

# FUEL MARKETS:

## *Where Have We Been and Where Might We Be Going?*



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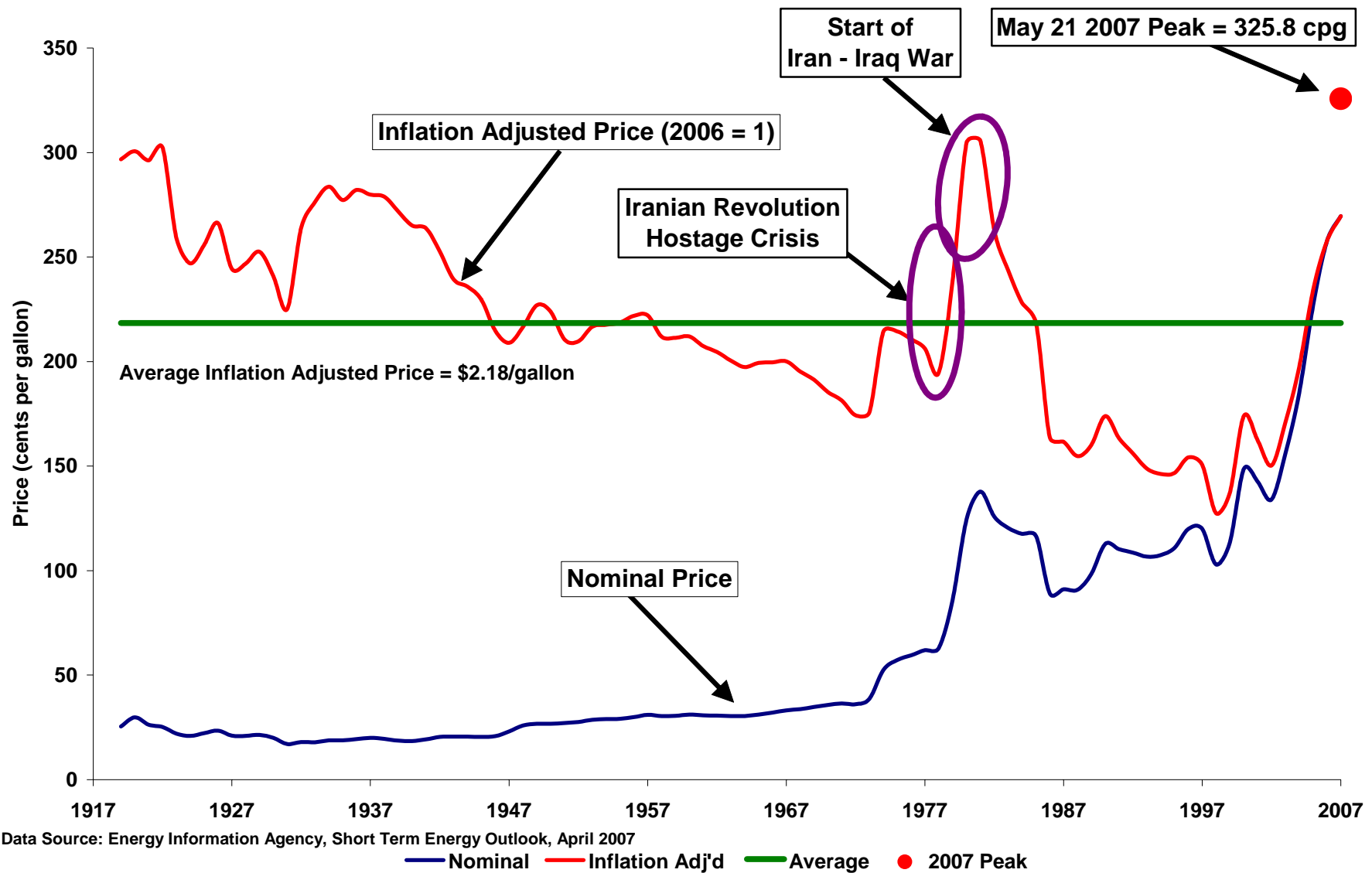
# **How Expensive Is Today's Gasoline?**

**Not As Expensive As People Think!**

**At Least Not Until Recently... And Not For  
The Reasons Most People Believe**

# Gasoline prices have risen significantly over the last several years, but only recently have they been above the inflation adjusted average.

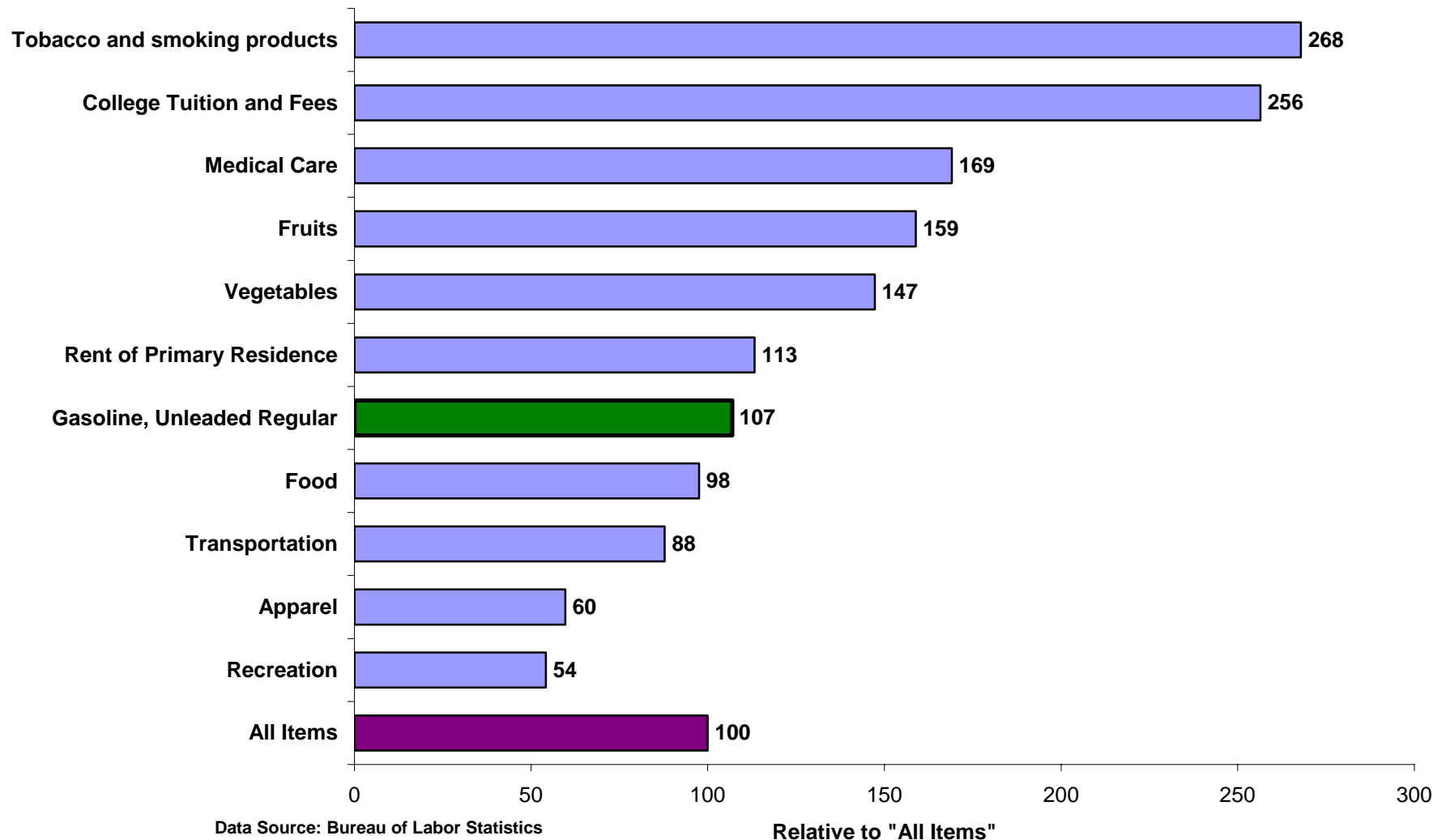
U.S. Annual Average Retail Gasoline Price



Data Source: Energy Information Agency, Short Term Energy Outlook, April 2007

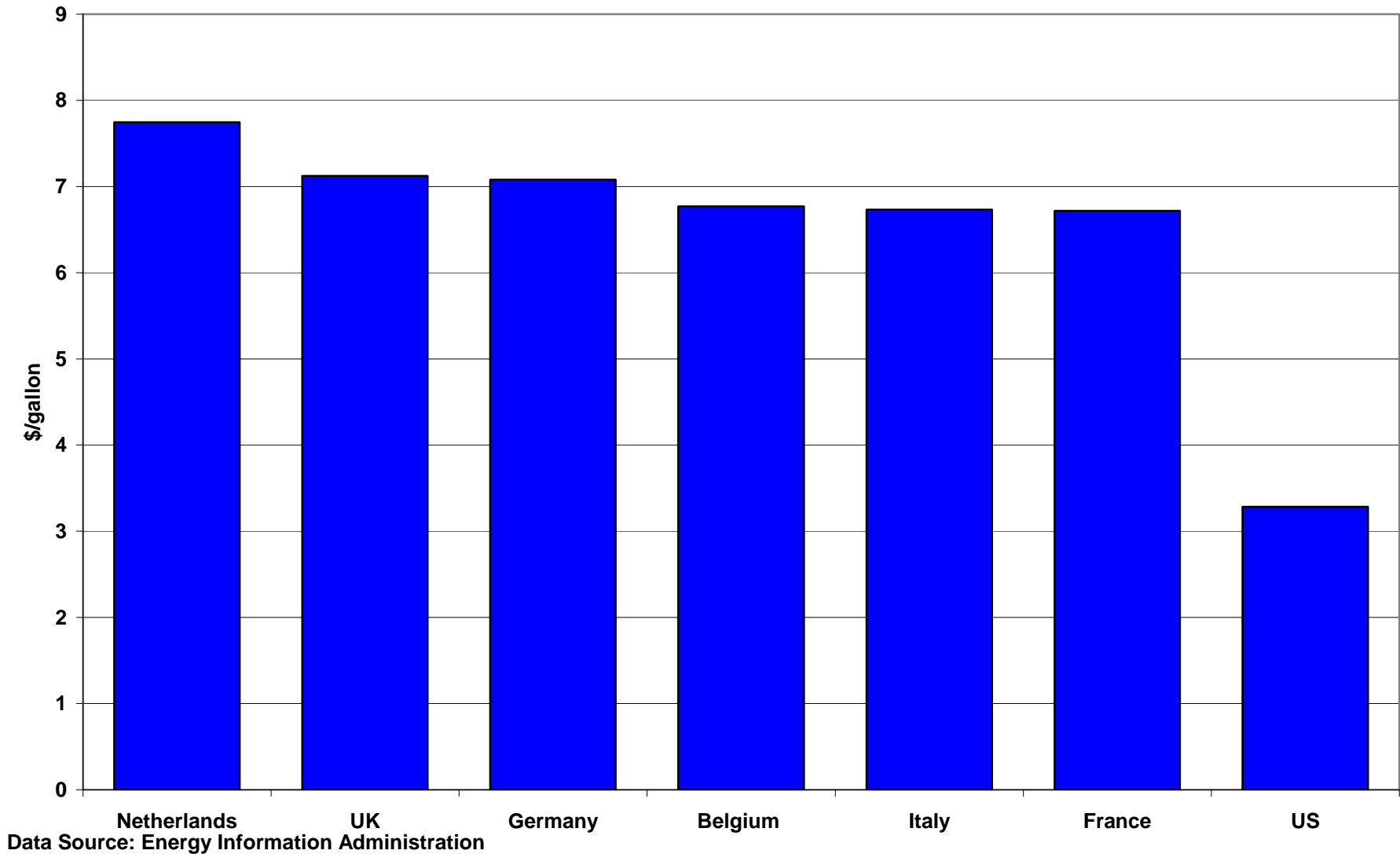
# Yet, even these increases are nominal in comparison with the price of other consumer goods

Price Increases for Consumer Goods  
(March 2007 relative to 1982 - 1984)



# Even with prices where they are today, gasoline in the U.S. is much lower than other western countries.

Retail Premium Gasoline Prices Including Taxes (5/14/2007)



