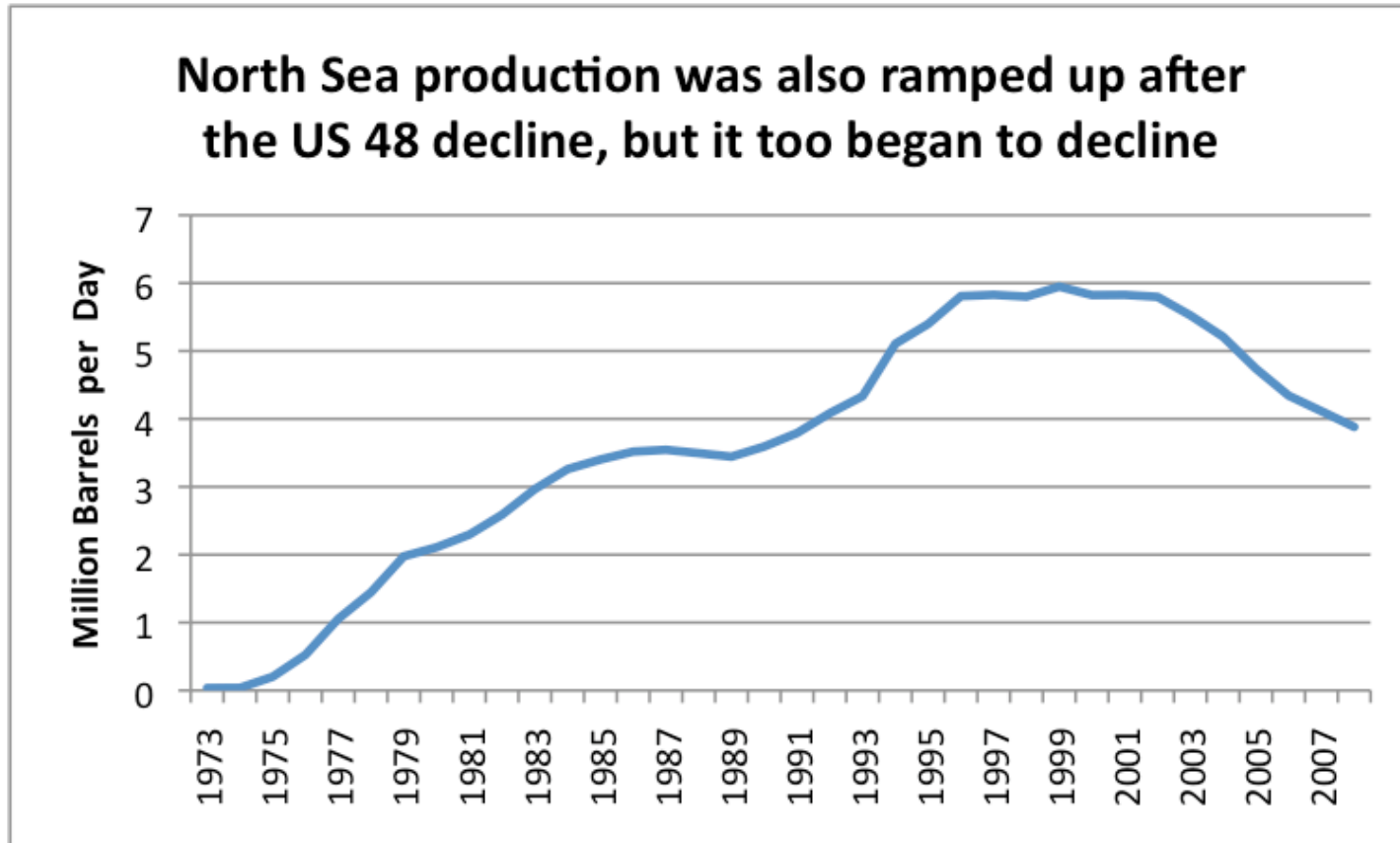
We know from experience that oil production tends to rise, then decline:



