

Econ 323
Economic History of the U.S.

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Spring 2016

Today's Topics

- Reminder: Turn in original essay with my edits when you hand in final version.
- Early Conservation Movement (Ch. 15 pp. 278-80 and Ch. 27 pp. 511-14)
- Environmental Kuznets Curve and Pollution
- Natural Resources and Early Industrialization (Wright reading optional)
- The Energy Crisis (Ch. 29 pp. 545-46)

Conservation Movement

- Colonial and Antebellum conservation was minimal
- Land and resources were abundant
- Often timber got in the way of westward movement
- In 1850, 90 percent of all fuel-based energy came from wood
- By 1915, less than 10 percent of all fuel-based energy came from wood
- Timber on public lands was aggressively harvested
- General Revision Act 1891 represented change in the policy of transferring land to commercial interests; allowed the government to set aside forest reserves
 - 50 million acres were set off limits

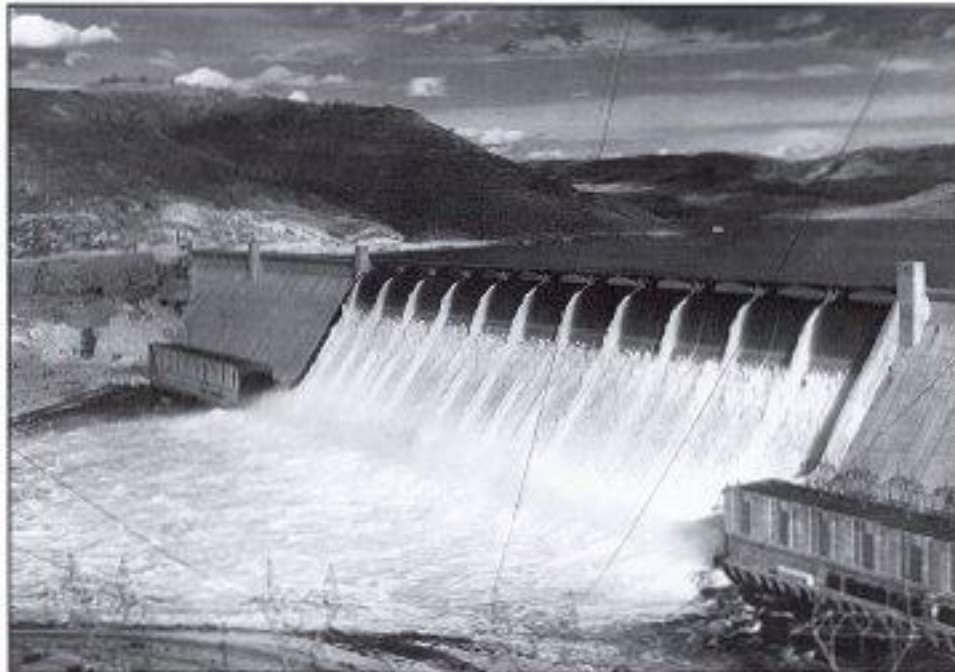
Conservation Movement

- President Teddy Roosevelt
1901-1909
- Was the last trained observer to
ever see a passenger pigeon!
- Created the U.S. Forest
Service 1905 to harvest crops
of trees
- Reclamation Act of 1902
constructed reservoirs and
irrigation works and led to large
scale river damming in West
- Did not allow a Whitehouse
Christmas Tree!
- **He wanted to stop wasteful
use of mineral lands,
waterways, and forests**



