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Imported Oil and U.S. National Security

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Summary

Linkages Between Imported Oil and U.S. National Security

The United States consumes 25 percent of all the oil produced in the world, yet the United States accounts for only 10 percent of world oil production. In 2007, on a net basis, the United States imported 58 percent of what it consumes. This monograph critically evaluates commonly suggested links between these imports of oil and U.S. national security and assesses the costs and benefits of potential policies to alleviate challenges to U.S. national security linked to imported oil. We focus on the following areas of concern:

- economic
 - the potential for an abrupt fall in supply and the concomitant surge in the world market price of oil to disrupt U.S. economic activity to the point of precipitating an economic recession
 - damage to critical nodes in the U.S. supply chain for refined oil products that could induce short-run local shortages or, if extensive enough, national short-falls in refined oil products, resulting in a reduction in U.S. economic output
 - large increases in payments by U.S. consumers of oil due to shifts in oil prices because of deliberate reductions in supply by major exporters
- political
 - the potential of major oil exporters to manipulate exports to influence other countries in ways inimical to U.S. interests
 - the potential for competition for oil supplies to exacerbate international tensions or disrupt international oil markets
 - the effect of higher revenues from oil exports on the ability of “rogue” oil exporters, such as Venezuela and Iran, to thwart U.S. policy goals
 - the potential role of oil-export revenues in supporting terrorist groups
- military: the additional costs to the U.S. defense budget of forces fielded to protect the supply and transit of oil from the Persian Gulf.

Economic Linkages

The gap between U.S. production and consumption is so large that eliminating it would entail extraordinarily costly changes to patterns of consumption and production of fuels. Moreover, even if total U.S. imports were cut sharply, the price of oil in the United States would still be determined by global, not national, shifts in supply and demand. A large, extended reduction in the global supply of oil would trigger a sharp rise in the price of oil and lead to a sharp fall in economic output in the United States, no matter how much or how little oil the United States imports.

The U.S. domestic supply chain for petroleum products is robust. Accelerated repairs of breakdowns, increased imports of refined oil products, and alternative domestic sources of supply make it highly unlikely that interruptions in domestic supplies could severely disrupt the U.S. economy.

Because the United States is a net importer of oil, when oil prices fall, as they did in the second half of 2008, the United States benefits from an improvement in its terms of trade, as consumers of refined oil products pay less for oil. Substantial reductions in U.S. consumption of oil or increases in domestic production of oil or oil substitutes would lower oil prices. A decline in oil prices may benefit the United States economically, if the cost of producing additional domestic fuel does not exceed the cost of importing oil and the economic costs of reducing oil consumption do not exceed the benefit of reduced oil costs. Lower oil prices would also benefit the U.S. military, which is a large consumer of refined oil products.

Political Linkages

Embargoes on exports of oil (and natural gas) have been unsuccessful in changing policies of targeted nations. As long as oil is a globally traded commodity, exporters cannot successfully target specific countries because importers can purchase alternative supplies on the global market.

Sales of oil below market prices or through grants have been more effective than embargoes at altering the behavior of targeted nations, but this limited support tends to last only as long as the favorable treatment.

Higher oil-export revenues have enhanced the ability for rogue states, such as Iran and Venezuela, to pursue policies contrary to U.S. interests.

The importance of donations from individuals and charities in oil-rich Middle Eastern states for financing al Qaeda and its affiliates has declined as terrorist groups have increasingly turned to crime to finance their attacks. Moreover, the costs of perpetrating a terrorist attack are so small (\$15,000 to \$500,000) that even a substantial fall in Middle Eastern oil revenues would not affect al Qaeda's ability to raise sufficient funds to finance its operations.

Incremental Costs of U.S. Forces to Secure the Supply and Transit of Oil from the Persian Gulf

Estimates of the incremental costs to the U.S. defense budget for protecting sources of oil and the routes along which oil is shipped are open to debate, with estimates in the literature ranging from zero to half of the U.S. defense budget. Our estimates indicate that the United States might be able to save between 12 and 15 percent of the fiscal year (FY) 2008 U.S. defense budget if all concerns for securing oil from the Persian Gulf should disappear. However, the size of the residual force would be dictated by remaining U.S. interests in the region.