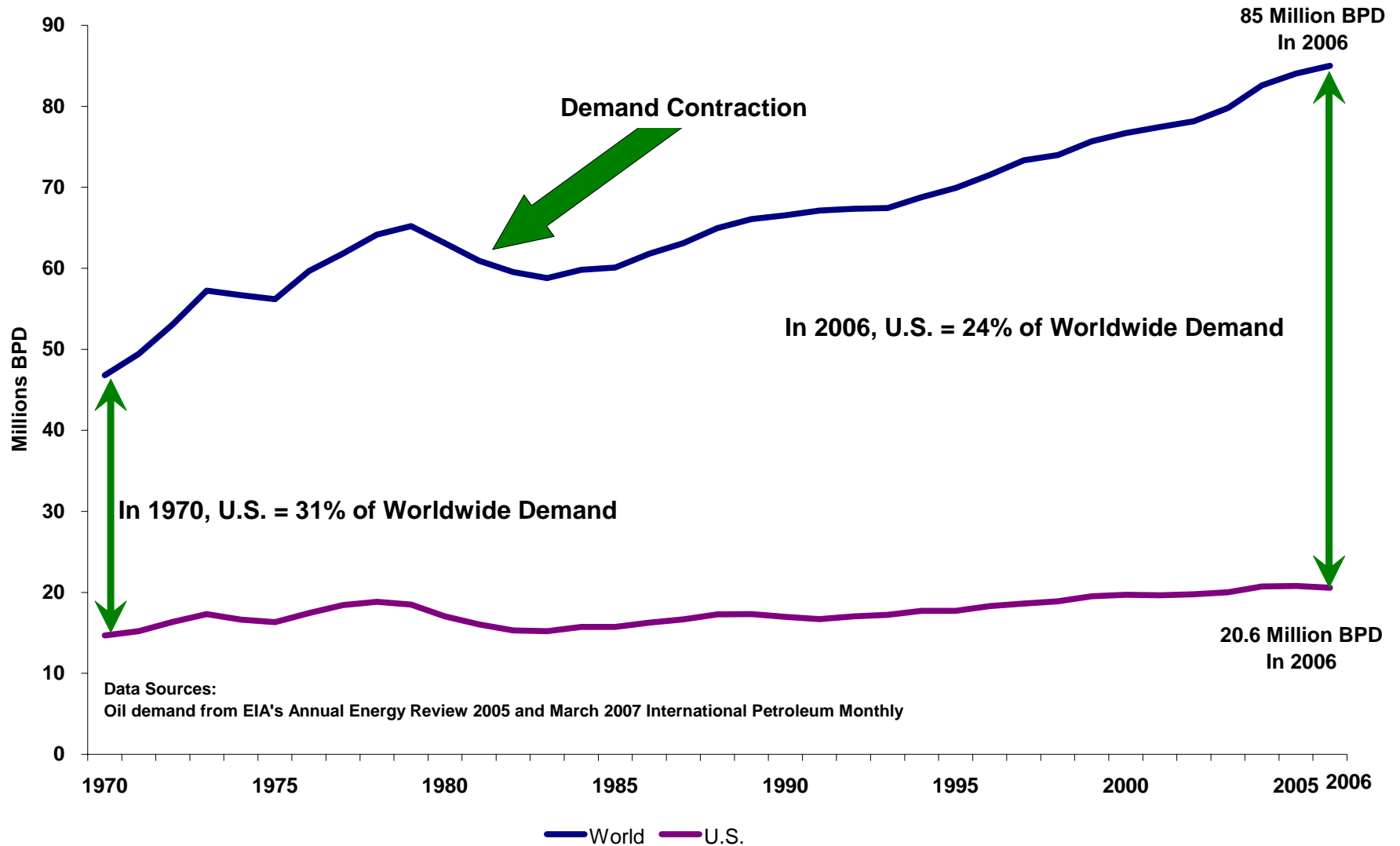
# **What Drives Gasoline Prices?**

**Supply And Demand!**

**Let's Look At Demand First**

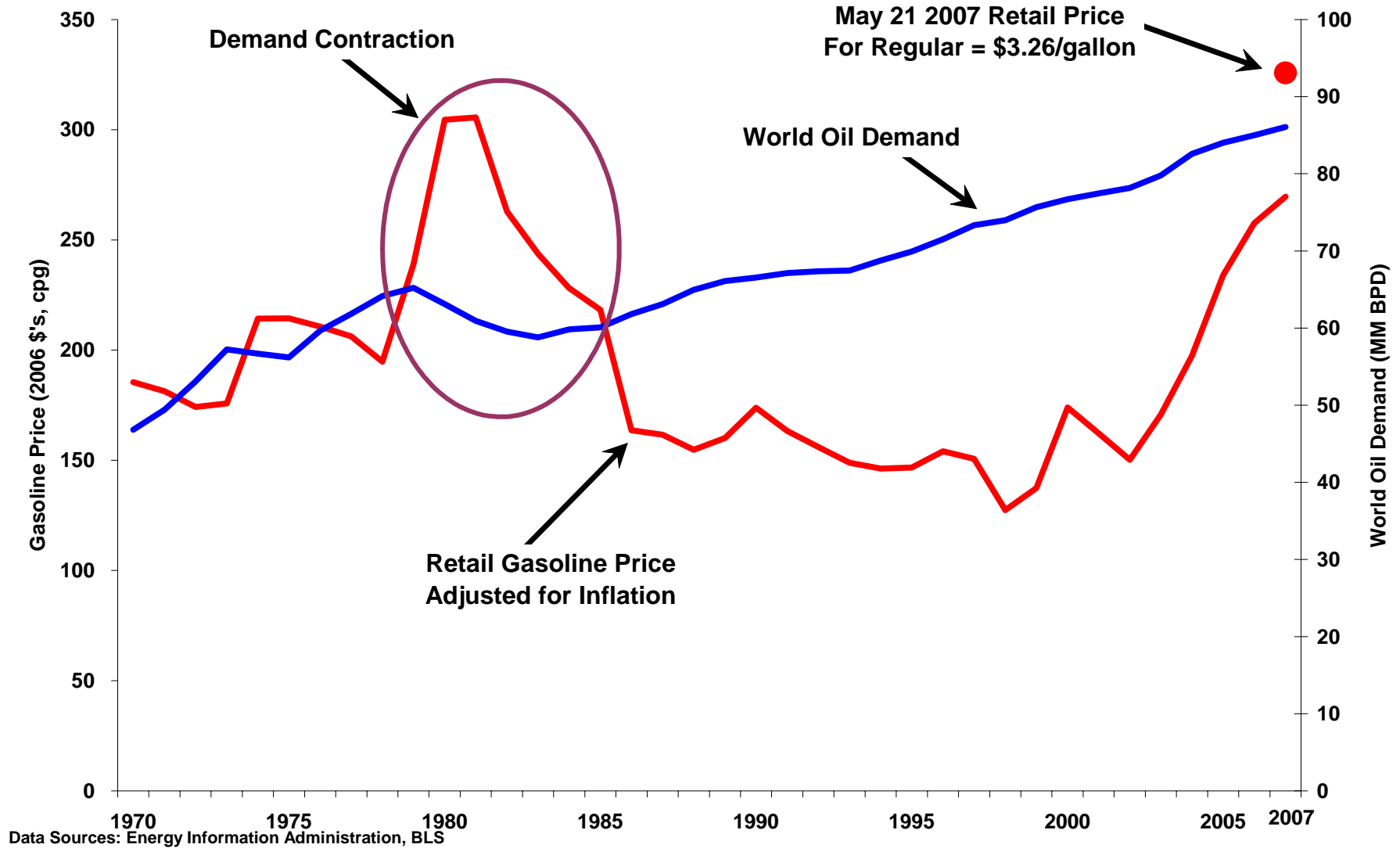
# Worldwide oil demand has continued to climb along with higher prices