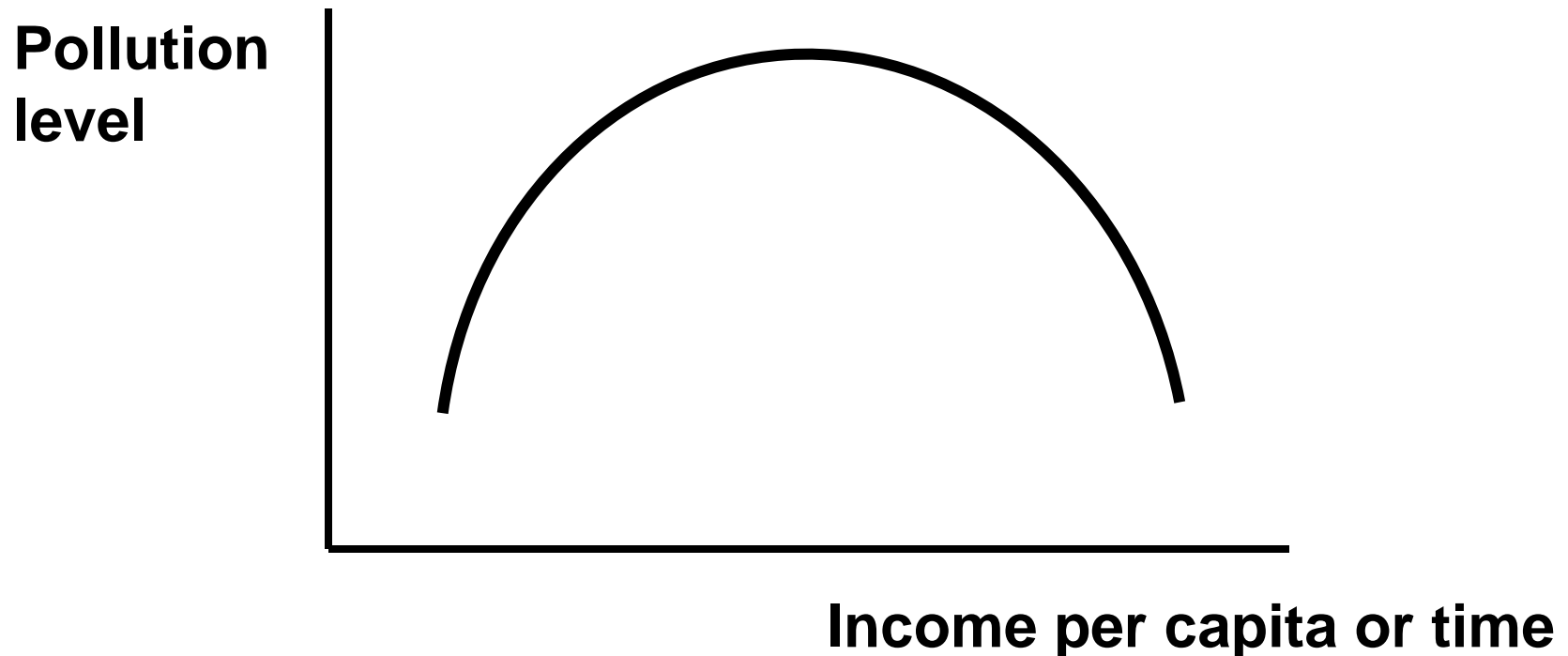
Conservation Movement

- New Deal Era Conservation included agricultural land soil conservation
- In part to reduce crop supply and raise prices
- Bureau of Reclamation water projects in the West



