

**MIT Energy Club  
March 2007**

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# **Does Wall Street Move the Oil Price?**

**John E. Parsons**



Center for Energy and Environmental Policy Research

# Outline

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- **The Crime**
- **The Charge**
- **The Suspect**
- **The Investigation**
- **The Verdict**

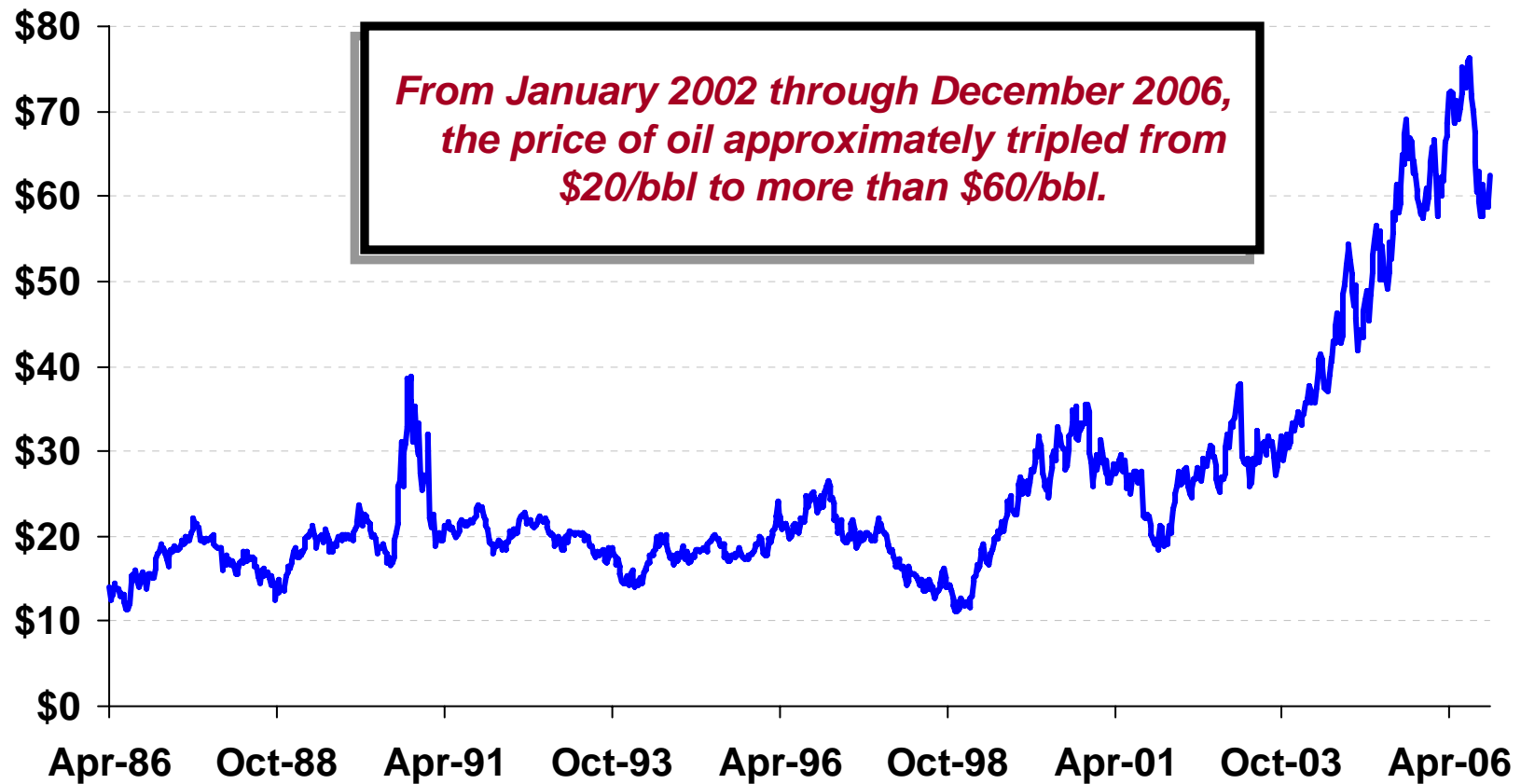
# The Price of Oil, 1986-2006

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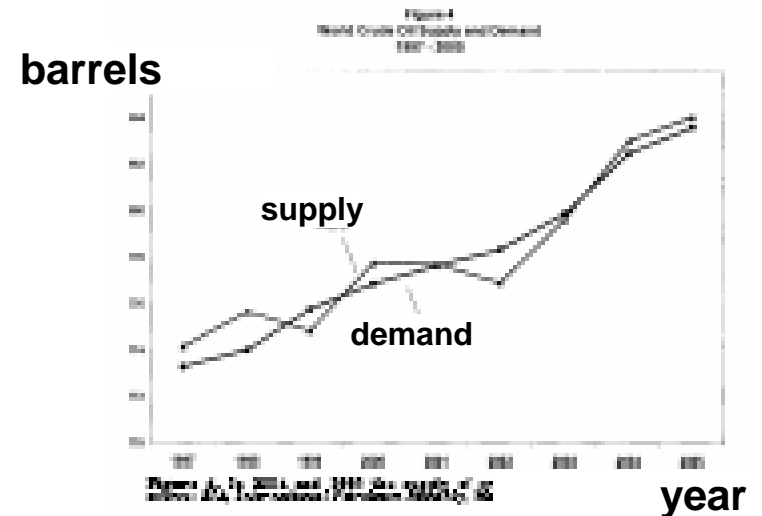
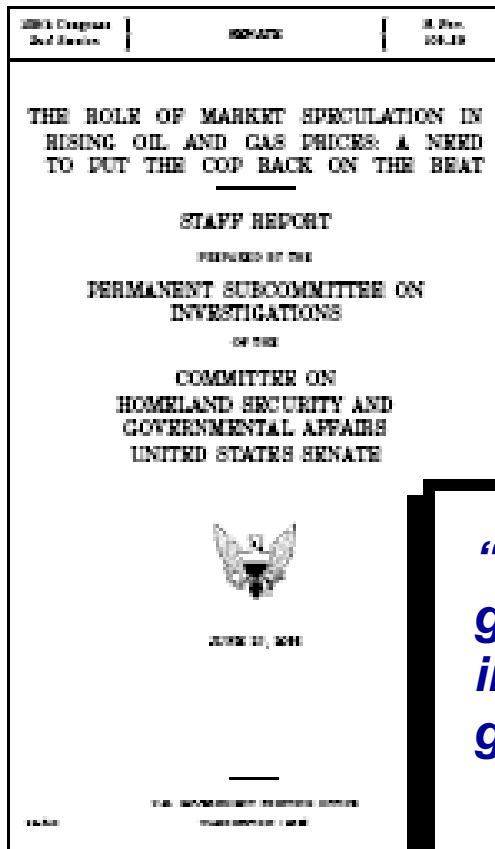


