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U.S. Oil Exports

Robert Bamberger, Specialist in Energy Policy

December 11, 2008

Abstract. Concern about exports of United States crude oil, gasoline, diesel fuel and home heating oil periodically draws Congressional attention to the level of these exports, recently observed to increase from 1.4 million barrels daily in 2007, to nearly 1.9 mbd during January-September 2008. Some policymakers have suggested that prohibiting oil exports would lower prices. Legislation introduced in the 110th Congress (H.R. 6515, S. 2598) included provisions prohibiting some or all oil exports, or would have reimposed the ban on Alaskan oil exports; but no bills received major attention.

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Summary

Concern about exports of United States crude oil, gasoline, diesel fuel and home heating oil periodically draws Congressional attention to the level of these exports, recently observed to increase from 1.4 million barrels daily in 2007, to nearly 1.9 mbd during January-September 2008. Some policymakers have suggested that prohibiting oil exports would lower prices. Legislation introduced in the 110th Congress (H.R. 6515, S. 2598) included provisions prohibiting some or all oil exports, or would have reimposed the ban on Alaskan oil exports; but no bills received major attention.

Virtually all U.S. oil exports are of refined products, and no crude is exported from the West Coast. A trickle of crude oil, in a range of 25,000 barrels per day during the first nine months of 2008, is sent to Canada from the upper Midwest. However, as Canada is the largest supplier of crude oil to the United States, providing nearly 1.9 mbd in 2008 (also through September), the U.S. crude sent to Canada is of limited significance.

The United States does export some gasoline to Canada and Mexico, and middle distillates to Latin America, but some of this product would not meet U.S. environmental standards. An additional roughly 40% of U.S. oil exports are of “heavier” products, such as residual fuel oil and petroleum coke, for which there is insufficient market in the United States. Because the market for oil is global, a prohibition on U.S. oil exports would have negligible effect on price. Such a restriction would only cause a rebalancing in the movement of petroleum because countries that had purchased U.S. oil products would need to find them from other suppliers. Restrictions on exports might, in fact, create inefficiencies in the movement of world oil supplies that could foster less optimal distribution of oil and possibly lead to higher prices in some markets.

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Introduction

Sharp increases in U.S. oil exports in recent years has led to perceptions that these exports are not in the national interest, and have drawn Congressional attention. Oil exports from the United States, which averaged 1.4 million barrels daily (mbd) in 2007, and have increased to a daily average of 1.9 mbd during the period of January-September 2008.¹ This represents roughly 10% of total daily consumption of oil products in the United States.²

A significant volume of these exports are of heavier oil products that U.S. markets cannot absorb. These include petroleum coke used in the making of steel, and residual fuel that is often used as ship fuel. Exports of these products averaged, respectively, 40,000 b/d and 362,000 b/d annually during the first nine months of 2008. There would be no advantage to keeping these products in the United States as it would be costly or impractical to further refine them into products that could be used in the automotive or residential heating sectors.

Some have argued that restricting U.S. oil exports would lower product prices. However, because oil is a commodity in a global market, a prohibition on U.S. exports would not lower crude oil prices. Allowing for oil quality differentials, regional anomalies and the policies of the governments of producing and consuming nations, the price for crude oil and refined products is primarily set by world demand, and not by a nation's dependence on imported oil.³

Prohibiting U.S. oil exports would compel those purchasing these products to seek elsewhere the supply no longer available from the United States. This would bring about a re-balancing in the flow of oil worldwide, but would have no bearing on world demand and would not materially affect price. However, if the re-balancing in oil trade brings about higher transportation costs and other inefficiencies in world trade, it is possible that some additional pressure could be placed on prices. Additional processing, if feasible, of heavier petroleum products for which there is insufficient domestic demand, would also increase costs.