# Similarly for Alaska



# Similarly for the North Sea

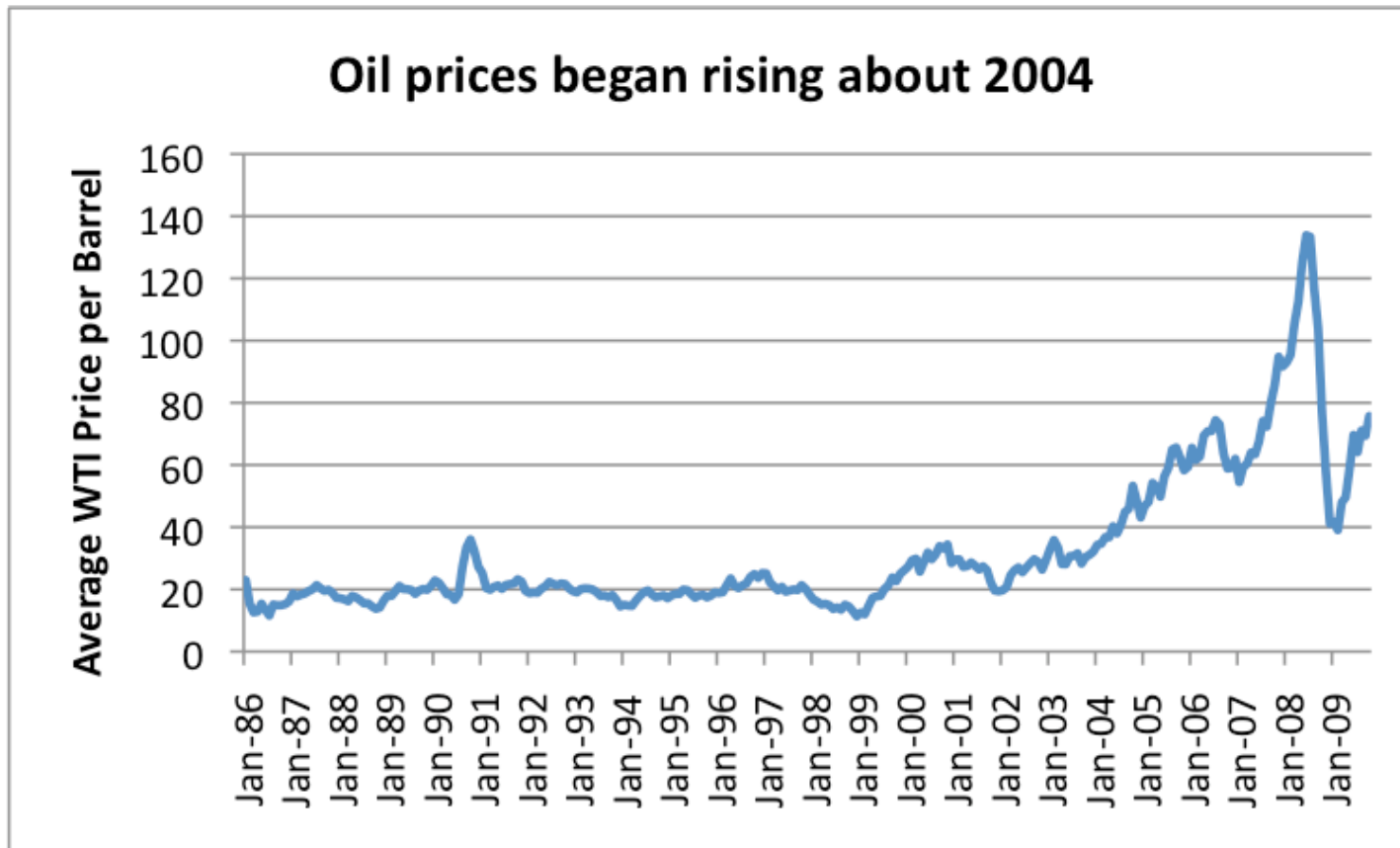




# Now the “easy oil” is mostly gone

- There is plenty of oil left
  - But it is expensive, slow-to-extract oil
- There are lots of substitutes
  - But they are generally more expensive than oil
  - Examples: Ethanol; electric cars powered by wind generated electricity
- If we could all get raises, everything would be fine! (And the economists would be right)

