

The Energy Security Obsession

by Jerry Taylor and Peter Van Doren

Among the most fashionable preoccupations in foreign policy circles is “energy security.” Although it is unclear what exactly energy security means, foreign policy elites have long been concerned about reliance on foreign energy. Fear of embargoes and supply disruptions affects how Western nations deal with oil and gas producing states, what sort of policies are pursued in the Middle East, and even fundamental questions of war and peace.

That’s unfortunate, because a nation that is self sufficient in energy is no more “secure” than one that relies on imports for all its energy needs. Given the global nature of oil markets and the increasing globalization of natural gas markets, willingness to pay market prices will secure all the energy a nation could possibly wish for during peacetime. Worries about producer blackmail are only a bit less far-fetched than worries about alien invasion.¹ Simply put, reliance on oil and natural gas – imported or otherwise – is *not* the Achilles heel of the Western industrialized world.

No Blood for Oil

Many believe that reliance on foreign oil requires consumers to militarily defend friendly exporting states and to ensure the safety of oil supply facilities and shipping lanes. Those marching under banners declaring “No Blood for Oil” seem to believe that’s the case, as do their arch rivals in the neo-conservative movement.

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¹ Many economists that specialize in oil economics doubt that there are significant national security externalities associated with gasoline consumption. See Douglas Bohi and Michael Toman, *The Economics of Energy Security* (Norwell, MA: Kluwer Academic Publishers, 1996).

Simple economics suggests otherwise. Oil producers will provide for their own security needs as long as the cost of doing so results in greater profits than equivalent investments could yield. Because Middle-Eastern governments typically have nothing of value to trade except oil, they must secure and sell oil to remain viable. Given that their economies are so heavily dependent upon oil revenues, Middle-Eastern governments have even *more* incentive than do consuming states to worry about the security of oil production facilities, ports, and shipping lanes.²

In short, whatever security our presence provides (and many analysts think that our presence actually *reduces* security³) could be provided by incumbent producers were the United States to withdraw. The fact that the Saudi Arabia and Kuwait paid for 55 percent of the cost of Operation Desert Storm suggests that keeping the Straits of Hormuz free of trouble is certainly within their means.⁴

The same argument applies to al Qaeda threats to oil production facilities. Producer states have such strong incentives to protect their oil infrastructure that additional Western assistance to do the same is probably unnecessary. While terrorists do indeed plot to disrupt oil production in Saudi Arabia and elsewhere, there is no evidence to suggest that producer-state security investments are insufficient for the job.

The U.S. “oil mission” is thus best thought of as a taxpayer-financed gift to oil regimes and, perhaps, the Israeli government that has little, if any, effect on the security of oil production

² J. Robinson West, “Saudi Arabia, Iraq, and the Gulf,” in *Energy Security*, Jan Kalicki and David Goldwyn, eds. (Washington: Woodrow Wilson Center Press, 2005), pp. 197-218.

³ Robert Jervis, “Why the Bush Doctrine Cannot Be Sustained,” *Political Science Quarterly* 120: 3 (Fall 2005), pp. 351-377.

⁴ Saudi Arabia and Kuwait paid approximately \$33 billion (55 percent) toward the total cost of Desert Storm and Desert Shield, which was \$60 billion. The U.S. share was only \$6 billion (10 percent). Defense Department press release 125-M, May 5, 1992.

facilities. One may support or oppose such a gift, but our military expenditures in the Middle East are not necessary to remedy a market failure.

Must We Kiss the Producers' Ring for Oil?

Many foreign policy analysts think that U.S. oil imports are dependent upon friendly relationships with oil producing states. The fear is that unfriendly regimes might not sell us oil – a fear that explains why former Federal Reserve Chairman Alan Greenspan supported the two Gulf Wars against Iraq. Maintaining good relations with oil producers, however, interferes with other foreign policy objectives and increases anti-American sentiment in producer states with unpopular regimes. And of course, it could lead to war.

The problem with this argument, however, is that its fundamental premise is incorrect. Friendly relations with producer states neither enhance access to imported oil nor lower its price.

