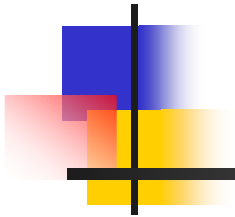


The Oil Price and the Global Oil Market



WBI Seminar on Oil Price Volatility

June 4th, 2008

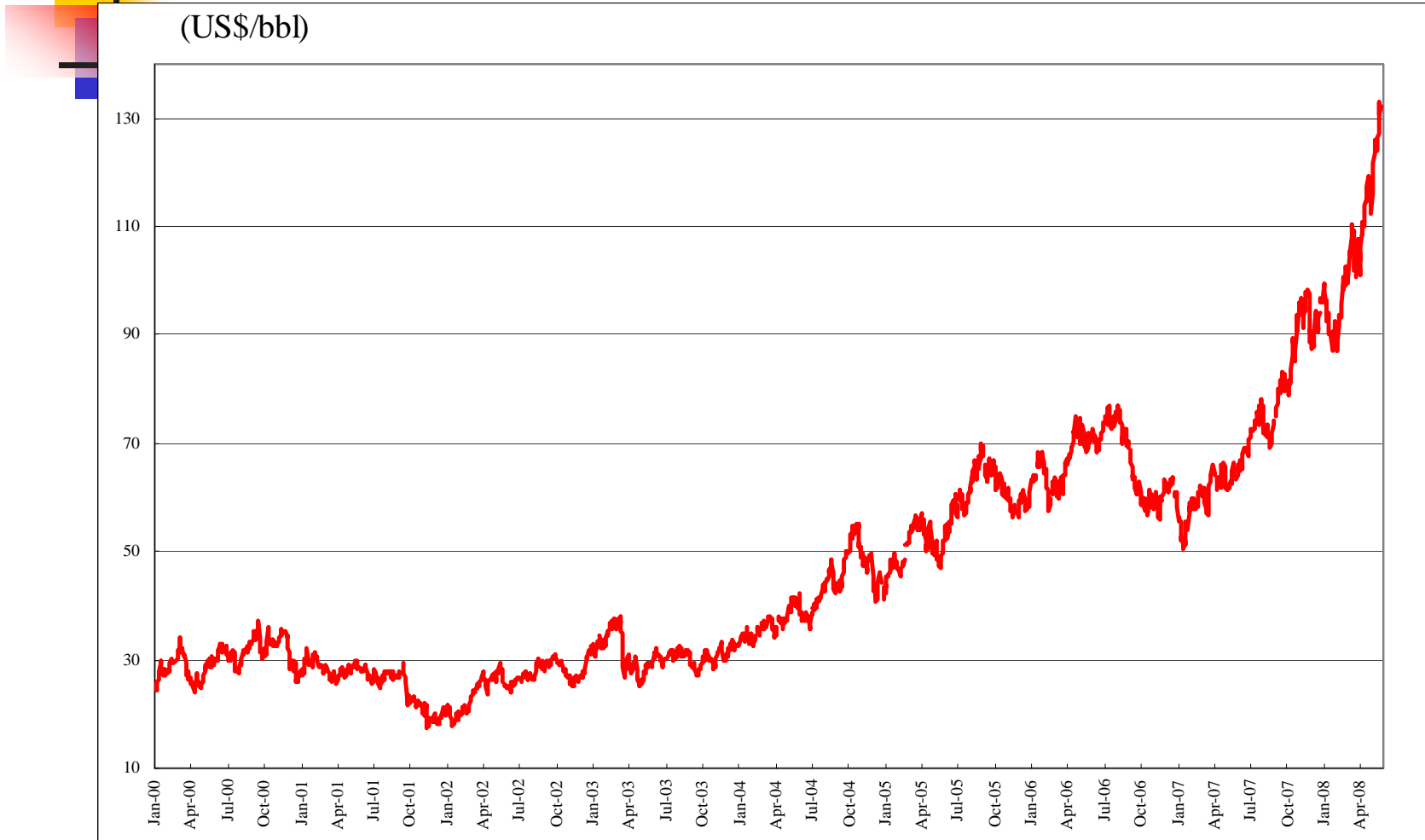
Ken Koyama, PhD

Director

The Institute of Energy Economics, Japan

WTI reached its historical high

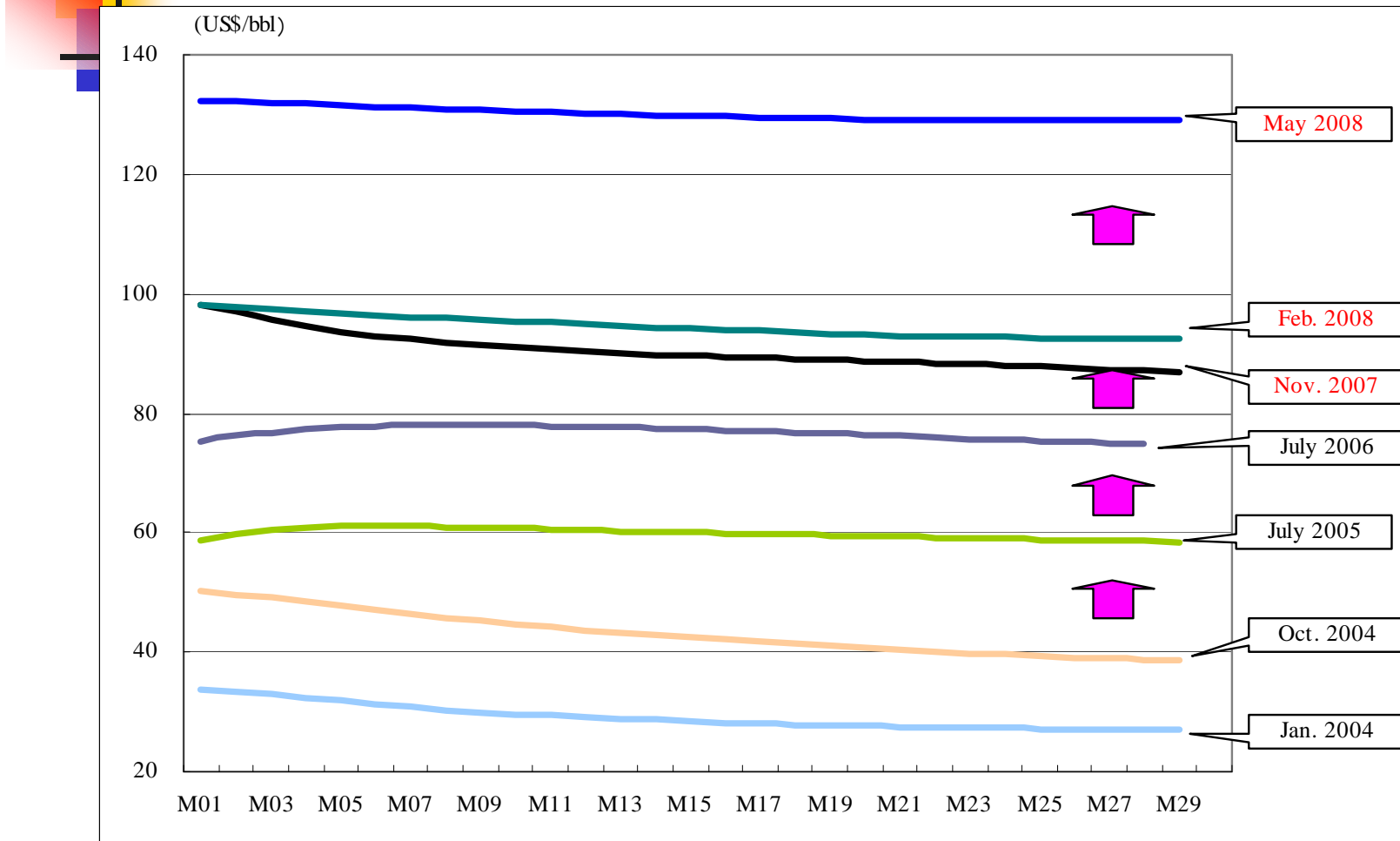
WTI prices reached 130\$ in May 2008



(Source) NYMEX data

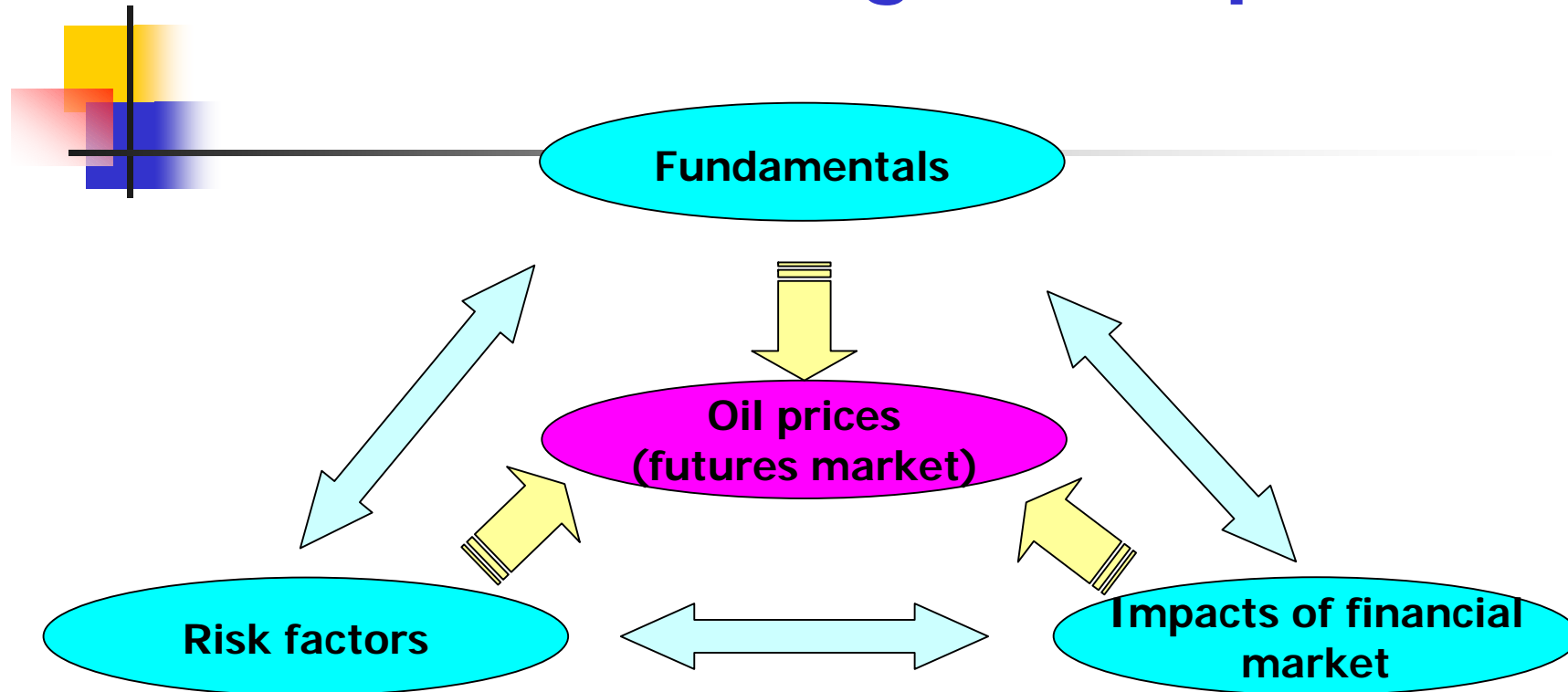