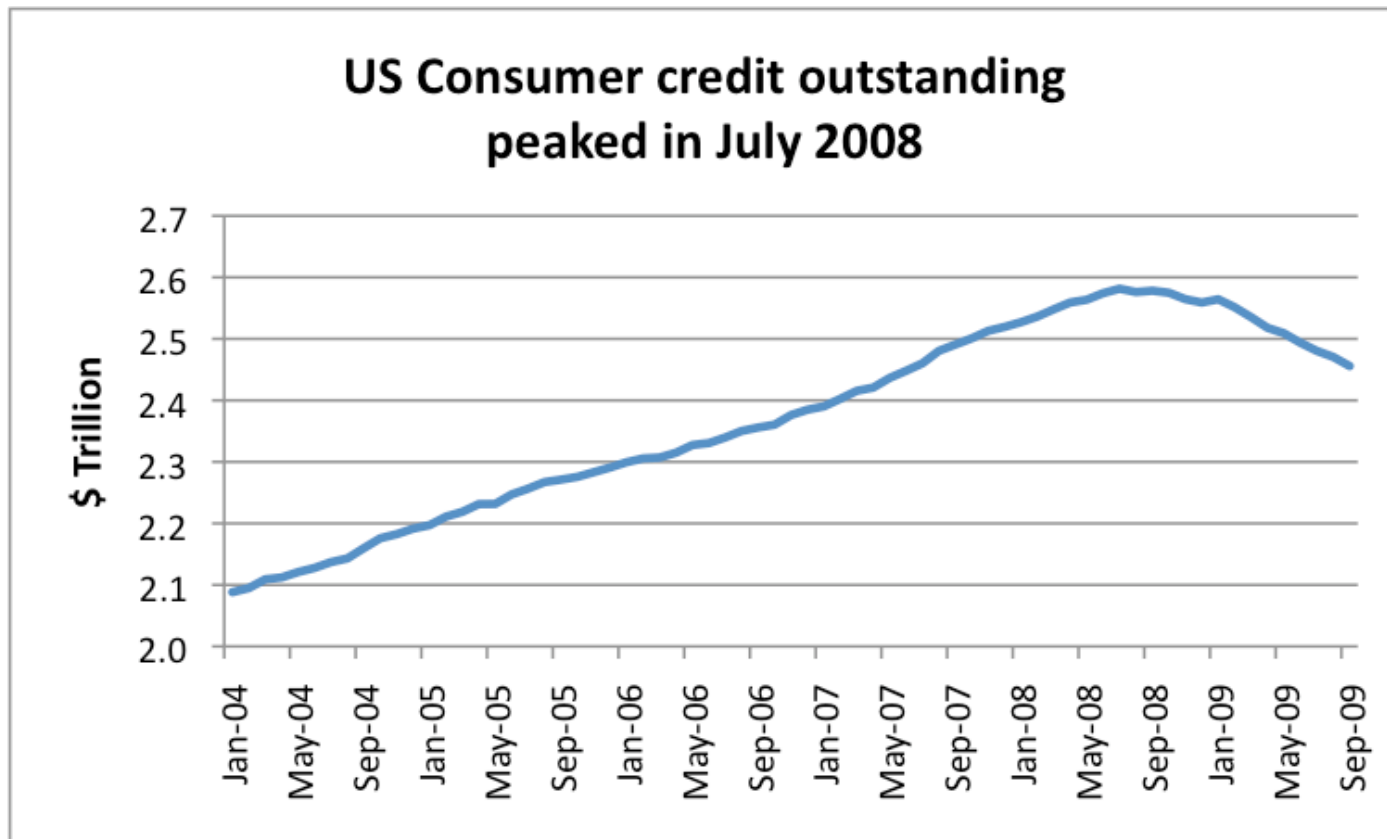
Many people thought the problem disappeared when prices dropped