Selective embargoes by producer nations on some consuming nations are unenforceable unless (i) all other nations on Earth refuse to ship oil to the embargoed state, or (ii) a naval blockade were to prevent oil shipments into the ports of the embargoed state. That's because, once oil leaves the territory of a producer, market agents dictate where the oil goes, not agents of the producer, and anyone willing to pay the prevailing world crude oil price can have all he wants.⁵

The 1973 Arab oil embargo is a perfect case in point. U.S. crude oil imports actually increased from 1.7 million barrels per day (mbd) in 1971 to 2.2 mbd in 1972, 3.2 mbd in 1973,

⁵ This is such an obvious point that energy economists rarely bother to explore the issue in detail. To understand how the world crude oil market works is to understand that embargoes are unenforceable. See Philip Verleger, *Adjusting to Volatile Energy Prices* (Washington: Institute for International Economics, 1993) and M.A. Adelman, *The Genie out of the Bottle: World Oil Since 1970* (Cambridge, MA: MIT Press, 1995).

and 3.5 mbd in 1974.⁶ Instead of buying from Arab members of OPEC, the United States bought from non-Arab oil producers. The customers that were displaced by the United States bought from Arab members of OPEC. Beyond the modest increase in transportation costs that followed from this game of musical chairs, the embargo had no impact on the United States.

In short, it does not matter to consumers to whom the oil is initially sold. All that matters to consumers is how much oil is produced for world markets.

Do oil producing nations allow their feelings towards oil consuming nations to affect their production decisions? Historically, the answer has been “no.” The record strongly indicates that oil producing states, regardless of their feelings toward the industrialized West, are rational economic actors. After a detailed survey of the world oil market since the rise of OPEC, oil economist M.A. Adelman concluded, “We look in vain for an example of a government that deliberately avoids a higher income. The self-serving declaration of an interested party is not evidence.”⁷ Prof. Philip Auerswald of George Mason University agrees, “For the past quarter century, the oil output decisions of Islamic Iran have been no more menacing or unpredictable than Canada’s or Norway’s.”⁸

Exceptions That Prove the Rule

If energy producers are wealth-maximizers, what do we make of countries that are selling oil and natural gas to others at below-market rates? For instance, Russia sold oil to Cuba at below-market prices during the cold war; Russia continues to sell natural gas to Ukraine at below-market prices but has ended its subsidy to Georgia as relations have soured; and China

⁶ Energy Information Administration, *Annual Energy Review 2004*, Table 5.3.

⁷ Adelman 1995, p. 31. Former OPEC Secretary-General Francisco Parra makes the same point. Francisco Parra, *Oil Politics: A Modern History of Petroleum* (New York: I.B. Tauris, 2004).

⁸ Philip Auerswald, “The Irrelevance of the Middle East,” *The American Interest*, May/June 2007, p. 22.

sells oil to North Korea at low rates and used this as leverage to induce North Korea to bargain over its nuclear weapons program.⁹

Two conclusions seem reasonable. First, sellers have leverage in natural gas markets that is not possible in oil markets because oil can be transported easily while natural gas is shipped through pipelines. Buyers have few near-term alternatives if natural gas sellers reduce shipments. As liquefied natural gas gains market share, however, natural gas markets will look increasingly like world crude oil markets, and the ability of Russia or other states to extract concessions from consumers will dissipate.

Second, the Russia–Cuba and China–North Korea cases involve poor countries receiving foreign aid in the form of low-priced oil. We are unaware of any wealthy western countries receiving such in-kind aid from oil-producing countries.

What if a radical new actor were to emerge on the global stage? For example, if the House of Saud were to fall and the new government consisted of Islamic extremists friendly to Osama bin Laden, the new regime might reduce production and increase prices.¹⁰ But that scenario is by no means certain given that Iran – despite all its anti-western rhetoric – has not reduced oil output out of hostility towards the West.¹¹ The Iranian economy and regime are dependent on oil revenue and the Saudis are even more dependent.¹²

⁹ See Steven Lee Meyers, “Russian Gas Company Plans Steep Price Increase for Georgia,” *New York Times* November 3, 2006, p. A12 and Joseph Kahn, “China May Be Using Oil to Press North Korea,” *New York Times* October 31, 2006, p. A12.

¹⁰ Bin Laden has said on many occasions that he thinks the Saudi monarchy keeps oil prices below true market value in order to maintain friendly relations with the West.