Upward Shifts in Futures Price Curves

Price curves shifted upward after 2004, jump in 2008



(Source) Prepared from NYMEX data

Factors affecting the oil price

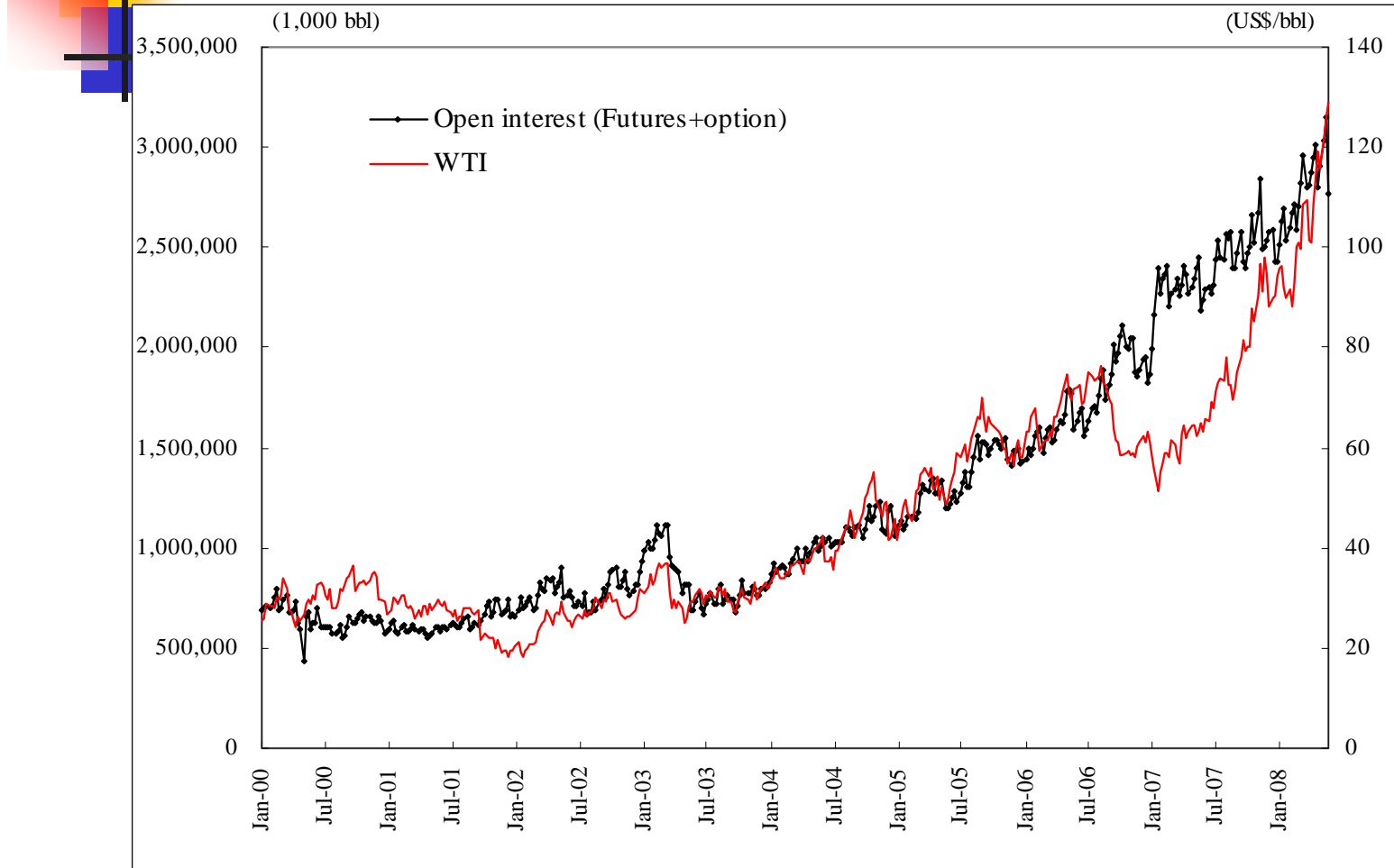


Market sentiments on the above factors matter with regard to short-term oil price formation

..., professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most corresponds to