

Oil Markets and Government Policy for a Sustainable Energy Future

Richard Alben and John Schnebly
Capital Region Energy Forum, June 8, 2009

Part I – Oil Markets

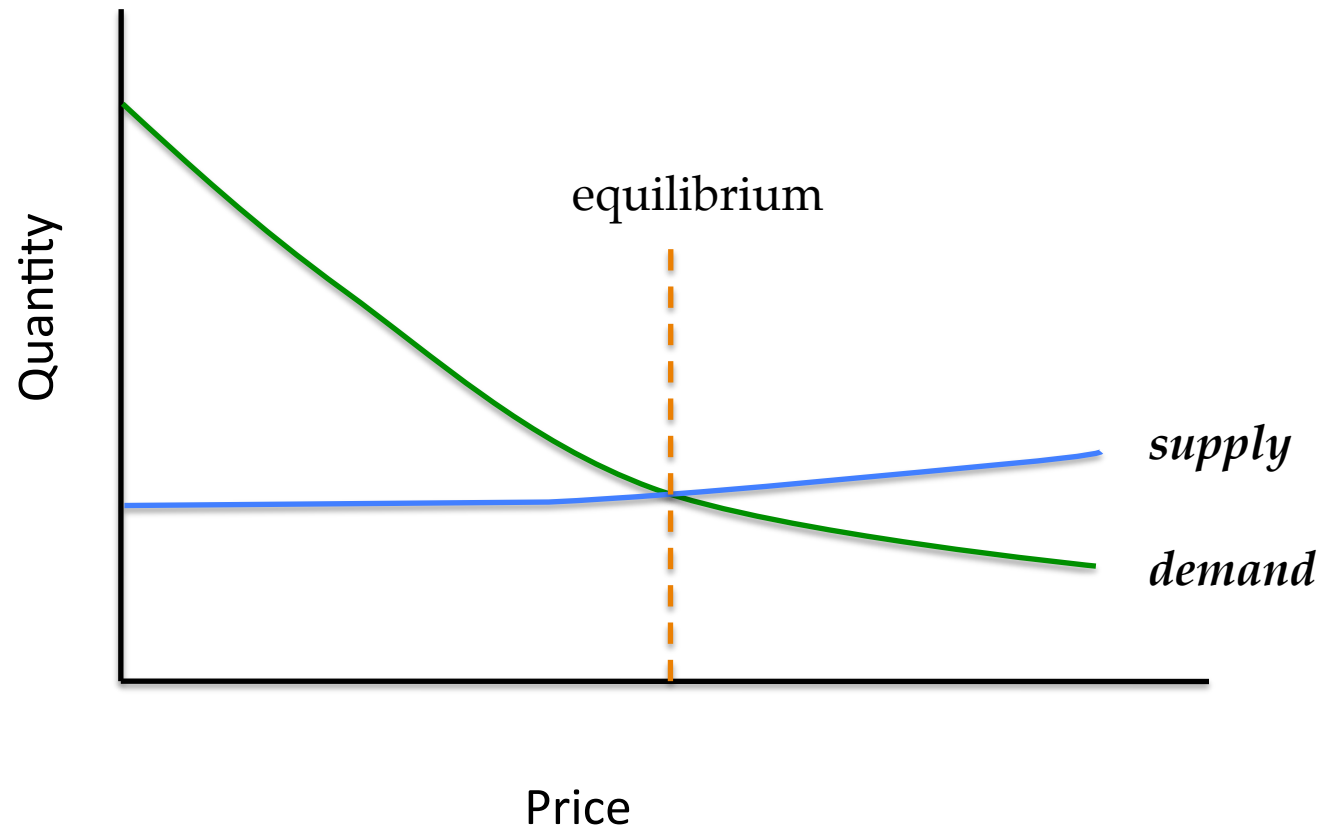
The Invisible Hand of the Market

- Adam Smith's *Wealth of Nations* 1776
- For certain conditions a "free market"
 - With Individuals acting independently in their own self interest
 - will lead to an efficient allocation of resources

Or more simply:

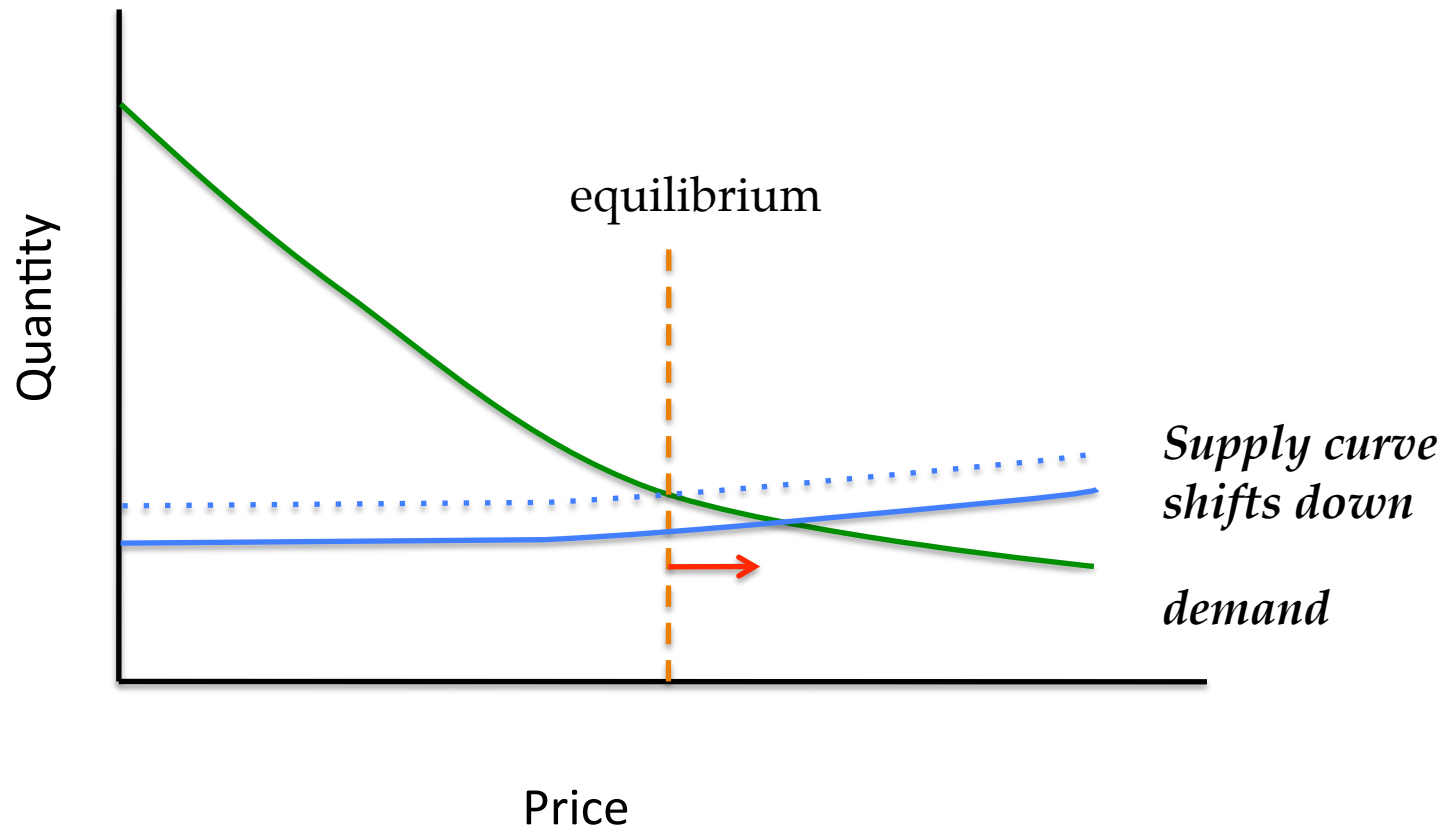
Free markets are (usually) the best way to allocate scarce resources