# But people's incomes couldn't stand higher oil prices

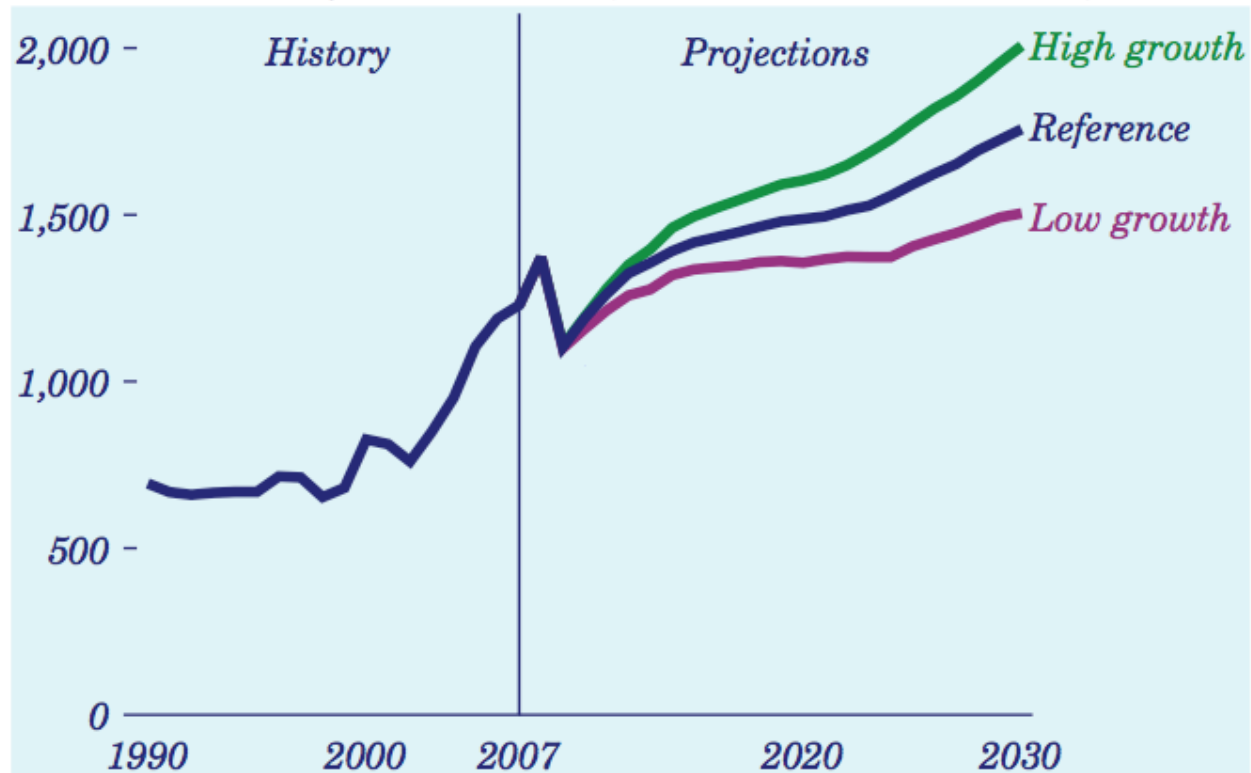
- Mortgage defaults rose
- Banks reported poor results
  - Cut back on new loans
- Suddenly, cut back on credit started affecting oil prices
- Less credit -> less demand -> lower oil prices