the average preferences of the competitor as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. ... we devote our intelligences to anticipating what average opinion expects the average opinion to be. (J. M. Keynes "The General Theory of Employment, Interest and Money")

NYMEX Open Interests and WTI prices

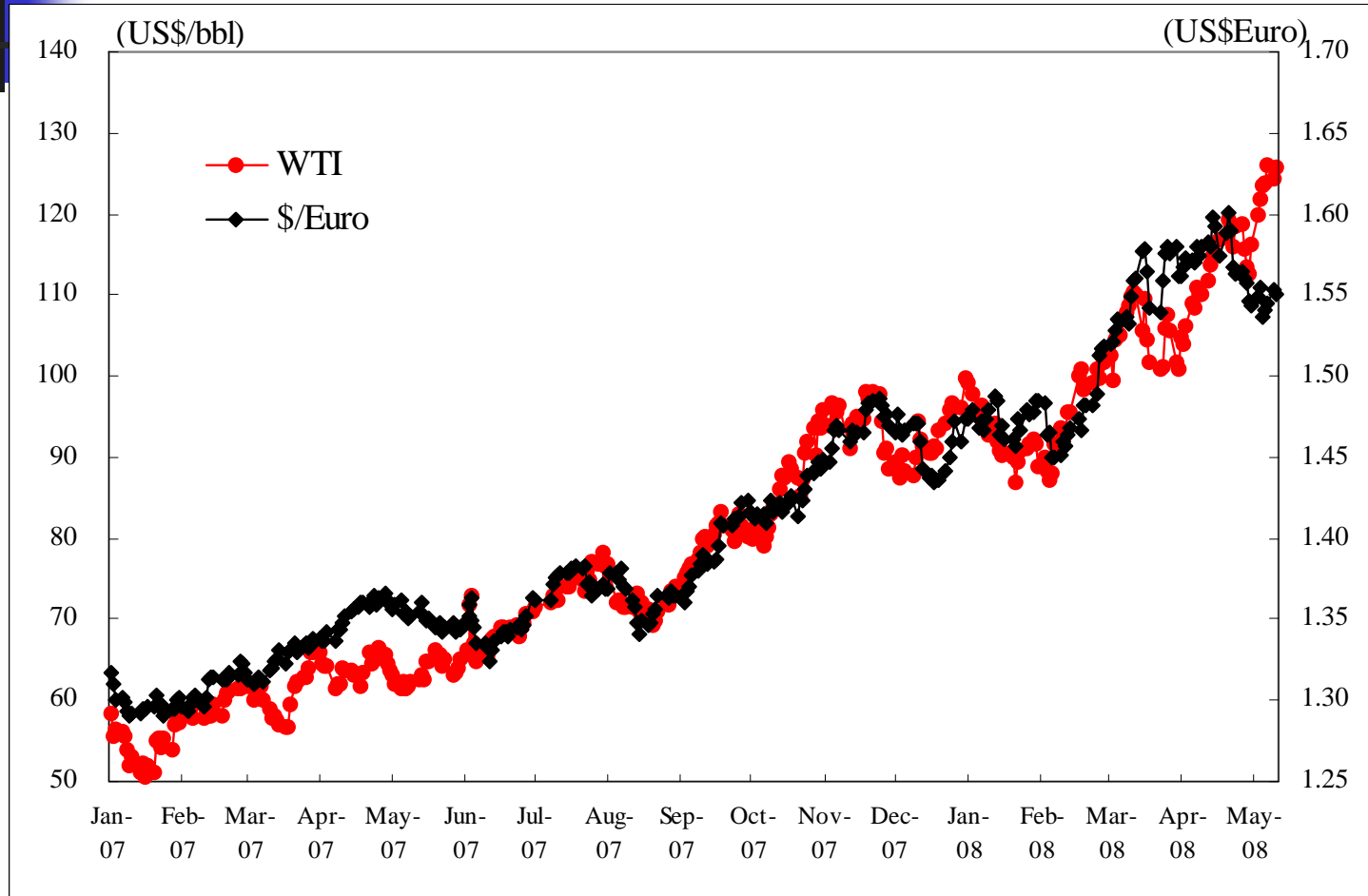
OI increased after 2004, while WTI also on the rise



