

# *Market Failure in the Gasoline Industry*

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# Market Failure

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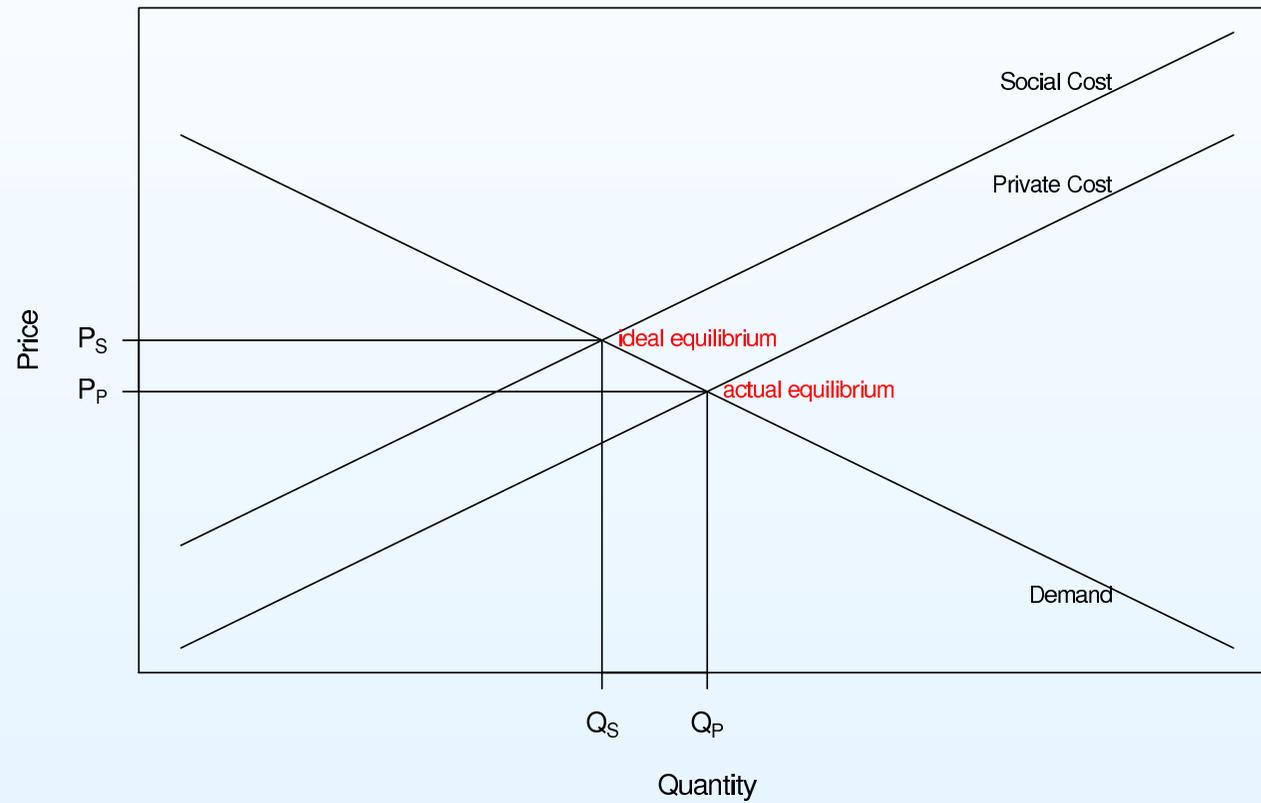
Market Failure occurs when

- Markets don't allocate goods and services efficiently.
- Market forces fail to serve the perceived public interest.

## Externalities

- Externality is present whenever some individual's utility or production relationship, include real (not monetary) damages or benefits without particular attention to the effects on another individual's welfare.

# Negative Externality



## Tragedy of the Commons

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- The Tragedy of the Commons is when there is a common resource that can be used freely by society but each individual fails to think about how their actions might harm others : Air (Pollution)

## The Rio Earth Summit and The Kyoto Protocol

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- A system to develop a treaty that would restrict emissions
- Treaty to cut greenhouse gas emissions world wide

## Social Costs

“...there is for public research to be complemented with private, which is why getting the “prices right” -that is, making households and firms pay the social costs of emissions- is so important”