US consumer credit “peaked” the same month as oil prices – July 2008



# US EIA View of Energy Costs

**Figure 30. Energy expenditures in the U.S. economy in three cases, 1990-2030 (billion 2007 dollars)**

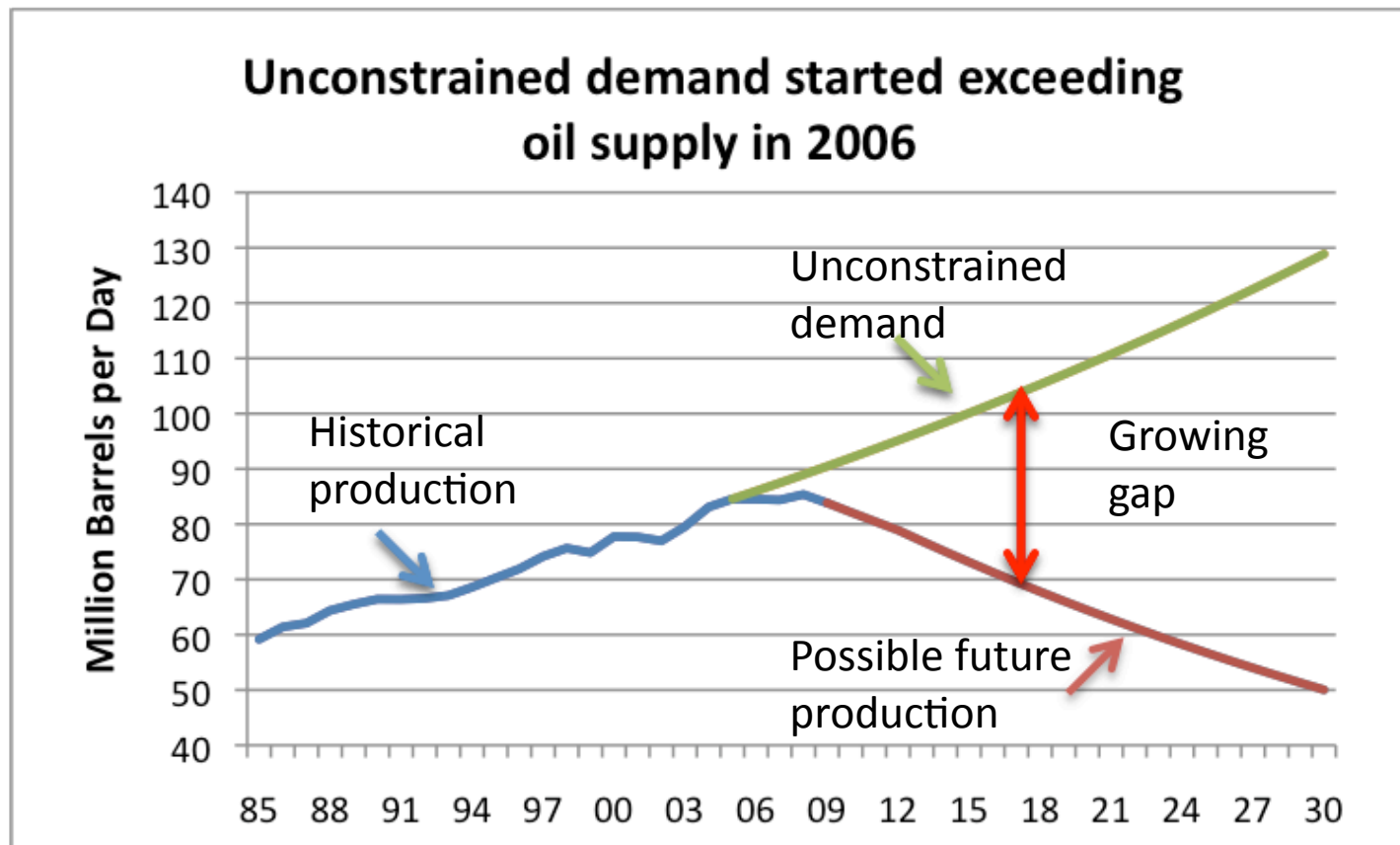


[http://www.eia.doe.gov/oiaf/aeo/pdf/0383\(2009\).pdf](http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2009).pdf)

# Where do we go from here?

- We are in uncharted territory
- Economists aren't much help
  - Didn't see the problem coming
  - Expect oil prices will rise, without \$ to pay for oil
- Things are in a "lull" now
  - Oil prices are down somewhat from their high
  - But debt problems persist
  - New flare up is likely

# Gap between production and unconstrained demand will likely grow



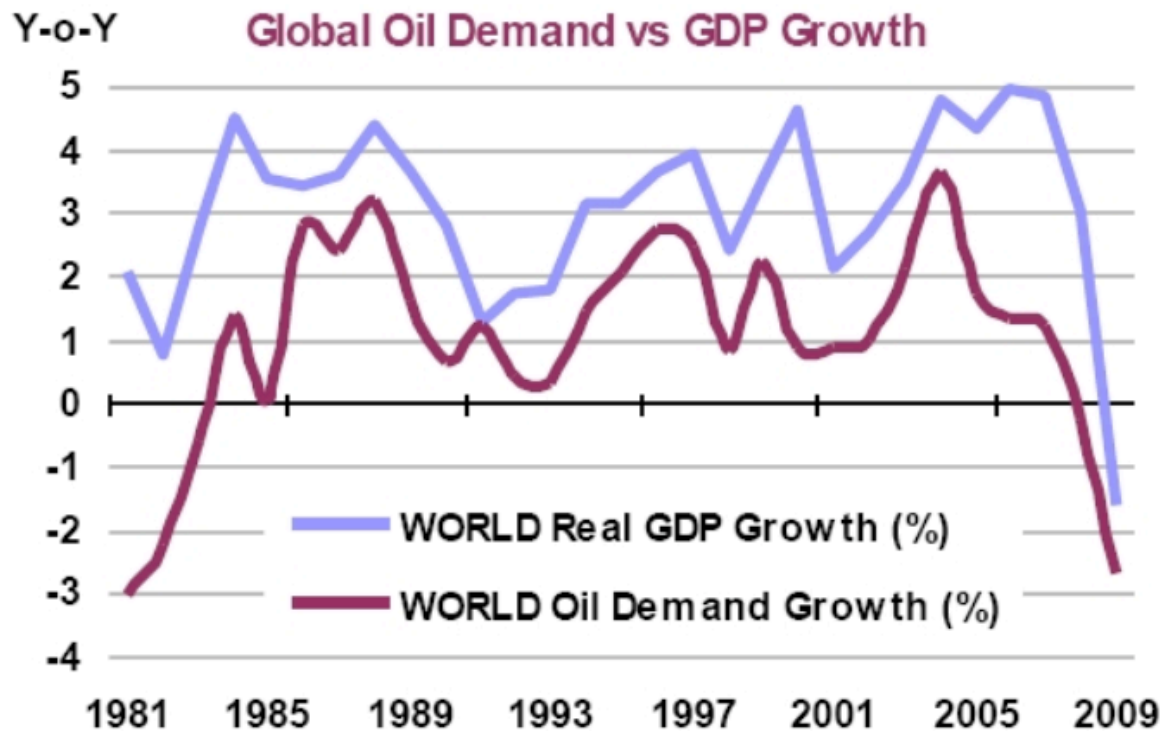
# Lower oil production will likely mean continued recession / depression