Policies to Mitigate Threats and Costs to U.S. National Security from Imported Oil

In light of these findings, the United States would benefit from policies that diminish the sensitivity of the U.S. economy to an abrupt decline in the supply of oil. The United States would also benefit from policies that would push down the world market price of oil by curbing demand or increasing competitive supplies of oil, domestic and foreign, and alternative fuels. U.S. terms of trade would improve, to the benefit of U.S. consumers; rogue oil exporters would have fewer funds at their disposal; and oil exporters that support Hamas and Hizballah would have less money to give these organizations. The United States might also benefit from more cost-sharing with allies and other nations to protect Persian Gulf oil supplies and transport routes.

Policies that attempt to curtail the likelihood of an oil embargo against the United States or to reduce oil prices to curb terrorist financing are unnecessary or unlikely to

Table S.1
Potential Links Between Imported Oil and U.S. National Security

Potential Link	Risk or Cost
Large disruption in global supplies of oil	Major
Increases in payments by U.S. consumers due to reductions in supply by oil exporters	Major
Use of energy exports to coerce or influence other countries in ways detrimental to U.S. interests	Minimal
Competition for oil supplies among consuming nations	Minimal
Increased incomes for "rogue" oil exporters	Moderate
Oil-export revenues that finance small terrorist groups	Minimal
Oil-export revenues that finance Harakat al-Muqawamat al-Islamiyyah (Hamas), Hizballah	Moderate
U.S. budgetary costs of protecting oil from the Persian Gulf	Moderate

be effective. Oil embargoes have been an ineffective tool for advancing foreign policy goals. Terrorist attacks cost so little to perpetrate that attempting to curtail terrorist financing through measures affecting the oil market will not be effective.

Policies to Cushion Disruptions in the Supply of Oil

Option: Support well-functioning oil markets. Well-functioning domestic and international petroleum markets are a primary means by which the economic costs of disruptions in the supply of oil can be minimized. Energy prices that are free to adjust to changes in supply and demand, undistorted by subsidies or price controls, offer the most effective mechanism for allocating petroleum in a time of scarcity. Hence, the U.S. government should refrain from imposing price controls or rationing during times of severe disruptions in supply.

Option: Draw on the Strategic Petroleum Reserve (SPR). Releasing oil from the SPR, coupled with coordinated releases from stockpiles in other oil-consuming countries, could completely or almost completely offset the effects of most modest disruptions to U.S. oil supplies. However, U.S. policy for use of the SPR is ambiguous, reducing its efficacy. Currently, the SPR can be used only after a presidential declaration of a “national emergency,” which is left undefined. The absence of a publicly stated policy on when the SPR will be used has the potential to trigger panic hoarding if market participants fear a major supply disruption, bringing on the very conditions that SPR use is supposed to ameliorate. By issuing a public statement that the SPR will be used in the event of a major disruption in supply, the market would be better informed and likely act more temperately if such an event came to pass.

Policies to Expand Domestic Sources of Supply

Any measures that increase the long-term global supply of refined oil products or close substitutes will reduce the market power of oil-exporting countries, thereby lowering the world market price of oil. Lower oil prices not only benefit U.S. consumers; they also reduce incomes for rogue oil exporters and potentially contributions to organizations like Hamas and Hizballah, thereby enhancing U.S. national security.

Option: Open access to environmentally sensitive and other restricted areas. Increases in the price of oil have spurred calls to relax or eliminate restrictions on oil exploration and drilling in the Arctic National Wildlife Refuge (ANWR) in Alaska and on the Outer Continental Shelf (OCS) off both the east and west coasts of the United States. A recent study released by the Energy Information Administration (EIA, 2008a) suggests that, if ANWR were to be opened up for oil and natural-gas drilling, it would take approximately 10 years for oil production to begin. At their peak, expanded access to ANWR and offshore coastal reserves might add supply equal to between 4 and 11 percent of baseline forecasts of U.S. demand, reducing future U.S. imports by the same amount.