A widespread but erroneous impression persists that the United States is continuing to export crude oil from the Alaska North Slope (ANS). Exports of crude oil from Alaska ended in 2000. The only crude exported from the United States is an insignificant amount which does not originate from Alaska; it averaged 25,000 barrels per day (b/d) during the period of January-September 2008.⁴

This report summarizes the history and current trends of U.S. oil exports, and examines proposals to restrict U.S. oil exports as a policy option to lower gasoline and diesel prices. (For information

¹ U.S. Department of Energy. Energy Information Administration: http://tonto.eia.doe.gov/dnav/pet/pet_move_expc_a_EP00_EEX_mbbldpd_a.htm

² U.S. oil consumption, which averaged 20.5 million barrels daily during the first eleven months of 2007, declined to 19.3 million barrels daily for the comparable period of 2008. For current figures, see U.S. Department of Energy. Energy Information Administration. *Weekly Petroleum Status Report*. Table 1. http://www.eia.doe.gov/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/wpsr.html

³ For example, Japan is entirely dependent upon imported oil. The U.S. has a net oil import dependence of roughly 58% for the first 11 months of 2008. Yet, both nations pay the prevailing world price for oil.

⁴ A link to year-to-date exports, reported by the Energy Information Administration is: http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/petroleum_supply_monthly/current/pdf/table48.pdf.

on the ANWR debate, see CRS Report RL33872, *Arctic National Wildlife Refuge (ANWR): New Directions in the 110th Congress*, by M. Lynne Corn, Bernard A. Gelb, and Kristina Alexander.)

Alaskan Oil Exports: History and Policy

When the Arab oil embargo began in late 1973, oil development on Alaska's North Slope had not yet commenced. Oil at Prudhoe Bay was discovered in 1968, but no agreement had been reached on a pipeline destination. Two plans were under consideration. One favored by many policy makers envisioned the oil transiting Canada to a Chicago-area destination. Proponents of this plan pointed out that the Midwest had no indigenous source of crude; those opposing it cited the high cost of such a lengthy and expensive pipeline construction project.

The other plan, which ultimately became the route of choice for the Trans-Alaska Pipeline System (TAPS), was to transport crude oil to the southern Alaska seaport of Valdez, where it would be shipped to refiners by tanker. Proponents cited large cost savings and the timeliness of the smaller construction project. Opponents of this plan contended that TAPS sponsors' true intent was to export North Slope crude, a contention denied by TAPS supporters. Midwest destination proponents asserted that exports would run counter to the principle that U.S. oil should be used domestically and remain available for consumption in the United States as a matter of energy security.⁵

A pipeline from Prudhoe Bay required transiting a route where much of the right-of-way was on federal lands. The 1973-74 Arab oil embargo brought a new sense of urgency to the debate, and legislation was required to end the stalemate over the route. The compromise, the Trans-Alaska Pipeline Act (P.L. 93-153), authorized right-of-way for the shorter pipeline to Valdez. However, the law included a proviso that crude oil transiting the right-of-way granted by Congress would not be exported.

TAPS was completed in 1977, and initial oil shipments began to flow by year-end. With continued oilfield development on the North Slope, production climbed steadily for 10 years, peaking at 2.0 million barrels per day (mbd) in 1988. In subsequent years, Alaska North Slope (ANS) output declined, falling to 1.5 mbd in 1995 and continuing downward to current flows of roughly 700,000 bd.

During the mid-1990s, California produced about 800,000 bd of crude oil. The combination of California's indigenous production, ANS crude, and foreign oil imports resulted in a regional oil surplus, in part because the West Coast market is isolated from the rest of the country. The local glut depressed prices for both California and ANS producers. Since more crude was available on the West Coast than was needed there at that time, about 300,000 bd of crude were shipped via the Panama Canal to the U.S. Gulf Coast and U.S. Virgin Islands.