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# Not a Problem of Supply & Demand

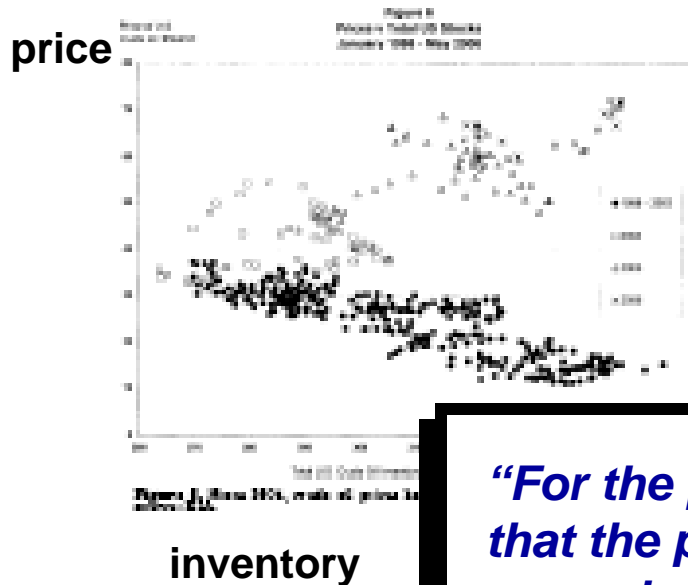


***“As Figure 4 indicates, over the past couple of years global crude oil production has increased along with increases in demand; in fact, during this period global supplies have exceeded demand.”***

***Staff Report, Senate Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, June '06***

# Breakdown in the Price-Inventory Relationship

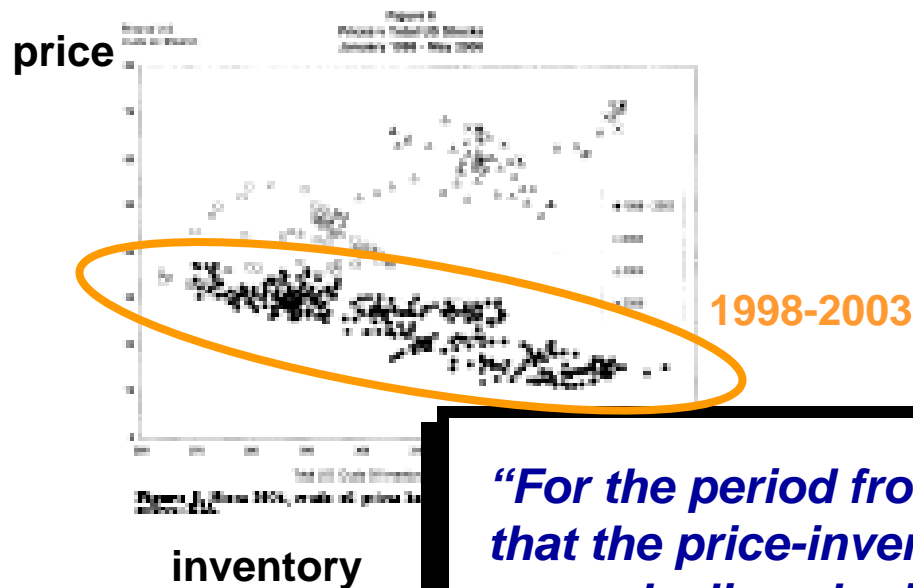
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*“For the period from 1998 through 2003, [Figure 6] shows that the price-inventory relationship generally centered around a line sloping from the middle-left of the chart down to the lower right, meaning that low inventories were accompanied by high prices, and high inventories were accompanied by low prices.”*

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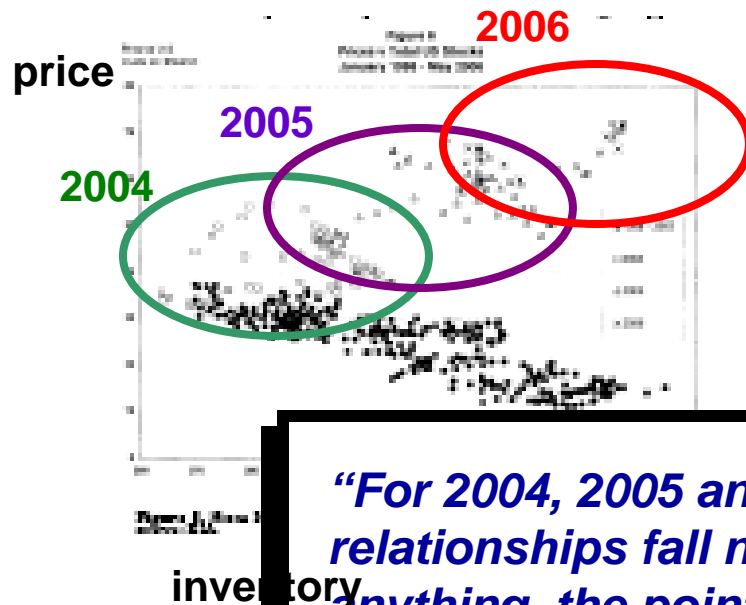


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# Breakdown in the Price-Inventory Relationship

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*“For 2004, 2005 and through May 2006, ...the inventory-price relationships fall nowhere near this downward sloping line; if anything, the points seem to go in the opposite direction, such that higher inventories seem to be correlated with higher prices. Figure 6 clearly indicates that there has been a fundamental change in the oil industry, such that the previous relationship between price and inventory no longer applies.”*

*Staff Report, Senate Permanent Subcommittee on Investigations,  
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## **Seconded by the Now Former CEO of ExxonMobil, Lee Raymond**

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***“Senator, the facts are—and I’ve said this publicly for a long time—the oil prices have been moving steadily up for the last 2 years. And I think I have been very clear in saying that I don’t think that the fundamentals of supply and demand—at least as we have traditionally looked at it—have supported the price structure that’s there.”***

**Joint Hearing before the Senate Committee on Commerce, Science and Transportation and the Senate Committee on Energy and Natural Resources, November 9, 2005**

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# The Charge



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# The Charge: It's the Speculators!