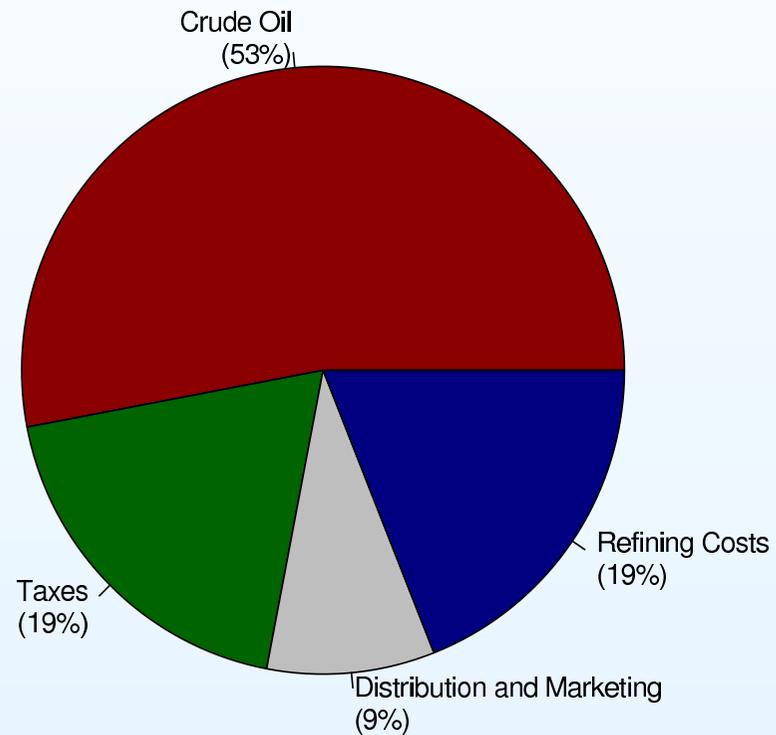
Joseph Stiglitz

# Gasoline Price

- Crude Oil Price
- Taxes
- Distribution and Marketing
- Refining Costs and Capacity
- Market Structure

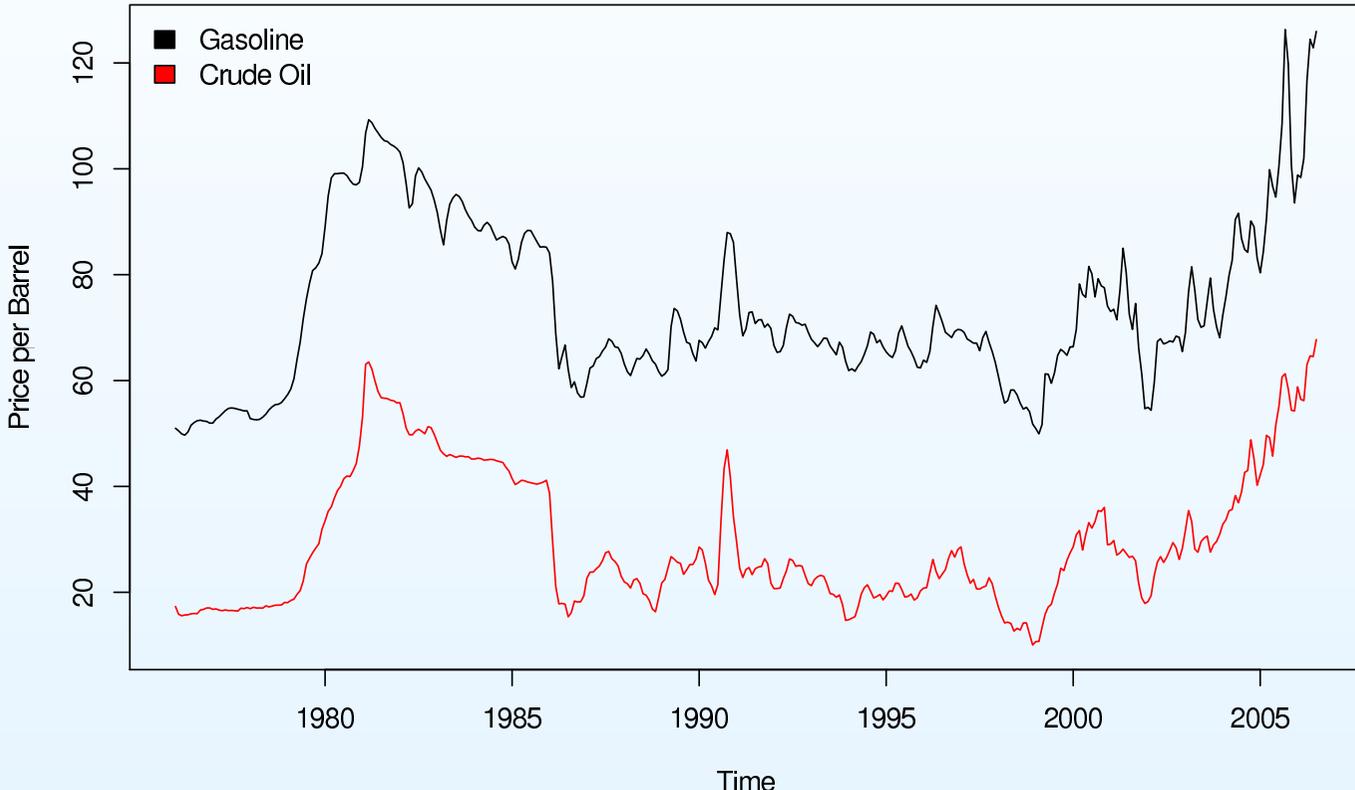
# What is included in the price of gasoline?

