We have lots of oil, but . . .

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Evolver Atlanta Peak Oil Event
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A huge amount of oil is available

- Onshore, easy to extract liquid oil
- Shallow water liquid oil
- Onshore heavy oil; oil sands
- Ultra deep water oil
- Polar oil
- Shale oil

More expensive -> Slower to extract
Theory says oil price can increase—but our pocketbooks disagree.

![Low oil price budget](image1)

- Everything else
- Debt payments
- Food and gasoline

![High oil price budget](image2)

- Everything else
- Debt payments
- Food and gasoline
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

Alaska production was ramped up after the US 48 decline, but it too began to decline.
Similarly for the North Sea

North Sea production was also ramped up after the US 48 decline, but it too began to decline.
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)

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

![Graph by Dave Cohen](attachment:image.jpg)
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