## World Oil Demand



# The last time oil prices were similar to today, demand contracted.

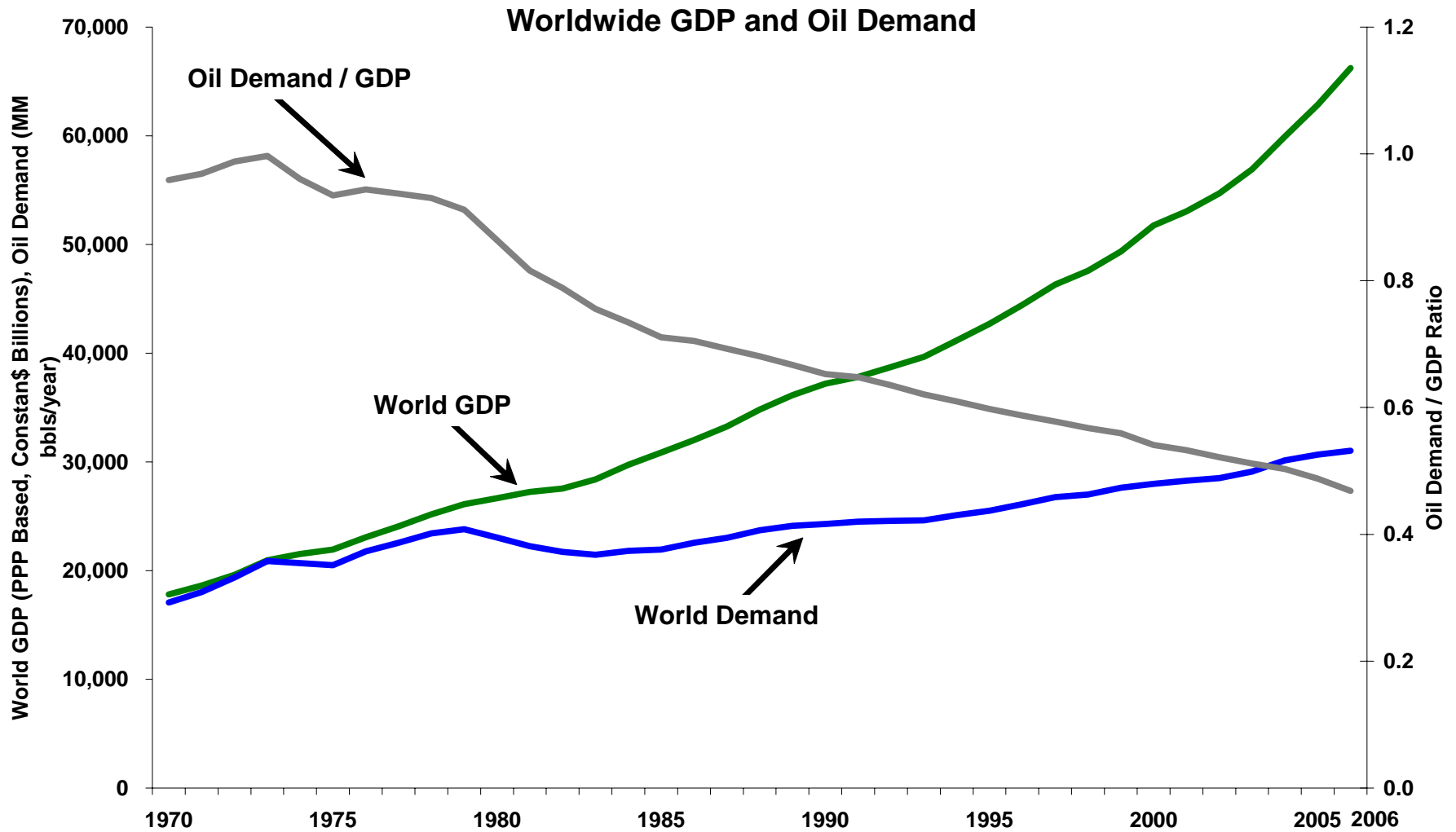
## Gasoline Price and World Oil Demand



Data Sources: Energy Information Administration, BLS

# **Then Why Isn't Demand Contracting Now?**

# The world economy has become much more energy efficient over the last 35 years.

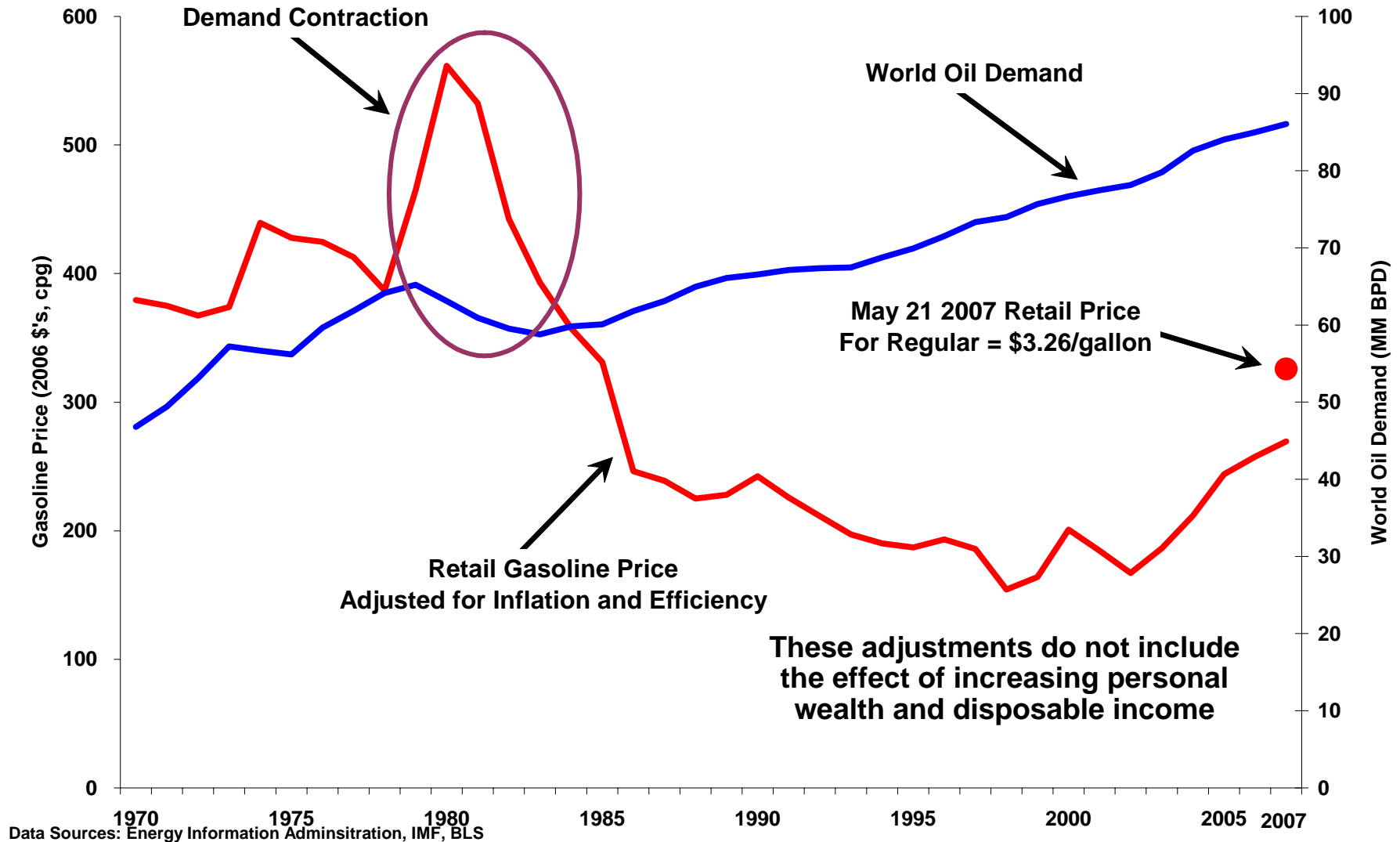


Data Sources: IMF, Energy Information Administration

— GDP — Oil Demand — Oil / GDP

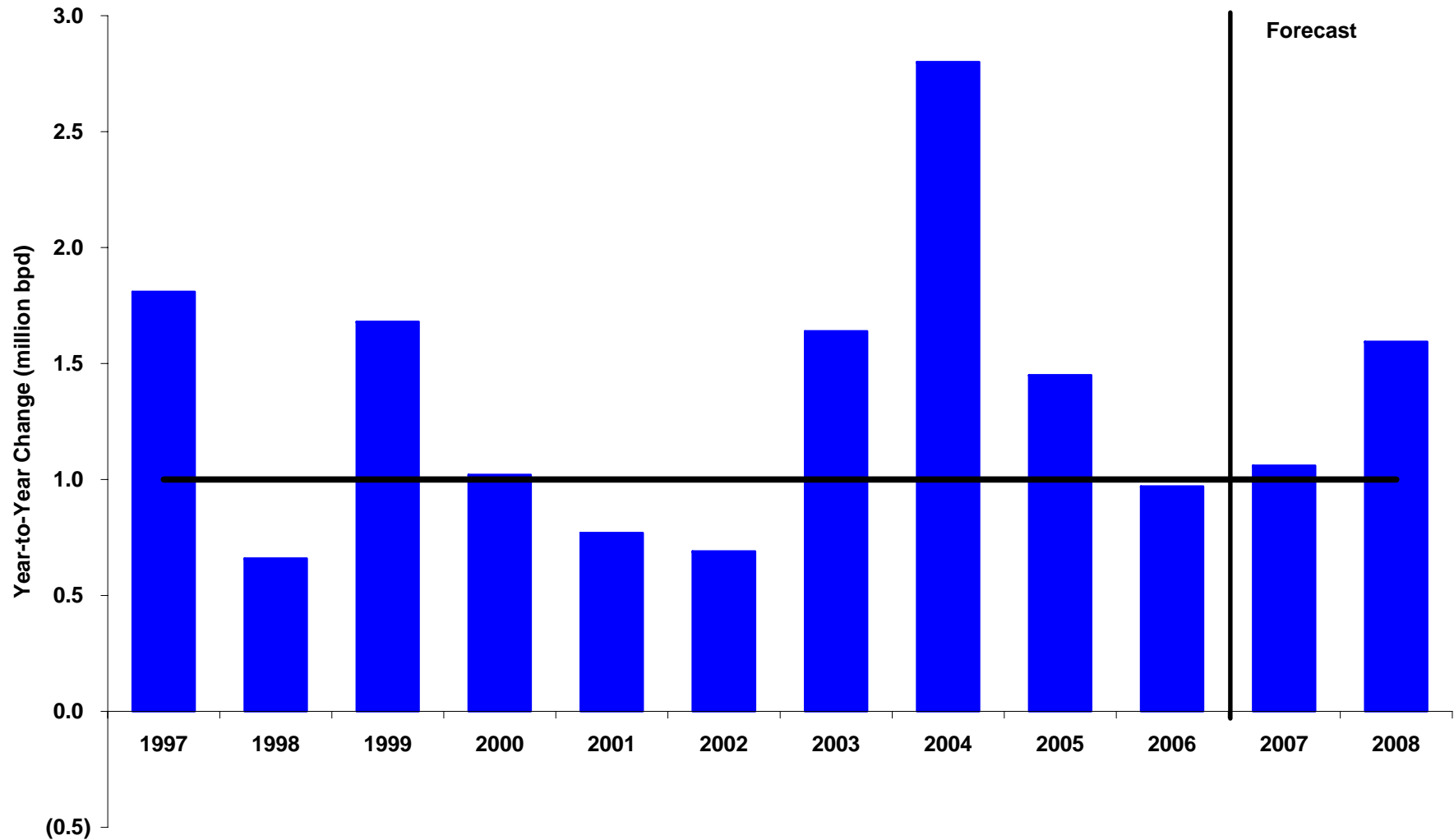
# Gasoline prices adjusted for efficiency are well below the early 1980's levels.

## Gasoline Price and World Oil Demand



# Annual oil demand growth has exceeded one million barrels per day and is expected to increase.

Change In World Oil Demand



Data Source: Energy Information Administration

■ World Oil Demand

**How much oil is one million barrels per day?**

**How many barrels per day are produced from the vast oil reserves of Alaska?**

- **0.7 – 0.8 million BPD average in 2006**

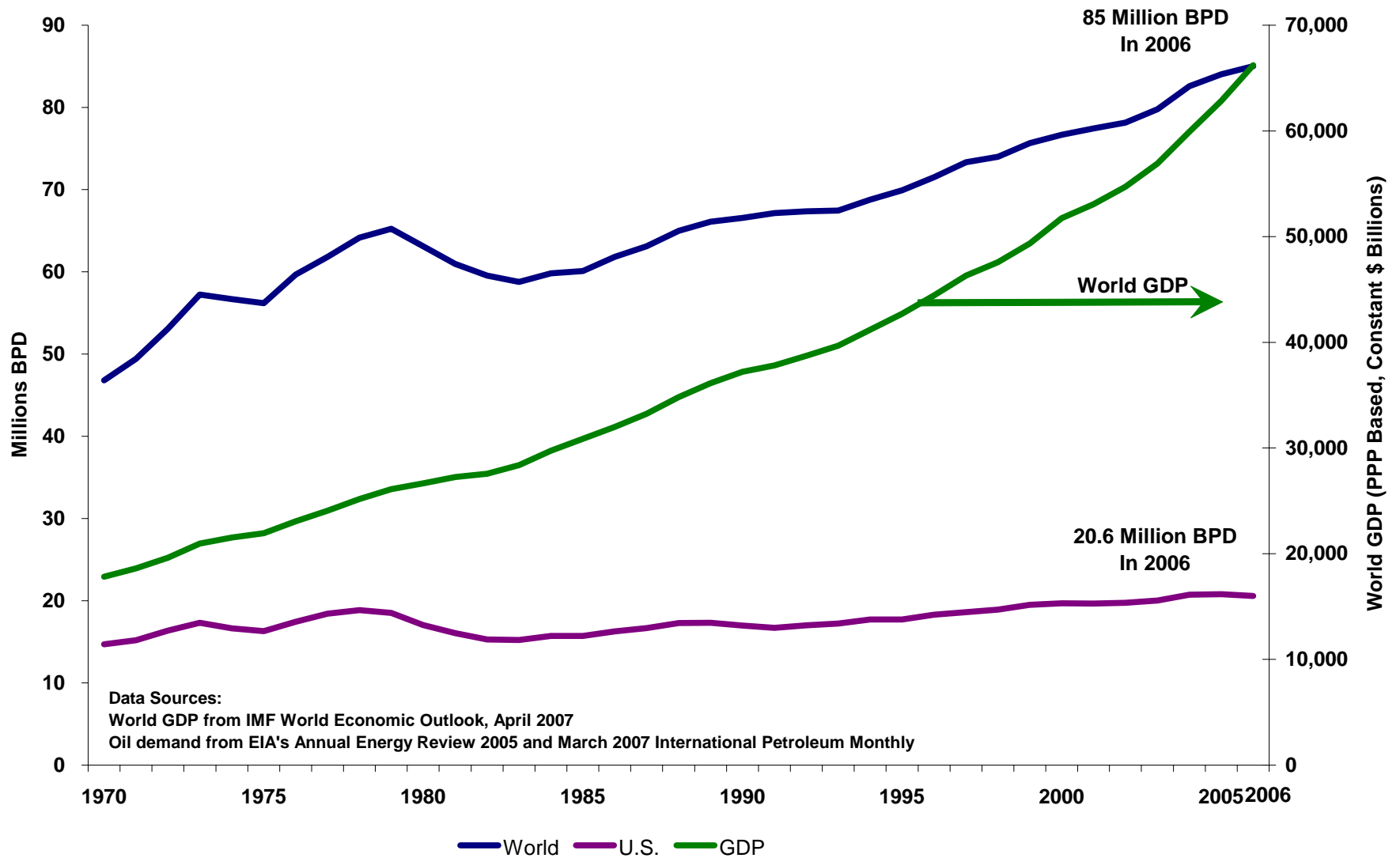
**How much additional oil is expected from the oil sands of Canada?**