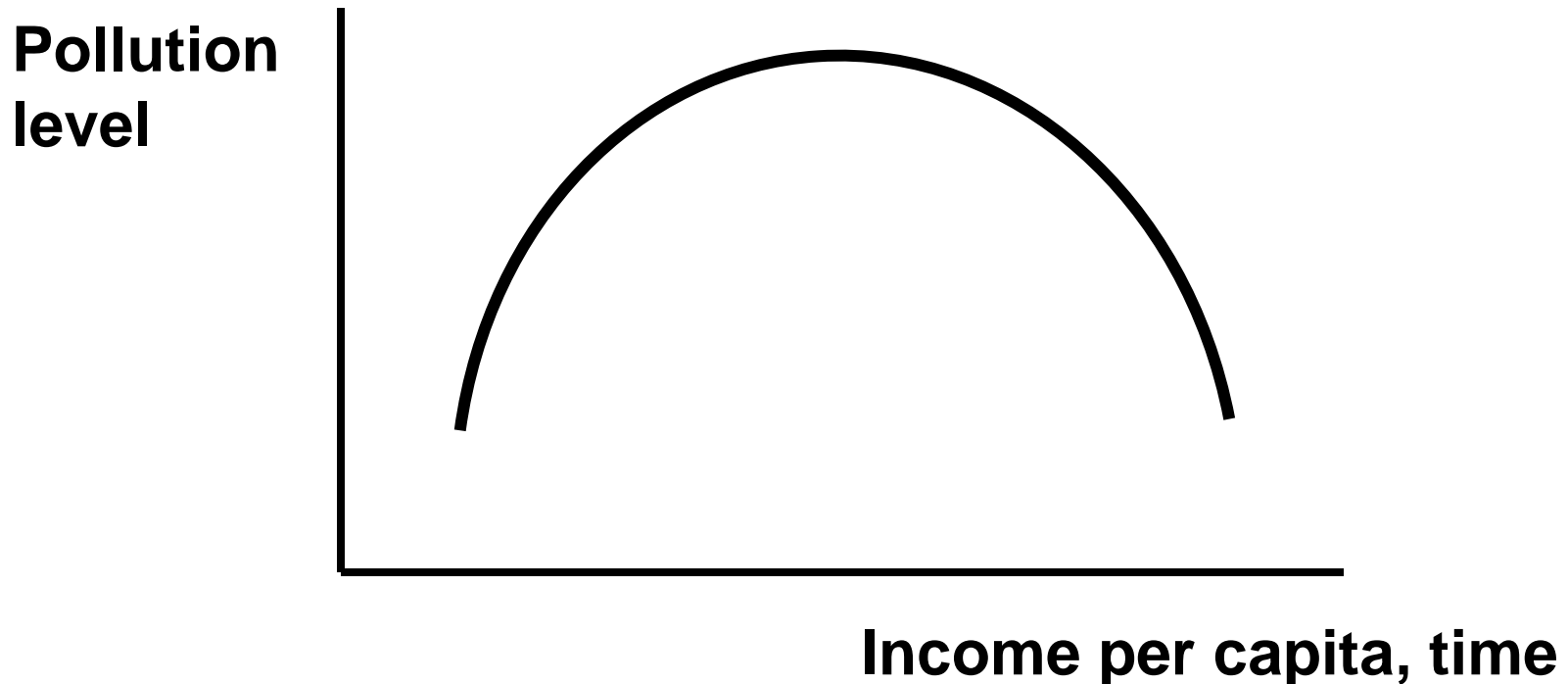
Environmental Kuznets Curve

- In the 1990s, economists noted that absolute pollution tends to rise then fall as an economy develops over time



