

# INTERNATIONAL ENERGY SECURITY: PROBLEMS AND POLICIES

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# Basic components of international oil security

- Concern about oil exporters (OPEC) exercising market power to keep prices high and thereby reduce US wealth
- Concern about oil price instability – shocks that send prices up abruptly and disrupt the economy as a whole
- Middle East and other international geopolitics, US military expenditures and risks – NOT the same kind of concern

# Risks and costs of oil import dependence

- OPEC currently supplies about 40% of total world oil output, projected to rise to 50% within 20 years; the US imports about 60% of its total petroleum consumption (though less than half of that is from OPEC)
- OPEC also holds around 75% of the world's known oil reserves

- The world oil market is not a textbook case of competition – large individual producers like Saudi Arabia and Russia, substantial state involvement in supply decisions, concern by many analysts that prices are persistently higher than competitive levels
- **But**, any action the US takes on its own to cut its import demand will have only limited price impacts, with lots of benefits spilling over to other oil importers

- The degree of OPEC control over the market continues to be debated – price discipline in a soft market, active competition including Russia and elsewhere in the FSU (Caspian Sea)
- And if OPEC did develop more discipline, they would be better able to absorb any efforts we make to reduce their market power by cutting demand or augmenting domestic supply

- OPEC's market power could grow in the longer term given their dominance in oil reserves
- But this depends as well on long-term options for development of other fuels and technologies, especially in transport; the strategy for long-term alleviation of market power is more than just a simple "displace imports" story

# Oil price volatility and economic disruptions

- Ongoing oil price volatility is a consequence of linked financial and inventory transactions in markets where incomplete and imperfect information means price fluctuations and waves
- Oil market fundamentals also make the market prone to episodic price shocks whenever there is an unanticipated sharp change in demand or supply: only limited short-run responsiveness of either supply or demand to price signals

- Everyday volatility itself is **not** a first-tier market failure or policy problem – the government can do little to change it, though it can look for ways to expand access to hedging and insurance
- Price shocks are uncomfortable for lower-income groups, but government should deal with income maintenance problems directly

- The stronger argument for concern about price shocks arises from their potential to create macroeconomic harm – increased unemployment, expensive idling or obsolescence of fixed capacity, disruptions of markets as producers and households attempt to adjust

- Statistical evidence does strongly indicate a relationship between oil price jumps and macroeconomic distress (though oil price drops do not seem to have a symmetric stimulating effect)
- Monetary policy focusing only on inflation control exacerbates the impact of oil price shocks, but the statistical evidence indicates a linkage beyond Fed actions

- However, the mechanisms through which these disturbances occur are still not well understood, and the relationships may be getting weaker over time (continued improvement in energy efficiency and changes in the composition of GDP)
- While large oil price disturbances good to avoid, and too contractionary a monetary policy in the face of an oil shock is bad, what actually should be done with energy policy to reduce vulnerability is still being debated

- National Research Council fuel economy study included estimates of “security premia” of <\$1 to ~\$10/bbl for both market power and macro instability, with “best guess” of ~\$5/bbl
- These figures probably too high – they do not fully account for possible weakening of oil-economy relationship or limits on OPEC market power

# Oil economics, geopolitics, and military issues

- It is easy but terribly misleading to say "If we cut or eliminated US oil imports, we could stop spending so much money and risking lives via political and military engagements"
- We can't reduce US imports to zero in any short to medium term time frame because it is just too costly (for example, through increased vehicle fuel economy)

- Even if we reduced US imports to zero (or only imported from "safe" sources) the rest of the industrialized world would still be import dependent, and US economy would still be vulnerable to oil price shocks
- In any event, US engages in diplomatic and military activities for reasons other than oil
- So calculations of "military dollars spent per barrel of oil imported" are mathematical truisms but logical absurdities

# Domestic energy security concerns

- Major political and economic concerns about domestic energy price shocks and supply reliability – California "electricity meltdown" of 2001, local problems with motor fuel supply
- Electricity reliability is tremendously important – value of lost load could have been on the order of **\$6 billion** if there had been the forecasted 5% supply shortfall during the CA meltdown

- Reliability is being under-supplied: changing market and regulatory institutions weaken traditional coordinated approaches and free market will not provide enough of this "public good"
- National-level response is needed, even as tension between states and national government over electricity restructuring remain

- Localized motor fuel market disruptions are less harmful economically, but political problems
- Source of problem is environmentally motivated "tailoring" of fuel "recipes" that limits ability of local fuel supply problems to be mitigated; also responds to local constituencies (alcohol lobby)
- Tailoring can bring down cost of environmental regulation, but implications for increased volatility need also to be considered
- Current policy moves to phase out some additives
- will only exacerbate the "brittleness" of the system

# Policy lessons

- Increased US petroleum production is not the answer to the oil security problem – it can do at most a bit to offer more competition to OPEC, and by keeping oil prices down it continues or expands macroeconomic vulnerability
- In particular, ANWR drilling is not the answer to the oil security problem – should be debated on energy economic and environmental grounds, but the national security justification is weak at best

- Nor is the answer in expensive tax breaks to stimulate or maintain high-cost Lower-48 domestic supply – domestic energy security is not the same as security for the domestic energy industry

- In the short term the US has a 550 million barrel Strategic Petroleum Reserve (SPR) that can in principle buffer price shocks – but only if there is a clear plan that can be rapidly implemented for using it!
- The Administration has repeated the mistake of its predecessors in forswearing SPR use "just" for dampening prices, when in fact that is the key reason for having the Reserve

- Clever proposals made 15 years ago for tying SPR use to market-based options contracts (still very useful even in a cynical post-Enron world) should be dusted off; otherwise the SPR should be sold
- Short-to-medium term energy security also can be enhanced by addressing institutional and regulatory bottlenecks to the expansion of other energy options (such as pipeline capacity for expanding natural gas use), and by developing reliable income protection mechanisms for low-income groups

- To increase electricity system reliability in a restructured industry, a critical reform is agreement on and implementation of architecture for regional transmission organizations
- Government also needs to reduce market power of suppliers *and* promote greater demand response through real-time pricing
- Motor fuels regulation needs to be cognizant of supply constraints caused by fuel content and infrastructure regulation, and market implications

- The long-term answer to domestic and international energy security ultimately is found in expanding the menu of market-compatible choices of fuels (domestic and imported) and energy-using technologies through development and diffusion of cost-effective new options
- There is a clear role for government in this through funding the necessary basic research, and lowering (where appropriate) real institutional and regulatory barriers to new technologies

- This is a long-term approach; if we want a faster transition we can have one by spending more on R&D and by adopting policies that make oil use more costly, but we should not pretend that this is a free lunch