(Source) Prepared from NYMEX and CFTC data

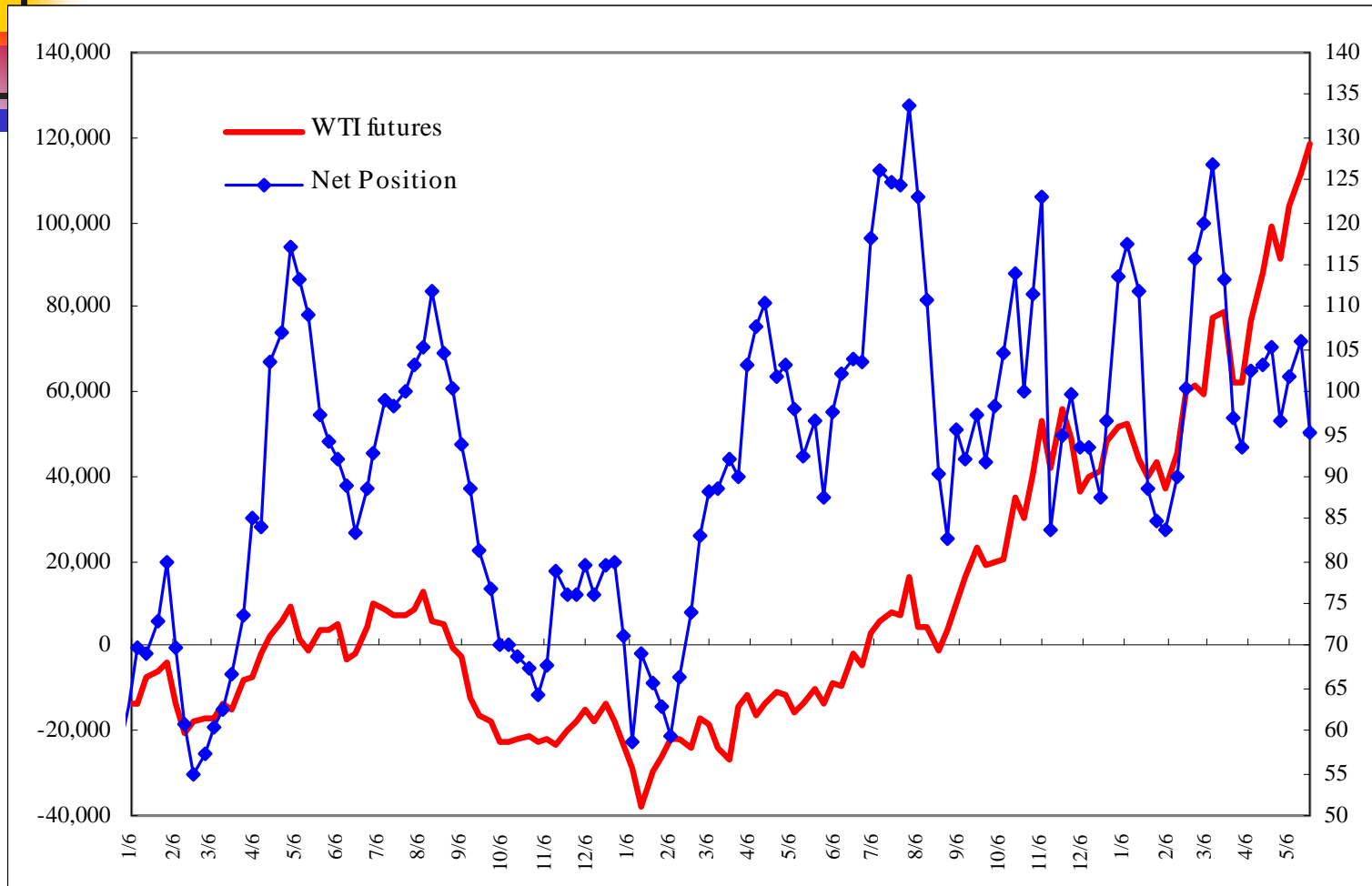
Financial market and WTI prices

WTI prices rose with weakening dollar



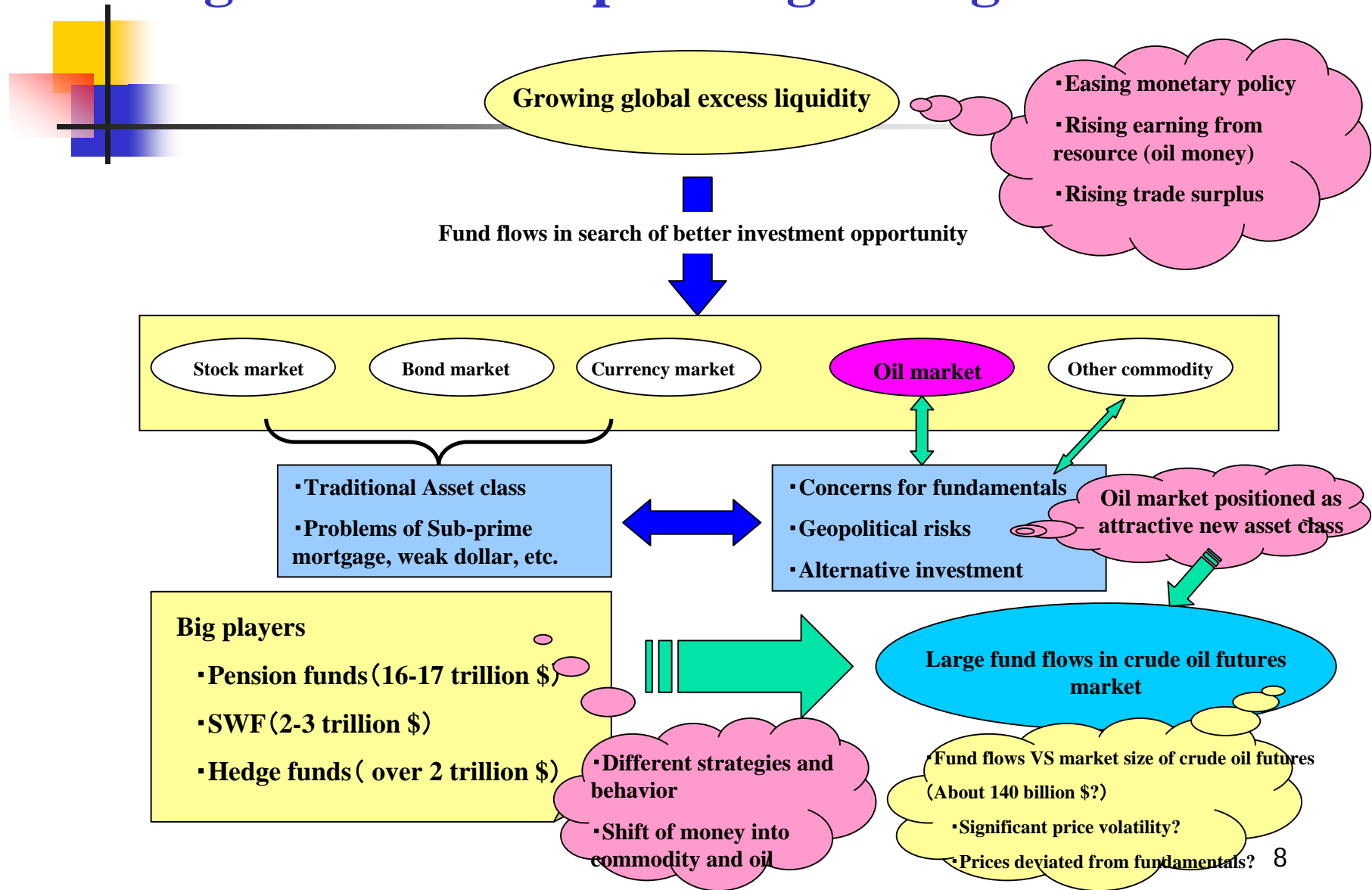
(Source) Prepared from NYMEX data and others