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*“Concurrent with the most recent sustained run-up in energy prices, large financial institutions, hedge funds, pension funds, and other investors have been pouring billions of dollars into the energy commodities markets to try to take advantage of price changes or hedge against them. Most of this additional investment has not come from producers or consumers of these commodities, but from speculators seeking to take advantage of these price changes. ... Reports indicate that in the past year a few speculators have made tens and perhaps hundreds of millions of dollars trading in oil and gas. The large purchases of crude oil futures contracts by speculators have, in effect, created an additional demand for oil, driving up the price of oil for future delivery in the same manner that additional demand for contracts for the delivery of a physical barrel today drives up the price for oil on the spot market.”*

*Staff Report, Senate Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, June '06*

# A View Surprisingly Reinforced by BP's Now Outgoing CEO, Lord Browne

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THE  TIMES

*“Lord Browne blamed [the increase of the crude oil price] on nervousness in the financial markets over the conflict in Iraq and a big increase in activity by speculative financial investors in oil. He said: ‘The scale of this [financial investment] has risen significantly, it has got much larger. We don’t know whether it makes things more volatile. It is the case that the price of oil has gone up while nothing has changed physically.’ ”*

quoted in *The Times* of London, April '06

# What We Know

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***“FINDINGS:***

***...***

***Speculation Has Increased Prices.”***

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# What We Know

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***“FINDINGS:***

***...***

***Speculation Has Increased Prices. Speculation has contributed to rising U.S. energy prices, but gaps in available market data currently impede analysis of the specific amount of speculation, the commodity trades involved, the markets affected, and the extent of price impacts.”***

***Staff Report, Senate Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, June '06***

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# The Suspect



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# Who Are These 'Speculative Financial Investors'?

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## ■ Utilizes the Futures Market

- buy 2<sup>nd</sup> maturity futures contract
- then, as time passes and it becomes the 1<sup>st</sup> or nearest maturity contract, roll out of it and into the new 2<sup>nd</sup> maturity contract

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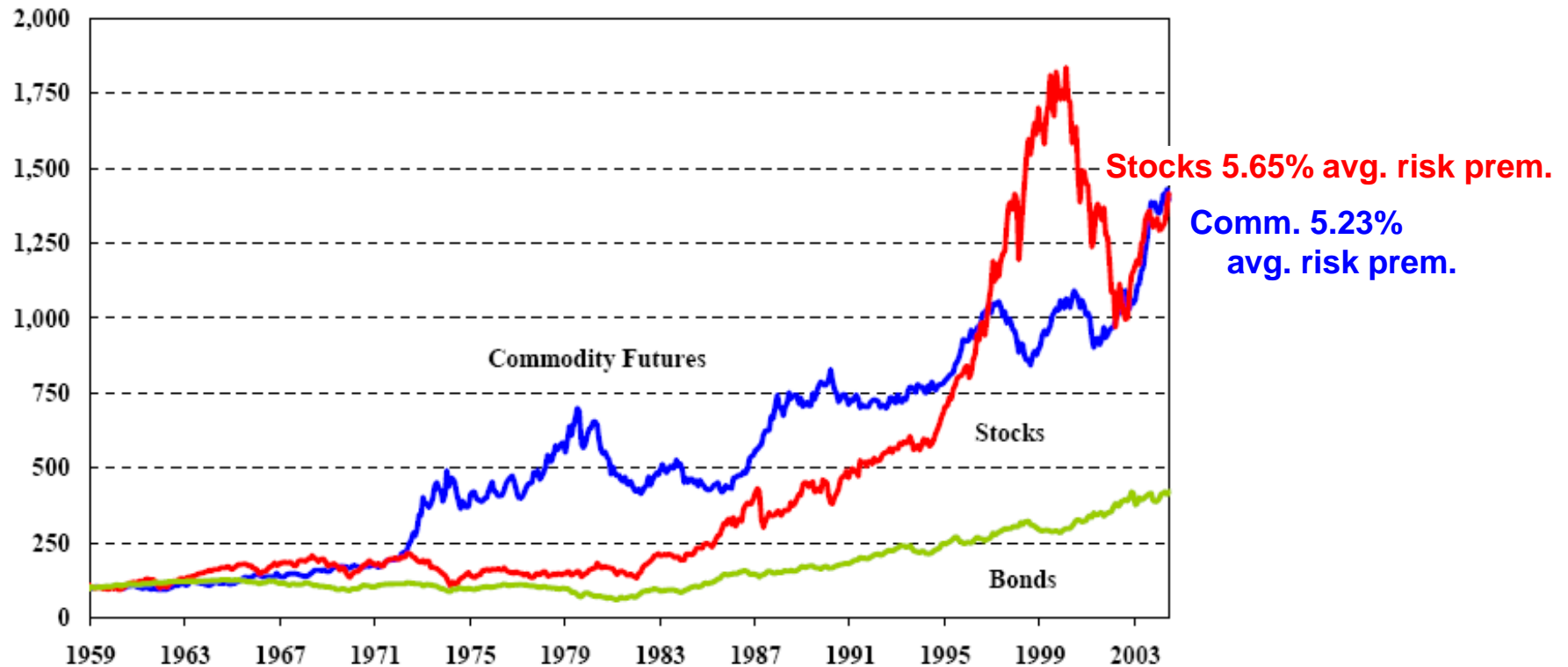
## ■ A diversified commodity index

- But energy commodities dominate...approx 70% of capitalization
- Within energy crude is 44%, natural gas 9%

# Recent Returns Have Driven Their Popularity

Figure 3

Stocks, Bonds, and Commodity Futures  
Inflation Adjusted Performance 1959/7-2004/12

