

BACKGROUND

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Time to Lift the Ban on Crude Oil Exports

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Abstract

Dramatic increases in domestic oil production over the past several years have produced tremendous economic benefits for Americans. The federal government, however, has constrained those benefits by significantly limiting the ability to export crude oil. Heritage Foundation energy policy expert Nicolas Loris explains how removing the ban on crude oil exports would create more opportunities for Americans, increase employment and economic growth, and augment the overall efficiency of global oil markets.

In a time of economic downturn, the sharp rise in crude oil production has been an important and remarkable wealth generator for the United States. As a result of technological advances in extracting and producing “tight oil,” also known as shale oil, the United States is now producing 8 million barrels per day, pushing the United States above 10 percent of the world’s total crude oil production.¹ While the U.S. will likely remain an important supplier of crude oil long into the future, the long-standing statutory ban on exporting crude oil, in combination with production outpacing refineries’ ability to process the crude, will limit America’s economic potential and cause a decline of otherwise viable drilling.

Trade freedom is a critical component of overall economic freedom² and increased prosperity. Removing the antiquated and unnecessary ban on crude oil will only enhance America’s stature in international energy markets, to the benefit of all Americans. The federal government can take several paths to allow companies to

KEY POINTS

- Crude oil production in the United States has grown dramatically in the past six years, in large part due to technological advances in hydraulic fracturing and horizontal drilling.
- The enormous quantity of production has companies seeking to export crude oil; but, with limited exceptions, laws prohibit the exportation of crude. Companies must refine crude in the United States before they are allowed to export petroleum products.
- Oil should be no different than any other good or service the U.S. trades around the world. By opening the door to establish more efficient global oil markets, all Americans will reap the benefits of lower prices and a stronger economy.
- Opening markets for both import and export breeds innovation as companies face more competition and face challenges to retain or expand their market share. The result is innovative ideas, higher-quality products at competitive prices, and an improved standard of living.

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export crude, but Congress should remove the ban on freely trading oil like other goods and services.

Oil Abundance and Production Growth

Crude oil production in the United States has skyrocketed in the past six years, in large part due to technological advances in hydraulic fracturing, commonly referred to as fracking, and horizontal drilling. As a result of these advanced drilling and extraction techniques, crude oil production has increased by 99.5 percent since 2008, the year when production reached its lowest point since 1943.³ Over 90 percent of all oil-production growth in the U.S. now results from fracking.⁴

The vast majority of this increase in oil production comes from just six shale resource deposits, the most productive being the Bakken Formation in North Dakota and the Eagle Ford and Permian regions in Texas. These three areas account for 98 percent of production in the major regions, and for over half of all oil production in the U.S.⁵

Production has taken off at such an unexpected rate that the U.S. Energy Information Agency (EIA) now estimates that the U.S. will not need to import any oil whatsoever by 2037, a proposition that would have been unheard of only a few years ago.⁶ Already, in 2012, the amount of oil produced in the U.S. surpassed the amount it imported.⁷

The ability to substantially reduce oil imports should not be misconstrued as a reason for the promotion of energy independence. Energy independence should not be the goal of energy policy. The goal should be to create an energy market that allows producers and consumers to respond to ener-

gy prices. Oil is a global commodity. Whether as a net importer or net exporter the U.S. will not be able to insulate Americans from price volatility any more than U.S. self-sufficiency in food production will prevent supply problems in other parts of the world from affecting domestic U.S. food prices. More market opportunities for fuel, food, or any other good incentivizes production, generates innovation, and establishes competitive prices. Greater oil supplies on the global market, however, *will* help insulate consumers from price volatility and supply disruptions.

Trading goods and services freely around the world is largely responsible for lifting hundreds of millions of people out of poverty.

America's current rate of production represents just a fraction of what the U.S. could produce. The U.S. alone has more than five times the amount of recoverable oil than Saudi Arabia.⁸ Proven reserves continue to add to this known wealth of oil as increased exploration and technological developments make more and more oil viable.