Non-Commercial Position and WTI



(Source) Prepared from NYMEX and CFTC data

Background and impact of growing fund flows



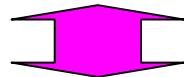
Linkage between energy market and financial markets



- Global liquidity bubbles
- Energy viewed as an attractive market to invest (by speculators, institutional investors, etc.)
- “Sub-prime mortgage”, weak dollar and issues in financial markets



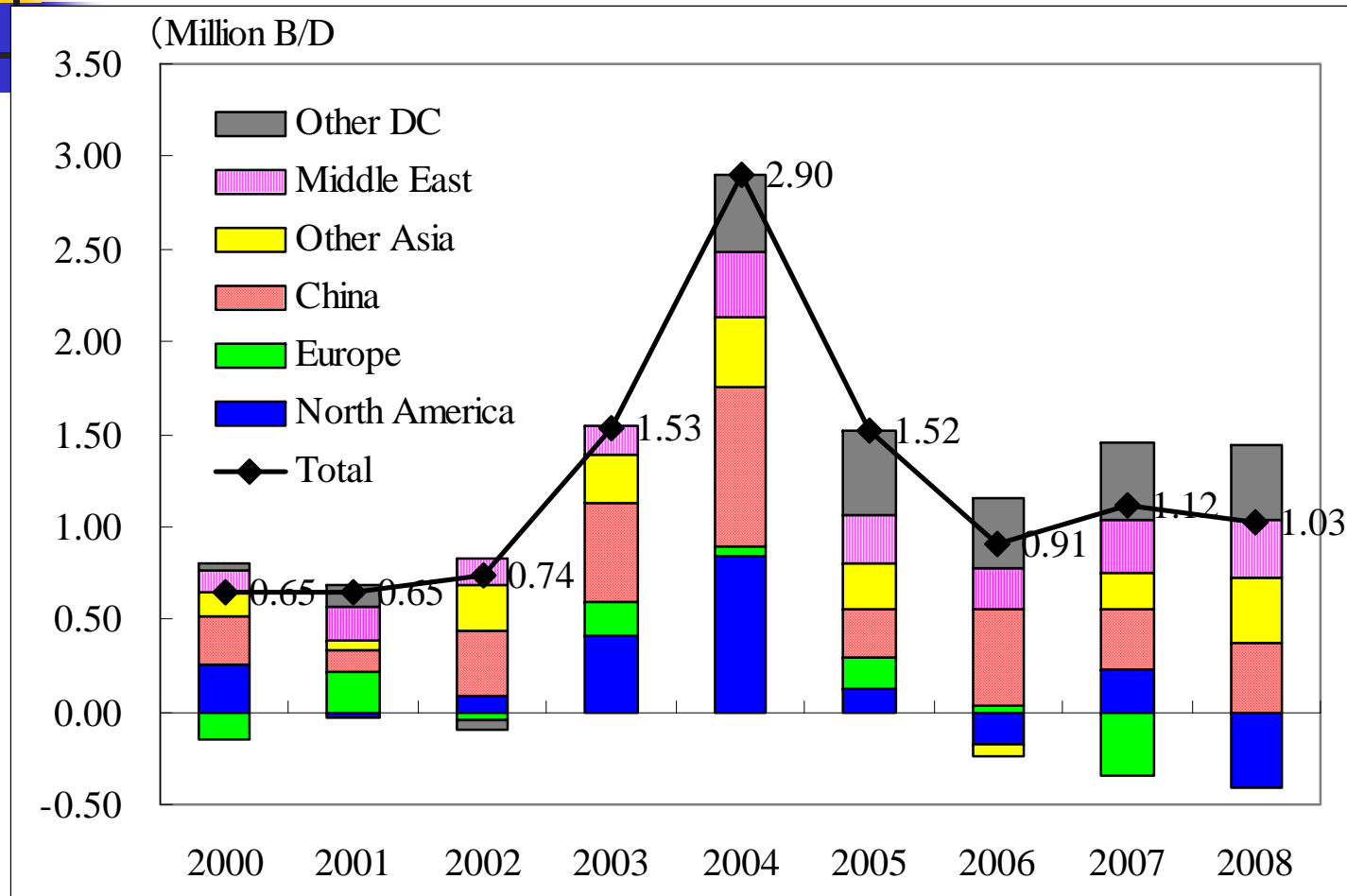
- Give supports and push-up for futures prices?
- Cause high volatility?
- Upward shifts in futures price curves?
- Affect shape of futures curve (backwardation or contango)?



- Interaction between Physical energy markets and financial markets
- Linkage of instability between energy market and financial markets (and world economy)
- Energy price volatility, a hindrance of energy sector investment (of long lead-time nature)?