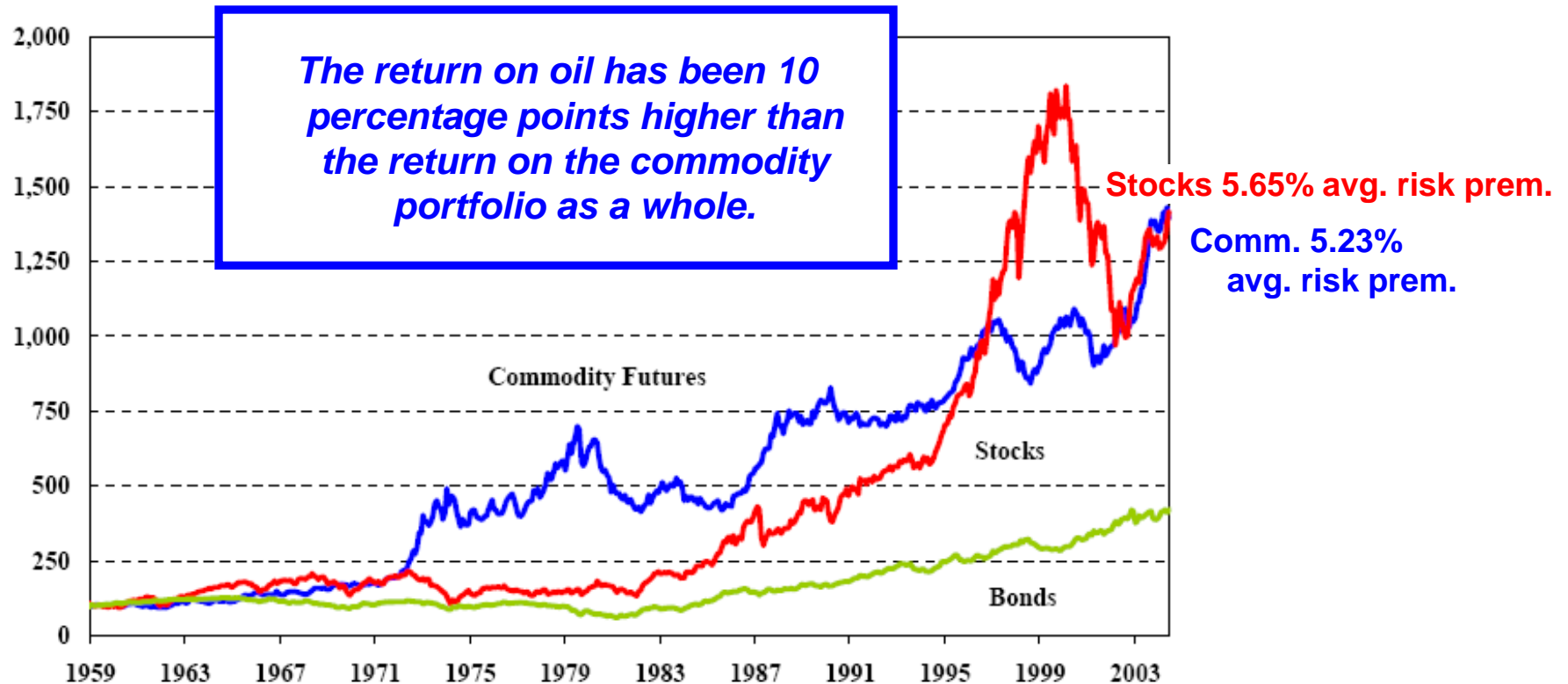


from *Facts and Fantasies about Commodity Futures* by Gary Gorton and K. Geert Rouwenhorst, 2005

# This Has Largely Been Due to Returns on Oil

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# How Big is This Pool of Capital?

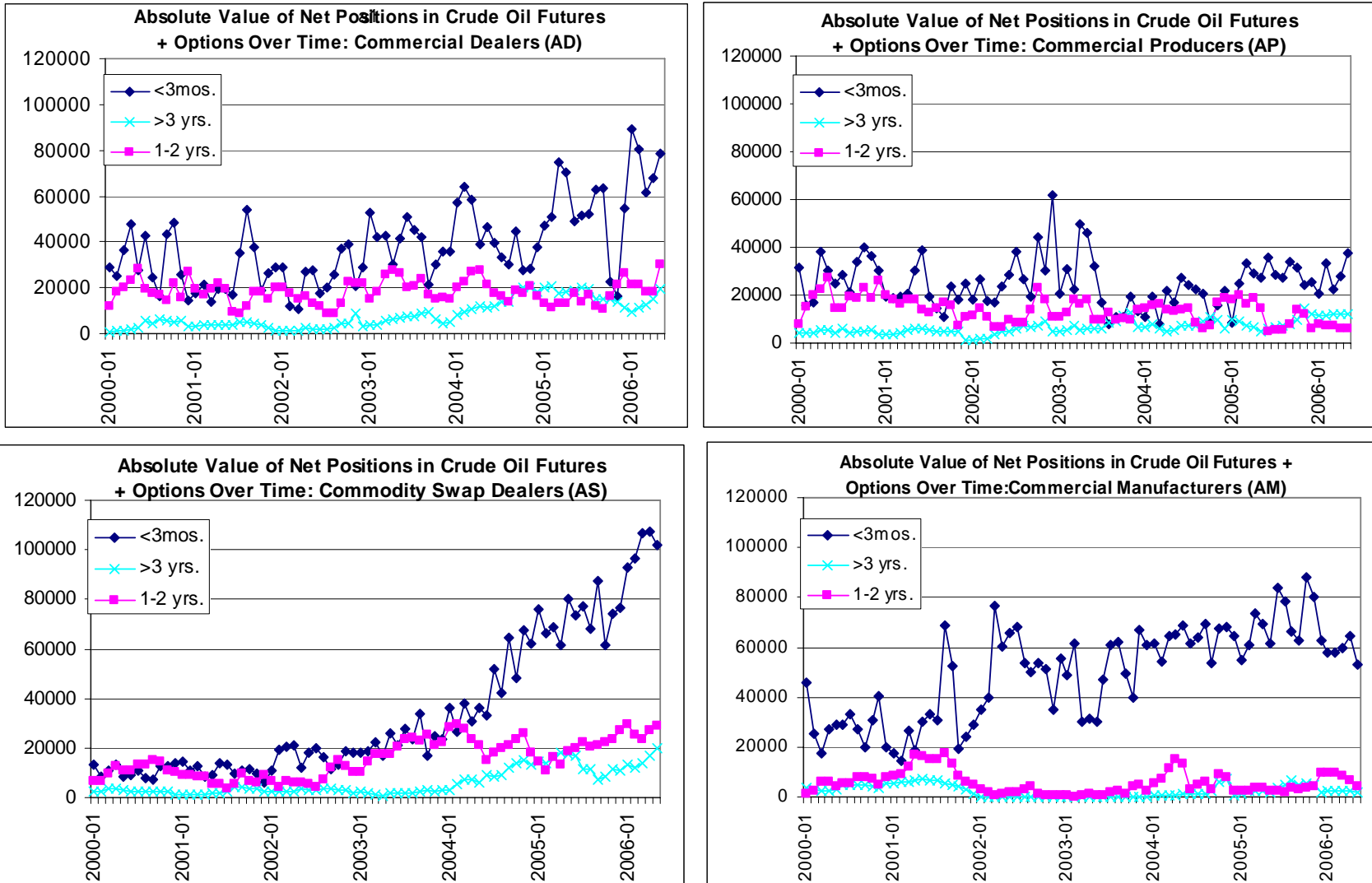
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- COT report on the NYMEX gives a peek at one small slice of the market

