Global Energy Policies: Supply, Demand and the Future of Nuclear

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The dominant ‘story’

• Industry consensus
  – Continuing recovery, two speed world economy, decline rates and supply problems, high oil and other energy prices.
  – Oil is ‘special’. But bio fuels, natural gas etc
  – Forecasts and scenarios
    • Industry forecasts spectacularly bad
    • Claim on Opec.
    • Wide uncertainty about price, income and technology effects
    • The supply side
    • Policy – the hardest of all

• Substitutions and other fuels: is oil special?
  – Shale gas, nuclear, efficiency and technology, and shale oil

• The climate change agenda – an ‘imperative’?

• Uncertainty and inconsistency
  – How can a consistent picture be developed? Should we try?
Chart 1. Real and nominal oil prices

Figure 1: Crude oil prices 1970-2010:

Chart 2. EIA energy scenarios
BP Energy scenarios to 2030 (BP 2011)

The diagram illustrates CO₂ emissions from energy use and the sources of carbon abatement versus the Base Case for 2030. The graph shows emissions increasing from around 20 billion tonnes in 2000 to nearly 40 billion tonnes in 2030 under the Base Case scenario. There are two additional scenarios: the Policy Case and the IEA “450 Scenario.”

The IEA “450 Scenario” indicates a significant reduction in emissions, with a 5.4 billion tonnes reduction by 2030. This is achieved through a combination of carbon capture and storage (CCS) and fuel switching, along with increased energy efficiency.

* a back-cast which illustrates what is required to stabilise greenhouse gas concentrations at 450 ppm from IEA, World Energy Outlook 2010.

Energy Outlook 2030

© BP 2011
A longer-term view of oil and food prices. (Source: IMF WEO September 2011)
Lessons from the last cycle: oil

• Rise to the peak in 2008 hard to explain
• A stable oil market?
  • OPEC band around 2001/2
  • Stabilising responses
  • Parallel shifts in futures curve during the price rise
• Absence of feedbacks
  – From supply, from demand, from policy, from the world economy
• Macroeconomic effects
  • Analysing an oil impact – like an indirect tax
  • Monetary policy. The Volcker shock in the 80s.
  • Offsetting policies – due to absence of second round effects
• It is different this time
  • No inflation in OECD but fiscal impacts all over the world (OECD and emerging countries)
  • Interest rates at lower bound. Fiscal crisis. = no offset
Chart 4. Expenditure on oil as percent of nominal GDP

- Good indicator of the size of oil price impacts
- Typical oil impact \( \sim 3\% \) GDP. Recent rise and fall about 2\% GDP
- Like an indirect tax change
Oil and the world economy. (Recap)

- Macroeconomic issues: why did oil price rises fail to shock in the last cycle?
  - Anticipated effect on inflation and growth failed to appear
- Lack of feedbacks?
  - Supply, demand, policy, global growth
  - No ‘second round’ effects on wages or inflation
  - Policy could be offsetting
  - Indirect tax analogy
  - ‘Great recession’ not due to oil
- But different this time ... 
  - Interest rates at lower bound:
  - fiscal consolidation in OECD.
  - What kind of adjustment in Asia?
  - Oil prices at $150 - 200 plus pose real risk to global growth.
  - Big hit to real incomes all over the world. Comes on top of fiscal consolidation in many countries.
- Worries over low growth have had little effect on oil prices so far. But this could change
Pricing and the market

• Speculation versus fundamentals
  – Big swings look like ‘indeterminacy’, not speculation in strict sense
• Indeterminacy and uncertainty
• Oil price swings and coordination
  • Focal points
  • Beauty contests (Keynes)
  • Coordination games
    – Market focuses on a few public signals, which swing about
• What would change the consensus?
  • China, India
  • World economy
  • Policy
  • Technology
• International coordination/dialogue?
Chart 5. The Oil price breaks away from the implicit band. (Brent spot, $ per barrel)

Chart 6. Geopolitical events and the oil price (Brent spot, $ per barrel)
One story. Oil price to balance budget in Saudi Arabia

Source: Jadwah Investment
The world economy and oil prices. (Recap)

• The dominant ‘story’
  – Continuing growth in Asia and other non-OECD
  – Substitution against oil in transport very difficult/slow
  – Structural problems on the supply side
    • Decline rates, lack of investment, ‘peak oil’, geo politics
• But does the story explain oil prices?
  – Indeterminacy and the implicit band ($70-80), Break out before the ‘Arab spring’.
  – Producer behaviour and market perceptions
• Could the story change?
  – Slowdown in world economy? Crisis in China, India?
  – Economic policy, politics: expect volatility
  – Substitution: there has been a major change in relative prices. What are the long run effects?
• What kind of policy could make a difference
Conclusions and some longer term issues

- Consensus forecasts for the world economy have been strong, but ‘two speed’. This has supported oil prices. But large price changes
- Biggest risks were always
  - Premature fiscal consolidation (OECD)
  - Renewed financial strains (Eurozone)
- Both of these have become much greater recently – hence volatility
- Consensus still based on temporary slowdown and muddle through. But that could change very quickly. Eurozone crisis cannot be ruled out.
- Unlike last time, high oil (and food) prices are slowing the world economy.
- Longer term issues include
  - The disconnect between economic realist views of oil markets and the imperatives of the climate change agenda. Unresolved, but adding to intrinsic uncertainty. Peak oil or stranded oil? Made worse post Fukushima.
  - Potential conflicts between producers and consumers over economic rents.
  - Can emerging countries continue to grow fast with high oil and other energy prices?
  - The ‘green paradox’
‘But what if stories themselves move markets? What if these stories of over-explanation have real effects? What if they themselves are a real part of how the economy functions? .. The stories no longer merely explain the facts; they are the facts.’ (Akerlof and Shiller; Animal Spirits, p.54)