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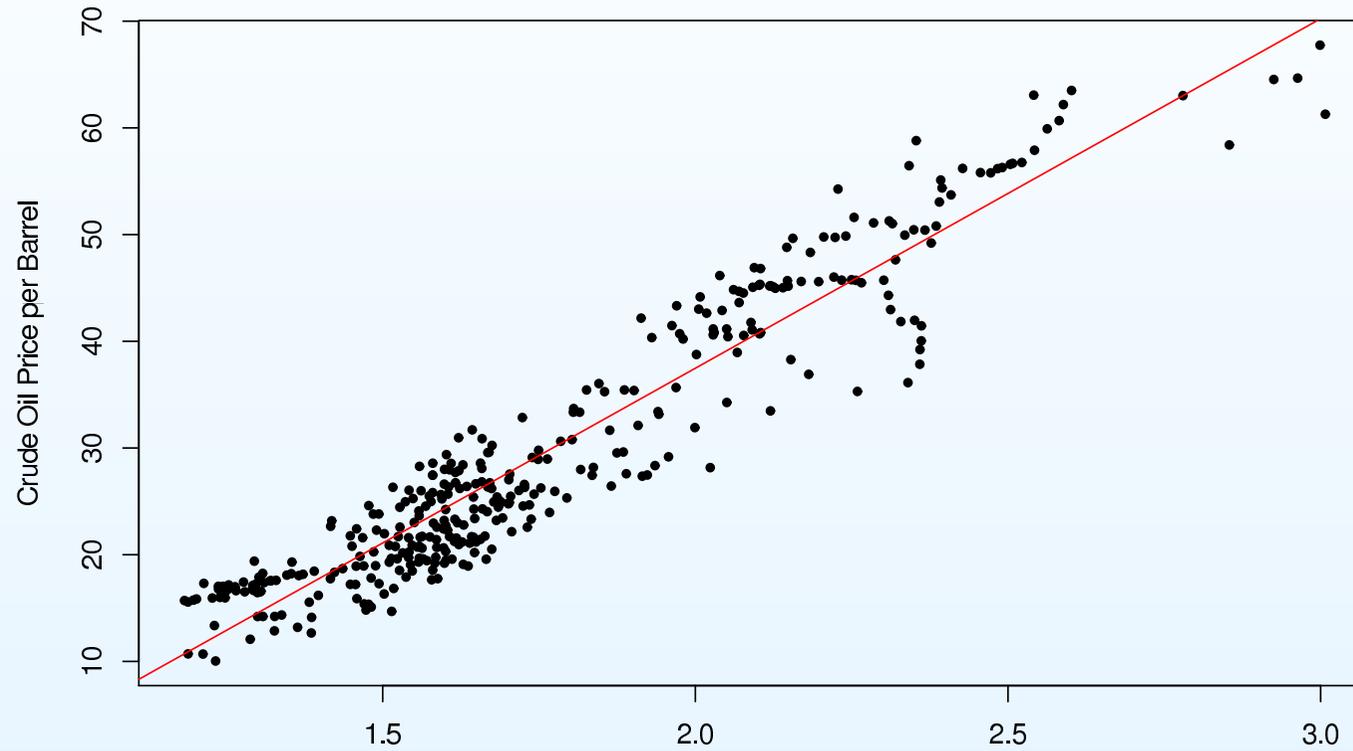
Source: Energy Information Administration, Washington DC