Markets 1: Supply, Demand, Price



Markets 101: Change in the Supply Curve

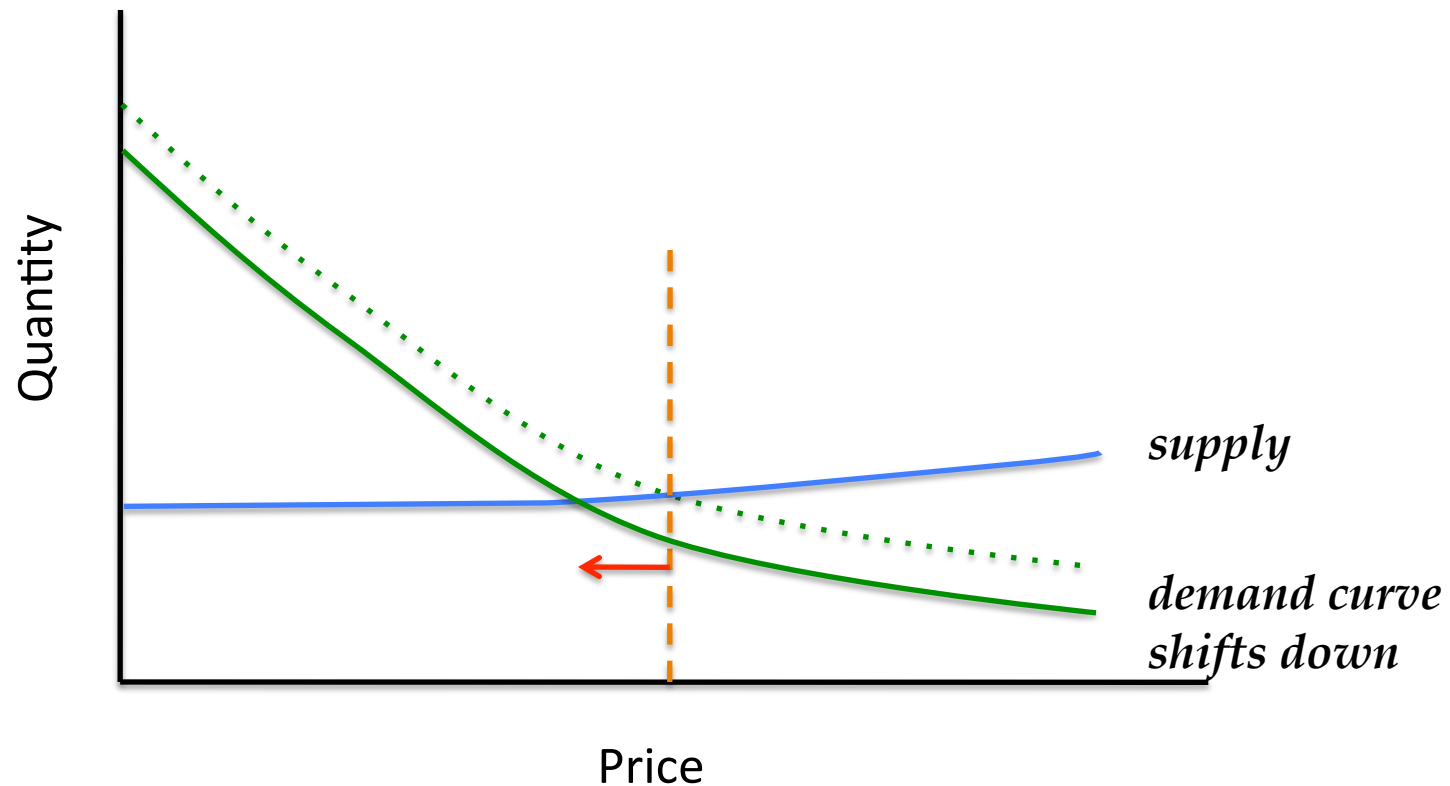
Example: Supply curve drops because oil is getting harder to find