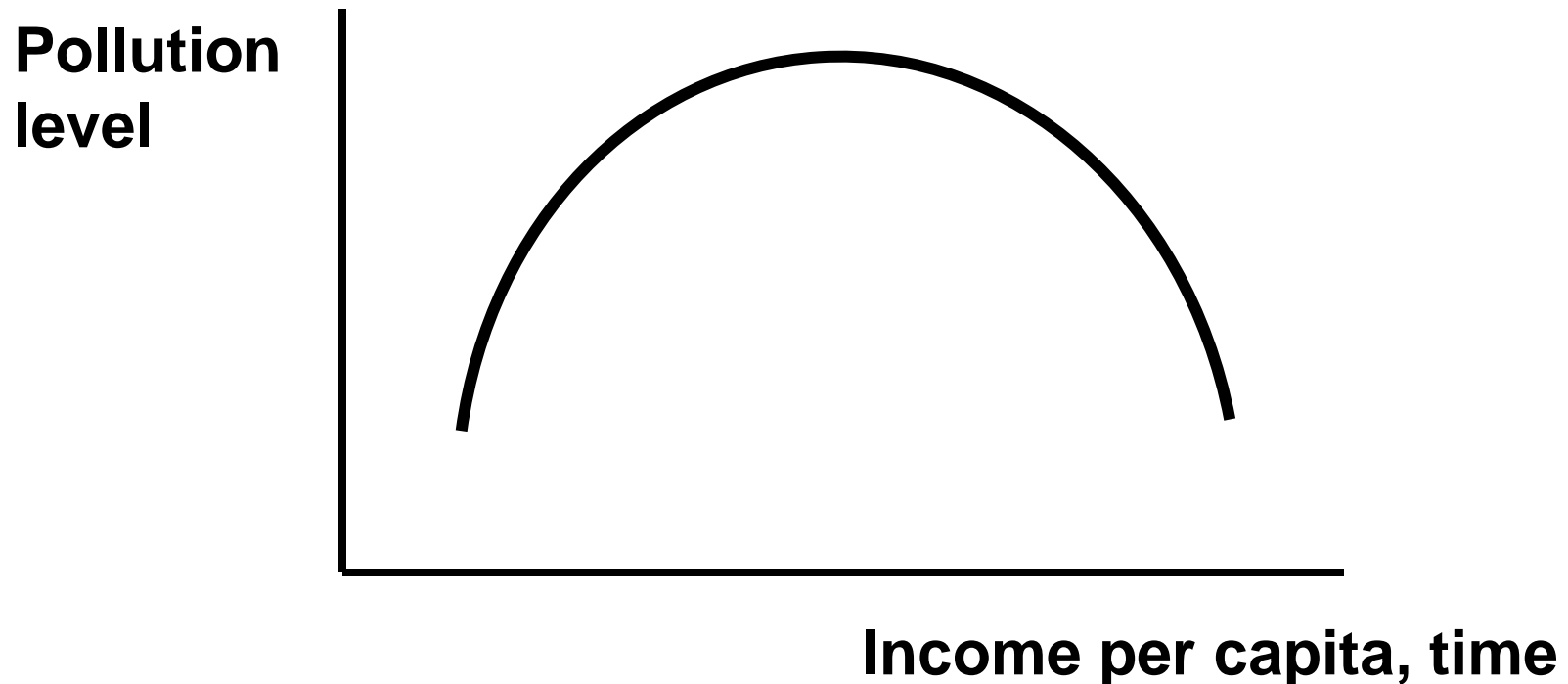
Environmental Kuznets Curve

- This is especially true for air and water pollution and deforestation, but not true for greenhouse gas emissions and others



Environmental Kuznets Curve

- *If* EKC holds, then we may not need to worry about environment as developing economies progress



History of Pollution Regulation

- 1800 US pollution from coal combustion in manufacturing, home heating, and transportation
- Early pollution control carried out by **municipalities**
- 1869 Pittsburgh outlawed locomotive soft coal burning in city – but not enforced
- 1881 Cincinnati passed smoke reduction law and appointment of smoke inspector-but not enforced
 - 3 primary causes of death in Cincinnati 1881 were Tuberculosis, pneumonia, bronchitis - all lung related
- 1881 Chicago smoke reduction law - had no effect
- 1893 St Louis: Law forbidding “dense black or thick gray smoke” and inspector appointed - overturned by MO State Supreme Court ordinance exceeded the “power of city under its charter” and was “wholly unreasonable”
- By 1920 air pollution ordinances existed in 175 municipalities, by 1940 increased to 200
- <http://www.aerosols.eas.gatech.edu/EAS%20Air%20Pollution%20Phys%20Chem/Intro1%20AP%20History.pdf>

History of Pollution Regulation

- 1898 **Andrew Carnegie** tells a Chamber of Commerce meeting in 1898, that smoke was driving people "to leave Pittsburgh and reside under skies less clouded than ours." Carnegie says: "The man who abolishes the Smoke Nuisance in Pittsburgh... [will earn] our deepest gratitude." 1907 Major pollution lawsuit begins in Supreme Court.
- In various decisions through 1915, the **Court** decides to limit the amount of sulfur and other noxious fumes that can emerge from the Tennessee Copper Co. following a suit by the State of Georgia. The suit involved sulfur dioxide fumes from Copper Basin smelters in Tennessee that were killing forests and orchards and making people sick over the Georgia border.

History of Pollution Regulation

- 1943 First recognized episodes of **smog** occur in Los Angeles in the summer of 1943. Visibility is only three blocks and people suffer from smarting eyes, respiratory discomfort, nausea, and vomiting. The phenomenon is termed a "gas attack" and blamed on a nearby butadiene plant. The situation does not improve when the plant is shut down.
- 1952 Dr. Arie Haagen-Smit discovers the nature and causes of photochemical **smog**. He determines that nitrogen oxides and hydrocarbons in the presence of ultraviolet radiation from the sun forms smog (a key component of which is ozone).
- Source:
<http://www.eih.uh.edu/outreach/tfors/history.htm>

Donora, Pennsylvania

Halloween 1948

- **Air Inversion**
 - Trapped air pollution from steel and zinc plants
- 18 people died during inversion
 - 50 people died afterwards
 - 7,000 people became ill
- Pennsylvania Division of Air Pollution Control created in 1949 to study air quality and human health
- Air Inversions kill over 500 people in New York City in 1963 and 1966

Donora is in a valley and breathed pollution from river boats, locomotives, and industrial sources.



http://www.eoearth.org/article/Donora,_Pennsylvania



Figure 4.3. Noontime photograph of Donora, Pennsylvania, on October 29, 1948, during a deadly smog event. Courtesy of the Pittsburgh Post-Gazette.

