

An Economic Analysis of the Jones Act

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ABSTRACT

The Jones Act, which requires the use of American ships on all domestic voyages, has been in place for nearly a century. Its purpose when enacted was to strengthen national security by creating a strong shipbuilding industry and merchant marine. But by denying American businesses access to the best shipping, the act has imposed large losses on American consumers. Recent developments in the world economy, including globalization of ownership, offshore outsourcing of ship components, and extensive use of flags of convenience, have made the act even more burdensome. Since recent contributions of the merchant marine to national security have been small or negative, major reform of the Jones Act is overdue. Such reform would be consistent with the goal of eliminating excessive regulation of the American economy.

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The Merchant Marine Act of 1920, also known as the Jones Act, reserves domestic shipping for vessels that are built, owned, crewed, and flagged in the United States. The ostensible goal of the legislation is to strengthen national security by maintaining a robust shipbuilding industry and merchant marine. The rules are enforced by a host of federal agencies, including the Coast Guard and the Federal Maritime Commission. Officials have interpreted the Jones Act and subsequent legislation to apply to nearly every type of commercial vessel, including cruise ships. Detractors maintain that the Jones Act functions as a protectionist barrier to trade, like a tariff or an import quota. Proponents claim that the act is more than an ordinary form of protection and that the net losses to consumers of transported products must be compared with the gains to national security.

Critics have claimed that the justification for the act was never strong, and developments in the world economy in the last century have substantially weakened the case for retaining the act. Benefits to national security have decreased, and costs to consumers have increased. Further, these costs are unevenly distributed—they have been borne disproportionately by the noncontiguous regions of Hawaii, Alaska, Puerto Rico, and Guam. Many reforms have been proposed, ranging from complete repeal of the act to piecemeal reform that would exempt certain regions from certain requirements of the act. One reform that has economic merit and is gaining support is to exempt carriers from using American-built ships.

“Major innovations in land and air transportation have made shipping much less important than it was. Today railroads, trucks, airplanes, and pipelines are good substitutes for ships in transporting many products on many routes.”

1. THE JONES ACT AND ITS GOALS

Domestic Shipping

Domestic shipping, also called cabotage, has been reserved for domestic suppliers by many governments.¹ Protection of domestic shipping is an age-old mercantilistic practice that came to the American colonies in the form of the British Navigation Acts. The newly independent United States of America continued the British tradition and introduced its own protection of domestic shipping in the first Congress of 1789–1791.² The rationale for protecting domestic shipping was partly based on the extreme importance of waterborne transportation at the time and the fact that private commercial ships were considered good substitutes for military ships.³ Authorization to use private ships for military purposes (privateers) was a common practice of both the British and the Americans during wartime.

In 1890, Alfred Thayer Mahan wrote an influential book in which he hypothesized that national security required both a strong merchant marine and a strong navy, and the book influenced the passage of the Jones Act.⁴ But since that time, major innovations in land and air transportation have made shipping much less important than it was. Today railroads, trucks, airplanes, and pipelines are good substitutes for ships in transporting many products on many routes.

1. Fabien Bertho, “Maritime Transport in Australia and the United States,” in *Priorities and Pathways in Services Reform—Part II: Political Economy Studies*, ed. Christopher Findley (Singapore: World Scientific, 2013), 290–311.

2. Warren G. Leback and John W. McConnell Jr., “The Jones Act: Foreign-Built Vessels and the Domestic Shipping Industry,” *SNAME Transactions* 91 (1983): 169–93.

3. Peter Padfield, *Maritime Supremacy and the Opening of the Western Mind* (Woodstock, NY: Overlook Press, 1999).

4. Alfred Thayer Mahan, *The Influence of Sea Power upon History, 1660–1783* (Boston: Little, Brown, 1890); Malia Blom Hill, “The Sinking Ship of Cabotage: How the Jones Act Lets Unions and a Few Companies Hold the Economy Hostage” (Capital Research Center, Washington, DC, April 7, 2013).