- Price Increases

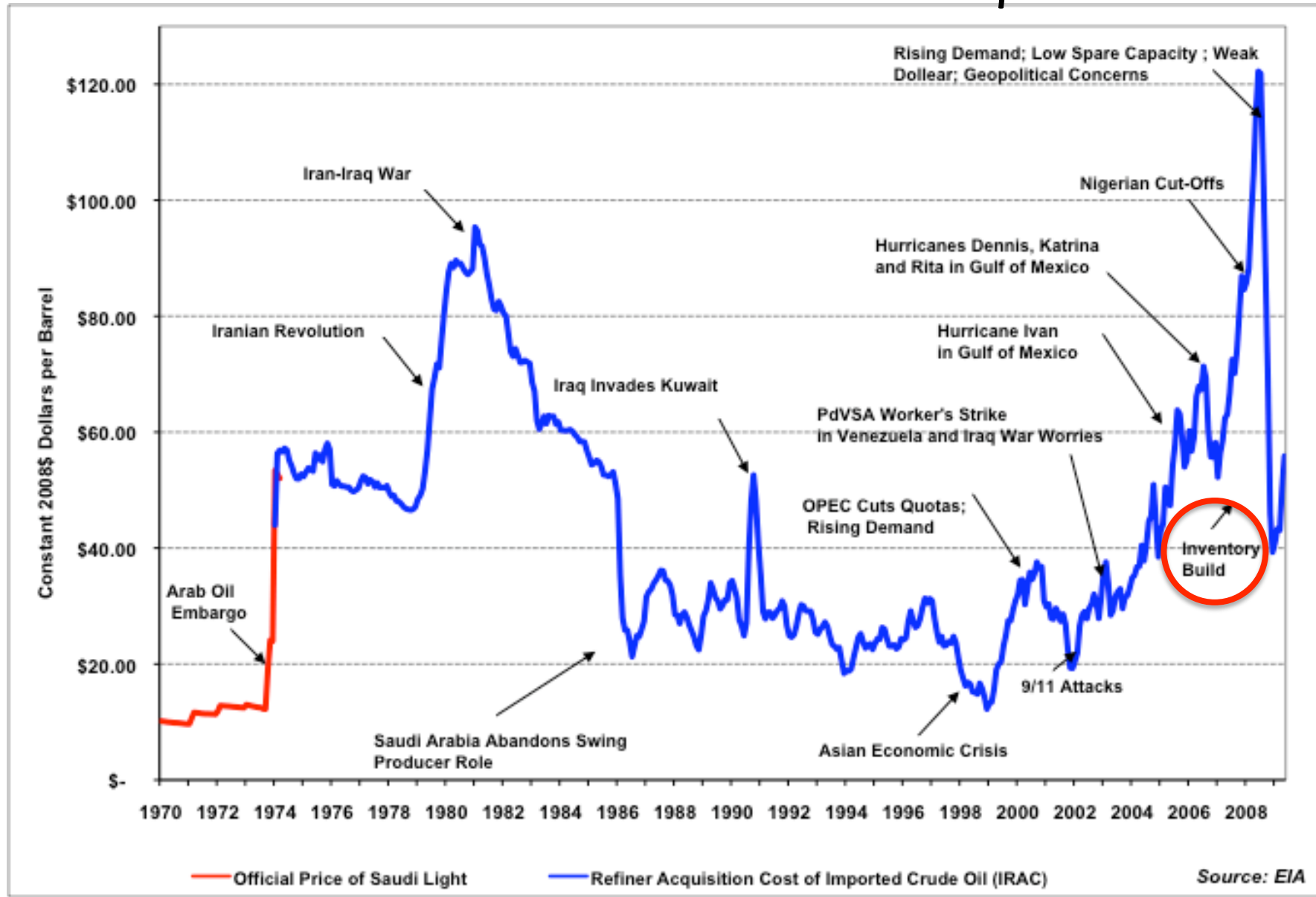
Markets 101: Change in the Demand Curve

Example: demand curve drops because of economic slowdown



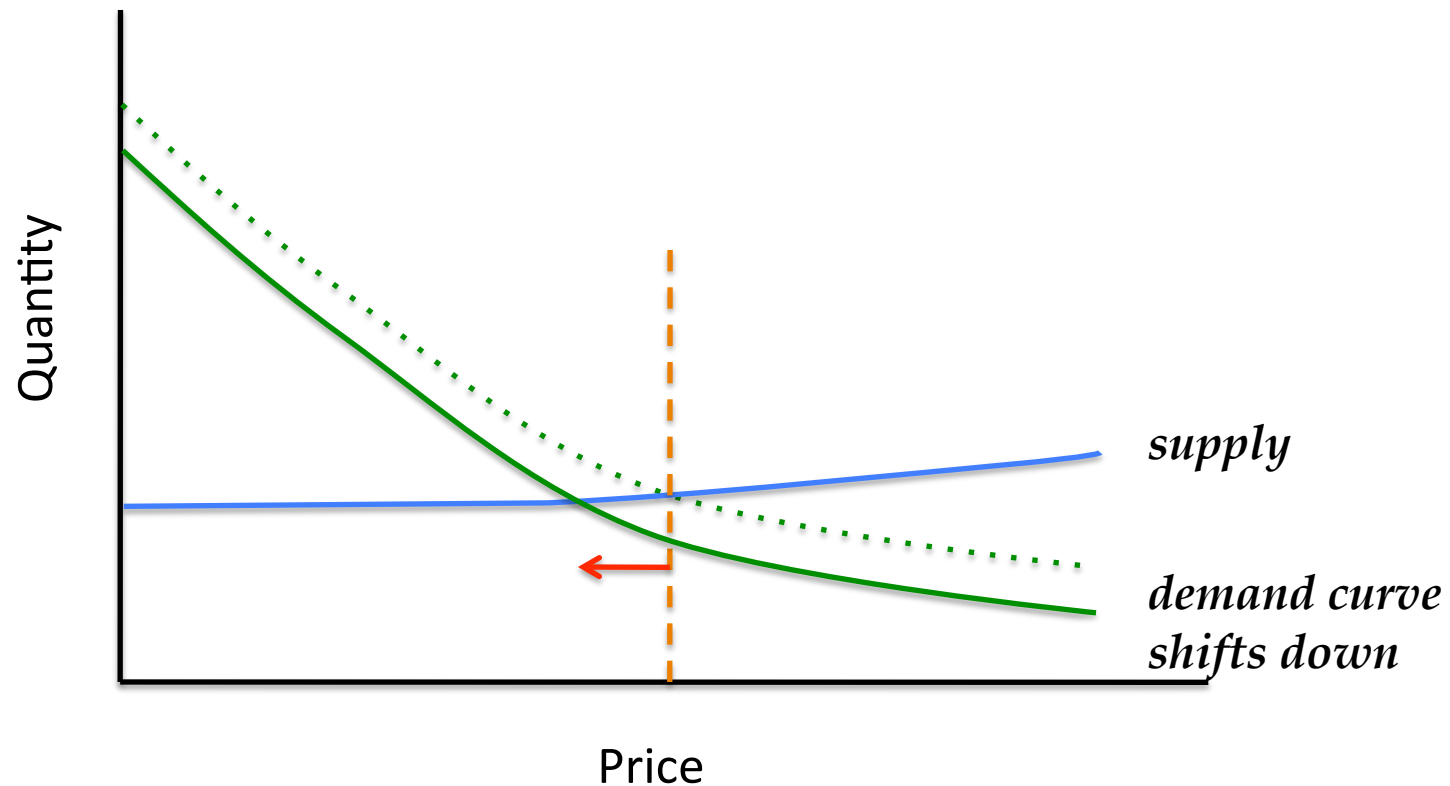
- Price decreases

Oil Prices in Constant \$'s