¹¹ While it is true that oil production in Iran was about twice as high under the Shah than it has been under the Islamic Republic, almost all analysts agree that this reflects the damage done to the oil infrastructure during the 1980-88 war with Iraq, the “brain drain” that has occurred in response to the revolution, and poor state management of Iranian oil assets – not the intentional result of state policy.

¹² Oil revenues are 40-50 percent of Iranian government revenues and 70-80 percent of Saudi government revenues. See Energy Information Administration, “Country Analysis Briefs,” available at <http://www.eia.doe.gov/emeu/cabs/contents.html> accessed on November 14, 2006. Iran’s oil output increased steadily from 3.7 mbd in 2003 to 4.1 mbd in 2005. Energy Information Administration, *International Petroleum Monthly*, Table 4.1a

Regardless, the departure of Saudi Arabia from world crude oil market would probably have about the same effect on domestic oil prices as the departure of Iran from world crude oil markets in 1978. The Iranian revolution reduced oil production by 8.9 percent, whereas Saudi Arabia accounts for about 13 percent of global oil production today.¹³ Oil prices increased dramatically after the 1978 revolution, but those higher prices set in motion market supply and demand responses that undermined the supply reduction and collapsed world prices eight years later. The short term macroeconomic impacts of such a supply disruption would actually be less today than they were then given the absence of price controls on the U.S. economy and our reduced reliance on oil as an input for each unit of GDP.¹⁴

So while it is possible that a radical oil-producing regime might play a game of chicken with consuming countries, producing countries are very dependent on oil revenue and have fewer degrees of freedom to maneuver than consuming countries. Catastrophic supply disruptions would harm producers more than consumers, which is why they are extremely unlikely. The best insurance against such a low-probability event is to maintain a relatively free economy where wages and prices are left unregulated by government. That would do more to protect the West against an extreme production disruption than anything else in government's policy arsenal.

¹³ Data on Iranian production in 1978 and Saudi production in 2006 from the Energy Information Administration; http://tonto.eia.doe.gov/merquery/mer_data.asp?table=T11.01a and http://tonto.eia.doe.gov/merquery/mer_data.asp?table=T11.01b.

¹⁴ In 1978 the U.S. used 15,950 BTUs per (\$2000) dollar of GDP but only 8,970 BTUs per (\$2000) dollar of GDP in 2005, a reduction of 43.8 percent. And the BTUs used in 2005 came less from petroleum than in 1978 (47.5 percent of 1978 energy consumption was petroleum versus only 40.5 percent in 2005). Energy Information Administration, *Annual Energy Review 2005* Tables 1.3 and 1.5 pp. 9 and 13. For discussions of the macroeconomic effect of oil price increases, see Rajeev Dhawan and Karsten Jeske, "How Resilient Is the Modern Economy to Energy Price Shocks?" *Economic Review*, Federal Reserve Bank of Atlanta 91:3, Third Quarter, 2006, pp. 21-32, David Walton, "Has Oil Lost the Capacity to Shock?," *Bank of England Quarterly Bulletin* 46:1, Spring 2006, pp. 105-114, available at <http://www.bankofengland.co.uk/publications/quarterlybulletin/qb060109.pdf>, and Eric Fisher and Kathryn Marshall, "The Anatomy of an Oil Price Shock," *Economic Commentary*, Federal Reserve Bank of Cleveland, November 2006.

Oil Profits for Terrorists

Does Western reliance on oil put money in the pocket of Islamic terrorists? To some degree, yes. Does that harm western security? Probably not – at least, probably not very much.

Before we go on, it's worth noting that only 15.5 percent of the oil in the world market is produced from nation-states accused of funding terrorism.¹⁵ Hence, the vast majority of the dollars we spend on gasoline do not end up on this purported economic conveyer belt to terrorist bank accounts.

Regardless, terrorism is a relatively low-cost endeavor and oil revenues are unnecessary for terrorist activity. The fact that a few hundred thousand dollars paid for the 9/11 attacks suggests that the limiting factor for terrorism is expertise and manpower, not money.