- **1 million bpd expected additions between 2005 and 2010**

# Where Does All This Demand Come From?

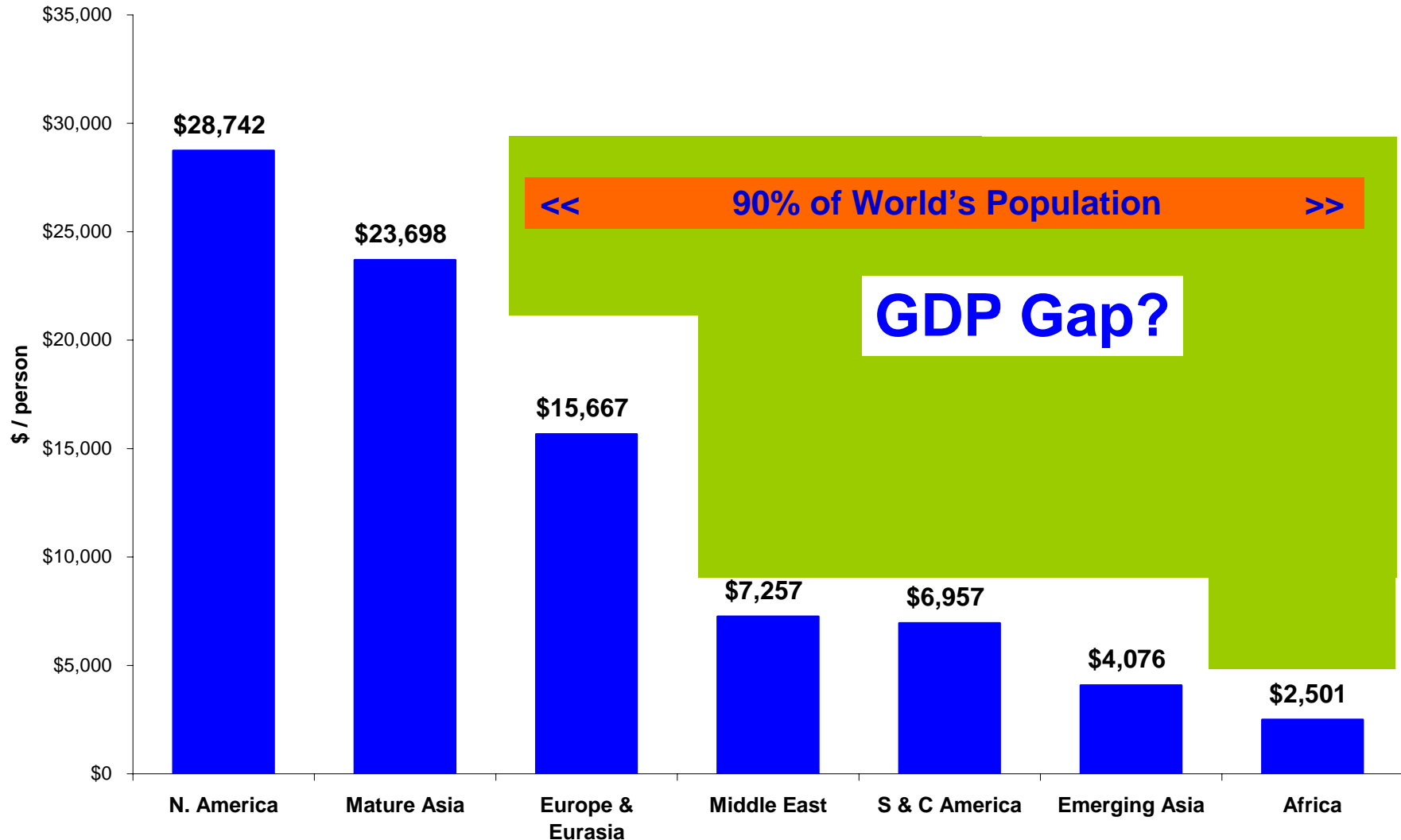
# Demand follows GDP

## World Oil Demand



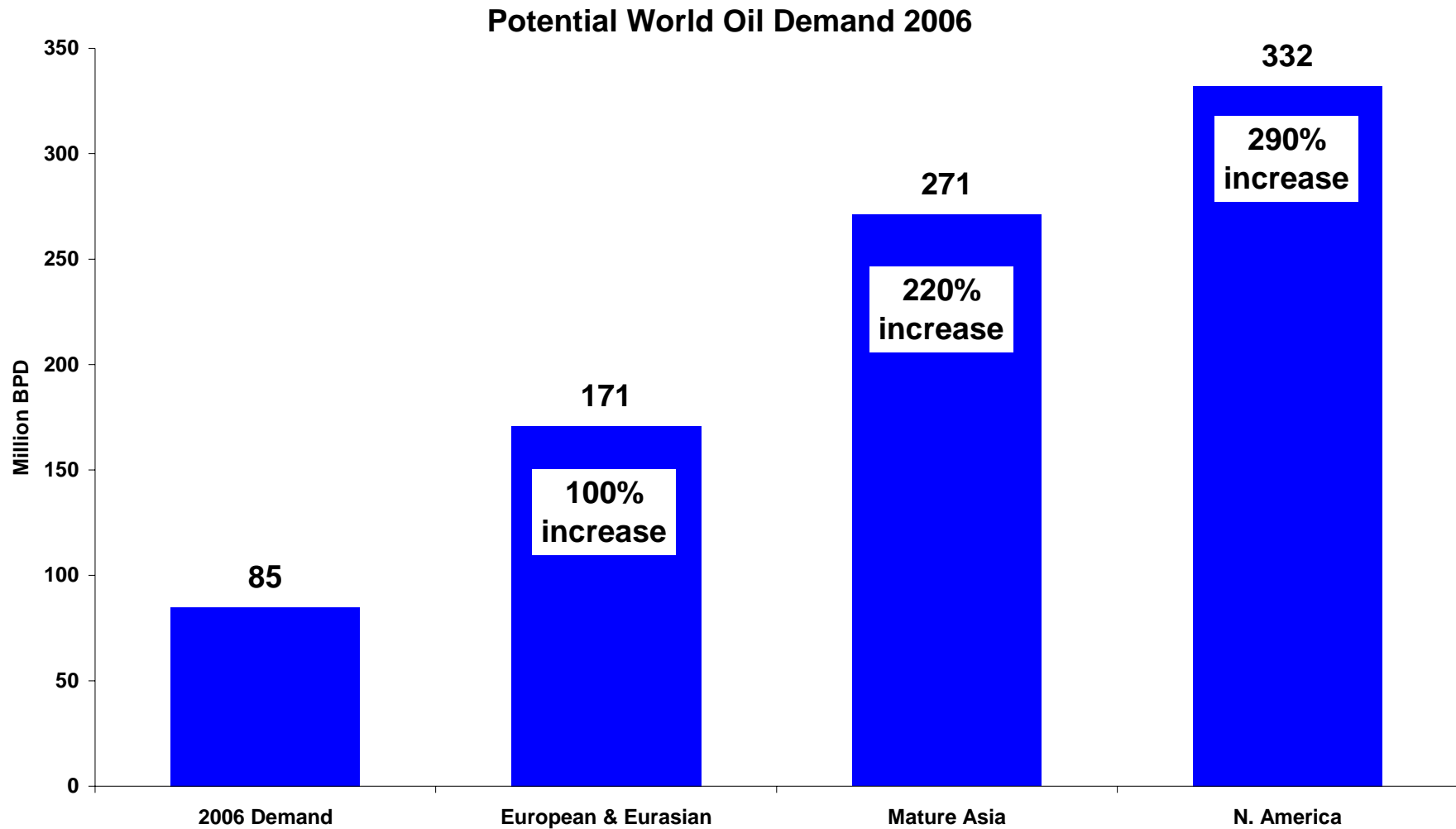
# The economic growth and demand potential of developing economies is enormous

World GDP/Person - 2003



Data Source: Energy Information Administration

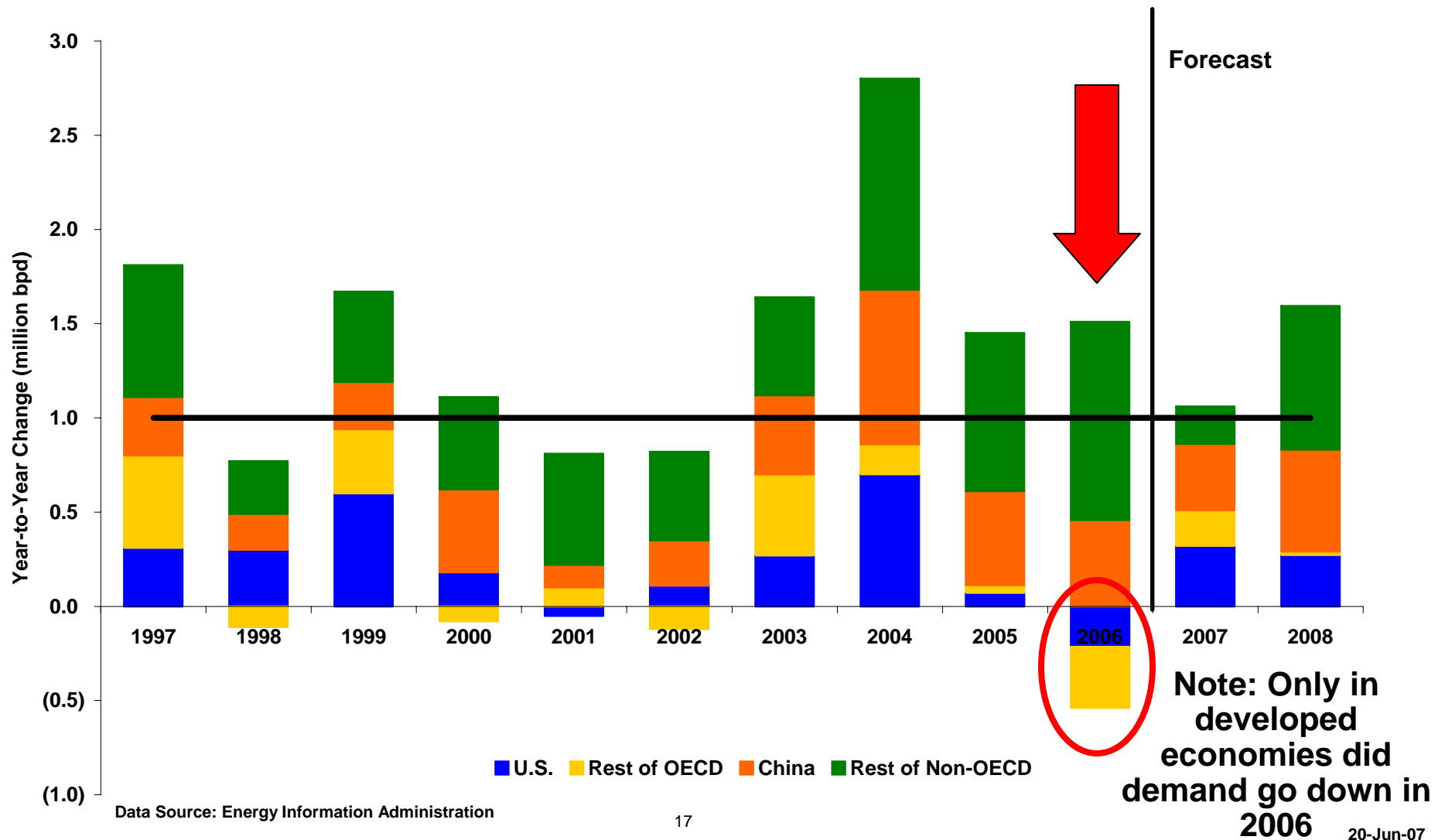
**Holding all else the same, oil demand would dramatically increase if the least developed economies even partly closed the GDP gap.**



Data Source: Energy Information Administration

# Developing countries are the major driver of demand growth. Demand grew over 1 MM bpd in 2006 despite mild contraction in developed economies

Change in World Oil Demand by Region



# Demand Summary

- 1. Potential increased energy demand is vast and is largely being driven by the developing countries.**
- 2. Efficiencies have led to more productive, economical uses of energy relative to price.**
- 3. Estimates show that prices need to be much higher than today's prices to reduce demand.**