*“...commodity swap dealers’ net positions increased by an order of magnitude, from just over 10,000 contracts in 2000 to almost 100,000 contracts in 2006. This massive growth started in 2002, and accelerated sharply from mid-2004 onward.”*

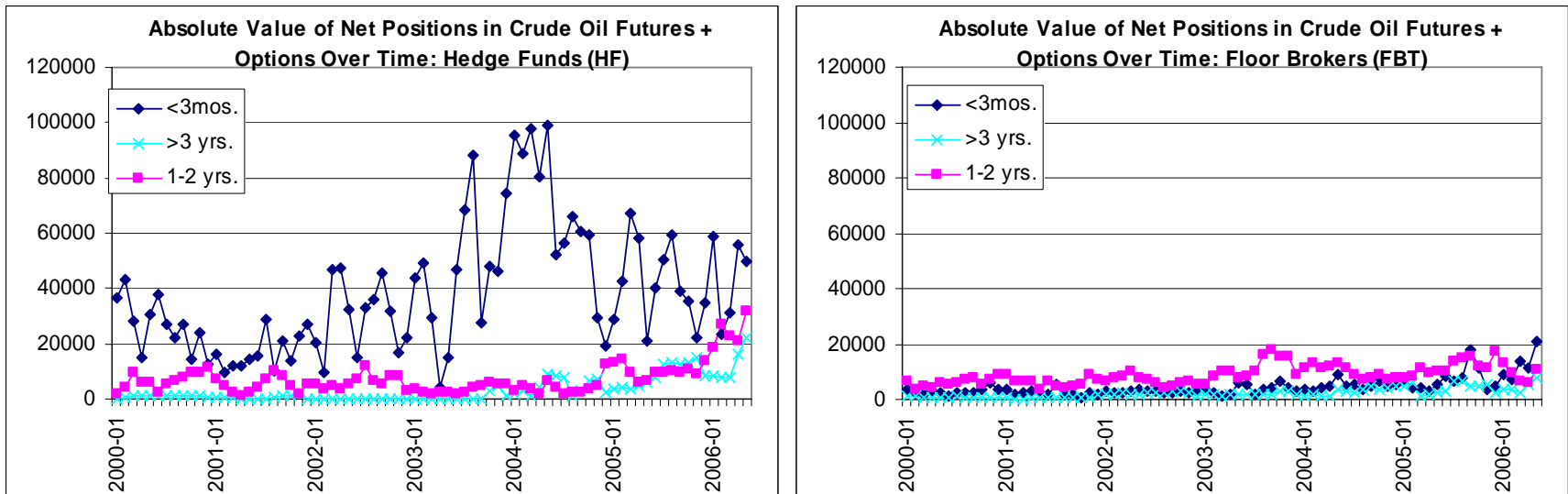
*CFTC Report, '07*

**Figure 5a: Magnitude of Short- vs. Long-term Net Positions of Commercial Trader Types, 2000-2006**



**Notes:** Figure 5a shows the average monthly magnitudes of the net futures + adjusted options (i.e., futures equivalent) positions, by contract maturity, of the four commercial trader types: AD = Dealer/Merchant, AP = Producer, AM = Manufacturer, and AS = Commodity Swaps/Derivatives Dealer (which includes FS = Financial Swaps / Derivatives Dealer FA = Arbitrageur or Broker/Dealer). After taking the absolute value of the daily net positions in each contract for each trader group, figures are summed up appropriately (e.g., for all positions less than 3 months, etc.), and the annual averages are then computed. The graphs are scaled to allow for easy comparisons of the relative sizes of the net positions held by different trader categories. Figure 5a is directly comparable to Figure 3a above and to Figure 6a below.

**Figure 5b: Magnitude of Short- vs. Long-term Net Positions of the Major Non-Commercial Trader Types, 2000-2006**



**Notes:** Figure 5b shows the average monthly magnitudes of the net futures + adjusted options (i.e., futures equivalent) positions, by contract maturity, of the two major non-commercial trader categories: HF = Hedge Fund, and FBT = Floor Broker/Floor Trader. After taking the absolute value of the daily net positions in each contract for each trader group, figures are summed up appropriately (e.g., for all positions less than 3 months, etc.), and the annual averages are then computed. The graphs are scaled to allow for easy comparisons of the relative sizes of the net positions held by different trader categories. Fig. 5b is directly comparable to Figure 3b above and to Figure 6b below.

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- Total value of oil consumption in one year is approx \$1,900 billion

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# The Investigation



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# **What is the Play? Why Invest in Commodities?**