Goal of the Jones Act

The United States Maritime Administration (MARAD)⁵ has interpreted national security to include both contributing to foreign military operations and responding to domestic disasters. However, it is not obvious that prohibiting foreign suppliers from offering their shipping services to the United States strengthens national security. When American businesses are free to choose suppliers to transport their goods on international routes that are not covered by the Jones Act, they hire foreign carriers that use foreign-built ships more than 80 percent of the time. MARAD considers part of its job to be “locating U.S.-flag vessels for the carriage of both domestic and international cargo.”⁶ However, American shippers appear to have no difficulty locating and choosing their own carriers on international routes. Foreign-built ships are cheaper, and American shippers have a private interest in choosing carriers based on factors such as cost, reliability, safety, and timeliness, rather than nationality.⁷ Why would prohibiting foreign carriers, which have demonstrated their superiority in the competitive international market, contribute to greater national security?

Simple Protectionism

Is the Jones Act simply a form of protection that benefits special interests at the expense of broader national interests? Restrictions on the use of foreign ships on domestic routes have the appearance of traditional protectionism. For example, Congress has required that foreign aid shipments must be carried on US-flag vessels,⁸ and the World Trade Organization considers such a “Buy American” program to be a form of nontariff barrier that is included in discriminatory government procurement. US shipbuilders, carriers, and seamen gain from excluding competition from foreign-flag ships, but for each dollar gained by the protected parties, American consumers of the transported products lose more than a dollar.⁹

5. US Maritime Administration (MARAD), *The Economic Importance of the U.S. Shipbuilding and Repairing Industry*, May 30, 2013.

6. MARAD, “U.S.-Flag Waterborne Domestic Trade and Related Programs,” accessed April 27, 2017, <https://www.marad.dot.gov/ships-and-shipping/domestic-shipping/>.

7. John Frittelli, *Cargo Preferences for U.S.-Flag Shipping* (Report R44254, Congressional Research Service, Washington, DC, October 29, 2015).

8. Stephanie Mercier and Vincent H. Smith, “Military Readiness and Food Aid Cargo Preference: Many Costs and Few Benefits” (American Enterprise Institute, Washington, DC, September 2015); Frittelli, *Cargo Preferences for U.S.-Flag Shipping*.

9. US International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Third Update 2002* (Publication No. 3519, US International Trade Commission, Washington, DC, June 2002); MARAD, *Economic Importance of the U.S. Shipbuilding and Repairing Industry*.

Protectionism results in a collective net economic loss for Americans. The 19th century economist Henry George expressed the self-inflicted damage: “What protection teaches us, is to do to ourselves in time of peace what enemies seek to do to us in time of war.”¹⁰ Because losses are spread rather thinly across many consumers while benefits are concentrated, it is easier to form and sustain a winning political coalition for the Jones Act. The success of special-interest programs with concentrated benefits and diffuse costs is a common issue in public choice. It contributes to overrepresentation of concentrated minority interests and underrepresentation of diffuse majority interests.¹¹

Nearly all analytical studies of the Jones Act have found that it imposes net costs on the US economy. Studies that estimate net costs include those by Gary C. Hufbauer and Kimberly Elliott, the US International Trade Commission, the Federal Reserve Bank of New York, and Scott N. Swisher and Woan Foong Wong.¹² Less formal studies by economists such as Anne O. Krueger, Ranjit Teja, and Andrew Wolfe¹³ and Joseph Stiglitz¹⁴ have also found that the act imposes net losses on the economy, especially on the noncontiguous states and territories of Hawaii, Alaska, Puerto Rico, and Guam.¹⁵ However, proponents of the Jones Act protest that this antiprotectionist argument is too simple and is incomplete. In addition to the benefits received by American shipbuilders and carriers, they claim, one must add possible benefits to national security from having a stronger merchant marine. After taking into account the possible benefits to national security, it is conceivable that Americans could collectively receive net benefits from protecting domestic shipping. Thus, in evaluating the Jones Act, potential national security benefits must be weighed against the traditional deadweight losses from conventional protectionism.