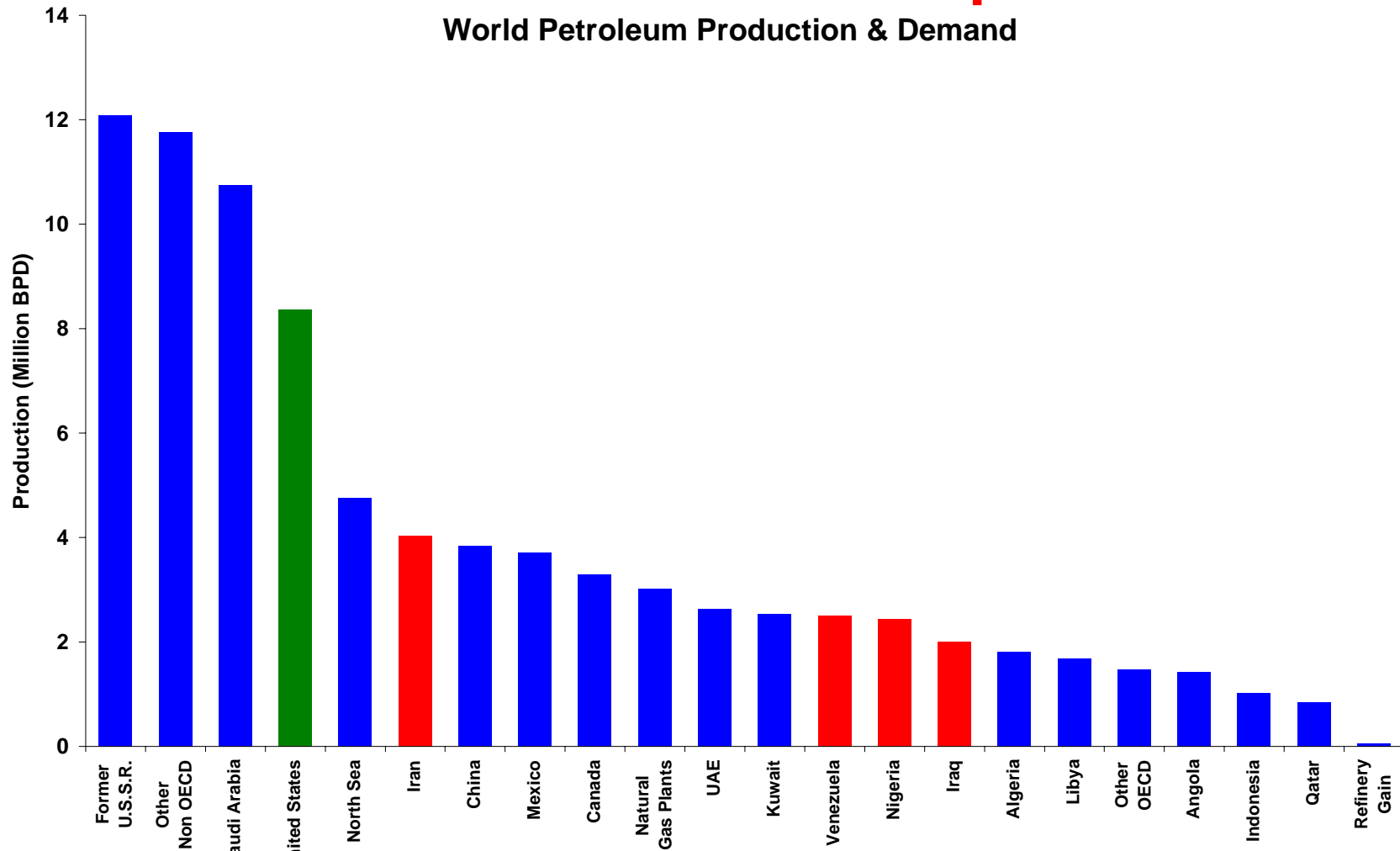
## Economic Fundamental

- 1. Given these circumstances, it is reasonable that prices must rise to lower demand and attract new supply.**
- 2. If new supply is not readily available, prices should rise significantly and the quantity demanded will decline.**

**If Demand is Robust,  
Then What About Supply?**

# Some of the larger producing countries are relatively unstable:

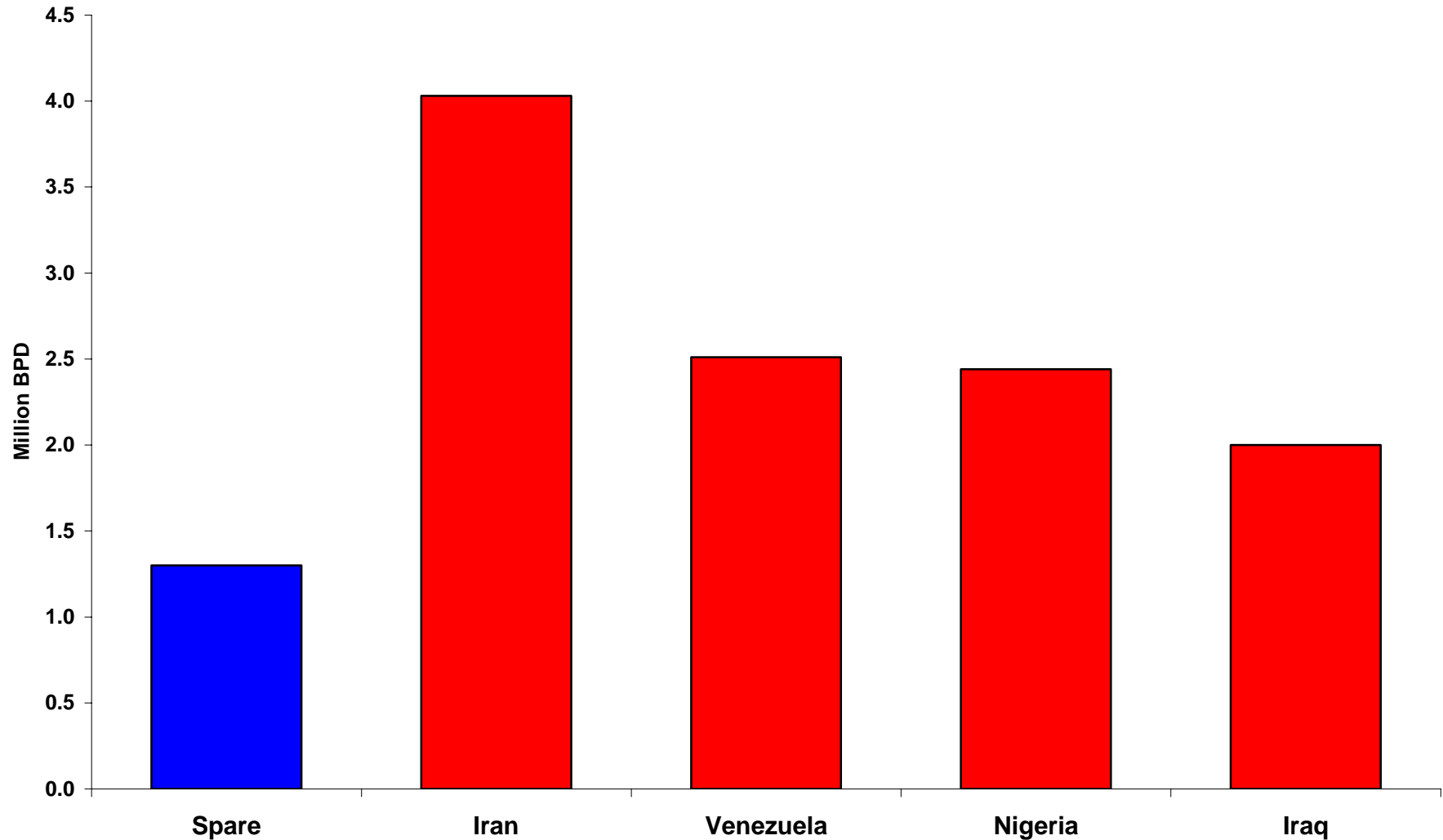
- Iran
- Venezuela
- Nigeria
- Iraq



Data Source: Energy Information Administration

**If any of these high risk countries closes its markets or goes offline, it would exceed global spare capacity.**

**Spare Capacity and Capacity of High Risk Countries  
2006**

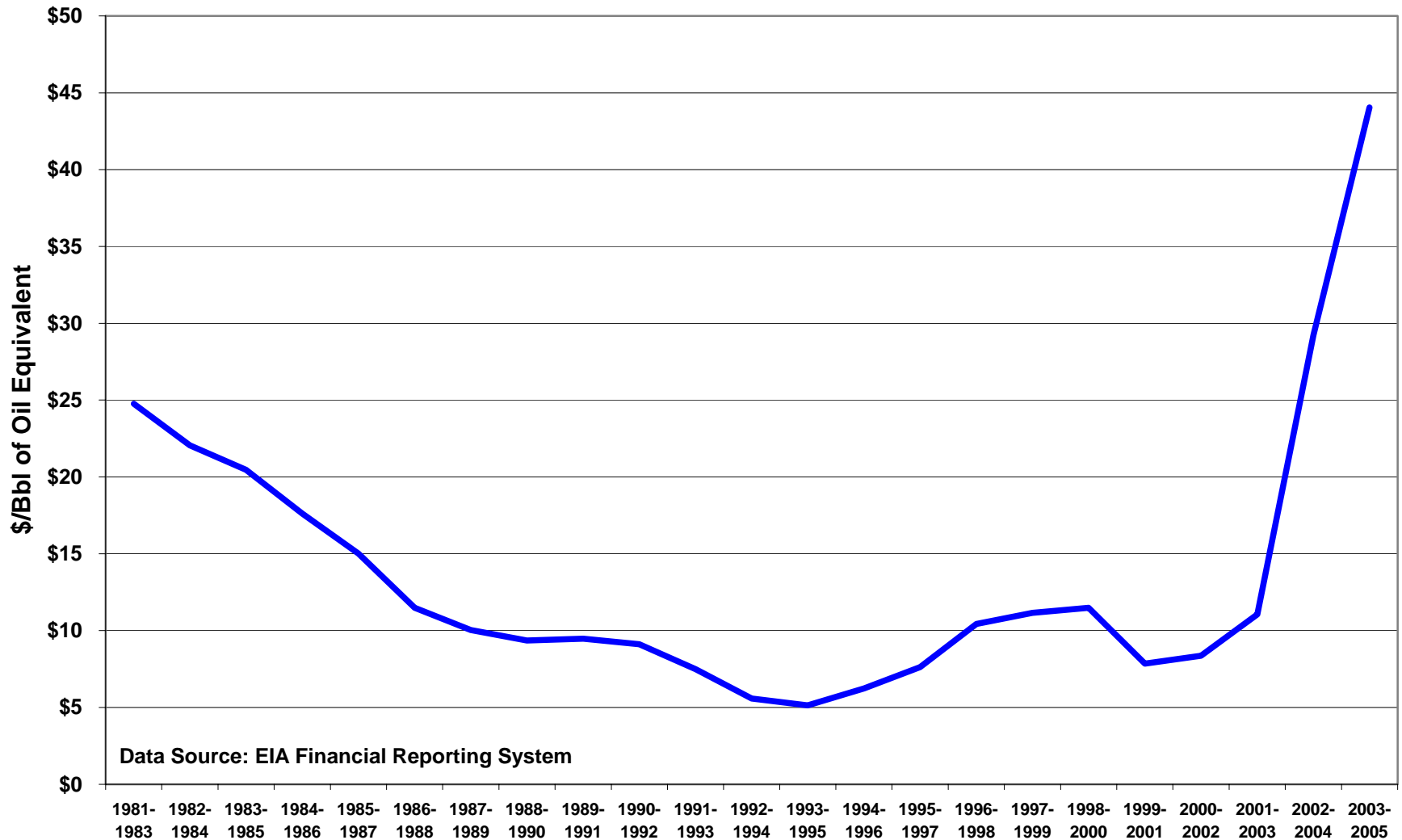


Data Source: Energy Information Administration

# **If The World Has Tight Crude Capacity, What About Finding Additional Crude Supply?**

# Industry has been very successful in finding additional resources in deeper water. That said finding and development costs are rising rapidly