Another potentially abundant source is oil shale, which differs from shale oil. Oil shale fields contain kerogen, a naturally occurring chemical compound found in sedimentary rock. Energy companies must heat the rock to extremely high temperatures to convert the kerogen and release the usable hydrocarbons. The Green River formation, located in parts of

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1. U.S. Energy Information Administration, "Tight Oil Production Pushes U.S. Crude Supply to Over 10% of World Total," March 26, 2014, <http://www.eia.gov/todayinenergy/detail.cfm?id=15571> (accessed April 21, 2014).
 2. Terry Miller, Anthony B. Kim, and Kim R. Holmes, *2014 Index of Economic Freedom* (Washington, DC: The Heritage Foundation and Dow Jones & Company, Inc., 2014), <http://www.heritage.org/index/ranking> (accessed April 21, 2014).
 3. U.S. Energy Information Administration, "Petroleum & Other Liquids: U.S. Field Production of Crude Oil," March 28, 2014, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS2&f=M> (accessed April 21, 2014).
 4. U.S. Energy Information Administration, "Petroleum & Other Liquids: Drilling Productivity Report," April 14, 2014, <http://www.eia.gov/petroleum/drilling/#tabs-summary-2> (accessed April 21, 2014).
 5. Ibid.
 6. Dana Van Wagener, "US Tight Oil Production: Alternative Supply Projections and an Overview of EIA's Analysis of Well-Level Data Aggregated to the County Level," U.S. Energy Information Administration, *Annual Energy Outlook 2014*, April 7, 2014, http://www.eia.gov/forecasts/aeo/tight_oil.cfm (accessed April 21, 2014).
 7. U.S. Energy Information Administration, *Annual Energy Outlook 2014: Early Release Overview*, December 16, 2013, Table 1, "Comparison of projections in the AEO2014 and AEO2013 Reference cases, 2011-2040," <http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282014%29.pdf> (accessed April 21, 2014).
 8. Ibid.
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Wyoming, Utah, and Colorado, has more oil than the rest of the world combined. As Anu Mittal, director of Natural Resources and Environment at the Government Accountability Office, reported to Congress in official testimony in May 2012: “Oil shale deposits in the Green River Formation are estimated to contain up to 3 trillion barrels of oil, half of which may be recoverable, which is about equal to the entire world’s proven oil reserves.”⁹

While the technology to extract shale oil is still developing and environmental considerations need to be taken into account, the government should not create unnecessary and onerous restrictions—which will stifle the private investment in research and development that could one day make oil shale economically viable and environmentally sound.

As developments in oil production have advanced, the amount of reserves in the U.S. has grown dramatically.¹⁰ The U.S. has an enormous potential for energy wealth and oil production that can be realized by freeing access to both additional resources and additional markets.

The Benefits of Free Trade and Private Property

Free trade is a fundamental component of economic growth by providing consumers with more choice and better products at a lower cost. The ability to buy foreign products that other countries make more efficiently frees up American labor and capital to be more productive, growing the economic pie and increasing prosperity for all. Opening markets for both import and export fosters innovation as companies face more competition and face challenges to retain or expand their market share. The result is innovative ideas, higher-quality products at competitive prices, and an improved standard of living.

Trading goods and services freely around the world is largely responsible for lifting hundreds of millions of people out of poverty. Companies in foreign countries that specialize in making a product at a lower cost create opportunities for Americans to import it and thus pay less for it. Further, when markets are open to export, opportunities grow, thereby increasing potential for more wealth, investment, and jobs. The increased profitable exchange of goods and services greatly benefits businesses and consumers alike.

As with many other countries around the world, the United States benefits from free trade because of private property rights. When individuals produce something, it is their property and, so long as there is no threat to national security and no violation of the rule of law, they should be able to do whatever they want with their property. Individuals, in large part, have owned and had the ability to produce America’s natural resources—which is a primary reason why the U.S. is a global energy leader.¹¹ Individuals extract and sell the energy, and the market should determine where it goes.

