World oil supply has been quite flat, despite rising oil prices.
A longer look at world oil supply shows more changes

Source: Based on BP Statistical Data through 2009; EIA data for 2010.
It is helpful to add trend lines to see how trends have been changing.

Note: Oil is crude, condensate, and natural gas liquids. Underlying data from BP Statistical Data and EIA.
Trends lines are becoming flatter

- Seems likely that world oil production will not increase much more
  - Perhaps add 5 million barrels a day, at most
  - Iraq might add a little production
- It seems likely that United States and Europe will enter recession in the next few months
  - Economies cannot withstand current high prices
  - Recession will cause the price of oil to drop
  - Amount of oil extracted is likely also to drop also
My view of what may be ahead
Many people believe that the decline in world oil supply will be relatively slow.

- They believe that $\frac{1}{2}$ of world oil will be extracted after the peak in production.

PEAK OIL: When you plot the production of an aggregate of oil fields over time you get roughly a bell curve.

The Hubbert Curve only holds when conditions are “normal”

- People have enough food
- There is enough capital for investment
- There is not too much war
- Hubbert thought “normal” conditions would hold forever

Source: M. King Hubbert, Nuclear Energy and the Fossil Fuels, 1956.
If problems prevent oil production, slope may be steeper

- Financial problems of some of buyers
- Riots and civil disruption for seller
- Some countries may lose ability to buy oil
World exports seem to be already trending down.

![Graph showing global oil consumption, production, net exports, and net imports from 1960 to 2010. The graph indicates that 2009 production decreased by 2.9%. Data source: BP Statistical Review 2010, Graphic: mazamascience.com.]
There is increasing competition for who get the oil that is produced.

Source: Based on data of U.S. Energy Information Administration
This increased competition for oil is even more evident from a line graph.
Recession tends to occur where there is a down slope in oil consumption
Increased oil production tends to go where the jobs are

1. Oil is often used when goods are made and transported
2. Workers with good wages can afford to buy cars and other goods that use oil.
China’s oil use is growing rapidly

[Graph showing the increase in China's oil consumption, production, net exports, and net imports from 1960 to 2010.]
Coal consumption has been rising even more rapidly.
Average cost of energy in China is low, because there is so much coal in mix

- Helps keeps China’s prices competitive
- How long can coal production rise rapidly?
  - Peak coal could be a big problem, if it occurs
Questions

- Gail Tverberg
- The Oil Drum “Gail the Actuary”
  - [http://www.theoildrum.com/](http://www.theoildrum.com/)
- E-mail: GailTverberg@comcast.net