## Offshore Oil & Gas Finding Costs



# Supply Summary

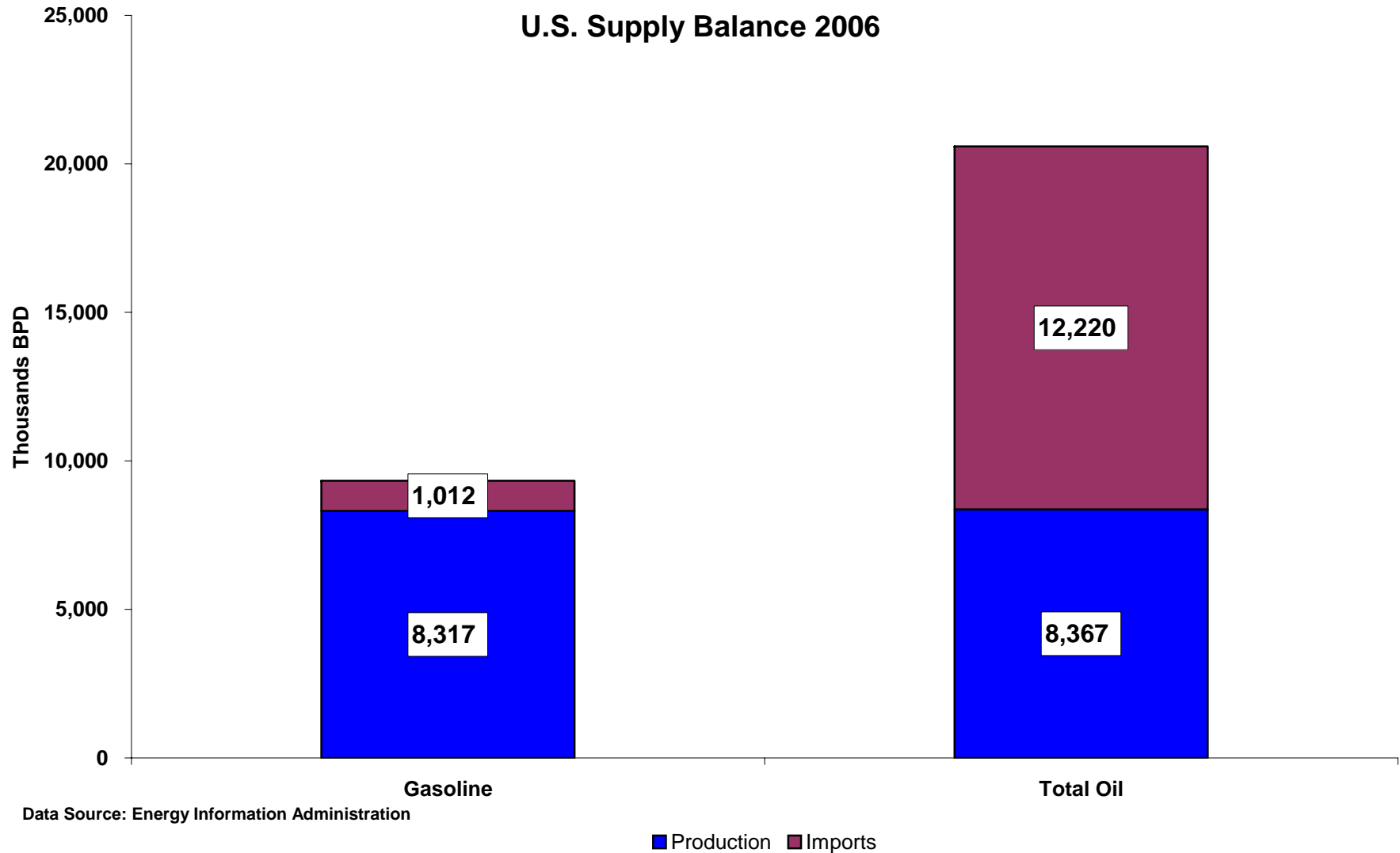
- 1. Much of the world's crude oil is controlled by the Middle East.**
- 2. While there is currently very little spare capacity to meet worldwide demand, additional sources of supply are under development including oil sands, deep water, coal, shale oil, etc.**
- 3. Loss of supply from any one high risk country would be very problematic.**
- 4. New sources of crude oil take a long time to develop.**

## Economic Fundamental

**Given these circumstances, it is reasonable for prices to rise to attract new supply.**

**If Both Supply And Demand Fundamentals  
Are Upward Biased, How Does This Translate  
Into The U.S. Gasoline Market?**

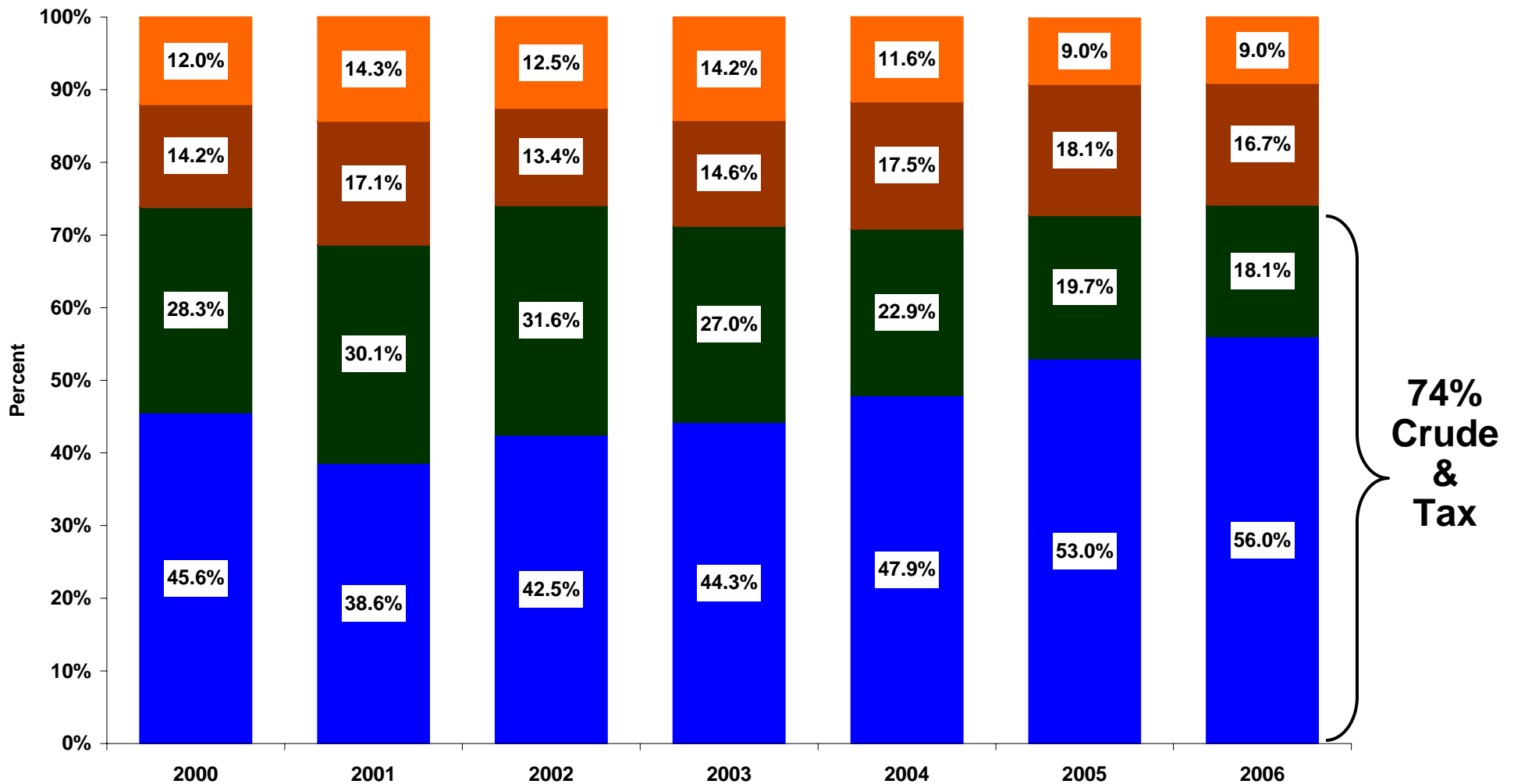
# The U.S. needs to compete in the worldwide market to import crude oil and gasoline to meet demand.



# Crude oil and taxes are the largest components of gasoline price. The percentage for taxes is greater than that of refining.

Note: refining includes wages, maintenance, environmental compliance spending, etc.

Components of the Retail Price of Gasoline

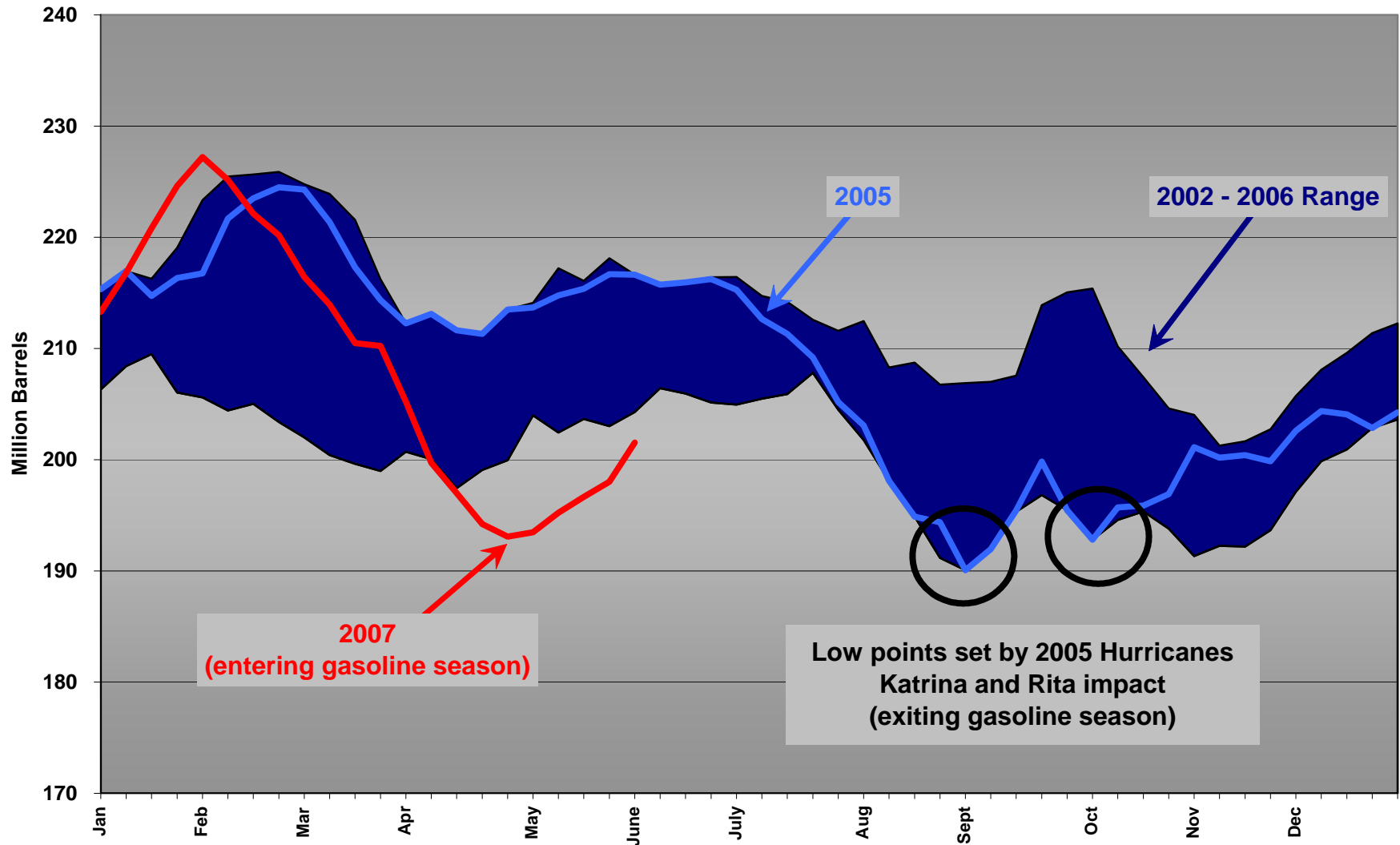


Data Source: Energy Information Administration

■ Crude Oil ■ Taxes ■ Refining ■ Distribution & Marketing

# Current high gasoline prices are also the result of low gasoline inventory levels

Weekly U.S. Gasoline Stock Levels (2002 to 2007 year-to-date)