Oil No Different, But Treated Differently. Oil should be no different than any other good or service the U.S. trades around the world, yet the law treats it differently. The Mineral Leasing Act of 1920 placed some of the first limitations on crude oil exports, but Congress enacted the laws primarily restricting crude exports (the Energy Policy and Conservation Act of 1975 and the Export Administration Act of 1979) in response to the 1973 Arab oil embargo.¹²

The Department of Commerce’s Bureau of Industry and Security (BIS) outlines the scenarios in which the agency will approve license applications to export crude. Currently, companies have significantly limited opportunities to export crude oil. Under its Short Supply Control regulations, the BIS

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9. U.S. Government Accountability Office, “Unconventional Oil and Gas Production: Opportunities and Challenges of Oil Shale Development,” statement of Anu K. Mittal, testimony before the Subcommittee on Energy and Environment, Committee on Science, Space, and Technology, U.S. House of Representatives, May 10, 2012, <http://science.house.gov/sites/republicans.science.house.gov/files/documents/hearings/HHRG-112-%20SY20-WState-AMittal-20120510.pdf> (accessed April 21, 2014).
 10. U.S. Energy Information Administration, “Natural Gas: U.S. Crude Oil and Natural Gas Proved Reserves,” April 10, 2014, <http://www.eia.gov/naturalgas/crudeoilreserves/index.cfm> (accessed April 21, 2014).
 11. Resources do exist on federally owned land, but the private sector leases that land and pays for the right to own and sell the resources.
 12. Neelesh Nerurkar, “U.S. Oil Imports and Exports,” Congressional Research Service, April 4, 2012, <http://www.fas.org/sgp/crs/misc/R42465.pdf> (accessed April 21, 2014), and U.S. Department of the Interior, Bureau of Land Management, “Mineral Leasing Act of 1920 as Amended,” http://www.blm.gov/pgdata/etc/medialib/blm/ut/vernal_fo/lands___minerals.Par.6287.File.dat/MineralLeasingAct1920.pdf (accessed April 21, 2014).
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automatically grants export licenses to crude oil produced in Alaska's Cook Inlet, crude transported through the Trans-Alaska Pipeline, re-exported crude from foreign nations, and small amounts of heavy Californian crude. Additionally, companies can export American crude oil to Canada so long as the consumption occurs in Canada. The industry has been taking advantage of this as exports of crude to Canada increased from 29,000 barrels per day in 2008 to 119,000 barrels per day in 2013, which was a 78 percent increase from 2012.¹³

Removing restrictions on crude oil exports could improve national security and geopolitics around the world by reducing any one nation's ability to manipulate energy supplies for political and economic influence.

The BIS, in consultation with the Department of Energy, will also approve crude exports from America's Strategic Petroleum Reserve (SPR) if "such exports will directly result in the importation into the United States of refined petroleum products that are needed in the United States and that otherwise would not be available for importation without the export of the crude oil from the SPR."¹⁴

Refined petroleum products are not subject to the same restrictions, with the exception of crude oil refined at the Naval Petroleum Reserve.¹⁵ In fact, the U.S. has seen exports of refined petroleum products increase significantly over the past few years. Decreased demand for gasoline as a result of a weaker economy and increased fuel-efficiency mandates, combined with the surge in oil production over the

past few years, meant that refiners searched for other markets to sell their product.

U.S. exports of finished petroleum products have increased from 513,000 barrels per day (bpd) in 1985 to 1.3 million bpd in 2007 and 2.8 million bpd in 2013, reaching a high of 3.3 million bpd that December.¹⁶ Some companies have also worked around the crude export ban by building small refineries to process the crude minimally to qualify it for export.¹⁷

Keep Crude in U.S. and Export Finished Products?

Several special interests¹⁸ who stand to benefit from crude export restrictions have argued that the United States should process the crude oil domestically and export finished, higher-value goods and refined petroleum products, such as gasoline. However, a producer could make that argument regarding just about any good sold in the United States. Should the government restrict the exports of wheat, steel, and gems to sell higher-valued bread, cars, and necklaces? The focus of trade policy should not be to restrict the allocation of goods and services around the world based on the product's final value.