⁵ The notion that husbanding U.S. resources for strictly domestic use promotes U.S. energy security policy has deep roots. Prohibiting U.S. crude oil exports has also been proposed as a condition for opening up offshore tracts for leasing. Others have argued that there are greater U.S. energy security benefits from consuming oil from abroad and keeping U.S. supply in the ground. Both points of view are flawed, and are discussed in greater detail in the section on "Oil Export Restrictions and Price."

Congress Lifts ANS Export Ban

The West Coast oil glut elicited persistent expressions of concern from oil producers who argued that the ban on the export of Alaskan oil production was distorting the market and causing a decline in the price of West Coast production. However, this was a much different oil market than witnessed in 2008. The price for U.S. production on the mainland had fallen to \$15.30 per barrel by 1993; California production was roughly \$2-\$3 per barrel cheaper.⁶ California oil producers argued that an increase of \$1-\$2 per barrel would be sufficient incentive to increase production and create jobs.

A June 1994 DOE study, *Exporting Alaskan North Slope Crude Oil—Benefits and Costs*, found that exporting Alaska crude would increase producer receipts for both California and Alaska oil. The increased producer receipts would be the result of transportation savings realized by avoiding a trip through the Panama Canal. Additionally, DOE estimated that lifting the ban would create 16,000 jobs in the near-term, and predicted that larger producer revenues at the wellhead would result in 100,000 bd more output from Alaska and California than would be the case with continued export restriction.

Interest in revisiting the statute prohibiting Alaskan oil exports grew in 1995, when low world oil prices, a relatively benign level of net oil imports (8.0 mbd, in contrast to a current level exceeding 12 mbd), and a supportive Department of Energy (DOE) coincided with renewed legislative efforts in both Houses of Congress.

Bills introduced in the 104th Congress to repeal the ban (H.R. 70 and S. 395) passed by large margins, 324-77 and 74-25 respectively. The Clinton Administration supported ANS crude exports and the President signed P.L. 104-58 in November 1995. The first commercial tanker carrying ANS oil to a foreign country departed Valdez on May 31, 1996, approximately six months after the legislation lifting the ban was enacted.⁷ In a 1999 report, the General Accounting Office estimated that lifting the ban on Alaskan oil exports had increased California crude oil prices by \$.98-\$1.30 barrel higher than they would have been had the ban remained in place.⁸

Exports of ANS oil totaled 36,000 bd in 1996; they grew to 66,500 bd in 1997, dipped slightly to 52,900 in 1998, and rose to a high of 74,000 bd in 1999. According to unpublished DOE figures, during 1999, Korea (50%), Japan (36%), and China (12%) imported nearly all ANS exports. The list of customers for this oil remained the same throughout the period.

Before ANS exports stopped in May 2000, the result of ownership changes and falling output, about 7% of North Slope output was shipped abroad. Viewed relative to total domestic consumption of 19.3 mbd in 2000, these exports comprised less than one-half of one percent.

⁶ Annual crude oil prices by region may be found at http://tonto.eia.doe.gov/dnav/pet/pet_pri_dfp1_k_a.htm.

⁷ U.S. general Accounting Office. GAO/RCED-99-191 Alaskan North Slope Oil: Limited Effects of Lifting Export Ban on Oil and Shipping Industries and Consumers, p. 4.

⁸ *Ibid.*, p. 22.

U.S. Oil Product Exports: 2008

While the export ban was under debate during 1995, the United States was already exporting nearly 900,000 bd—28% in the form of petroleum coke, which is used in making steel. During the period of January through June 2008, exports have averaged 1.7 mbd, of which petroleum coke exports have averaged roughly 22%. Finished motor gasoline represents roughly 9.5% of exports, distillates (the portion of the barrel from which diesel fuel and home heating oil are refined) comprise a little less than 25%. Residual fuel oil averaged less than 22%. During this period, approximately 35% of total U.S. oil exports went to Canada and Mexico in cross-border trades.⁹

<http://wikileaks.org/wiki/CRS-R40120>

⁹ Year-to-date crude oil and petroleum exports are available at the following link and updated monthly by the Energy Information Administration: http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/petroleum_supply_monthly/current/pdf/table50.pdf.