# Gasoline price follows the price of crude oil



Source: Energy Information Administration, Washington DC

# Gasoline price follows the price of crude oil (pt. 2)



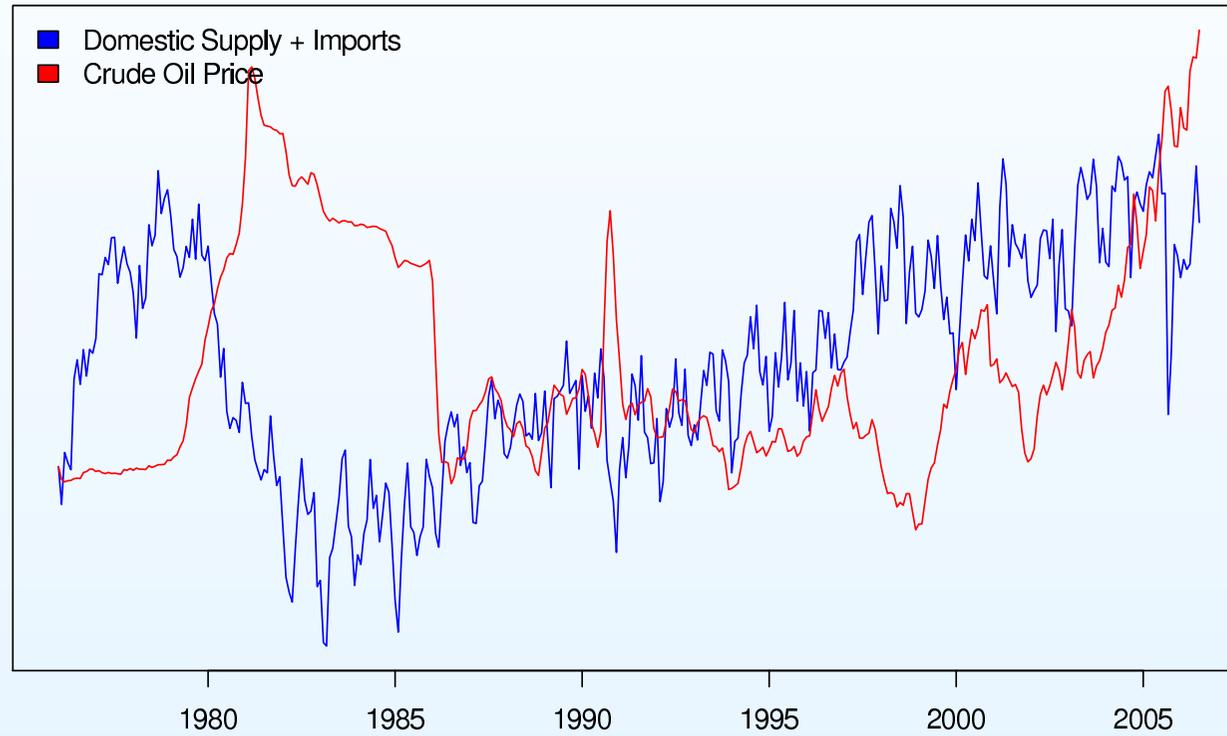
Gasoline Price per Gallon  
Source: Energy Information Administration, Washington DC

## Crude Oil Price

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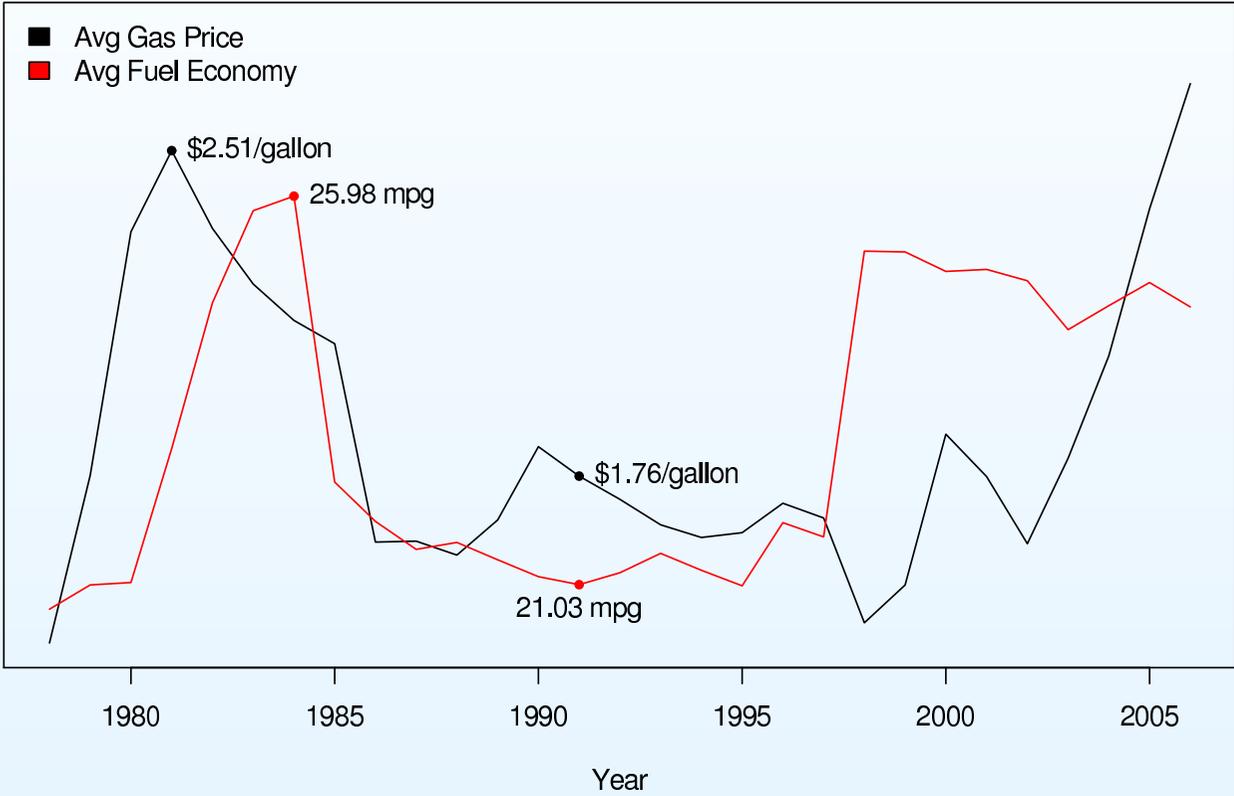
- A gallon of crude oil costs \$6.00 per barrel for non-OPEC producers and \$1.50 per barrel for OPEC producers.
- Price based on
  - Supply & Demand
  - Politics
  - Demand can also be dictated by vehicle fuel efficiency