Polluted River on Fire in Ohio, 1952



Love Canal, NY, 1970s

- Toxic waste infected an entire neighborhood, causing birth defects and cancer



1970s Television Ads promoting pollution awareness



<http://www.youtube.com/watch?v=gkhdMwQQ1fQ>

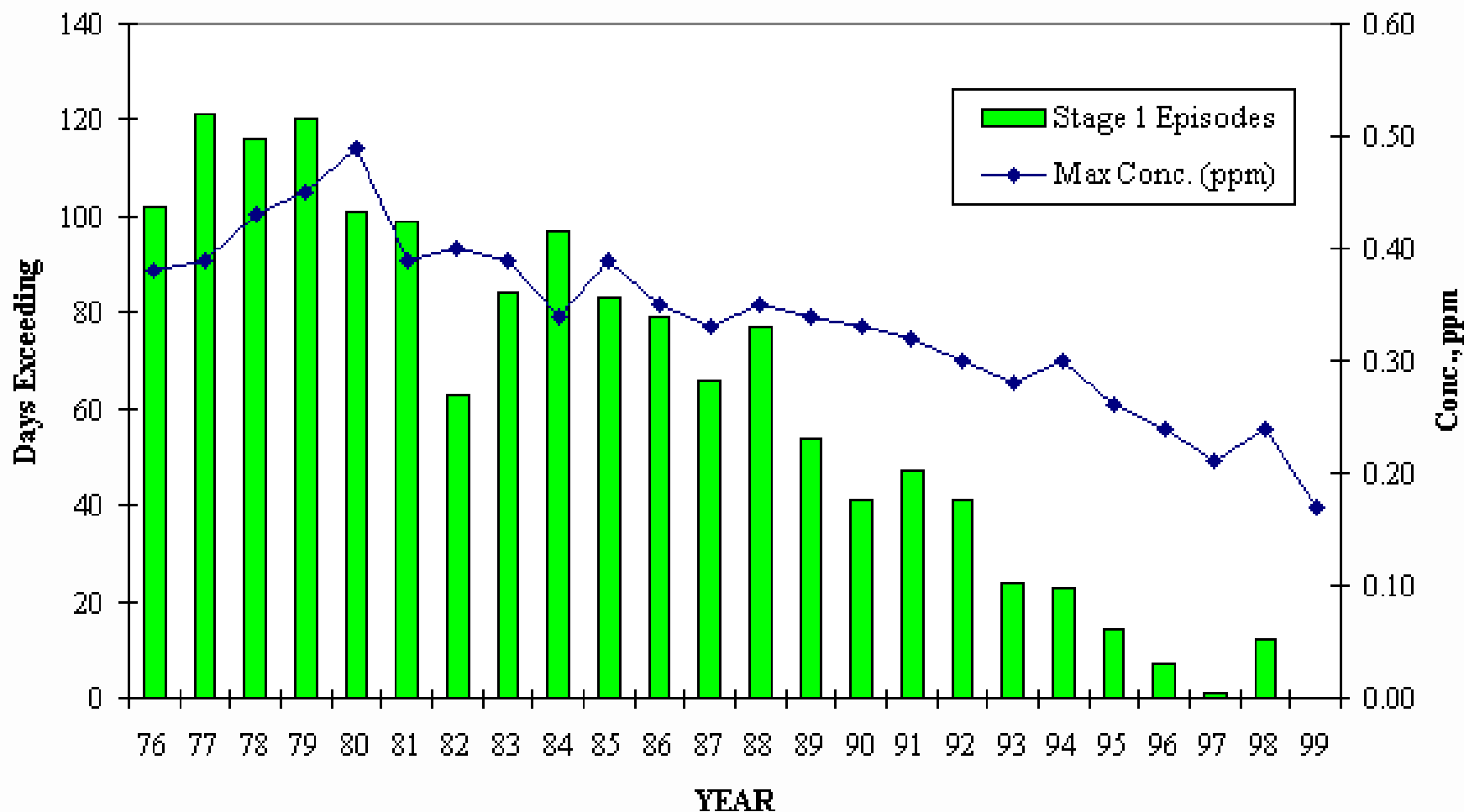


EPA History

- Environmental Protection Agency created in 1970
- Clean Air Act 1970
- Ban on Fluorocarbon Gases in Aerosol Cans 1978
- Superfund 1980
- Leaded gasoline curtailed 1986
- Clean Air Act Amendments 1990

