

China's Foreign Oil Policy - Genesis, Deployment and Selected Effects

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Motivation

- New global environment of high oil prices (since around 2003)
- Several explanations, of which accelerating demand from China
- Expanding Chinese presence in upstream all over the world – collision course?
- Reports of non-market transactions – fragmentation / regionalisation?

Research goals

- What are the Chinese actually doing?
- How are they doing it? Why are they doing it?
- How does it differ from what other major consumers do?
- What are the economic and energy security implications for other countries, in particular for the European Union?
- Policy implications?

Project team

- Team research areas:
 - China: W. Urban (Ch. 1)
 - Global econ & trade modelling: J. Francois (Ch. 2)
 - Energy economics & oil markets: F. Wirl (Ch. 3)
 - Energy policy & energy security: E. Christie
(Ch. 4 and policy conclusions; project design)

Project components (1)

- Preliminaries: IEA energy scenarios
- Empirical base: (chapter 1)
 - Chinese consumption, production, import volume and import distribution: data and scenarios
 - Policy orientation & institutions
 - China's NOCs: equity investments and supply contracts by world region (descriptive, essentially based on media reports)

Project components (2)

- Pure demand shock on the world economy (chapter 2)
 - Growth differential to 2020 – effects on growth, trade patterns, and energy prices
 - Effect of China's higher GDP growth as compared to other factors (how important?)

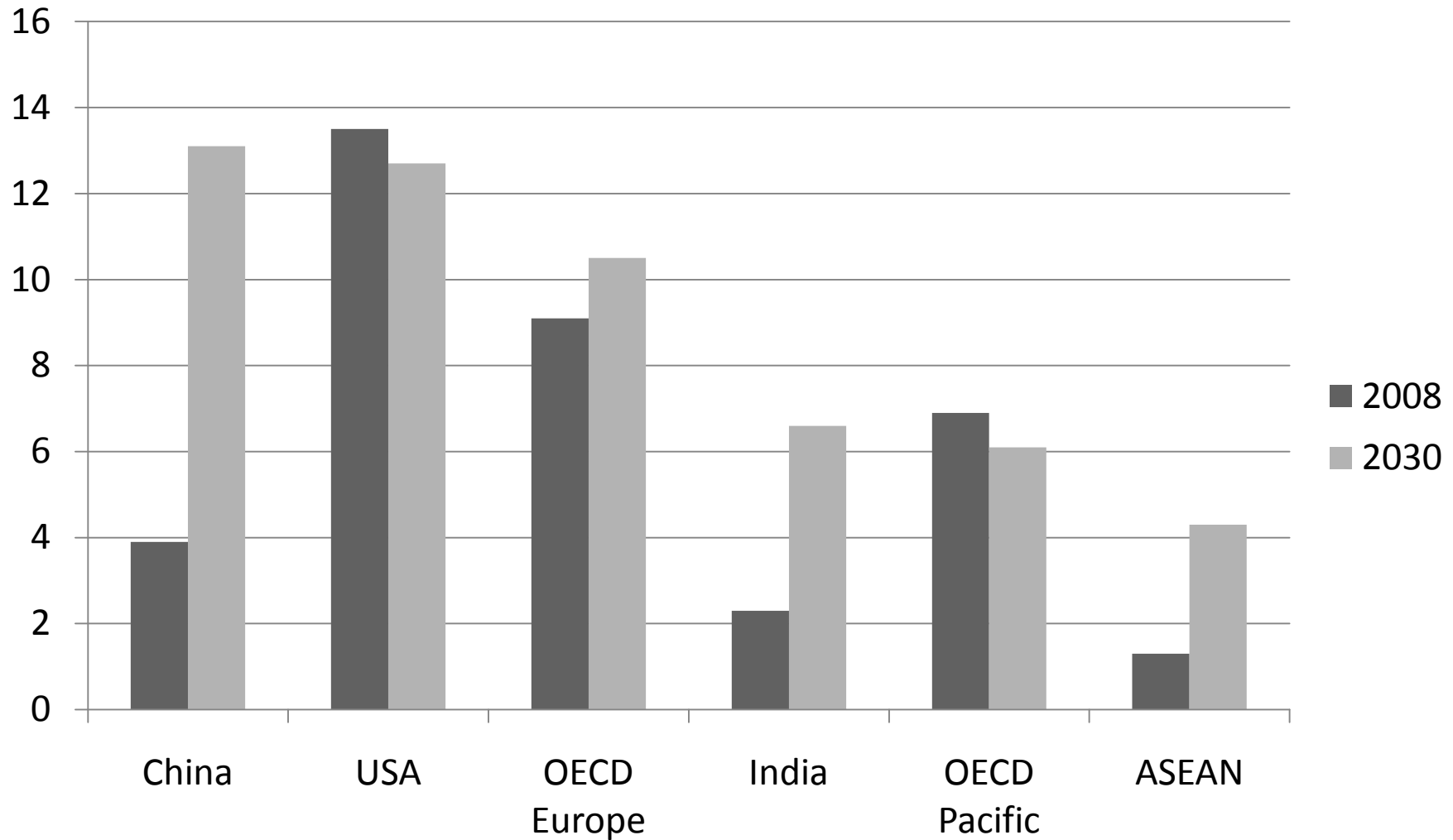
Project components (3)