The exports of refined petroleum products are a positive development, but the U.S. should not limit its export capabilities to those products. If the refiners value the crude more than foreign competitors do, they will be willing to pay to refine it and ship it where the market dictates. The free market should determine those decisions, not antiquated laws protecting special interests that restrict companies from making their own decisions.

Goods and services should be allocated to their highest-valued use, and that is determined by who is willing to pay most for them. If opportunities exist for companies to export their goods to a foreign buyer, they should be permitted to do so. The real-

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13. U.S. Energy Information Administration, "Petroleum & Other Liquids: U.S. Exports to Canada of Crude Oil," September 27, 2013, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCREXCA2&f=A> (accessed April 22, 2014).
 14. U.S. Department of Commerce, Bureau of Industry and Security, "Short Supply Controls," January 29, 2014, https://www.bis.doc.gov/index.php/forms-documents/doc_view/425-part-754-short-supply-controls (accessed April 21, 2014).
 15. Nerurkar, "U.S. Oil Imports and Exports."
 16. U.S. Energy Information Administration, "Petroleum & Other Liquids: U.S. Exports of Finished Petroleum Products," September 27, 2013, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MTPEXUS2&f=A> (accessed April 21, 2014).
 17. Alex Nussbaum and Bradley Olson, "BP Splitter Refinery Seen Skirting U.S. Oil Export Ban," Bloomberg, March 6, 2014, <http://www.bloomberg.com/news/2014-03-06/bp-splitter-refinery-seen-skirting-u-s-oil-export-ban.html> (accessed April 21, 2014).
 18. Jennifer A. Dlouhy, "Independent Refiners form 'CRUDE' Group to Fight Export Efforts," FuelFix, March 17, 2014, <http://fuelfix.com/blog/2014/03/17/independent-refiners-form-crude-group-to-fight-export-efforts/> (accessed April 27, 2014).
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ity is that removing restrictions on crude oil exports could improve national security and geopolitics around the world by reducing any one nation's ability to manipulate energy supplies for political and economic influence. Further, the more oil the U.S. is producing, the more oil will be readily available if a national security circumstance necessitates its use.

Misguided Concerns About Gas Prices. One of the primary concerns among skeptics and opponents of lifting the crude export ban is the effect that increased oil exports might have on domestic gas prices. Several studies have projected that lifting the ban would actually decrease gas prices both in the United States and globally by creating a more efficient distribution system for processing oil. To understand how crude exports could cause a price decline, it is important to understand the complexities of the oil market and how, without exports, market saturation could ultimately lead to shutting in production domestically:

- **Understanding oil markets.** Both crude oil and gasoline prices¹⁹ in the United States are tied to the global market price, as oil is a globally traded commodity. The reference price for crude oil trading is set through benchmarks, the three main benchmarks being West Texas Intermediate (WTI), Brent Crude, and Dubai Crude. A large part of the reason why many different benchmarks exist is that different qualities of crude exist in the market. A barrel of oil extracted in Texas is not the same as a barrel extracted in Saudi Arabia. Crude can range from very light to very heavy depending on its density,²⁰ and sweet to sour depending on its sulfur content.²¹ Light, sweeter crudes sell at a premium compared to heavy, sour crudes because refiners can process them more cheaply.

WTI and Brent have historically priced close to one another with the difference mostly stemming from transportation costs, but the spread has grown between the two benchmarks over the past few years. The combination of a Libyan supply disruption affecting the Brent benchmark and the dramatic increase in U.S. production caused a buildup of inventories and a bottleneck in Cushing, Oklahoma, where WTI is priced, that resulted in WTI trading as low as \$23 below Brent in February 2013.²² Additional pipeline infrastructure and increased rail deliveries of crude helped relieve that bottleneck and narrow the price differential to around \$5 today, but the Energy Information Administration expects the discount to remain around \$10 for the next two years.²³ Opening exports would allow U.S. companies to compete in the international markets where similar crudes have higher prices. The overall increase in global supply would reduce the price of Brent and decrease the price at the pump.