# Supply



Source: Energy Information Administration, Washington DC

# Fuel Economy vs. Gas Price



## Refining Capacity

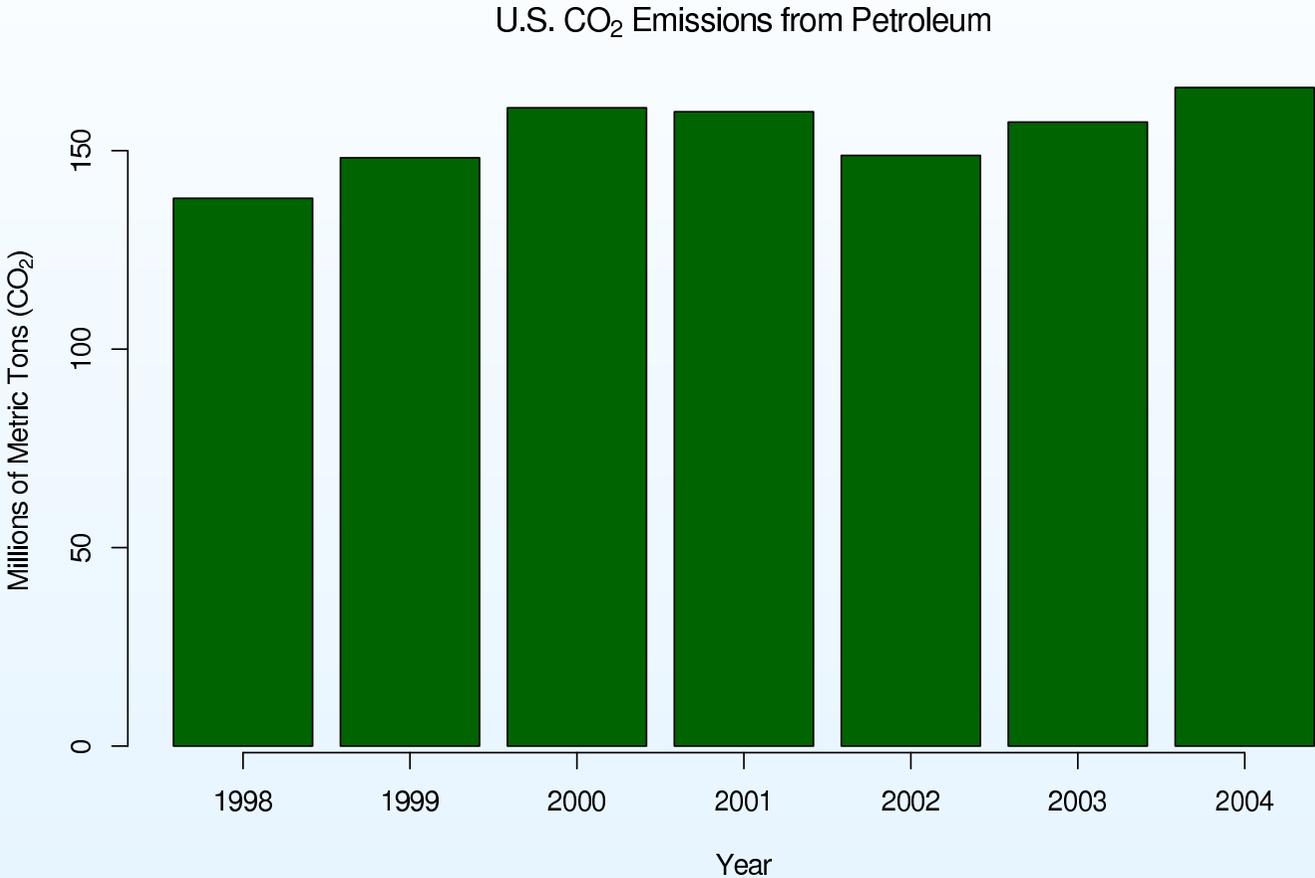
- Refining capacity has not increased in the last 25 years.
- Demand is projected to increase by 20% by 2020.
- Natural disasters (such as hurricane Katrina) can adversely affect refining capacity ultimately affecting price.