Option: Increase supplies of unconventional fossil fuels. Unconventional fossil fuels can be produced from coal, oil shale, oil sands, and stranded natural gas. With the exception of Canadian oil sands, production of unconventional fuel substitutes for oil is currently small. However, output from Canadian oil sands and U.S. coal-to-liquid (CTL) plants could be enough to supplant 15 percent or more of baseline domestic U.S. demand for oil. A potential constraint to achieving large production increases is the availability of water and environmental effects. Expansion of CTL will also depend on the costs of controlling—or penalties for releasing—carbon dioxide. CTL is about twice as carbon dioxide-intensive as conventional oil when one factors in all the carbon dioxide emitted, from when it is pumped out of the ground to when it is consumed by a car or truck—that is, on a well-to-wheels basis.

Option: Increase supplies of renewable fuels (biofuels). At present, ethanol produced from corn and blended into gasoline is the most widely used renewable liquid fuel in the United States and is likely to continue to be so. Using corn for ethanol is economically inefficient and has harmed U.S. national security. Diverting corn from food to ethanol production has pushed up world market prices for grains and other foods, which, in 2008, resulted in riots in a number of developing countries. In addition, the net energy benefit of corn-based ethanol is low because so much energy is used to fertilize, harvest, and transport corn. Substantial additional growth in the output of ethanol will have to come from woody, noncrop cellulosic feedstocks (e.g., brush or stubble left after harvest) for which major technological breakthroughs are needed.

Policies to Reduce Domestic Consumption of Oil

Like increases in supply, reductions in domestic petroleum demand put downward pressure on oil prices. However, whereas increases in supply result in an increase in the quantity of oil consumed, measures to increase energy efficiency reduce demand for oil. Greater efficiency reduces the United States' vulnerability to price shocks because generating the same economic output requires less oil. However, like supply-side measures, policies that discourage consumption take a long time to have a substantial effect on demand because improving energy efficiency often requires large investments.

Option: Impose excise taxes on oil. Raising fuel taxes is the most direct way to curb U.S. consumption of oil. Less consumption would put downward pressure on world market oil prices, reducing some of the national security costs linked to U.S. consumption of imported oil. Although prices for U.S. consumers would be higher, net import payments for the country as a whole would be lower, because imports would be reduced.

Even though excise taxes are more effective than other policy measures to encourage more efficient use of oil, fuel taxes have been politically unpopular in the United States, even though the United States has the lowest fuel taxes of any industrial country. How tax revenues from increased fuel taxes would be used would affect their overall economic impact and political opposition as well. For example, a per capita

refund of revenues from fuel taxes through the U.S. income-tax system or identifiable improvements in transportation infrastructure would defuse some opposition.

Option: Raise Corporate Average Fuel Economy (CAFE) standards. The economic effects of fuel-economy standards are subject to debate. Proponents argue that these policies overcome market barriers facing consumers who prefer better fuel economy: Fuel-economy standards induce manufacturers to produce vehicles that are in the long-term economic interest of consumers. Other economists have focused on the costs to manufacturers of producing and selling vehicles when consumers may prefer less fuel-efficient vehicles. One study found that increasing gasoline taxes would reduce gasoline consumption for about one-sixth the welfare cost of a corresponding increment to the CAFE standard.

Policies to Reduce U.S. Expenditures to Defend Oil Supplies from the Persian Gulf

The United States could encourage allies to share the burden of patrolling sea-lanes and ensuring that oil-producing nations are secure.

Effective Energy Policies and U.S. National Security

Importing oil imposes costs affecting the national security of the United States. Of the measures we consider in this study, the adoption of the following energy policies by the U.S. government would most effectively reduce these costs:

- Support well-functioning oil markets and refrain from imposing price controls or rationing during times of severe disruptions in supply.
- Initiate a high-level review of prohibitions on exploring and developing new oil fields in restricted areas in order to provide policymakers and stakeholders with up-to-date and unbiased information on both economic benefits and environmental risks from relaxing those restrictions.
- Ensure that licensing and permitting procedures and environmental standards for developing and producing oil and oil substitutes are clear, efficient, balanced in addressing both costs and benefits, and transparent.
- Impose an excise tax on all oil, not just imported oil, to increase fuel economy and soften growth in demand for oil.
- Provide more U.S. government funding for research on improving the efficiency with which the U.S. economy uses oil and competing forms of energy.