10. Online Library of Liberty, “Henry George on How Trade Sanctions Hurt Domestic Consumers (1886),” Liberty Fund, accessed April 4, 2017.

11. Mancur Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups* (Cambridge, MA: Harvard University Press, 1965).

12. Gary C. Hufbauer and Kimberly Elliott, *Measuring the Costs of Protection in the United States and Japan* (Washington, DC: Institute for International Economics, 1993); US International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Second Update 1999* (Publication No. 3201, US International Trade Commission, Washington, DC, May 1999); Federal Reserve Bank of New York, *An Update on the Competitiveness of Puerto Rico’s Economy*, July 31, 2014; Scott N. Swisher and Woan Foong Wong, “Transport Networks and Internal Trade Costs: Quantifying the Gains from Repealing the Jones Act,” December 2, 2015.

13. Anne O. Krueger, Ranjit Teja, and Andrew Wolfe, “Puerto Rico—a Way Forward,” June 29, 2015.

14. Michael Hansen, “Will the Jones Act Cause Hawaii’s Last Sugar Plantation to Close?,” *Hawaii Free Press*, November 16, 2015.

15. Susan M. Collins, Barry P. Bosworth, and Miguel A. Soto-Class, eds., *Restoring Growth in Puerto Rico: Overview and Policy Options* (Washington: Brookings Institution Press, 2007).

2. COVERAGE AND ENFORCEMENT OF THE JONES ACT

Coverage

Nearly all territory of the United States is covered by the act, including Hawaii, Alaska, Puerto Rico, and Guam. These regions are most severely affected by the act because of their long shipping distances from the contiguous US and because geography prevents them from using substitute modes of transportation such as trucks, trains, and pipelines. Some territories, such as the US Virgin Islands, American Samoa, and the Northern Mariana Islands, have been exempt from certain features of the law, and other regions have sought exemptions as well.

Nearly all kinds of ships are covered by the Jones Act and extensions of the act, including oceangoing cargo ships, barges, ferries, tugboats, small service ships, and passenger ships. The fleet covered by the Jones Act includes more than 30,000 vessels, but most of them are tugboats and barges rather than oceangoing vessels.¹⁶ Since 2010, 89 percent of commercial vessels produced in US shipyards have been barges or tugboats.¹⁷ As of February 2016, there were only 91 large Jones Act-eligible vessels. The courts have interpreted the law broadly to apply to a wide variety of vessels, including those that dredge material used for landfills and those that transport sewage sludge.¹⁸ The act also covers vessels that service drilling and production platforms for oil and natural gas in the Gulf of Mexico. According to one interpretation of the law, pleasure boats owned by companies and used to entertain clients are also subject to the law.¹⁹ Hardly anything that floats and is used for commercial purposes is exempt from the Jones Act.

Enforcement

The US Customs and Border Protection and other cooperating federal agencies enforce the Jones Act,²⁰ and these enforcers have been responsive to the lobbying efforts of protected groups. For example, at the request of a group of ship owners called the Offshore Marine Services Association, the Coast Guard recently

16. MARAD, *Consolidated Fleet Summary and Change List*, February 3, 2016.

17. MARAD, *Economic Importance of the U.S. Shipbuilding and Repairing Industry*, table 3, “Deliveries by U.S. Shipyards, by Type of Vessel, 2010–2014.”