## Market Structure

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- According to the GAO oil company mergers in the late 90's increased gasoline prices by one to seven cents per gallon.

# Contribution to Global Warming



Source: Energy Information Administration, Washington DC

Note: 2003 Petroleum activities produced 1.20 million metric tons of methane in the U.S.

# Environmental Impact

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## Expected Associated Costs

- Drought induced disruption to food supply
- Considerable decrease in fresh water supply as glaciers melt
- Hundreds of millions displaced from homes due to sea level rise
- Potentially large increase in rate and ferocity of hurricanes

Former Chief Economist at the World Bank, Sir Nicholas Stern, conducted year-long investigation and predicted a 5-20% drop in total world wealth. Economic cost of inaction: \$4 trillion by end of century.

U.N. Secretary General, Kofi Annan: “It is increasingly clear it will cost far less to cut emissions now than later”

## Other Acquisition Costs

Middle East involvement may partially be attributed to assuring unfettered supply of oil to the U.S.

### 1991 Persian Gulf Conflict

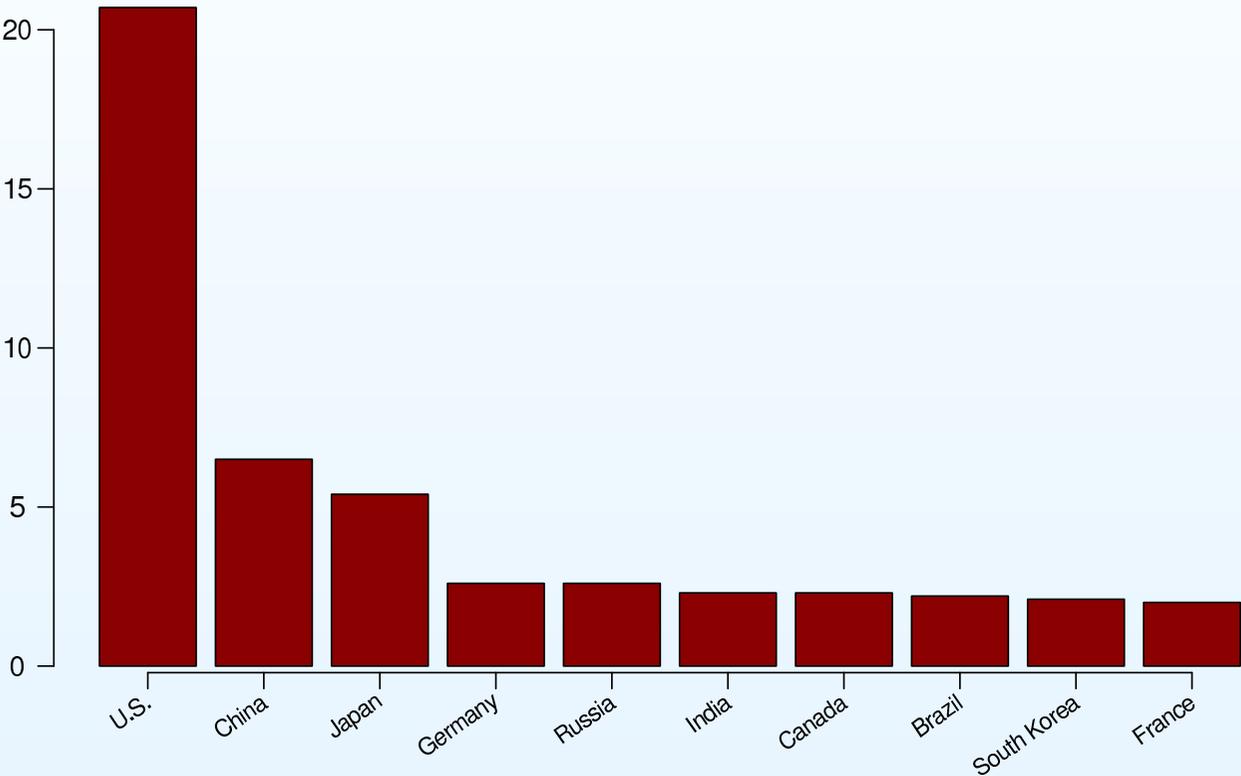
U.S. Department of Defense estimated cost at \$61 billion.  
30,000+ Iraqi Civilians killed as a result of collateral damage