Cleaning up Smog in California

Number of Days Exceeding Stage 1 Episode Level (0.20 ppm) and Maximum 1-Hour Average Concentration (ppm)



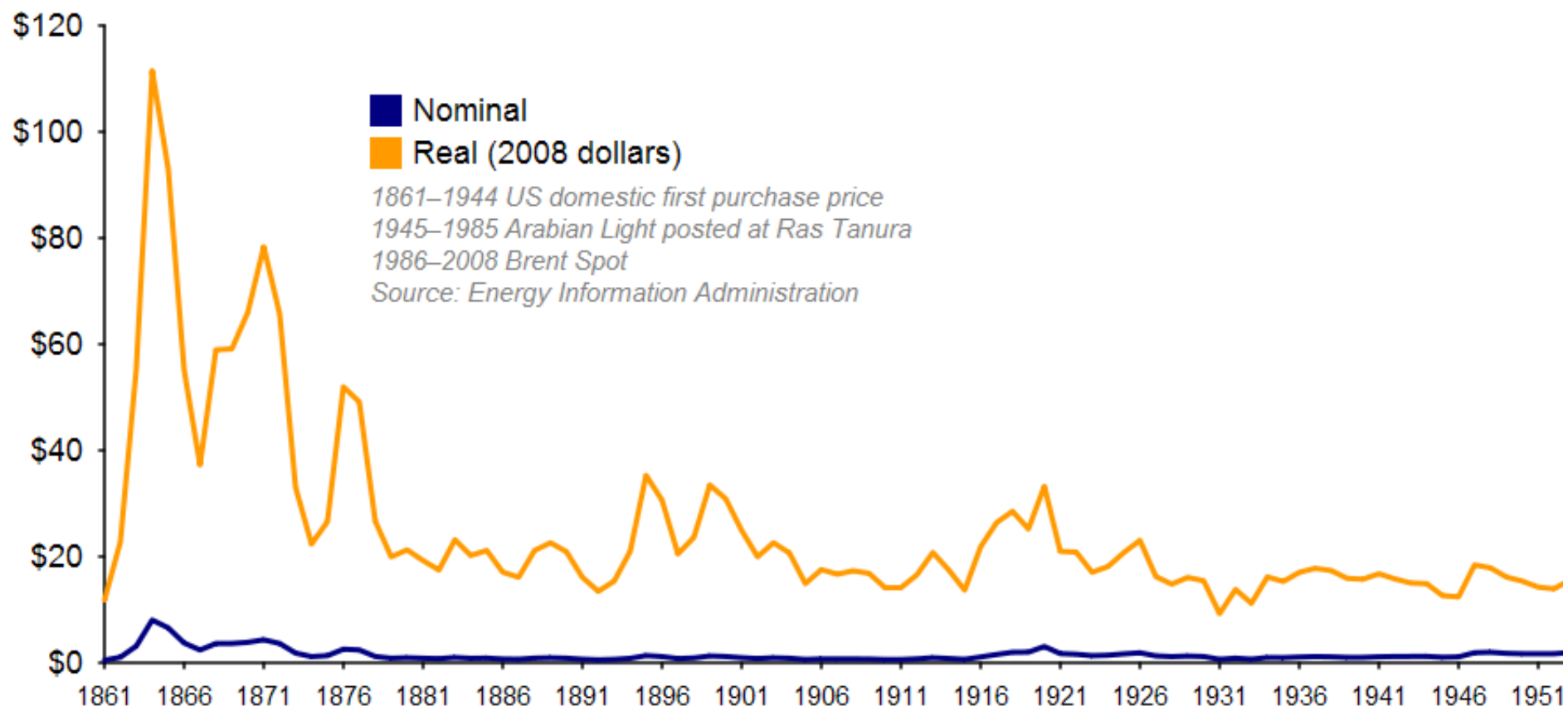
- <http://www.aqmd.gov/smog/aqscr99/aqscr99.htm>