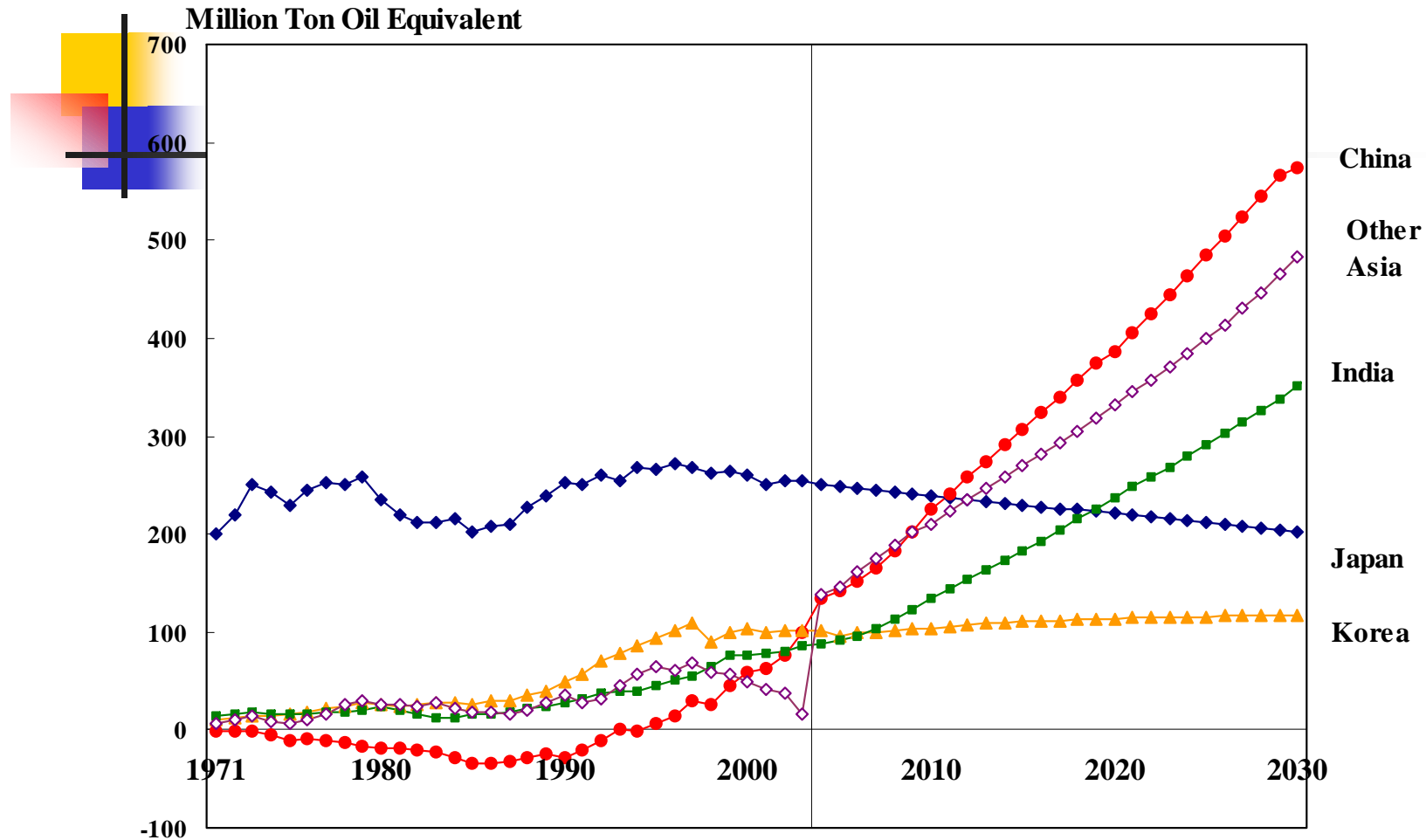
Incremental Growth in World Oil Demand

Demand continued to grow in developing Asia and the Middle East



(Source) Prepared from data in Monthly Oil Market Report (IEA)

Outlook for Net Oil Import by Asian Countries



China's net oil import is projected to expand from 135 million ton in 2004 to 574 million ton in 2030.

India's net oil import is projected to expand from 88 million ton in 2004 to 351 million ton in 2030.

Source: IEEJ (Asia/World Energy Outlook 2007)

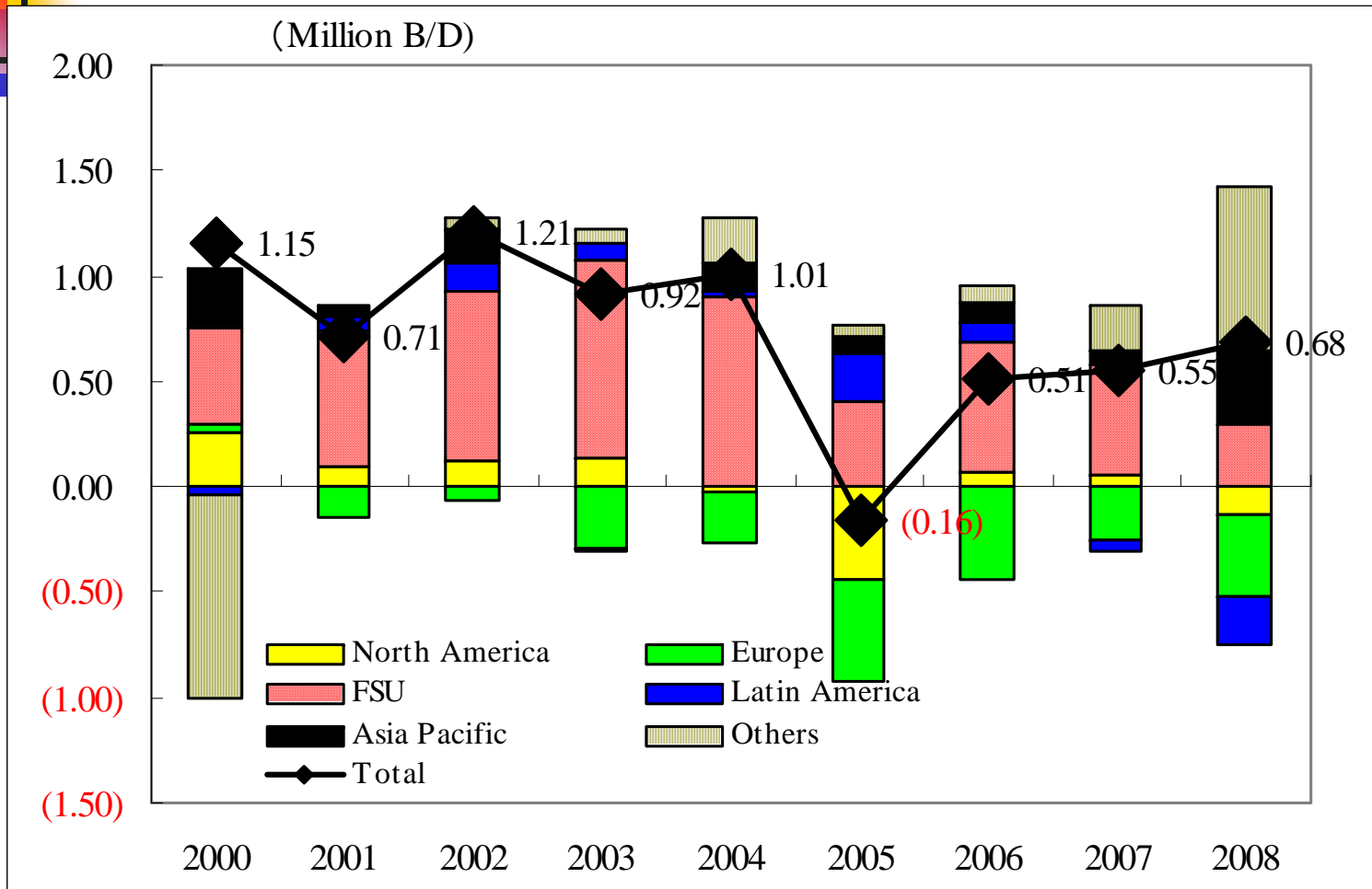
Competition for Access to Energy Resources



- **Growing import dependence is perceived as “vulnerability”**
- **Strategy being taken as a counter measure:**
 - Domestic energy resource development
 - Energy diversification
 - Overseas resource development
 - Promotion of NOCs
- **Excessive pursuit of securing oil supply exclusively may lead to politicize and destabilize world energy markets**
- **Behavior of emerging giants attracts attentions in global energy community**

Incremental Growth in Non-OPEC Supply

Non-OPEC supply growth stagnated after 2005



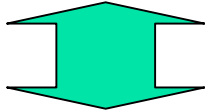
(Source) Prepared from data in Monthly Oil Market Report (IEA)