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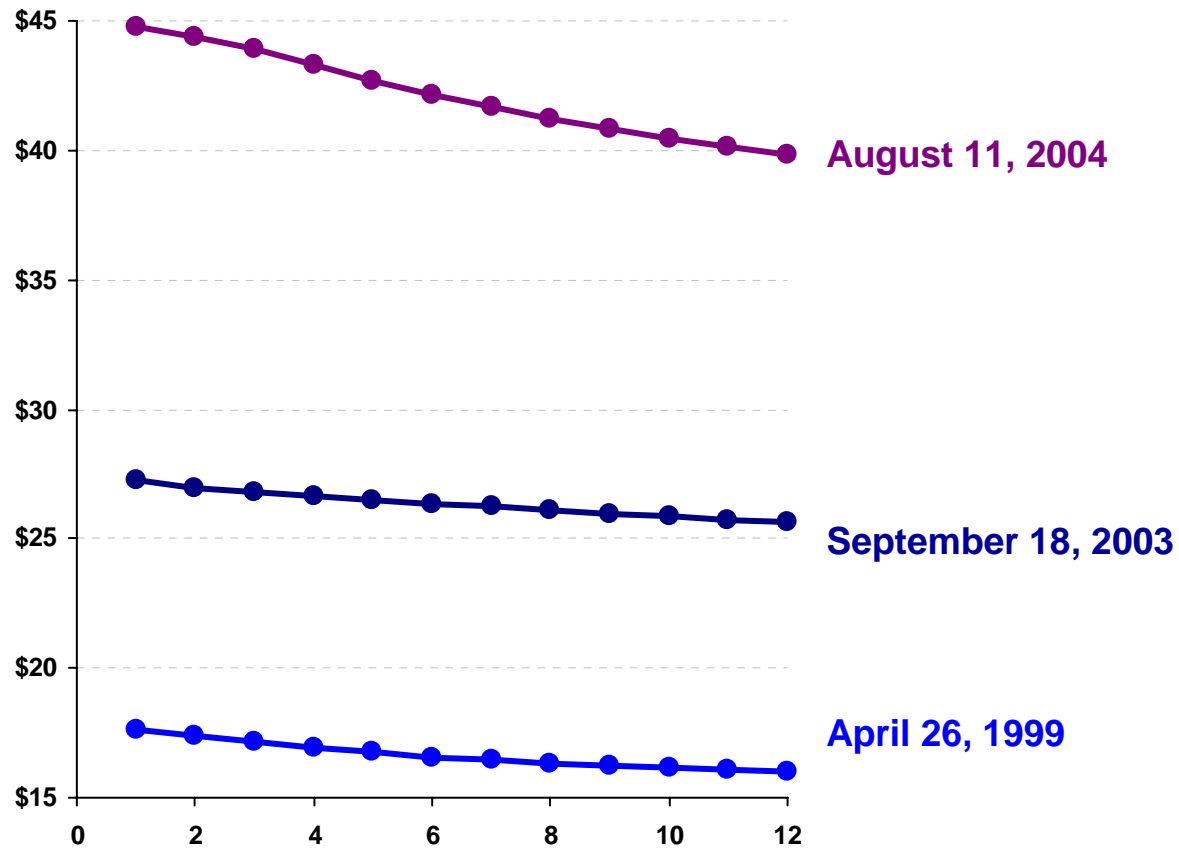
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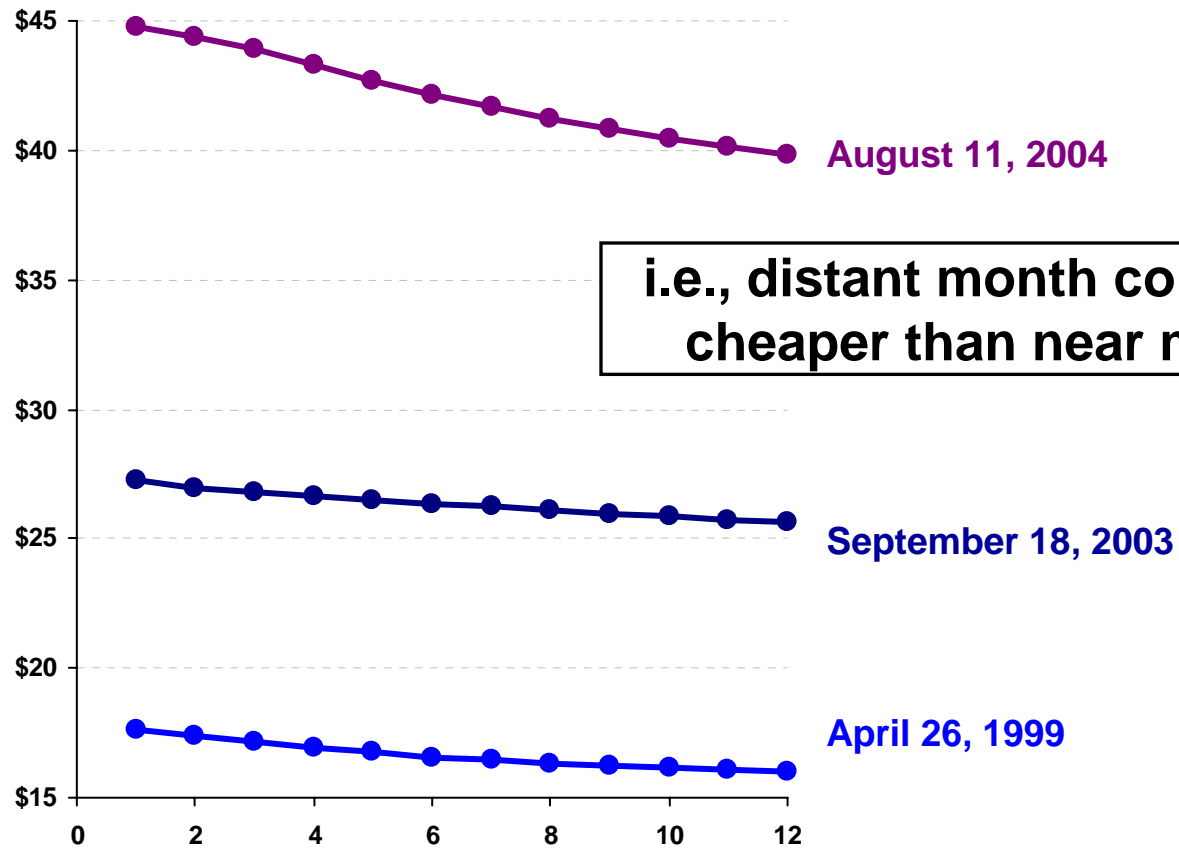
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- A play on Backwardation.

# Historically, Oil Futures are “Backwarddated”

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# Profit on Backwardation

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- buy oil forward at the lower futures price
- as time moves along, and assuming the spot price stays constant, the futures contract maturity shortens and its price must rise to meet the spot price
- close out the contract at the higher price

# Inventories, Risk and Return

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- **Holding some level of inventories is a necessary element of the oil business.**
  - both in storage and in-process
- **Holding inventories entails some risk.**
  - the price may move while the inventory is in hand, resulting in an appreciation or depreciation in value
- **Risk is priced; holding risk earns a return.**

# **Futures and Inventory Risk**

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- **Inventory holder can shed price risk by selling the inventory forward, i.e, by selling a futures contract.**
- **Financial investor can take the price risk by buying the futures contract.**
- **Financial investor also captures the return.**
- **Profit on Backwardation is the return to holding the short-term spot price risk**

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# The Verdict



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## Speculative or Financial Capital Can Move Prices

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September 29, 2006

*“Goldman Sachs, which runs the largest commodity index, the G.S.C.I., said in early August that it was reducing the index’s weighting in gasoline futures significantly. “They started unwinding their positions, and those other longs also rushed to the door at the same time,” said Lawrence J. Goldstein, president of the Petroleum Industry Research Foundation. Wholesale prices for New York Harbor unleaded gasoline, the major gasoline contract traded on the New York Mercantile Exchange, dropped 18 cents a gallon on Aug. 10, to \$1.9889 a gallon, a decline of more than 8 percent, and they have dropped further since then.”*

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- Impact on the timing of price changes is different from causing a long-term, significant increases in the level.