### 2003-Current Iraqi Conflict

Cost cited at \$200 million/day U.S. military deaths recently surpassed 2,800

# Long-term Stability and Economic Well-being

2004 World Oil Consumption (Millions of Barelles per Day)



Source: Energy Information Administration, Washington DC

Notes: U.S. Consumption, 20.7 MMBD, equals 25.1% of world total

2004 U.S. Production equaled 8.6 million barells/day (10.5% of total)

# Are Americans Concerned?

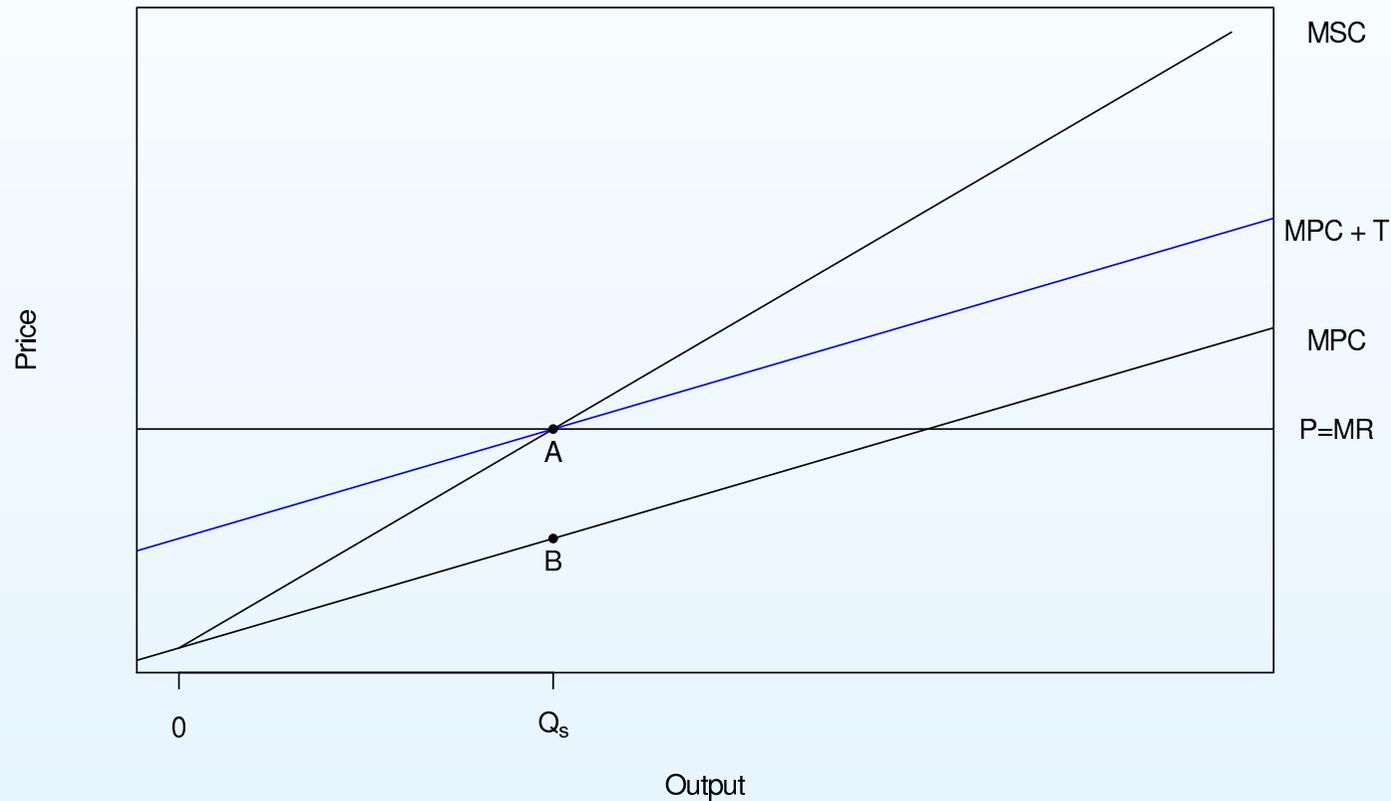
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## 2006 CNN/USA Today/Gallup Poll Results