Emerging concerns for supply constraints



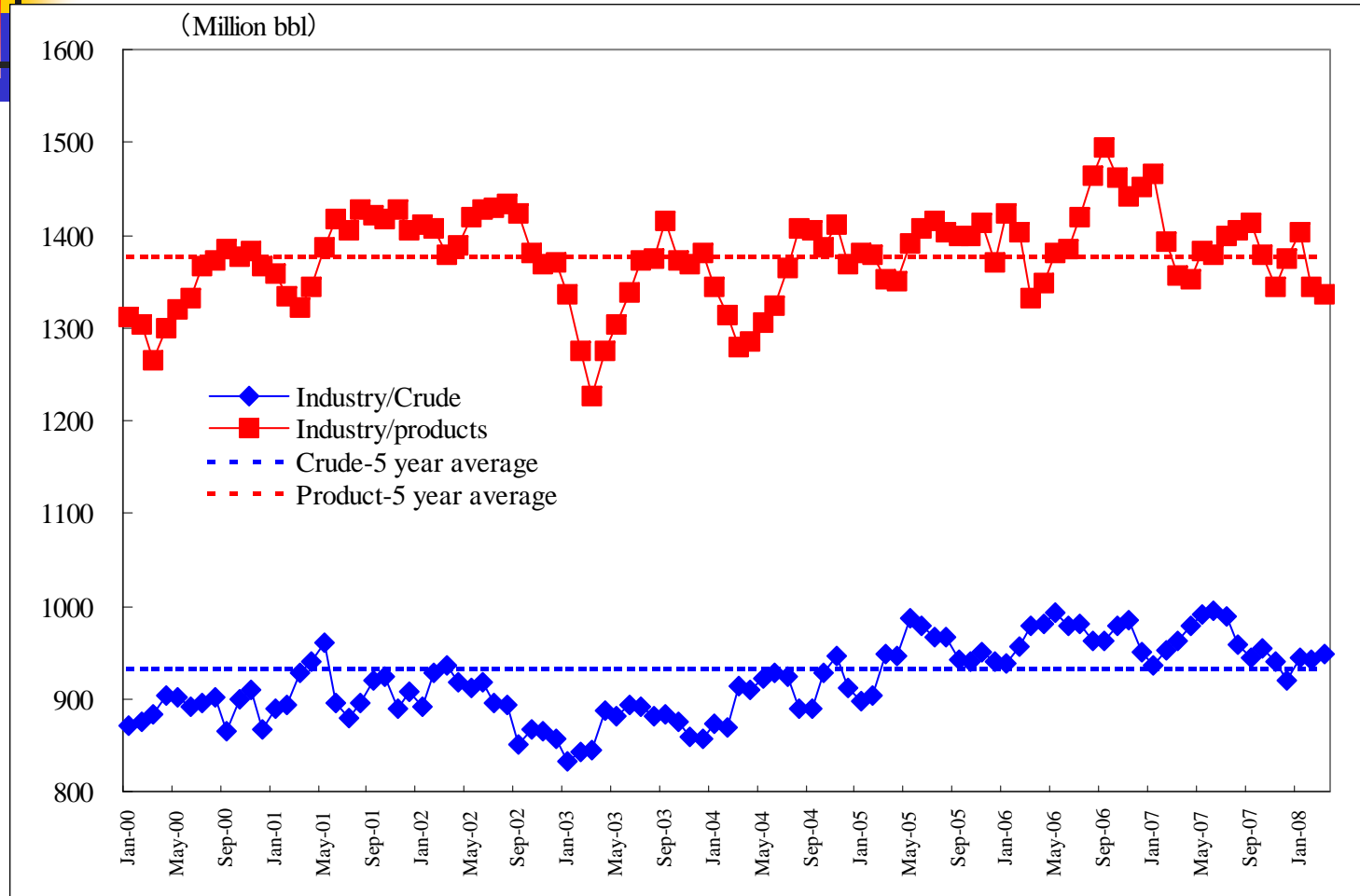
- **Resource constraints (Peak oil): A real threat?**
- **Production in matured areas continue to decline**
- **Accelerating natural decline in existing fields**
- **Rising costs and difficulties for access to equipments & skilled manpower**
- **State & NOC dominance in access to energy resources**
- **Rising “resource nationalism”**
- **Huge investment requirement and uncertainties over realization of sufficient and timely investment**
- **Etc.**

OPEC reaction to the oil Market

- **The motto: “Pursuit for oil price acceptable for both producers and consumers”**
 - **But growing “high price preference”**
 - **Production cut examined and implemented to lower inventory level**
 - 1.2 million B/D cut agreed at Doha (Oct. 2006)
 - 0.5 million B/D additional cut agreed at the 143 OPEC meeting (Dec. 2006)
- 
- **Reactions to oil price over 80\$**
 - 0.5 million B/D increase at the 145 OPEC meeting (September 2007)
 - But OPEC decided not to increase output at the 146, 147 and 148 OPEC meeting

OECD Private Oil Inventories

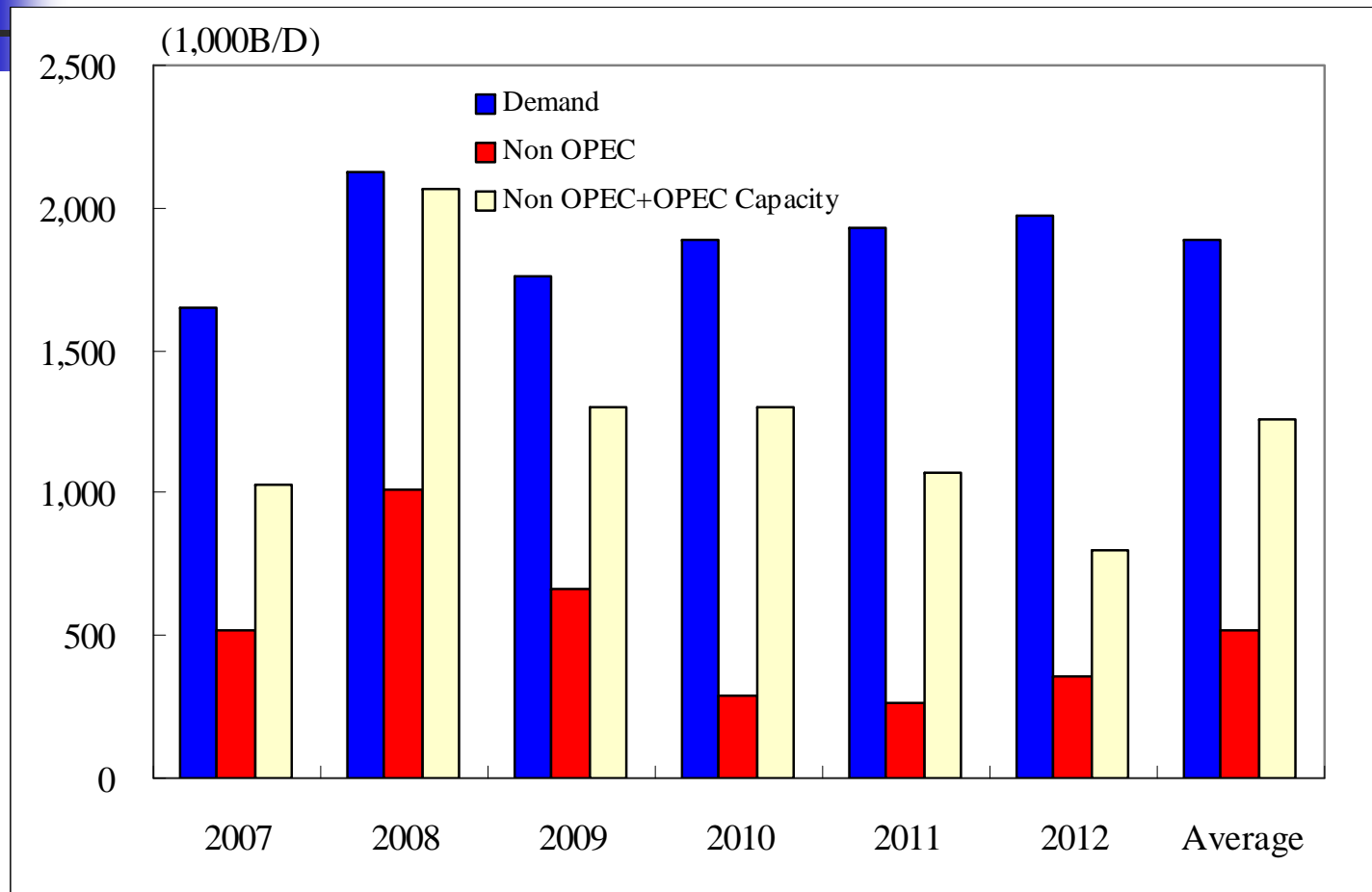
OECD inventories declined to below 5 year average