That observation is strengthened by the fact that there is no correlation between oil profits and Islamic terrorism. We estimated two regressions using annual data from 1983 to 2005: the first between fatalities resulting from Islamic terrorist attacks and Saudi oil prices and the second between the number of Islamic terrorist incidents and Saudi oil prices. In neither regression was the estimated coefficient on oil prices at all close to being significantly different from zero.¹⁶

Consider: Inflation-adjusted oil prices and profits during the 1990s were low. But the 1990s also witnessed the worldwide spread of Wahabbi fundamentalism, the build-up of Hezbollah, and the coming of age of al Qaeda. Note too that al Qaeda terrorists in the 1990s

¹⁵ Calculation from “Fatally Flawed Premise: Why Anti-Oil Weapon in War on Terror Won’t Work,” *Energy Détente* 27:11, Lundberg Survey, Inc., November 30, 2006.

¹⁶ Data on international Islamic terrorism incidents and fatalities were taken from the MIPT Terrorism Knowledge Base, an interactive website maintained by the Memorial Institute for the Prevention of Terrorism; <http://www.tkb.org/>. Data on that website comes from the [RAND Terrorism Chronology and RAND-MIPT Terrorism Incident databases](#); the [Terrorism Indictment database](#); and [DFI International's research on terrorist organizations](#). Nominal Saudi oil prices were obtained from Energy Information Administration, *Annual Energy Review 2005* p. 169 Table 5.19 “Landed Costs of Crude Imports From Selected Countries” and deflated with the GDP deflator. Unit root tests suggested that fatalities and Saudi oil prices had unit roots but terrorist incidents did not, so the former were first differenced before the regressions. Even after first differencing, auto correlation existed so autoregressive terms were added to each regression, which further weakened the insignificant relationships.

relied upon help from state sponsors such as Sudan, Afghanistan, and Pakistan – nations that aren't exactly known for their oil wealth or robust economies.

Producer states do use oil revenues to fund ideological extremism, and Saudi financing of *madrassas* and Iranian financing of Hezbollah are good examples. But given the importance of those undertakings to the Saudi and Iranian governments, it's unlikely that they would cease and desist simply because profits were down. They certainly weren't deterred by meager oil profits in the 1990s.¹⁷

The futility of reducing oil consumption as a means of improving national / energy security is illustrated by the fact that states accused of funding terrorism earned \$290 billion from oil sales in 2006. Even if that sum were cut by 90 percent, that would still leave \$29 billion at their disposal – more than enough to fund terrorism given the minimal financial needs of terrorists.¹⁸

Rents to Bad Actors

When oil prices are high, so too are oil profits for infra-marginal (low-cost) producers. Even if those profits do not find their way to international terrorists, they serve to prop up many regimes we find distasteful. Oil producers in the Second and Third worlds often use their robust flow of petrodollars to squelch human rights at home and to menace neighbors abroad.¹⁹ Many

¹⁷ Although little is known about funding trends associated with Iranian support for Hezbollah, the Iranian government probably spends no more than \$25-50 million on Hezbollah a year. Anthony Cordesman, "Iran's Support for Hezbollah in Lebanon," Center for Strategic and International Studies, July 15, 2006, p. 3. Even less is known about Saudi contributions to Islamic extremism. See Alfred Prados and Christopher Blanchard, "Saudi Arabia: Terrorist Financing Issues," RL32499, CRS Report for Congress, Congressional Research Service, Updated December 8, 2004.

¹⁸ "Fatally Flawed Premise: Why Anti-Oil Weapon in War on Terror Won't Work," *Energy Détente* 27:11, Lundberg Survey, Inc., November 30, 2006, p. 8.

¹⁹ For a brief review of the academic literature on this subject, which is somewhat mixed, see Paul Stevens, "Resource Impact: Curse or Blessing? A Literature Survey," *The Journal of Energy Literature* 9:1, June, 2003, pp. 22-24.

foreign policy elites argue that oil consumption thus harms national security by strengthening these bad international actors.

It is unclear to what extent oil profits are associated with human rights abuses or militaristic activity. There are plenty examples, after all, of relatively long-lived regimes with terrible human rights records – such as North Korea – with no oil revenues to speak of, and this is the case even within the same socio-economic regions. Denuding Iran and Libya of oil revenues might produce a government that looks a lot like Syria; denuding Venezuela of oil revenues might produce a government that looks a lot like Cuba; and denuding Russia of oil revenues might produce a government that looks a lot like Russia used to be. After all, all of these “bad-acting” petro-states yielded unsavory regimes even when oil revenues were a small fraction of what they are today.