- **Matching refining capabilities.** The bottleneck in Cushing is not the only constraint facing oil markets in the United States. Another critical component to further unleashing America's domestic oil production and improving global market oil efficiencies is matching refining capabilities, which are largely set up for processing heavy crude despite the recent growth in light crude production.

The shale oil production occurring in the United States produces light sweet crude; in fact, light crude production increased 3 million bpd between 2008 and 2013. This rise has increased the share of light crude from 50 percent to over 70 percent in terms of total oil production.²⁴ There

19. Spot gasoline prices are linked to the world price, but several factors cause differences, such as refinery configuration and regulations, federal and state taxes, inventories, and weather.

20. The American Petroleum Institute gravity (API gravity) is a formula used to measure petroleum's density to water.

21. U.S. Energy Information Administration, "Today in Energy: Crude Oils Have Different Quality Characteristics," July 16, 2012, <http://www.eia.gov/todayinenergy/detail.cfm?id=7110> (accessed April 21, 2014).

22. Ingrid Pan, "Why the WTI-Brent Oil Spread Traded Below \$4 Per Barrel," Market Realist, April 15, 2014, <http://marketrealist.com/2014/04/wti-brent-oil-spread-traded-4-per-barrel/> (accessed April 21, 2014).

23. U.S. Energy Information Administration, "Short-term Energy and Summer Fuels Outlook," April 8, 2014, <http://www.eia.gov/forecasts/steo/> (accessed April 21, 2014).

24. Roger Diwan, "The Unbearable Lightness of US Crudes: When Will the Levee Break?" presentation at "Crude Oil Exports: Market Drivers and Near-Term Implications," event at the Center for Strategic and International Studies, video, February 10, 2014, <http://csis.org/multimedia/video-crude-oil-exports> (accessed April 21, 2014).

has also been a substantial increase in ultra-light hydrocarbon known as lease condensate. Refiners across the country are equipped to process a range of crudes, which presents challenges with the glut of light crude production. Gulf Coast refineries are set up largely to handle medium and heavy crudes from Venezuela, Mexico, Canada, and the Middle East. For the past 20 years, well before the onslaught of light crude production in the U.S., companies invested \$100 billion in refining capabilities to handle heavier crude imports.²⁵

Refiners that are already set up to process light crude have almost entirely reduced their imports from West African countries that extract similar grades of oil, and a number of companies have made investments to handle more light crude.²⁶ Over the past four years, light oil imports decreased by two-thirds.²⁷ In addition to displacing light crudes, refiners have switched from medium and heavy to light when economical, and have expanded refining capabilities to process more light crudes. However, these shifts have constraints²⁸ and are unlikely to keep up with American crude production; if the refining market is saturated, oil companies will stall or shut-in production. In some areas of the country, this is already occurring. The discouragement of production brought on by an artificially restricted market will decrease global supplies of oil, and keep prices higher than they otherwise would be. On the other hand, allowing crude oil exports to flow freely to where markets can already process

the crude would increase supply and increase overall market efficiency. There will likely always be lags in infrastructure buildup, but reducing artificial constraints will minimize those lags and allow better planning and improved efficiency for mid-stream (transportation) and downstream (processing) activities.

Expanding market opportunities will not just benefit oil companies. By opening the door to establish more efficient global oil markets, all Americans will reap the benefits of lower prices and a stronger economy.