(Source) Prepared from data in Monthly Oil Market Report (IEA)

Mid-term Supply-Demand Balances

Demand growth expected to outstrip supply growth



(Source) Prepared from data in Mid-term Oil Market Report 2007 (IEA)

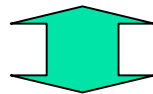
Geopolitical risks and threats to energy market stability

■ Instability in major oil producers

- Iraq: war, terrorism, security problems
- Iran: nuclear issues
- Nigeria: domestic conflicts
- Venezuela: general strikes, political issues
- Russia, etc.:

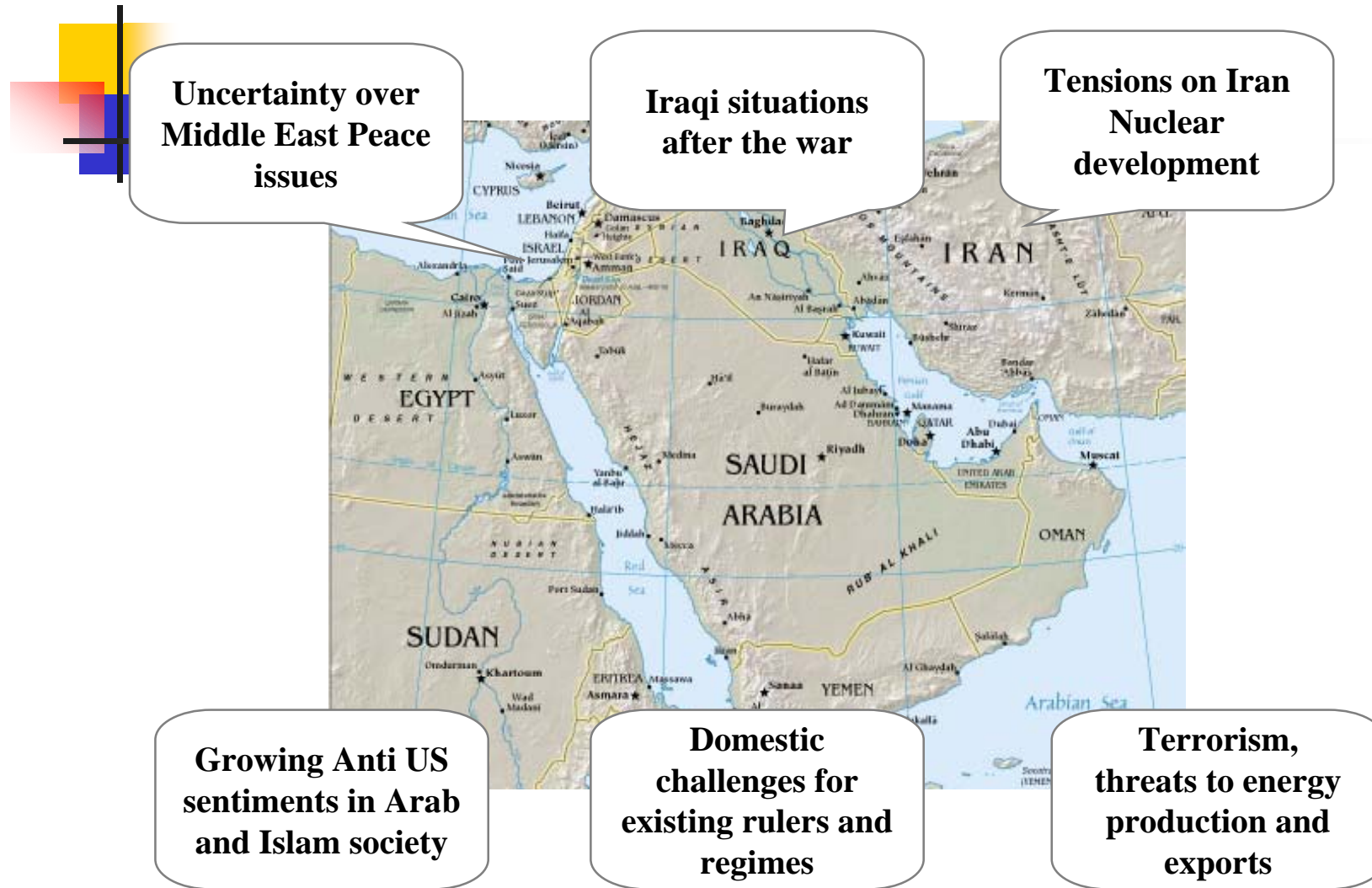
■ Natural disasters and accidents

- Hurricanes
- Accidents in up/downstream supply chain



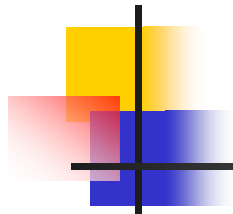
- Many of the above risks already factored in?
- New problem or real supply disruption may result in strong market reaction

Instability in the Middle East



Source: Prepared by IEEJ

Summary



- **Extremely volatile oil market/prices expected to continue**
- **Behind the scene, numbers of complicated factors existed**
- **Supply-demand fundamentals, primarily important factors**
- **Geo-political risks and market uncertainties also play out**
- **But industry circle started to pay growing attentions to the possible impacts of the financial markets.**
- **Further research/study and better information availability are essential to improve the understanding of the market players**
- **2008 WTI average may reach around 110-120\$ level**
- **Further price escalation possible, if and when supply problems affect the market (sentiments)**
- **Downside risks also exist when global economy and demand stagnate**