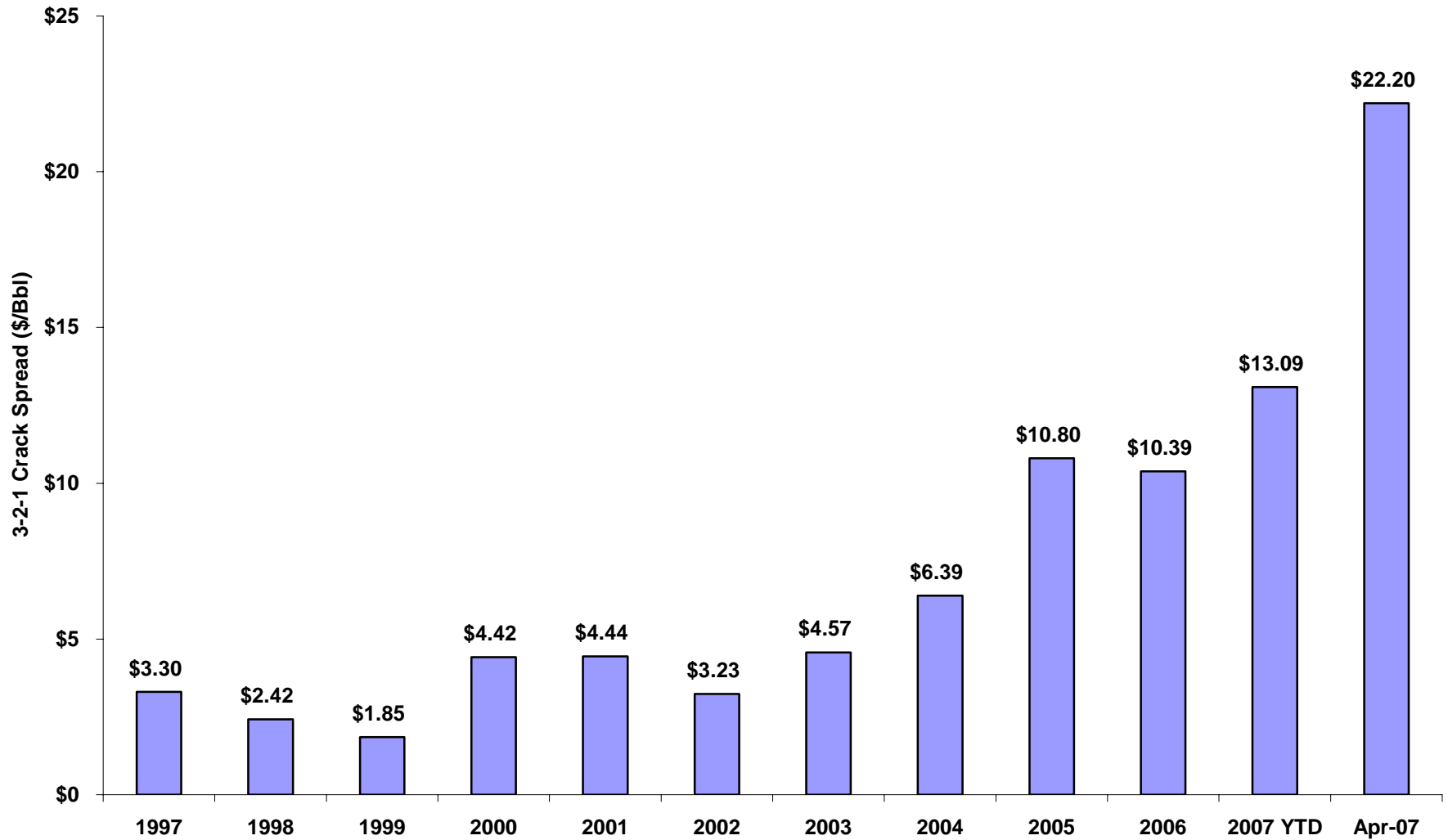
Data Source: Energy Information Administration

**If Refining Margins Are Increasing, Then**

**Why Hasn't A Refinery Been Built In The U.S.  
In 30 Years?**

# U.S. margins have risen recently.

## Refining Product Margins

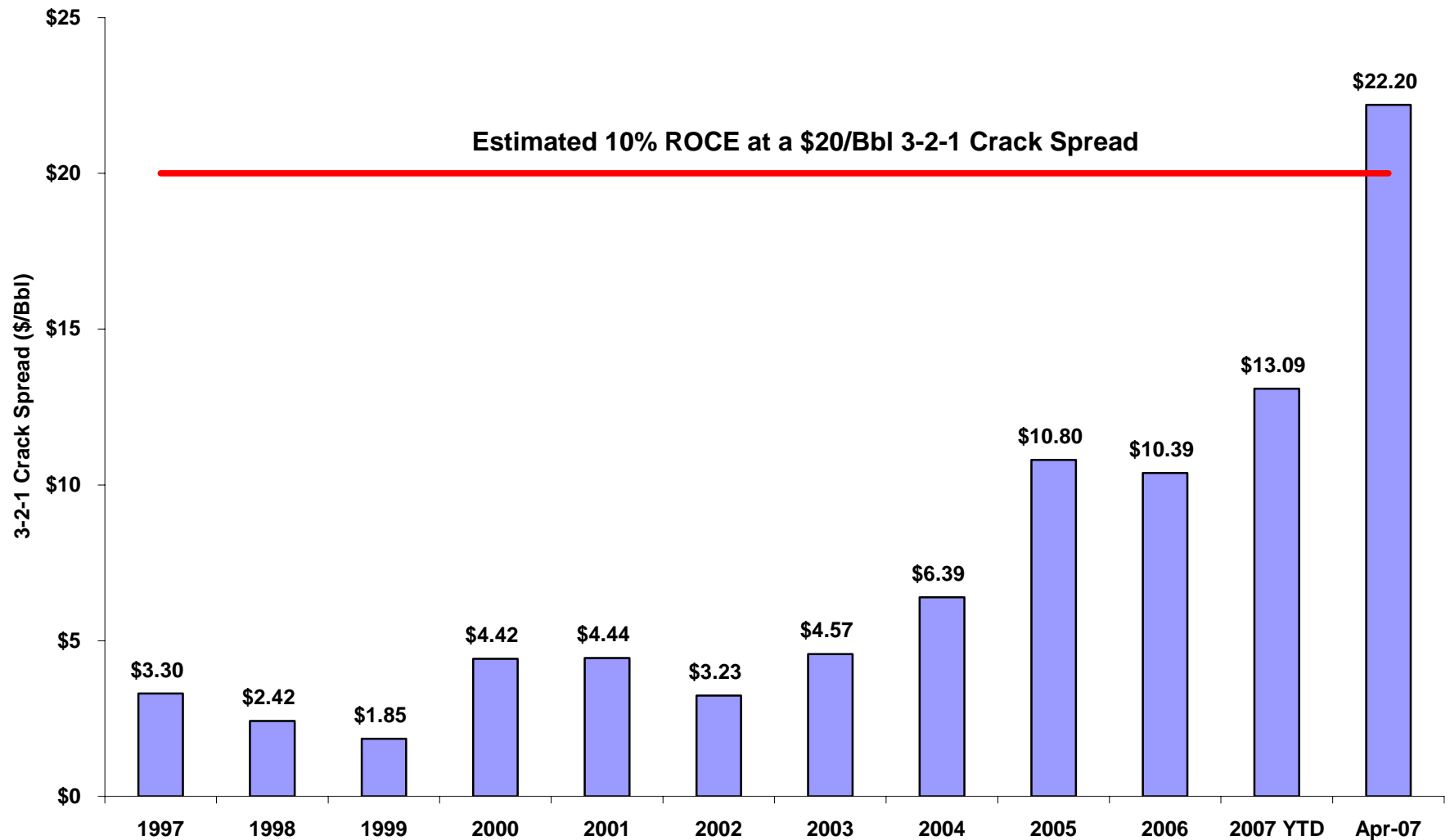


Data Source: Energy Information Administration Spot Prices

3-2-1 Crack Spread = 2 x Gasoline Price + 1 x Distillate Price - WTI

# Until recently, U.S. margins were nowhere near levels required to support investment in new refineries.

## Refining Product Margins

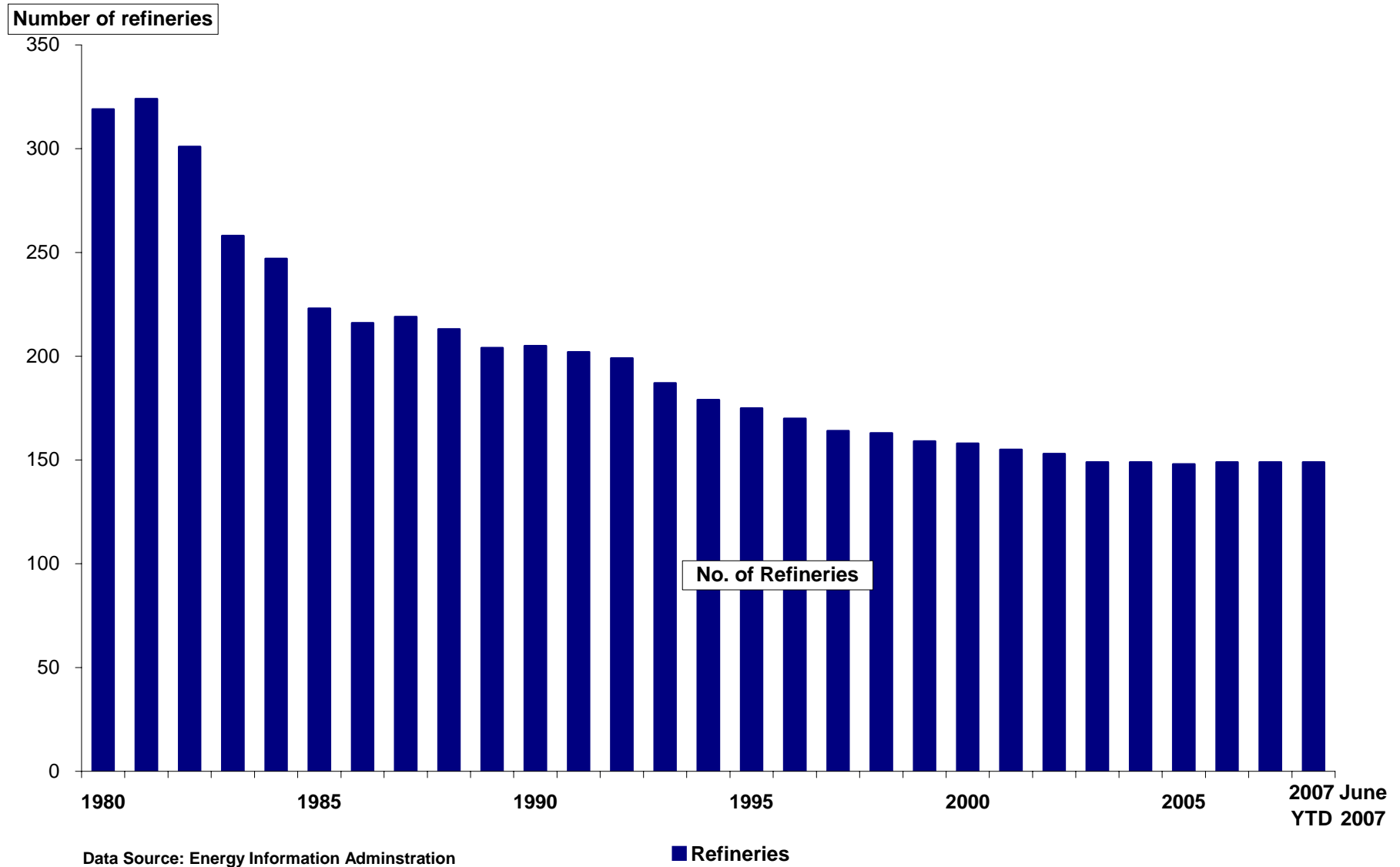


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3-2-1 Crack Spread = 2 x Gasoline Price + 1 x Distillate Price - WTI