*“With the demand from the investment community, oil prices have moved up sooner than they would have otherwise.”*

**Alan Greenspan, in testimony before the Senate Committee on Foreign Relations, June 7, 2006**

# Key Distinction: the Level vs. the Shape of the Forward Curve

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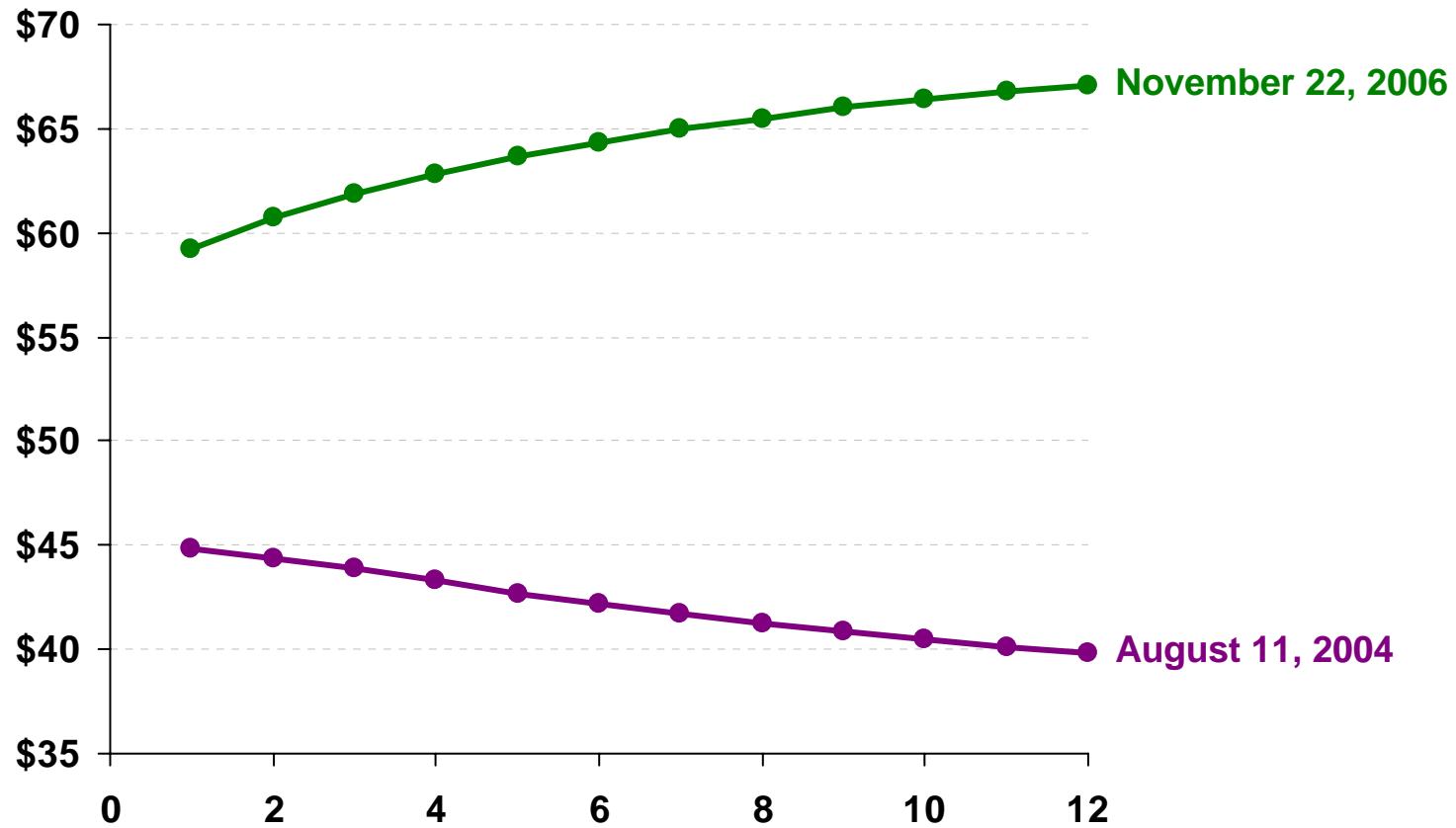
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- **This influx of capital at the short-end of the forward curve can change the shape of the curve.**