Markets 101: Change in the Demand Curve

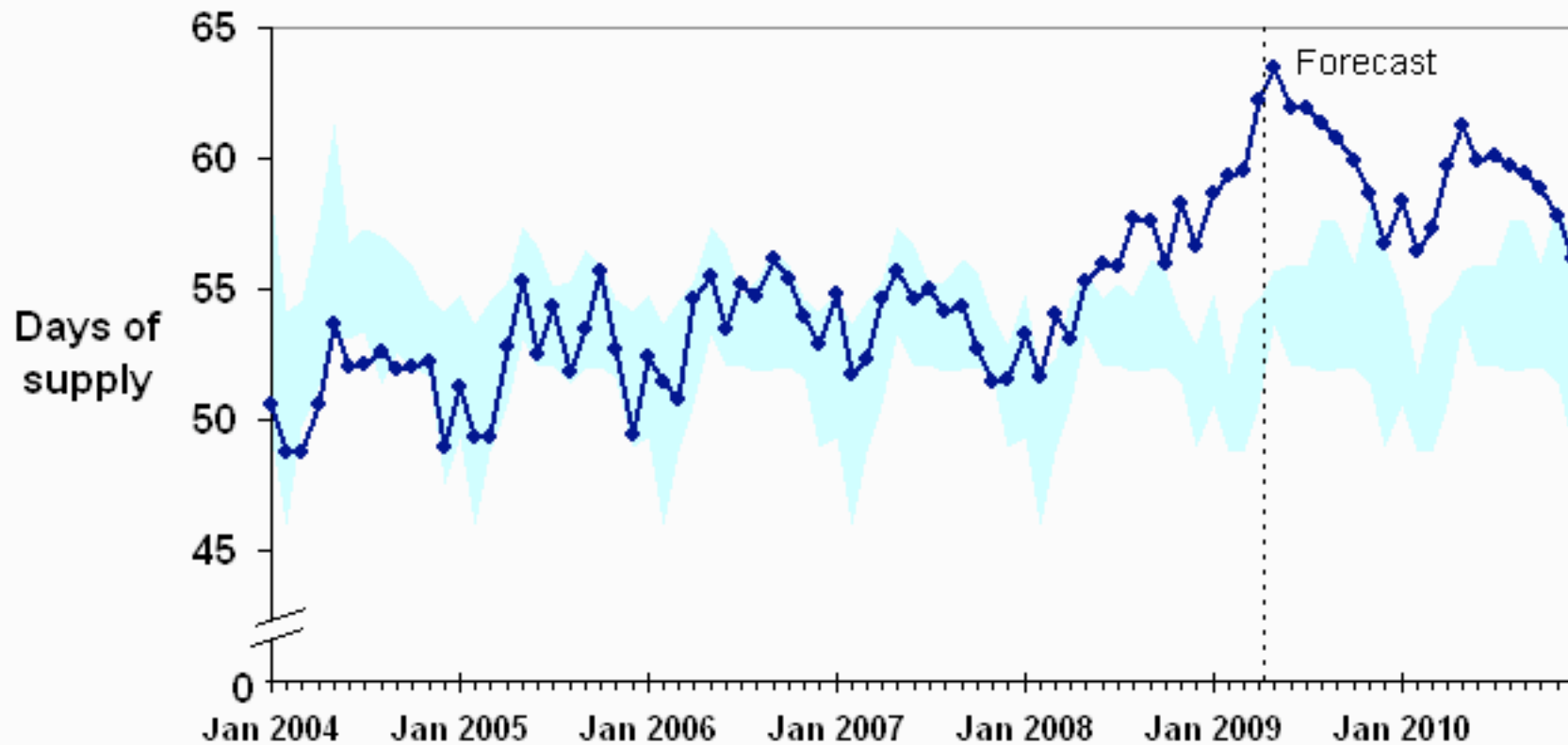
Example: demand curve drops because of economic slowdown



- Price decreases

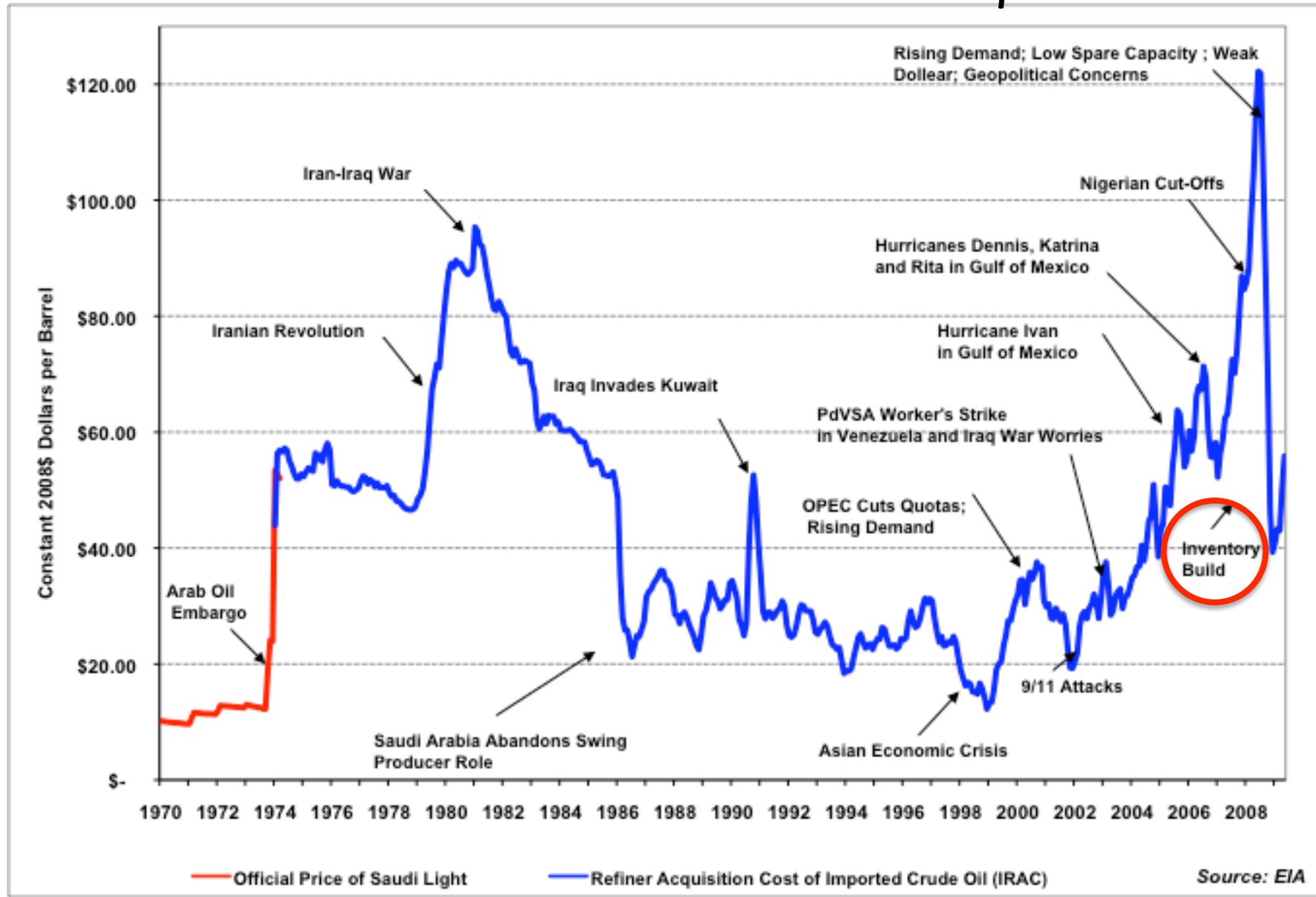
Recent Changes in Inventories as Economies Slowed