Table 1. U.S. Oil Exports: Crude and Products

Daily Average (thousands barrels daily) and Expressed as a Percentage of Total Average Daily Exports

Product	1995	2000	January-September 2008
1 Crude Oil	95 (10.0)	50 (5.0)	25 (1.0)
2 Natural Gas Liquids ^a	59 (6.2)	78 (7.0)	108 (6.0)
3 Other Liquids ^b	13 (1.4)	49 (5.0)	81 (4.0)
4 Total Finished Petroleum Products	782 (82.4)	863 (83.0)	1644 (89.0)
<i>of which:</i>			
-Finished Motor Gasoline	144 (13.9)	144 (13.9)	176 (9.5)
-Kerosene-Type Jet Fuel	32 (3.1)	32 (3.1)	63 (3.5)
-Distillate Fuel Oil ^c	173 (16.6)	173 (16.6)	522 (28.2)
-Residual Fuel Oil	139 (13.4)	139 (13.4)	362 (19.6)
-Petroleum Coke	319 (31.0)	319 (31.0)	402 (21.7)
-Other Finished Petroleum Products ^d	56 (5.4)	56 (5.4)	119 (6.5)
Total	949 (100.0)	1040 (100.0)	1857 (100.0)

http://wikileaks.org/wiki/CRS-R40120

Source: Prepared by CRS from statistics appearing in various editions of the Petroleum Supply Annual, Energy Information Administration: http://www.eia.doe.gov/oil_gas/petroleum/data_publications/petroleum_supply_annual/psa_volume1/psa_volume1.html

Notes: Click here and type the notes, or delete this paragraph

- a. Includes pentanes and liquid petroleum gases such as ethane and propane.
- b. Includes motor gasoline blending components, and other hydrocarbons.
- c. Represents distillate fuel oil greater than 15 parts per million sulfur. Distillate exports by sulfur content were not made in 1995 and 1990, and may have varied with destination.
- d. These include special naphthas, lubricants, asphalt and road oil, waxes, and other products.

Oil Export Restrictions And Price

Oil is a commodity in a global market. Restricting U.S. oil exports would not lead to lower prices for products such as gasoline and diesel fuel. Except in nations where the price of petroleum products is controlled, consumers worldwide pay the prevailing market price, taking into account the quality of the crude, the refining process, taxes, and distribution to points-of-sale.

In an unregulated market, economic theory holds that commodities find the most efficient and economic pattern of distribution at market prices. As has been noted, most U.S. oil exports are of products the U.S. market cannot use or absorb. Additionally, prohibiting U.S. oil exports would compel customers for those exports to seek the supply no longer provided by the U.S. elsewhere. This would have no bearing on world demand for crude oil. Price is primarily determined by demand, and by expectations that world supply will be able to satisfy it in the future. Consequently, restrictions on U.S. oil exports are highly unlikely to place downward pressure on world crude prices.

However, upward pressure might be placed on oil prices. The current worldwide import and export patterns would need to find a new equilibrium, and it could prove to be less economically efficient than currently. For example, the transportation costs of bringing products from elsewhere might be greater than from the United States. While a reduction in U.S. dependence on petroleum imports could reduce anxiety about the adequacy of supply during an incident that reduced world oil production for a time, a disruption in production from any supplier will affect the price for oil paid by all, no matter how dependent or independent they may be on imported oil.¹⁰

Author Contact Information

Robert Bamberger
Specialist in Energy Policy
rbamberger@crs.loc.gov, 7-7240

¹⁰ The cost to the governments of nations where oil prices are controlled below market would increase, depending upon the response of those nations to a disruption. Maintaining below market prices to end-users could bring about shortages because markets in those countries are not sending signals to consumers that reflect current world supply conditions.