18. Maritime Law Center, “The Jones Act,” November 1, 2016.

19. *Ibid.*

20. MARAD, *Consolidated Fleet Summary and Change List*.

set up a new enforcement unit called the Jones Act Division of Enforcement to deal with alleged violations in the Gulf area that may affect shipments from the Gulf to New York and Boston.²¹ Recent strong opposition to construction of new pipelines (Keystone XL pipeline and North Dakota Extension pipeline) makes domestic transport of energy by ship and railroad more important than it was.²² Recent railway accidents also raise the question of the relative safety of rail, pipeline, and water shipment of energy.²³

The coastal trade is different from the deepwater trade in terms of both products carried and types of ships used. Of the thousands of Jones Act-eligible vessels, most of them are barges, tugboats, ferries, and small vessels that operate near the shore. American shipbuilders have concentrated on producing small vessels for coastal trade. Some shippers that use large vessels have sought less stringent regulation for their oceangoing voyages.²⁴

Exemptions and Waivers

A Small Passenger Waiver Program is allowed for ships carrying no more than 12 passengers for hire. Customs is authorized to issue waivers for other vessels, but they will not do so if MARAD finds that suitable domestic ships are available. MARAD keeps a list of certified domestic ships at its website for such purposes.

All the noncontiguous regions have sought waivers from some features of the Jones Act. A bill to weaken the Jones Act has been introduced into the legislatures in Hawaii, Alaska, Puerto Rico, and Guam. It is called the Noncontiguous Trade Jones Act Reform (NTJAR), and it would eliminate the Buy American requirement for oceangoing vessels in trade with these states and territories.²⁵

Following disruption of supplies from Libya, President Obama issued a waiver in 2011 to allow shipment of oil from the Strategic Oil Reserve in Louisiana

21. Michael Hansen of Hawaii Shippers Council, “US Ships Built 2000–2016” (Table HSC-877) and “Shipyards Comps May 26, 2016” (Table HSC-876), email message to author, December 5, 2016.

22. John Frittelli et al., *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress* (Report R43390, Congressional Research Service, Washington, DC, December 4, 2014).

23. John Frittelli, *Shipping U.S. Crude Oil by Water: Vessel Flag Requirements and Safety Issues* (Report R43653, Congressional Research Service, Washington, DC, July 21, 2014); David M. McCullough and Shelley Wong, “Troubled Waters: Customs Increases Jones Act Enforcement,” Law360, July 21, 2016.

24. Hansen, “US Ships Built 2000–2016” and “Shipyards Comps May 26, 2016.”

25. Michael Hansen of Hawaii Shippers Council, “US Ships Built 2000–2016” (Table HSC-877) and “Shipyards Comps May 26, 2016” (Table HSC-876), email message to author, December 5, 2016.

and Texas to refineries in the Northeast.²⁶ The buyers wanted to use large tankers because of lower costs, but there were only nine large Jones Act tankers at the time, and all were committed to routes from Alaska to California. The alternative was to use slower and more expensive barges and coastal vessels. Instead, the Obama administration allowed the use of foreign ships for 46 of the 47 oil shipments.²⁷

Domestic emergencies have demonstrated an important weakness in the Jones Act: sometimes speed in responding to disasters is an important component of national security. MARAD acknowledges that excluding foreign ships may be an impediment to a speedy response to a domestic disaster, such as the 2010 Deepwater Horizon disaster in the Gulf of Mexico. MARAD promises to expedite requests for exemptions for foreign oil spill response vessels (oil skimmers, etc.). However, if foreign vessels can contribute to a speedy and effective response to disaster, why not allow their participation all the time, instead of merely allowing for unpredictable and ad hoc waivers that can only delay the arrival of responders?²⁸

Passenger ships are covered by an extension of the Jones Act (the Passenger Vessel Services Act), and operators have sought exemptions without success. For example, cruise ships cannot carry passengers directly from Seattle to Anchorage without incurring the added expenses of an American-flag vessel. That is why so many Alaskan cruises originate in Vancouver. It is also possible to circumvent the rules by beginning in Seattle, stopping in Vancouver, and continuing on to Anchorage.

“Cruise ships cannot carry passengers directly from Seattle to Anchorage without incurring the added expenses of an American-flag vessel. That is why so many Alaskan cruises originate in Vancouver.”

26. Jim Walker, “Why Can’t You Cruise from One U.S. Port to Another?,” *Cruise Law News*, September 9, 2011; Michael Hansen, “The Jones Act Debate: Key Issues and Positions Defined” (paper presented to the Hawaii Tourism Wholesalers Association, Honolulu, Hawaii, February 2017).