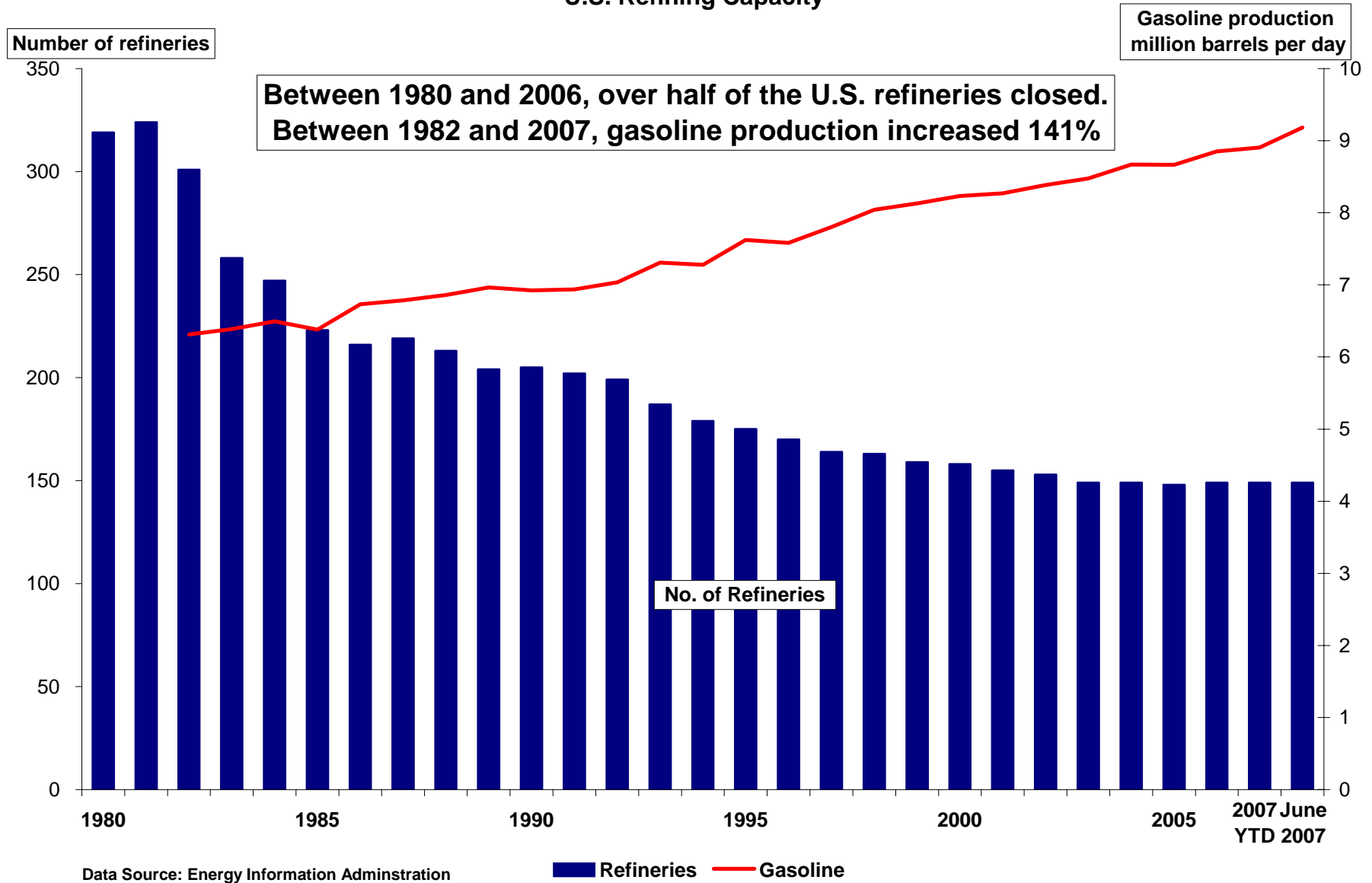
# Historical margins resulted in outdated and inefficient U.S. refineries being closed

U.S. Refining Capacity

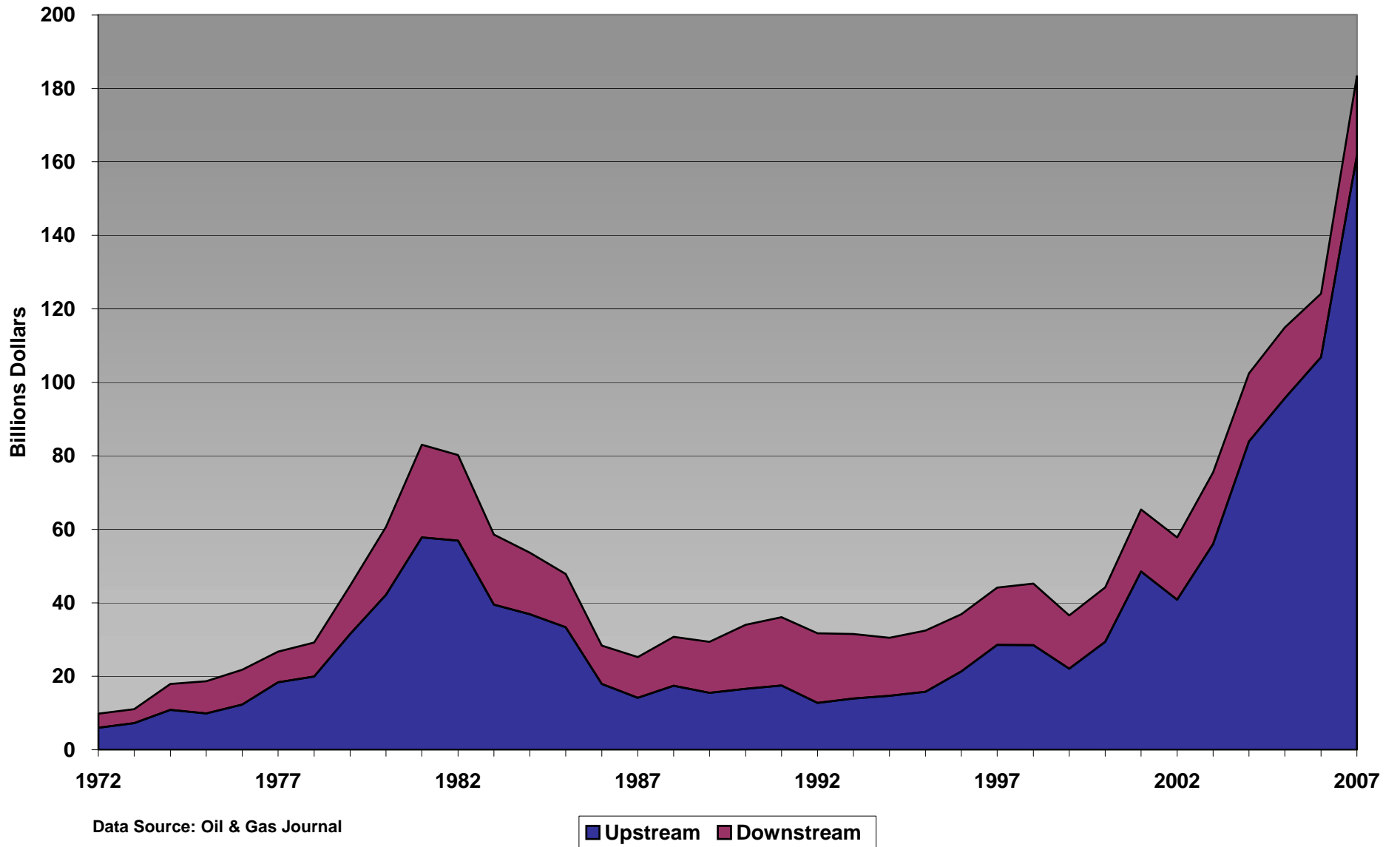


# Nevertheless, gasoline production has increased dramatically

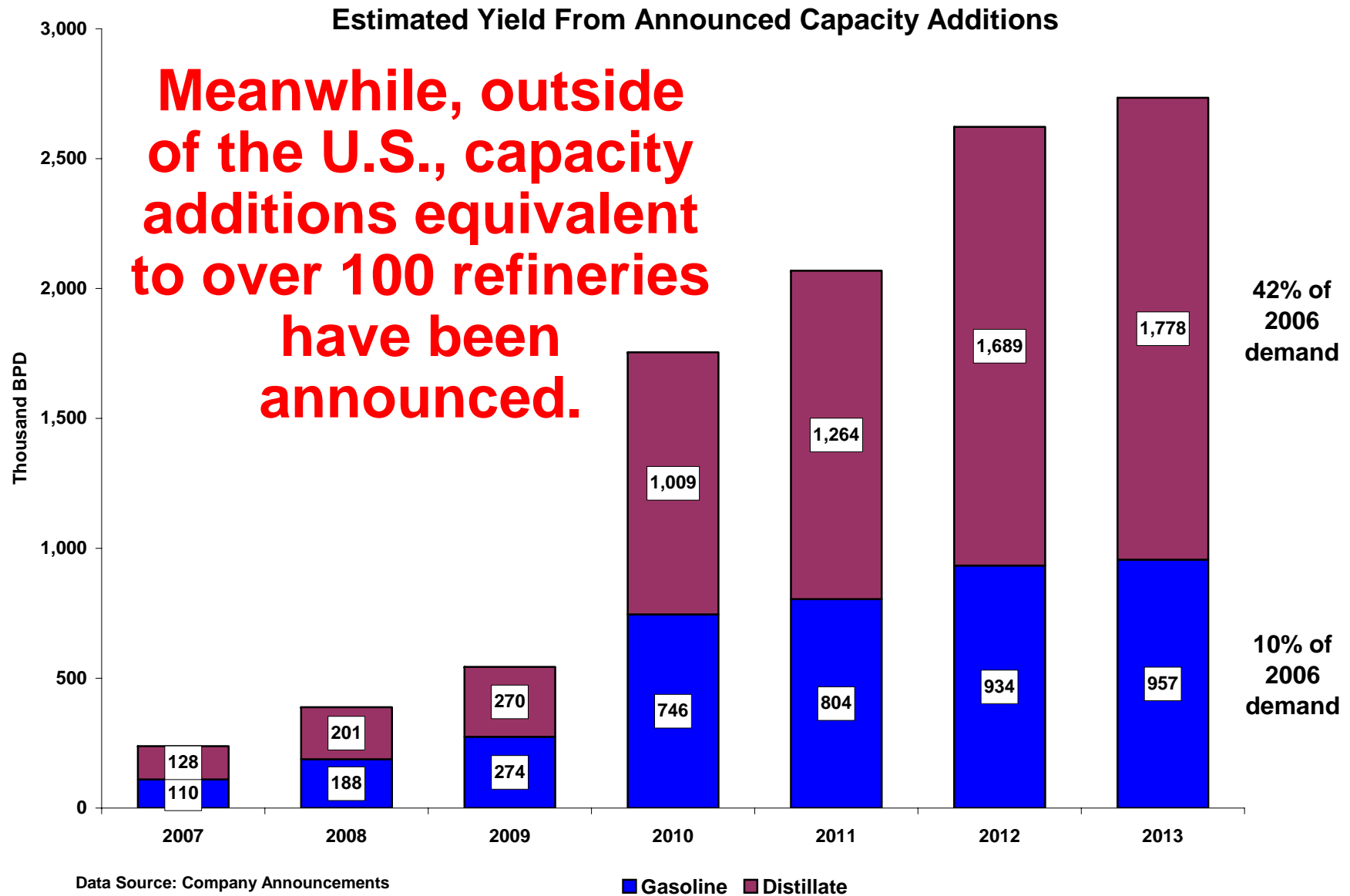
U.S. Refining Capacity



# Petroleum Industry Capital Spending



# U.S. capacity additions equivalent to 14 world scale refineries have been announced – only two are new.



**Even If All The Announced Capacity Is Built, It  
Will Take Significant Time to Achieve.**

**Further, It Only Addresses A Small Piece Of  
The Equation.**

**What Else Needs To Be Done?**

# Let The Market Work, Providing Incentives To:

*Expand Capacity*

*Improve Energy Efficiency*

*Deliver Energy Alternatives*

# Is Ethanol The Solution?

- Biofuels hold great promise and will continue to provide an increased share of the transportation fuels used in the U.S., but additional government mandates and increased subsidies are not the answer.
- Specifically, corn-based Ethanol must be further studied to determine its supply utility, as well as its potential environmental benefits and drawbacks.
- At present, corn-based ethanol is generally more expensive than regular gasoline. Ethanol provides 30 percent fewer miles per gallon than regular gasoline.
- More promising Cellulosic ethanol is years away from being commercially viable.

# What Should Not Be Done?

**We Should Not Distort Price Signals And Discourage Energy Investment...**

## *Actions Now Being Considered*

- Price Control / Price Gouging Legislation and Criminalization
- Increased Mandates
- Increased Environmental Regulation
- Company Divestitures
- CO2 Regulation
- Permit Challenges
- Windfall Profit Taxes
- Interference With Maintenance Schedules

**Let The Market Work, Providing Incentives To Expand Capacity and Fuel Alternatives**

# What are the Potential Consequences?

**In Aggregate, The Legal, Legislative And Regulatory Agenda Being Pursued By Special Interests Will Come At The Expense Of Consumers And Employers**

- Higher Prices (energy, fuel, food, services)
- Fuel Shortages
- Increased Reliance on Foreign Sources of Energy (crude oil as well as gasoline and other fuel products)
- Decreased Capital Investment in U.S. Energy Sector
- Less Domestic Energy Capacity, Lower Economic Growth and Job Losses
- Diminished Economic and National Security