- The economics of the oil market (chapter 3)
 - Price formation mechanisms refresher
 - The rationale for upstream investments?
 - The rationale for long-term supply contracts and the potential for fragmentation?
 - Simplified oil market simulations – the impact of Chinese demand growth
 - Extra component: short-run supply shocks

Project components (4)

- Oil security: definitions & framework
- Definition of a strategic commodity (why does oil matter?)
- Oil security: a state-centred risk analysis framework
- Application to the Chinese case
- Policy conclusions

Net oil imports (est.) mb/d (IEA 2009)



China: actors & modus operandi

- Based on National Oil Companies (CNPC, CNOOC, Sinopec) (former gov agencies / ministries)
- Multiple gov agencies & bodies
- Package deals / linkages with other areas of bilateral cooperation (financial loans, development aid, technical assistance, in some cases arms deals)
- Boosts upstream investment beyond what would otherwise occur

Global Econ Simulation

- Model projects global production and trade patterns over 2008-2020
- Model runs a main scenario with high Chinese growth and high energy prices, and a scenario assuming Chinese growth to be zero
- Counter-factual leads to an estimate that 90% of the rise in the price of oil is due to China's growth alone

Oil market simulation

- Simplified demand-driven simulation (single type of oil with single price, 4 world regions, demand elasticities assumed, market clears on 2030 global demand level of 105.6 mb/d as in OPEC LT scenario projection)
- China's demand found to be higher than generally assumed (19 mb/d vs. ~ 16 mb/d)
- Price in 2030: 164 \$/bl at 2008 prices

Upstream investments

- Property title approach – gain residual rights (so-called equity oil)
- Idea: safety cushion in terms of volumes
- Question: at non-market prices? (no answer)
- Downside: winner's curse (artificial drive to win repeated auctions – higher costs)

LT supply contracts

- Again the question: do we witness transactions at non-market prices?
- Very patchy empirical record
- Should not be significant due to arbitrage
- Conversely: if arbitrage is supported, then attempts to trade off-market may be defeated

Energy security: definitions

- Def.: “*the availability of energy at all times, in various forms, in sufficient quantities, and at affordable prices*”, see Meidan (2007: 16)
- Oil as a strategic commodity: definition – see Christie et al. (2009: 66) (the FIW study)
 1. *Indispensable for core functions of modern economic systems (and national defence);*
 2. *Not substitutable in the short-run (or even in the medium-run);*
 3. *In insufficient supply in most states, while abundant in a few others.*

Oil security assessment

- 1. Oil import dependence ratio
- 2. Total oil imports
- 3. Oil intensity of the economy
- 4. Share and substitutability of petroleum products in transportation
- 5. Share and substitutability of petroleum products in other sectors
- 6. Domestically-held oil stocks
- 7. Diversity of import sources
- 8. Diversity of transit routes
- 9. Risks or threats with respect to supplier countries
- 10. Risks or threats from third parties (e.g. transit countries, terrorist groups, other net importers of oil, other)
- 11. Risks of accidental breakdowns and natural disasters

SR risks & threats in China's eyes

- 1. Sudden disruptions in provision of oil to the global market could trigger serious energy shortages and sharp price spikes
- 2. China might be affected by disruptions in tanker flows from unstable exporting regions such as the Persian Gulf, Central Asia and Africa.
- 3. Japan and the USA might attempt to deny China vital oil supplies in the event of a confrontation, particularly over Taiwan.

Strategic threat in China's eyes

- US attempts to dominate the Middle East could lead to (could have led to) :
 - In case of success: such leverage over the oil market as to enable targeted export restrictions to China (surprising idea, but openly stated by the Chinese)
 - In case of botched attempts: such instability in the Middle East that imports from that crucial region become unreliable

Summary findings (1)

- The major reasons for China's engagement and activity in international acquisitions of oil appear to be the following:
 1. Fears about the future physical availability of oil as a crucial fuel for its development;
 2. China's companies are awash with cash and China's NOCs are strongly incentivised to make upstream investments.

Summary findings (2)

- Whatever happens wrt upstream investment and LT contracts, China's massive demand growth will radically change the global oil market
- China's basic oil security parameters are very similar to those of the US and the EU
- What works for the latter can work for the former: a global oil market with functioning arbitrage

Summary findings (3)

- While China's upstream and diversification strategies may be questionable from an economic perspective (assuming the global oil market continues to function), China's strategic perceptions matter and drive the country's actions and strategies
- Those actions and strategies present certain risks, i.e. self-fulfilling prophecy
- High-level policy dialogue is needed to ensure that major oil importers are on the same page

Summary findings (4)

- The key to oil demand mitigation is transportation → China is still building up its private vehicle fleets, so there is an attractive window now
- In parallel, the EU and the US have an interest in technological change in transportation due both to oil security concerns and to climate policy commitments

Policy recommendation

- Create a new trilateral body (EU, USA, China) for regular consultations and cooperation on foreign oil policy and oil security
 1. Commit to avoiding zero-sum or negative-sum competition for upstream resources
 2. Commit to upholding a transparent global oil market with functioning arbitrage
 3. Shift towards a new model for transportation

Policy follow-up

- The International Energy Agency (IEA) has announced that it is considering inviting China to become a member (FT, 30 March 2010)
- That would cover the policy recommendation provided in the study using an existing institution rather than by creating a new one
- It raises the question of the linkage between OECD and IEA membership and admission criteria to both institutions