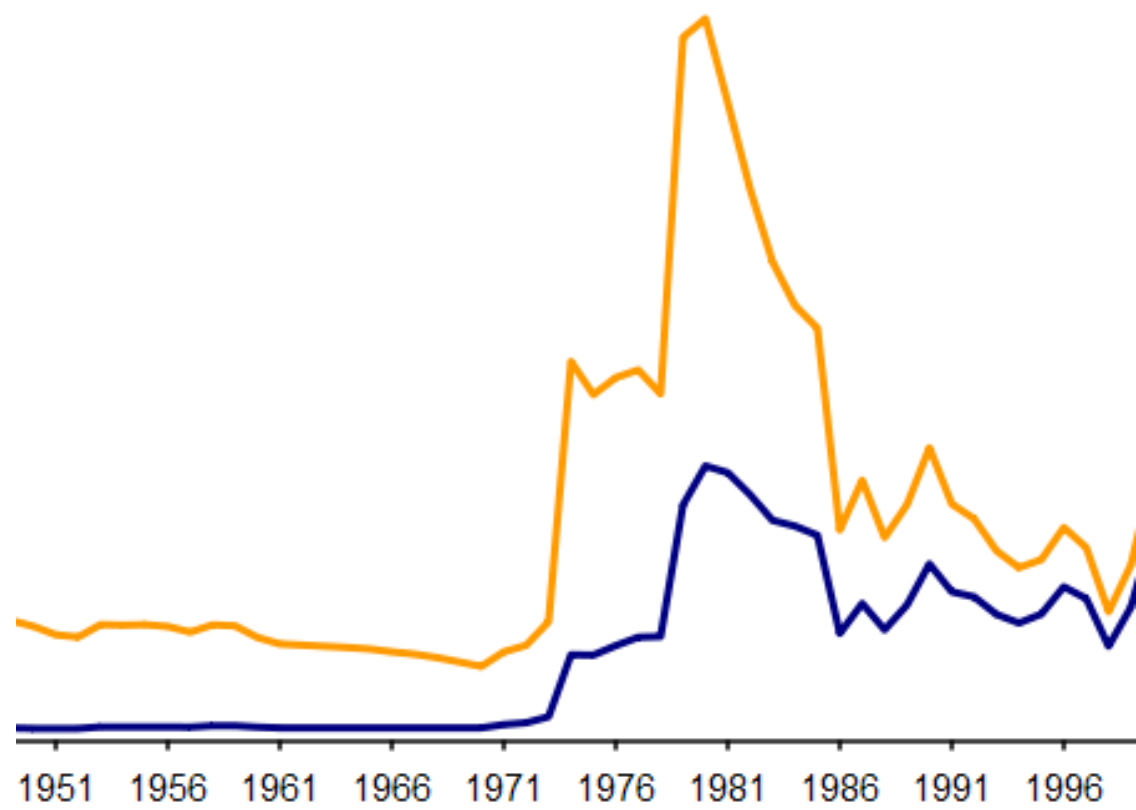
- California Air Resources Board 12 min video clip from 1998
- <http://www.arb.ca.gov/videos/clskies.htm>

1970s Energy Crisis

(Ch. 29 p 545-6)

- Oil prices fell quickly in first decade of refineries
- Prices constant for about a century
- OPEC cut production and raised prices in 1973, then Iranian Revolution in 1979
- US gasoline rationing (license plate number) and pricing at pumps in half-gallons
- Large macroeconomic effects on productivity





1970s Energy Crisis

(Ch. 29 p 545-6)

- Price of Energy was high
- But Gasoline/oil prices fell after mid 1980s
- Energy consumption per unit of GDP fell
- In the last few years, gas prices reached record highs

TABLE 29.2 THE ENERGY CRISIS

| YEAR | PRICE OF CRUDE OIL (current dollars per million BTU) | PRICE OF CRUDE OIL (year 2000 dollars per million BTU) | ENERGY FROM PETROLEUM AS A SHARE OF TOTAL (Percent) | ENERGY CONSUMPTION (thousands of BTU per dollar of GDP at year 2000 prices) |
|-------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1970 | 0.55 | 2.01 | 45.5 | 18.0 |
| 1980 | 3.72 | 6.92 | 43.8 | 15.1 |
| 1990 | 3.45 | 4.24 | 39.7 | 11.9 |
| 2000 | 4.61 | 4.61 | 38.7 | 10.1 |
| 2010 | 12.88 | 10.33 | 36.7 | 8.4 |

Source: Statistical Abstract of the United States, 2012, table 927.

1970s Energy Crisis

(Ch. 29 p 545-6)

- Question for future: Will energy prices (from all sources) continue to fall?

References and Further Reading

- <http://www.runet.edu/~wkovarik/envhist/>
- <http://lcweb2.loc.gov/ammem/amrvhtml/conshome.html>