The claim that oil revenues increase the threat those regimes pose to their neighbors seems reasonable enough, but here again, it is unclear to what extent this is true. Pakistan is a relatively poor country with no oil revenues to speak of, but it has still managed to build a nuclear arsenal and is constantly on the precipice of war with India. Impoverished, oil-poor Egypt and Syria have at various times been the most aggressive anti-Israeli states in the Middle East. Russia launched its war with Chechnya before oil revenues engorged its Treasury.

While we have no doubt that – all other things being equal – a rich bad actor is more dangerous than a poor bad actor, the marginal impact that oil revenues have on “bad acting” might well be rather small. The fact that unsavory petro-states have been fully capable of holding on to power, oppressing their people, and menacing their neighbors during a decade associated with the lowest inflation-adjusted oil prices in history (the 1990s) suggests that nothing short of rendering oil nearly valueless will have any real effect on regime behavior.

For the sake of argument, however, let's assume that there is some incremental benefit associated with reducing oil revenues to bad-acting oil producers. Unfortunately, we have only very blunt and imperfect instruments at hand to achieve that end. Policies that might reduce oil consumption would reduce oil demand – and thus, reduce revenues – for *all* oil producers, whether they are bad actors or not. Producers in the North Sea, Canada, Mexico, and the United States (which collectively supplied 20.1 million barrels of oil per day in 2006, or 24 percent of the world's crude oil needs that year) would be harmed just as producers in Venezuela, Iran, Russia, and Libya (which collectively supplied 20.3 million barrels per day in 2006).²⁰

Given there was plenty of “bad acting” in 1998 when we saw the lowest real oil prices in world history, it's unlikely that even the most ambitious set of policies to reduce oil consumption would have much effect on bad acting. Accordingly, we doubt that the foreign policy benefits that might accrue from anti-oil policies would outweigh the very real costs that such policies would impose on both consumers and innocent producers. We suspect that there are better remedies available to curtail bad behavior abroad.

An LNG Cartel?

Growing demand for natural gas and the declining costs associated with liquefying and transporting natural gas by ship has led most energy economists to conclude that natural gas markets, which have historically been continental and thus regional, will soon look very much like oil markets.²¹ While liquefied natural gas (LNG) is still more expensive than conventional

²⁰ Energy Information Administration, International Petroleum Monthly, May 8, 2007; <http://www.eia.doe.gov/emeu/ipsr/t22.xls>.

²¹ Dagobert Brito and Peter Hartley, “Expectations and the Evolving World Gas Market,” *The Energy Journal* 28:1, 2007, pp. 1-24.

natural gas delivered via pipelines, regional price discrepancies are so great that international trade in natural gas is on the rise.

The emergence of LNG and the advent of an international gas market has prompted several major gas producers – such as Russian president Vladimir Putin – to call for a global cartel of natural gas producers. Accordingly, a number of foreign policy elites are alarmed – not relieved – by the rise of LNG. One OPEC is bad enough. Who wants a second?

What this misses is that LNG is bad economic news for gas pipeline owners (like Russia) and good economic news for everyone else (like Europe). Producers in some markets did not *need* cartels prior to LNG; they were the sole providers to begin with. Low-cost LNG technology allows producers everywhere to enter markets anywhere. Thus, reluctance to embrace LNG is essentially a preference for more rather than less market concentration, with or without a cartel.

Some political actors recognize this, but they worry that market actors are not demonstrating sufficient interest in LNG investments. Hence, a number of Europeans have called for a continental energy strategy that would direct public and private investment towards the construction of LNG terminals and supply infrastructure. If LNG will liberate Europe from reliance on Russian gas, it is thought, then European states should ensure that the market moves towards LNG as quickly as possible.

Rarely, however, do we hear a convincing narrative about why market actors are systematically under-investing in LNG. For the moment, LNG is still substantially more expensive than natural gas delivered via pipeline from Russia, and market actors are not as convinced as politicians that LNG is an economically attractive means of insuring against Russian supply disruptions. Politicians may feel otherwise, but why their judgment of disruption

risks – or their judgment about optimal risk hedging strategies – is superior to the judgment of thousands of market actors with a direct financial incentive to get such things right, is unclear. The default premise of modern economics – that market actors are, in aggregate, better informed than political actors – would seem to hold here; market judgments are better informed than political judgments.