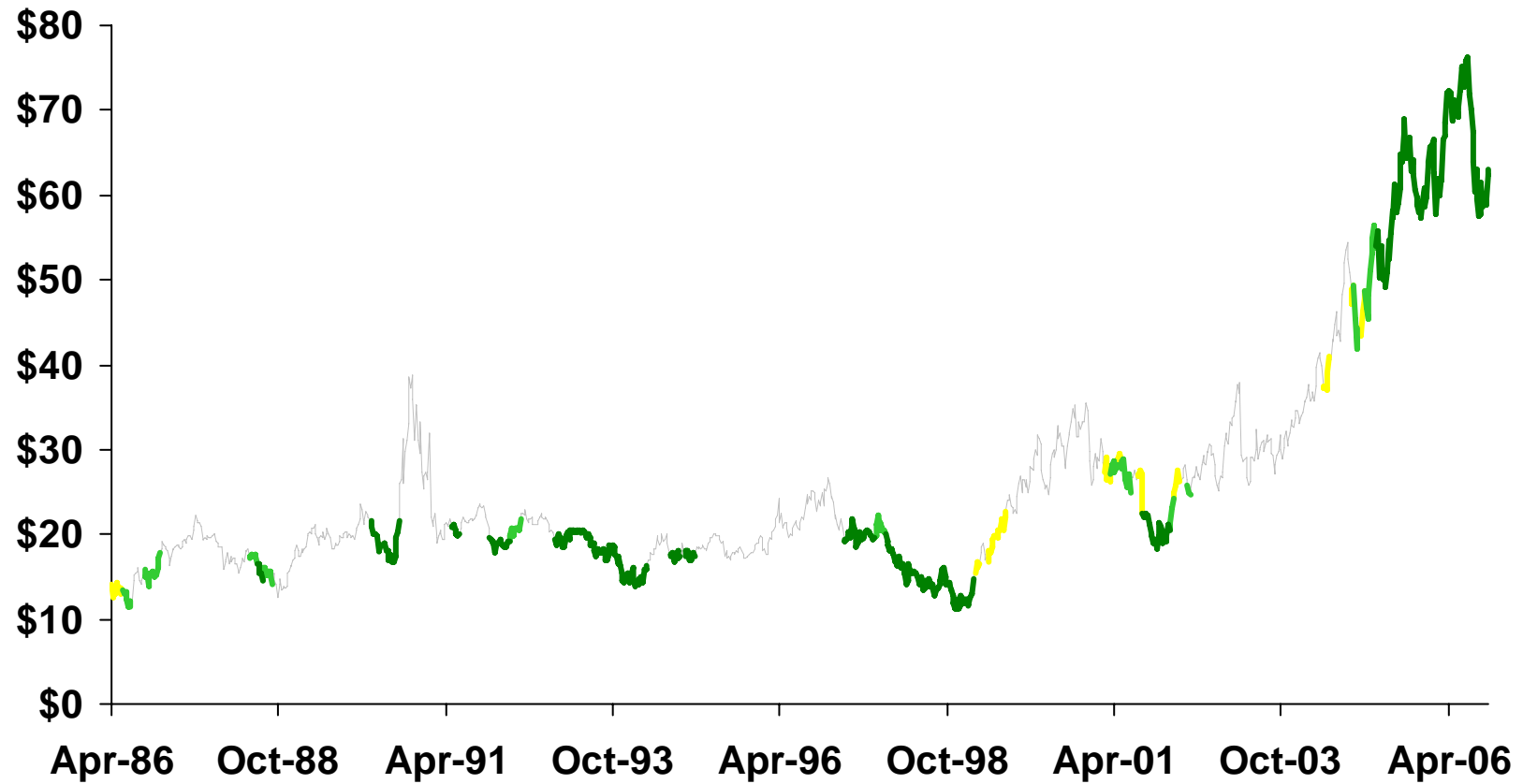
# Recently, Oil Futures Moved Into “Contango”

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# This is Not an Unheard of Phenomenon

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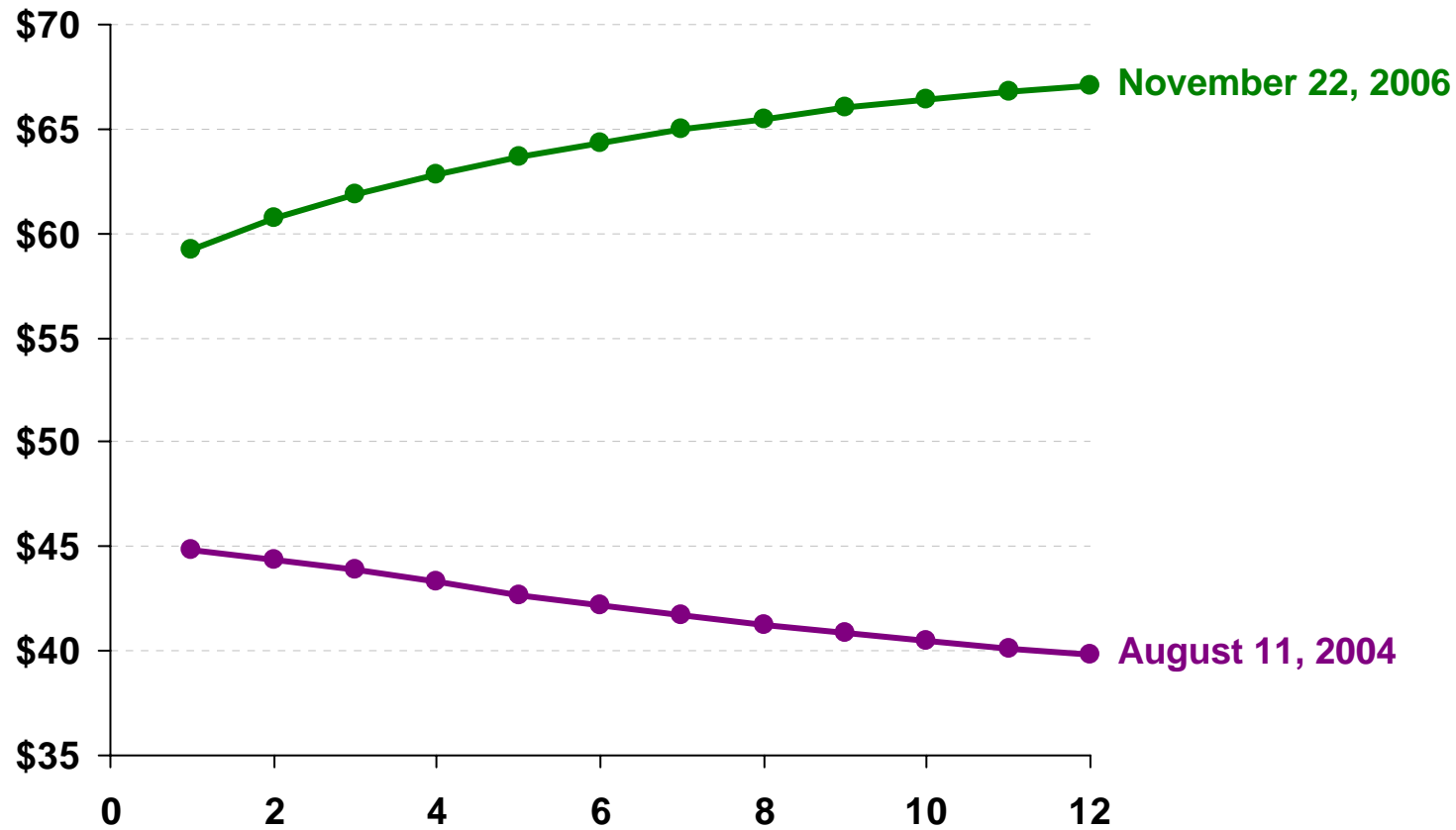
# But Something is Different Now

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# Speculative Capital May Have Moved the Short-End of the Curve *DOWN*

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# Back to Fundamentals!



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