

Economic Impacts of High Oil Prices

Youngho Chang

Division of Economics and S. Rajaratnam School of International Studies
Nanyang Technological University

“East Asia Summit – the 7th Energy Cooperation Task Force Meeting
International Seminar”

‘Energy Future: Turning Challenges into Opportunity’

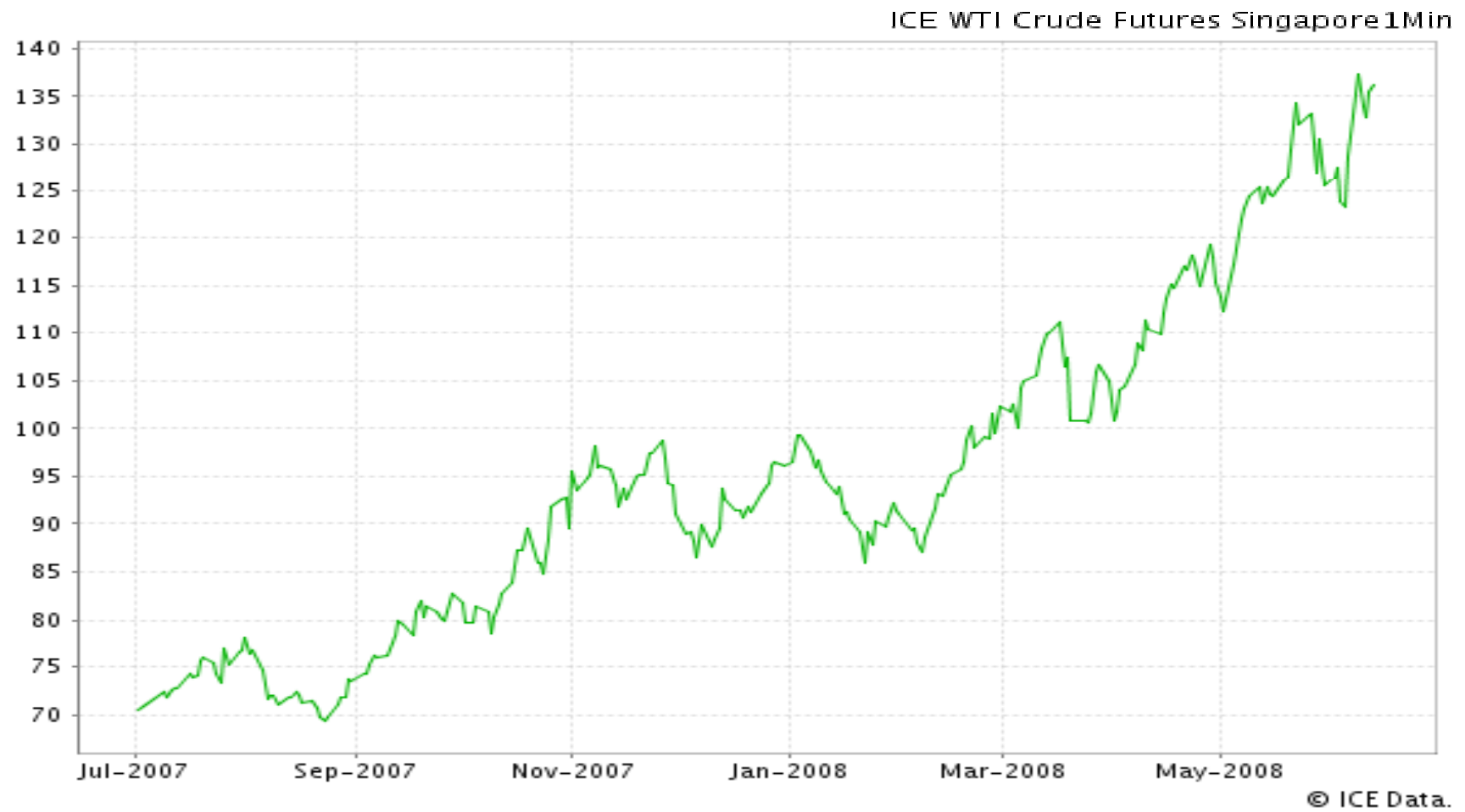
June 27, 2008

Hotel Riviera Seoul, Seoul, Korea

Agenda

- Introduction
 - Current Oil Price Movements
 - Crude Awakening
- Oil Price Fluctuations and the Economy
 - Economic Impacts
 - Responses to High Oil Prices
 - High Oil Prices and Technology
- A Scenario Analysis
- Verdicts and in the Long-Run...