Regardless, should consumers be worried about the advent of a natural gas cartel? Well, they should not celebrate its arrival, but it is uncertain to what extent a cartel would actually increase natural gas prices. Surprisingly enough, there is very little concrete evidence for the proposition that OPEC has, on balance, increased world crude oil prices above where they might have been absent the cartel.²²

Cartels, moreover, are quite difficult to hold together in practice. That's because members face a multilateral prisoner's dilemma game. If all members comply with their production quotas, and those quotas yield a profit-maximizing amount of global supply from the producers' standpoint (a very big "if" – ascertaining such things is much harder than popularly believed), then cartel members will profit handsomely. If one member of the cartel defects, however, cartel members will still profit, but the defecting producer will earn more than it would have earned had it stuck to its quota (how much more depends on how much spare production capacity the defecting country has on hand). If a large enough number of cartel members defect, however, the profits promised by the cartel will disappear for all members.

To make matters worse for the cartel, members are rarely in a position to independently verify whether fellow cartel members are complying with their production quotas, and decisions whether to comply or not comply with production limits are made simultaneously. While the

²² James Smith, "Inscrutable OPEC? Behavioral Tests of the Cartel Hypothesis," *The Energy Journal* 26:1, 2005, pp. 51-82.

repeated “plays” of the game mitigate against chronic defection to some degree, the history of OPEC suggests that defection is still the rule rather than the exception.

In any event, an LNG cartel would have far less leverage over consumers than an oil cartel for a very simple reason; fuel competition in the electricity sector is far more robust than it is in the transportation sector. If LNG became too expensive, consumers could switch to coal, nuclear, or renewable energy, all of which are more cost competitive with gas than alternative fueled vehicles are with oil.²³

Foreign Policy Elites & Energy

The arguments laid out in this paper are rarely encountered in foreign policy circles. Nevertheless, they represent the orthodox view of economists and corporate analysts who specialize in the study of oil and natural gas markets.

When foreign policy elites encounter these arguments in public forums, they tend to dismiss them as overly theorized economics that assume perfectly informed rational actors and, moreover, are divorced from geopolitical reality. Energy producers, we are told, are not first and foremost wealth maximizers. They pursue foreign policy ends and demonstrate a willingness to sacrifice money to secure those ends. Ideological regimes, moreover, have not always acted rationally in the past and cannot be counted upon to do so in the future. The possibility that

²³ The real levelized cost of gas-fired electricity in the United States before government distortions is 5.29 cents per kilowatt hour (kWh). By means of comparison, the real levelized cost of conventional coal-fired electricity is 3.1 cents per kWh, clean coal is 3.53 cents per kWh, nuclear is 4.57 cents per kWh, wind is 4.95 cents per kWh, and biomass is 4.96 cents per kWh. Although renewable energy costs are likely underestimated because they do not reflect the cost of securing back-up generation and additional units of transmission capacity, natural gas is still the most expensive conventional source of electricity in the United States. While natural gas is cheaper in Europe, the fact remains that competition in the electricity sector would constrain and LNG cartel to a great extent. Cost data from Gilbert Metcalf, “Federal Tax Policy Towards Energy,” Working Paper 12568, National Bureau of Economic Research, October, 2006, table 8, p. 36.

producer states might become economic suicide bombers – immolating their own economies in order to inflict great economic pain on the West – cannot be lightly dismissed.

The facts, however, indicate that the above narrative is fundamentally at odds with observable reality. Energy producers have thus far demonstrated a keen interest in near-term wealth maximization – cover stories to the contrary notwithstanding. International actors rarely if ever act irrationally as an economist would define the term (e.g., they do not act in a manner that would frustrate their self interest as they perceive it). Fears of “economic suicide bombing” by anti-Western producer states are greatly exaggerated by an overly pessimistic view of the harm said bombing could do to Western economies. And worry over embargoes demonstrates a fundamental ignorance of how international oil markets work.

There are plenty of things for foreign policy elites to worry about. Energy security, however, is not one of them.