Days of Supply of OECD Commercial Oil Stocks



NOTE: Colored band represents the 5-year minimum/maximum range for each month.

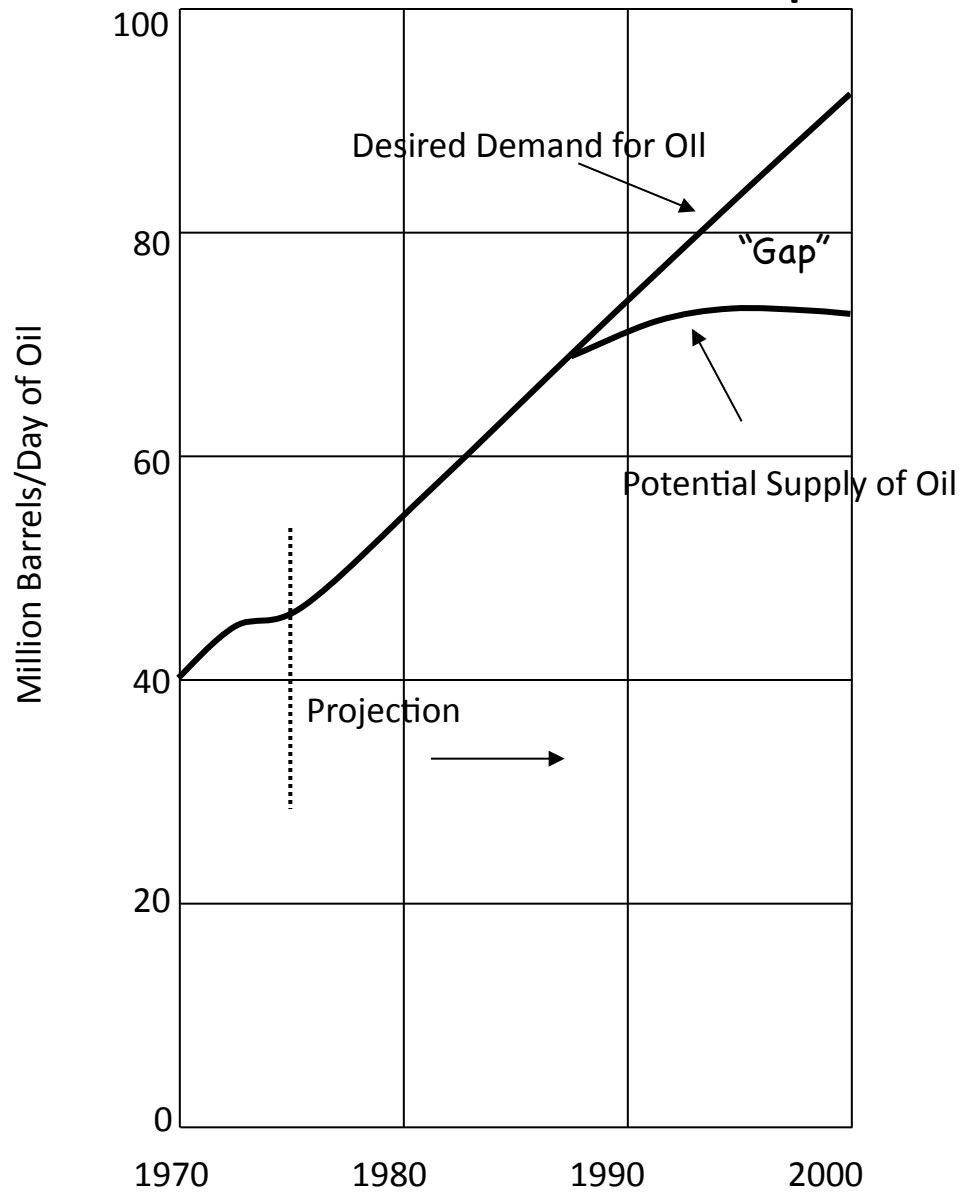
Oil Prices in Constant \$'s



But are Market Forces Effective In Driving Long Term Adjustments?