Americans will stand to benefit from a more efficient global oil market through lower prices and an increase in economic activity. Two recent studies, one from Resources for the Future (RFF) and a second by ICF International commissioned by the American Petroleum Institute (API), found that lifting the crude export ban would lower gasoline prices. RFF projects that market efficiencies would reduce gas prices from 3 cents to 7 cents per gallon, while the API study estimates that American consumers would save up to 2.3 cents per gallon on gas, heating oil, and diesel fuels.²⁹ Although the price impact at the pump may seem marginal, the direction is clear that prices will fall, and not only do the savings add up over time, so do the widely expanded economic

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25. Jim Efstathiou Jr., "Oil Supply Surge Brings Calls to Ease U.S. Export Ban," Bloomberg, December 17, 2014, <http://www.bloomberg.com/news/2013-12-17/oil-supply-surge-brings-calls-to-ease-u-s-export-ban.html> (accessed April 21, 2014).
 26. Clifford Krauss, "Domestic Crude Oil Drives a Cautious Refining Revival," *The New York Times*, March 3, 2014, http://www.nytimes.com/2014/03/04/business/energy-environment/oil-boom-is-driving-a-revival-in-refining.html?_r=0 (accessed April 21, 2014).
 27. ICF International, "The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs," submitted to the American Petroleum Institute, March 31, 2014, <http://www.api.org/news-and-media/news/newsitems/2014/mar-2014/-/media/Files/Policy/LNG-Exports/LNG-primer/API-Crude-Exports-Study-by-ICF-3-31-2014.pdf> (accessed April 21, 2014), and U.S. Energy Information Administration, "Tight Oil-Driven Production Growth Reduces Need for U.S. Oil Imports," April 7, 2014, <http://www.eia.gov/todayinenergy/detail.cfm?id=15731> (accessed April 21, 2014).
 28. Since many refineries are set up to handle medium and heavy crudes, so long as these crudes are available, refiners will likely stay equipped to handle them. Further, some refineries are co-owned with foreign-owned companies and have destination clauses which will also curtail displacement. See Diwan, "The Unbearable Lightness of US Crudes."
 29. ICF International, "The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs," and Stephen P. A. Brown, Charles Mason, Alan Krupnick, and Jan Mares, "Crude Behavior: How Lifting the Export Ban Reduces Gasoline Prices in the United States," Resources for the Future *Issue Brief*, February 2014, <http://www.rff.org/RFF/Documents/RFF-IB-14-03-REV.pdf> (accessed April 21, 2014).

benefits. The ICF study concludes that opening markets to crude exports will save American consumers an estimated \$5.8 billion over a 20-year period, increase America's gross domestic product by over \$38 billion, and add more than 300,000 jobs by 2020.

What Congress and the Administration Can Do

The federal government can lift the ban on crude oil exports in several ways. In a comprehensive review of all U.S. energy export policy, Senator Lisa Murkowski (R-AK) outlined steps that the federal government could take:³⁰

- **The Department of Commerce can change the definition for allowable exports**, which it has done in the past,³¹ given the technological and economic constraints to use the crude oil in the United States.
- **The President can declare that crude oil exports are in the national interest of the United States.** Given the expansive economic gains from exports and the effect that increased

global market supplies would have on geopolitical influence, lifting restrictions on crude oil exports is undeniably in the national interest.

- **Congress can pass legislation to remove the ban.** Regardless whether any decision is made by the Department of Commerce or the President to lift restrictions, Congress should change the law, recognizing the benefits of free trade to American families.

Expanding market opportunities will not just benefit oil companies. By opening the door to establish more efficient global oil markets, all Americans will reap the benefits of lower prices and a stronger economy. Free trade is one of the principal drivers of improving standards of living both in the United States and abroad, and removing unnecessary restrictions on oil exports will help power that growth.

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30. Lisa Murkowski, "A Signal to the World: Renovating the Architecture of U.S. Energy Exports," United States Senate *Energy 20/20 White Paper*, January 7, 2014, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=546d56f0-05b6-41e6-84c1-b4c4c5efa372 (accessed April 21, 2014).

31. Senate Committee on Energy and Natural Resources Minority Staff, "License to Trade: Commerce Department Authority to Allow Condensate Exports," April 2, 2014, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=99de41e8-0074-441c-a6f2-e1e91d915314 (accessed April 21, 2014).