- Seventy-one percent feel the current federal administration is not doing enough to solve the nation's energy problems.
- Roughly three out of four (77 percent) fear the future supply of oil will not be able to meet global demand

EIA data validates their concerns: 60% of current day consumption is imported oil from foreign countries; The EIA's 2004 estimate of proved domestic reserves was 21.4 billion barrels (Current U.S. consumption is over 7.5 billion barrels/year)

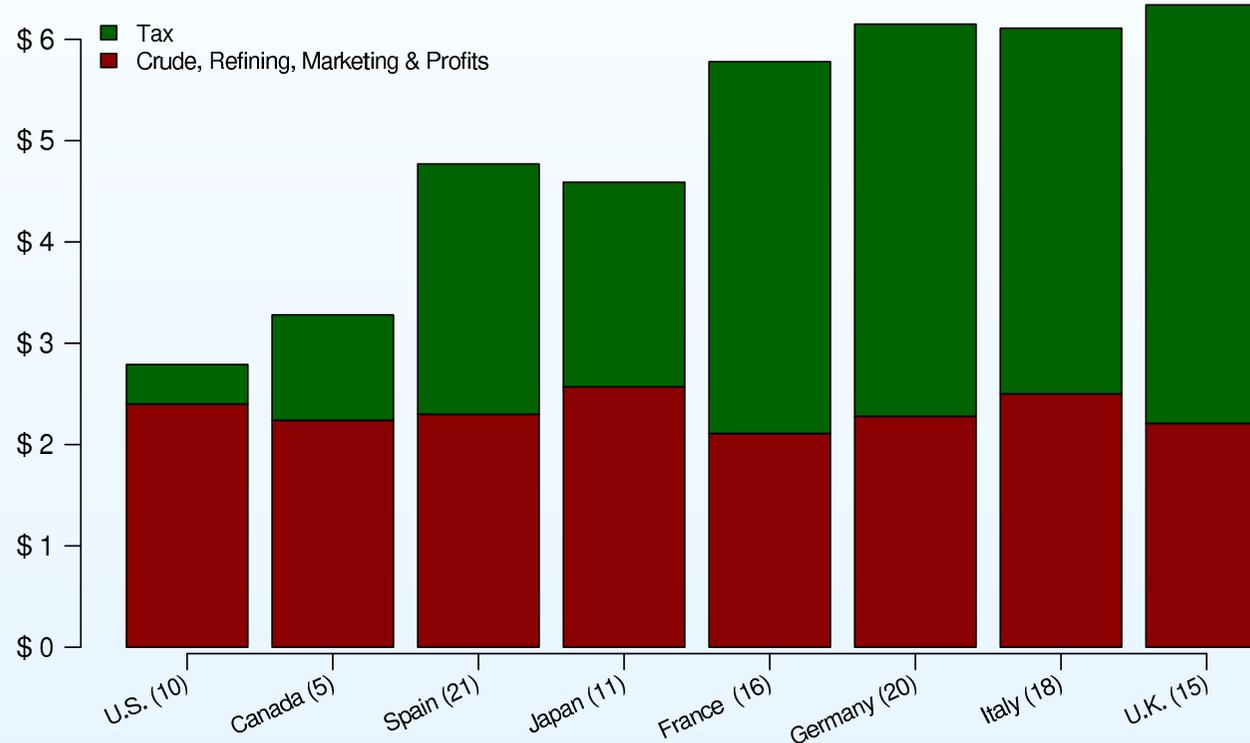
# Pigouvian Tax



Source: Wikipedia.com, www.wikipedia.com

A \$.50/gallon tax increase would raise over \$50 billion per year in federal revenue

# International Survey of Petroleum Taxing



Source: International Energy Agency  
(2004 HDI Rankings in Parenthesis)

Note: 2004 U.N. Human Development Index (HDI) Ranking in Parenthesis (177 countries surveyed)

## Conclusion

“Economic advance is not the same thing as human progress.”

John Clapham, British Economic Historian (1873-1946)