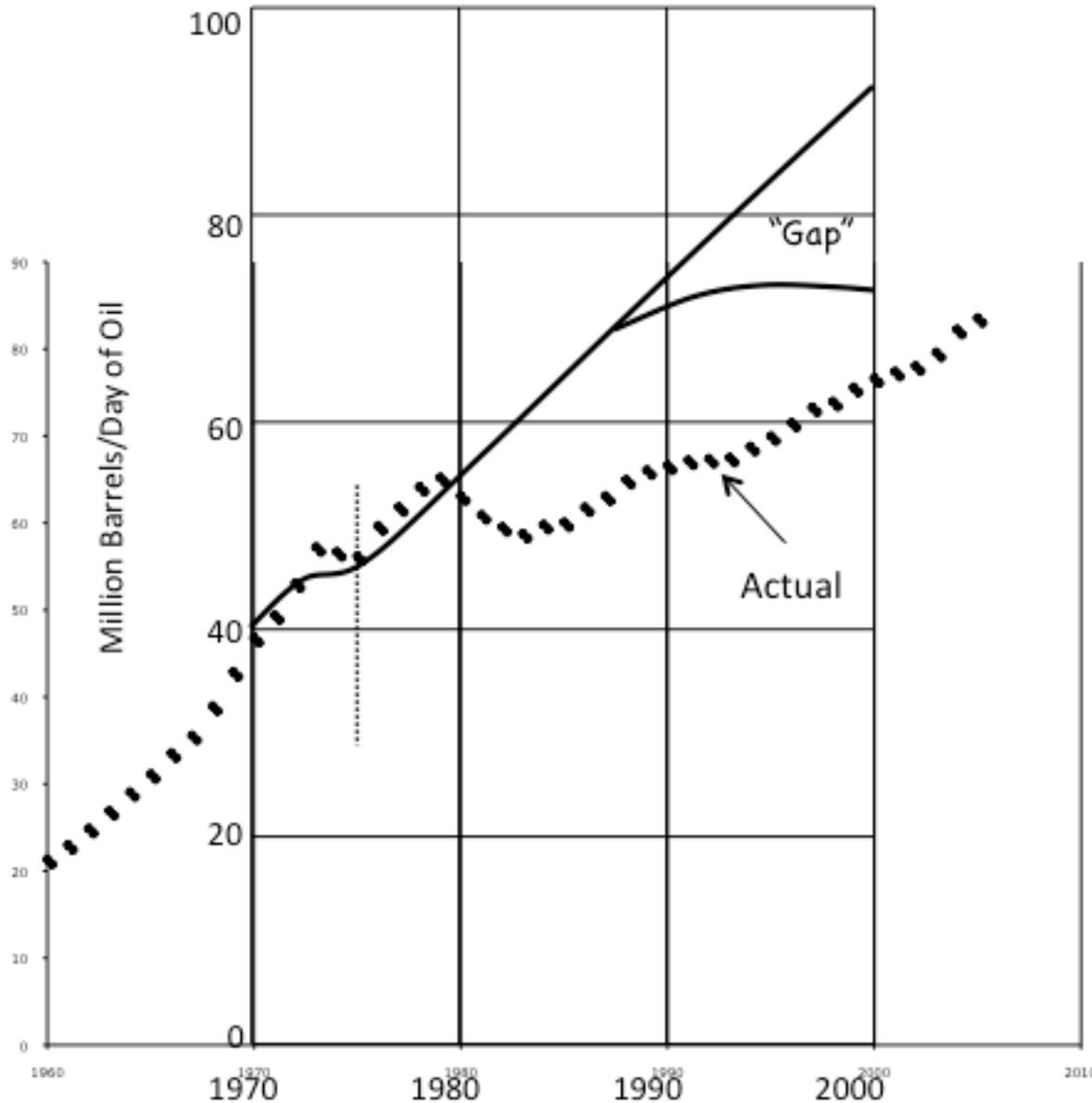
- Consider the response to the 1970's oil crisis

1975 Projection of an Impending Oil Supply Demand "Gap"



From Figure I-3 of "Energy: Global Prospects 1985-2000," Report of MIT WAES Project 1977 (excludes Communist Countries)

What Happened Post 1975



Gap was resolved “efficiently”

- Demand decreased
- Supply potential increased

“Invisible Hand” of the market played a major role

- Fact and expectation of increasing oil prices curtailed demand and increased supply

But Pre-Reagan government actions were quite significant for demand moderation

- Public mindset
- efficiency standards
- Switching off oil for electric generation

Environment and energy security were left on the table

What About the Future?

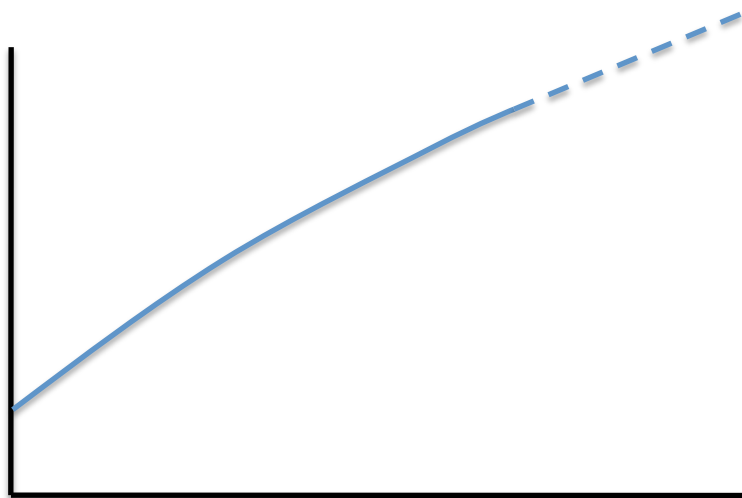
- What is the right balance between free market and government policy actions for oil next 30 years?
- The answer depends in part on whether we think there is a lot or a little oil remaining to be produced

Parable of the Oil Executive and the Geologist (true story)