- Prices likely volatile
- May rise for a while
  - Then higher oil and food prices will cause more loan defaults and more recession
  - Oil prices will drop; and there will be more lay offs
- International trade may be impacted



# Reason for continued recession is close tie between GDP and oil production

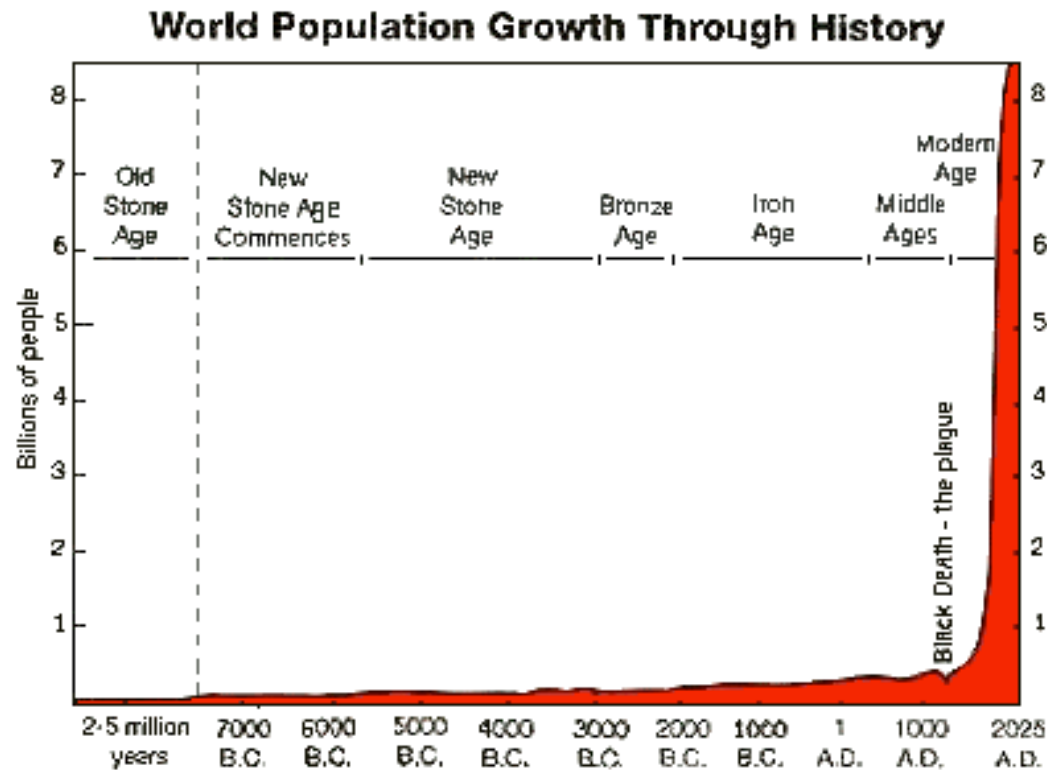
Oil Demand Correlates With Global GDP



Source: International Energy Agency (IEA)

Graph by Dave Cohen

# World population has grown greatly since discovery of fossil fuels



<http://www.susps.org/overview/numbers.html>

# One concern is the ability to continue feeding everyone

- Food is very oil dependent
  - Pumps for irrigation
  - Fuel for tractors
  - Transport food long distances
  - Pesticides, herbicides, fertilizer
- Higher costs alone would be a problem
  - If food becomes unavailable in some places, there will be a real problem

# No one is telling us about our predicament

- No good solution in sight
- Probably too late for huge technology changes
  - But may be some partial mitigation
- Most alternatives are too expensive
- My view:
  - Need to re-localize food and manufacturing
  - May need local financial systems
  - Need to completely change educational system