WTI Crude Futures



Brent Crude Futures



Middle East Sour Crude



Introduction: Crude Awakening

- Strong demand
 - Oil demand rises with income
 - Suppliers' excess capacity shrinks
- Expectations and speculation
- Weakening dollar
- Fear factor
 - Geopolitical risks

Oil Price Fluctuations and the Economy

- Oil is an input for production and a final good
- Sketch with a Production Function
 - As a production factor [$Q=f(K, L, E)$], with increasing oil prices an economy faces basically two options in the short term:
 - Sustaining the level of oil consumption
 - Reduce Oil Input
 - The same goes for consumers
- And the consequences are...

Economics Impacts

- An oil shock: “a classical supply shock”
 - Slow economic growth, high inflation, and high unemployment are the stylized phenomenon.
- Past
 - High oil prices caused severe recessions.
- Present
 - Still the negative impacts are persisting but the stylized negative causation are weakening.
- Future
 - The causation will weaken further and why?

Responses to High Oil Prices

- Short-term
 - Reduces oil use or sustains the same level of oil use and bears the full cost of high oil prices.
- Long-term
 - Substitutes alternative fuels for oil and the economy recovers to the pre-shock level or achieves even a higher level of economic growth.
 - What had happened after two oil shocks
 - Energy efficiency improvements
 - Wide-spread energy conservation efforts
 - Developments of new sources of energy and technologies

High Oil Prices and Technology

- Even oil prices have gone down, the world has witnessed that
 - The substitution of oil for alternatives keeps occurring
 - Efforts to improve energy efficiency continue
 - Efforts for energy conservation continue
- Hence, the demand for oil (i.e., the unit of oil per output) will decrease further.
- And the level of energy intensity (i.e., the unit energy requirements per GDP) is decreasing over time.
- The share of oil in the world energy consumption is decreasing over time.

The Worst Scenario for Oil-Exporting Countries

- A: The ultimate depletion of oil
- B: The ultimate loss of customers due to transition to a backstop technology
 - The question is which one is most likely (more probably) to occur.
- Oil-dependent economy needs to prepare the both scenarios to make the economy at least weakly sustainable in which a constant level of consumption vis-à-vis well-being is sustained (so that there is no degradation of standard of living).

Verdicts

- In short-term, facing high oil prices, an economy must bear the full costs of high oil prices such as slower economic growth, higher inflation and unemployment.
- The process is painful, but high oil prices could extend the life of oil by confining oil's use on a very indispensable demand such as transportation.
- At the same time, they would accelerate more exploration and production (E&P) of oil and the developments of new sources of energy and technologies.

In the Long-run,

- Oil will be further spared for very specific and non-substitutable energy demand such as transportation and hence the life of oil will be extended compared to the case in which oil is used across all energy demand categories.
- High oil prices will accelerate the developments of alternative fuels or backstop technologies such as portable PV, fuel cells or hydrogen.
- The transition towards a renewable energy-based economy would occur more rapidly.

A Saudi Proverb

“My father rode a camel.

I drive a car.

My son flies a jet airplane.

His son will ride a camel.”

- Saudi saying, from Richard Heinberg’s *The Party’s Over: Oil, War and the Fate of Industrial Societies*

Beyond Hubbert's Peak

“The Stone Age did not end for lack of stone, and the Oil Age will end long before the world runs out of oil.”

Sheik Ahmed Zaki Yamani,
Saudi Arabia oil minister during the 1970s

Thank for your attention!