Oil Executive

Plenty of Oil

~ 2 T bbls



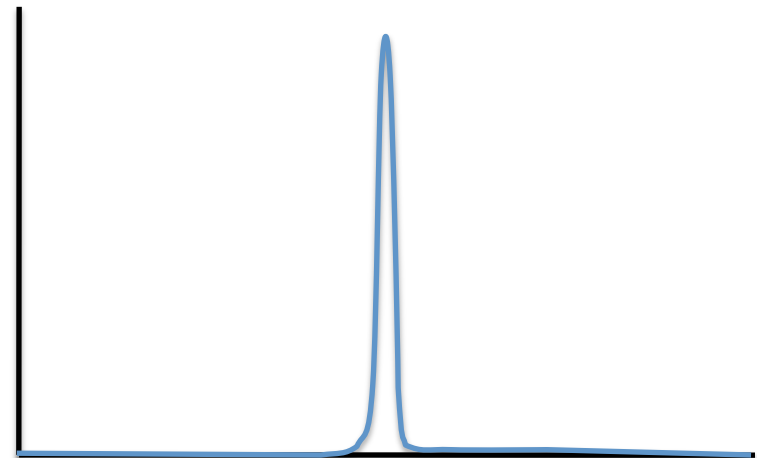
Now

10 years

Geologist

Little Oil

~4 T bbls



← Neolithic

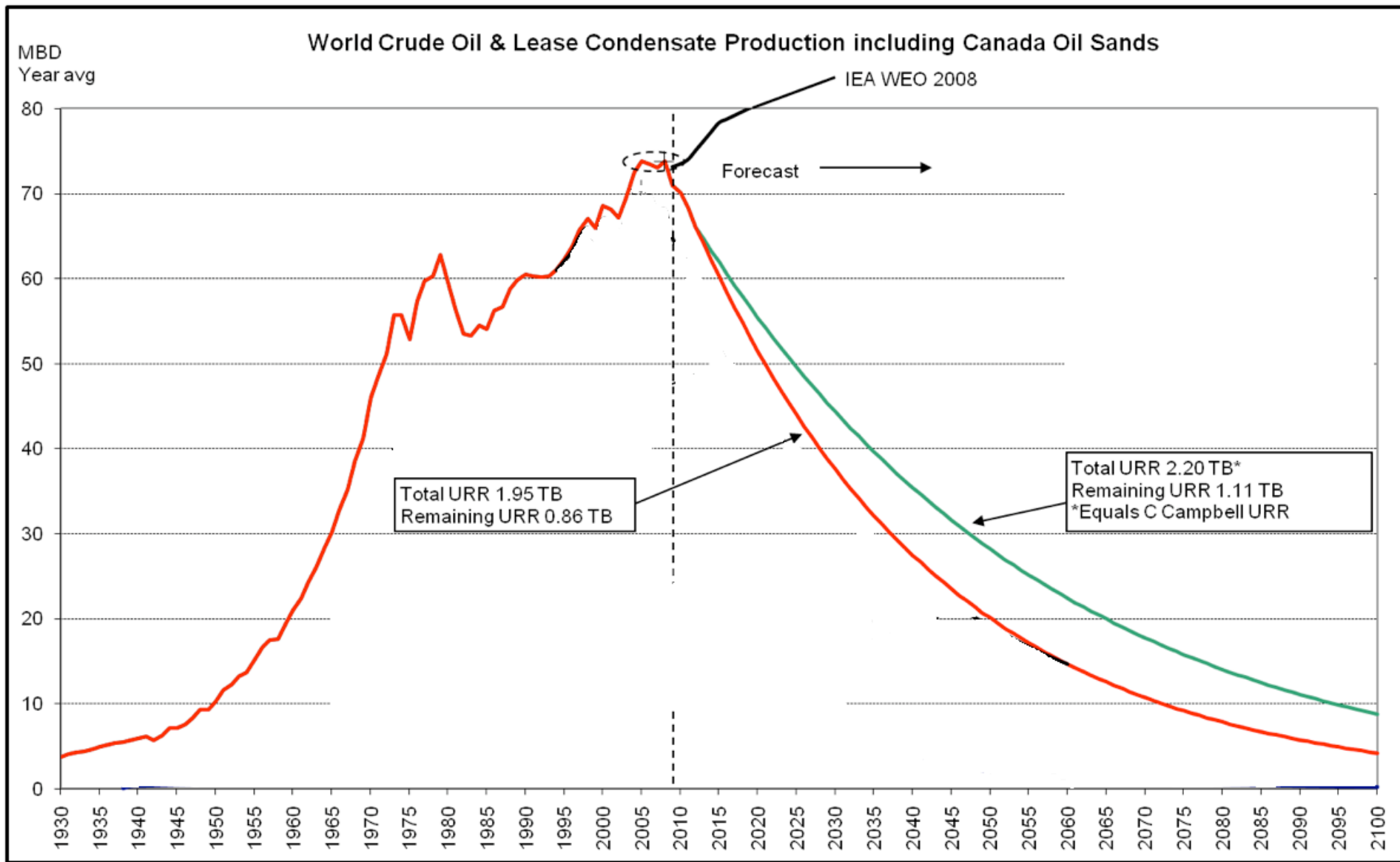
Now

+1000 years

Forecasting Oil Markets

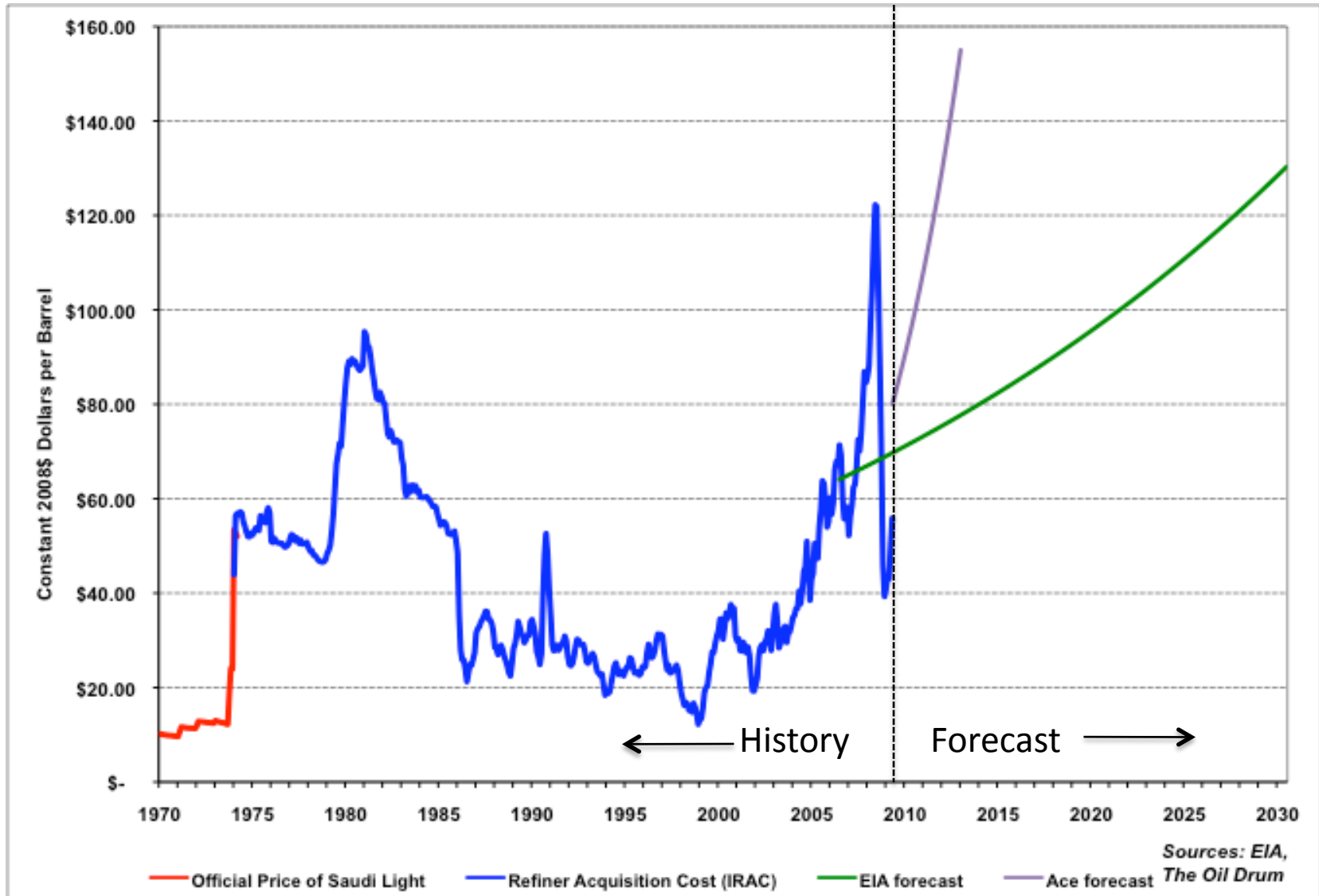
- John Kenneth Galbraith:
“The only function of economic forecasting is to make astrology look respectable.”

IEA vs Peak Oiler Forecasts of Production



Modified from Tony Eriksen, The Oil Drum 5-19-2009

Forecasting Price

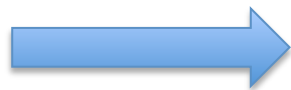


Price Uncertainty

- Markets need price signals to function
- Long lead investments require high premiums when future prices are uncertain
 - Memory of costly failures when oil prices collapsed in the 1990's
- Consequences of failure to invest go beyond lost opportunities for individual investors
- Example of a “market failure”

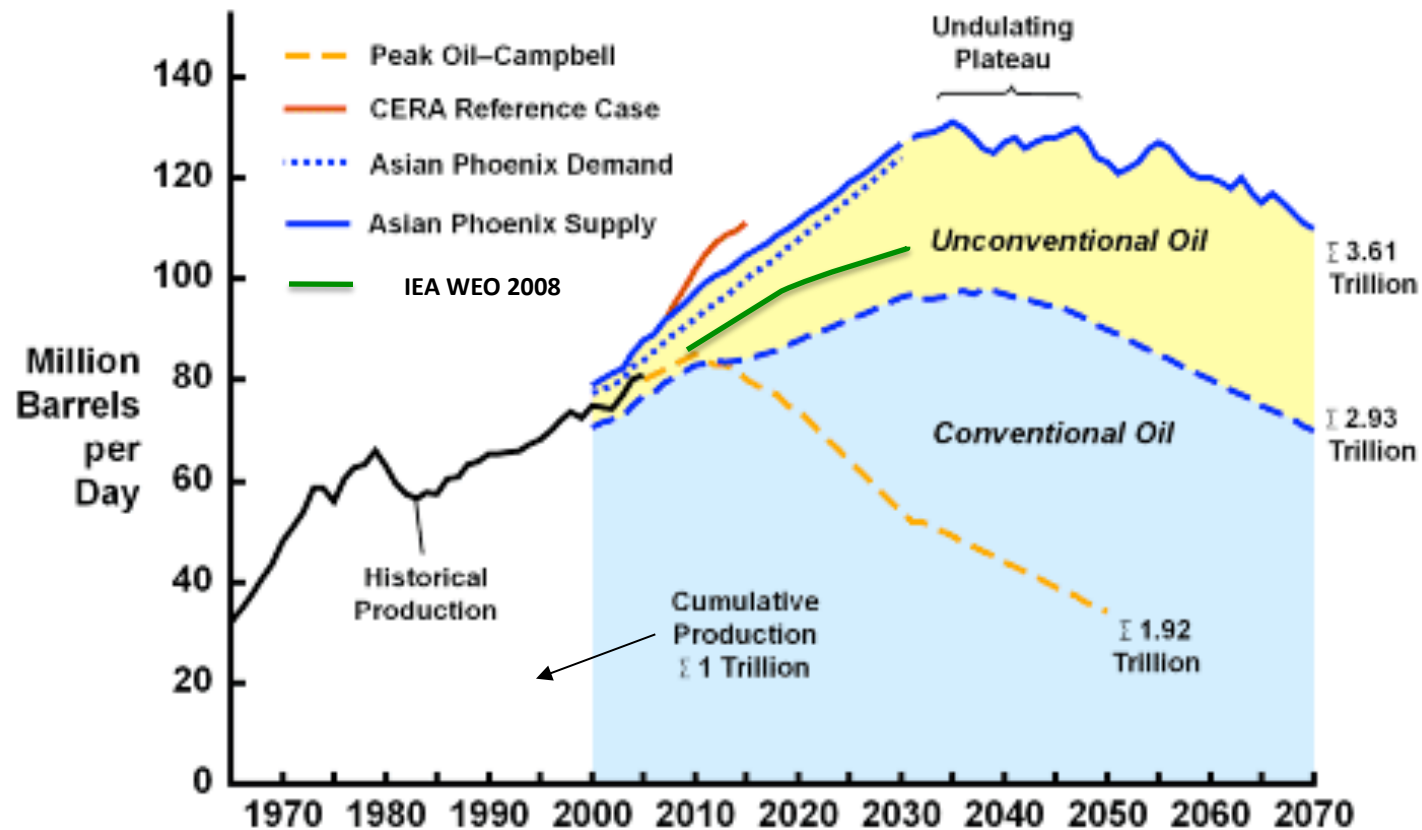
Oil Market Failures that Might be Addressed by Government Actions

- High price uncertainty restrains investments
 - In oil conserving equipment and technology
 - In oil substitution
 - (In oil production)
- Cost of risk to the system is “externalized”
- Other externalized costs
 - Climate change and other environmental impacts
 - Security



Part II Government Policy

Production Projections: “Optimists” vs IEA vs Peak Oilers



Source: Cambridge Energy Research Associates.
60907-9

Significant realignment of demand and production required near oil peak
.... Between now and 20 years from now

IEA vs Peak Oiler Forecasts of Production