27. *Ibid.*

28. Daniel T. Griswold, *Mad about Trade: Why Main Street America Should Embrace Globalization* (Washington: Cato Institute, 2009).

3. DEVELOPMENTS IN THE MARITIME INDUSTRY SINCE 1920

World Development

It is nearly a century since the Jones Act was passed, and major changes have occurred during that time in the world economy, the manufacturing sector, the shipping industry, and competing modes of transportation. The world is more open to trade as a result of transport innovations and reductions in tariffs and other trade barriers. China was a closed economy until 1977, but it has become a major trading nation and one of the largest producers of ships. Rapid economic growth in South Korea has transformed it from a poor developing country into a major shipbuilder and a prosperous member of the Organisation for Economic Co-operation and Development (OECD). Historically, major wars have been an important barrier to trade; thus the absence of a world war since 1945 has created an environment favorable to trade.

The world economy has changed, and the United States has lost its comparative advantage in steel, shipbuilding, and certain other manufacturing industries. Technology has changed (engines, containers, improved canals, etc.), but innovations have been adopted more rapidly in some countries than others. According to an OECD study,²⁹ the gap has widened between the best technology used by frontier firms and that used by laggard firms. The gap is especially wide where laggard firms have been protected from international competition, particularly in service industries such as shipping. The Jones Act has shielded US producers from international competition for nearly a century, and the protection has stifled innovation.³⁰ The older age of the US-flag fleet is consistent with the OECD's findings about the technological gap. In 1920, when the Jones Act was passed, trucking and airlines were in their infancy, and the pipeline network covered a much smaller area than it does today. For certain products where perishability makes speed of delivery important, modern air transport now dominates shipping.

29. Dan Andrews, Chiara Criscuolo, and Peter N. Gal, "Frontier Firms, Technology Diffusion and Public Policy: Micro Evidence from OECD Countries" (Main Background Paper, Organisation for Economic Co-operation and Development, Paris, 2015).

30. Brigham A. McCown, "Keeping Up with the Jones Act: Inconsistent Trade Policy Hinders Economic Growth," *Forbes*, January 19, 2016; Alliance for Innovation and Infrastructure, "The Jones Act: Protectionism v Global Trade," January 19, 2016.

TABLE 1. PRIVATE OCEANGOING SHIPS FLYING THE US FLAG

Year	Number of ships	Percentage of world fleet
1960	2,926	16.9
1970	1,579	7.9
1980	864	3.5
1990	636	2.7
2000	282	1.0
2010	221	0.7
2016	169	0.4

Source: Bureau of Transportation Statistics, "Table 1-24: Number and Size of the U.S. Flag Merchant Fleet and Its Share of the World Fleet," 2016.

US-Flag Fleet

The shifting comparative advantage, driven by technical change, has left the US shipbuilding industry uncompetitive, in spite of protection from the Jones Act. The decline in the US-flag fleet has been sizeable and continuous. Table 1 shows the number of large, private, oceangoing ships in the US fleet from 1960 to 2016 and the US share of the comparable world fleet. These numbers exclude small vessels such as barges, tugboats, etc. In 1960 there were 2,926 large ships in the US fleet, which was 16.9 percent of the world fleet. By 2016, the US fleet had declined to 169 ships, which was only 0.4 percent of the world fleet. As table 1 shows, the decline has continued for more than half a century, practically without interruption. The Jones Act-eligible fleet is a subset of the US-flag fleet; in 2016 there were only 91 large Jones Act-eligible ships in the fleet. Those 91 ships are less than half the number of Jones Act-eligible ships (193) in the US fleet in 2000. If the Jones Act was intended to help the US maritime industry flourish, it has not succeeded.

As the US-flag fleet has become smaller, it has also become less competitive on the world market. In 1955, US-flag ships carried 25 percent of US international trade, but by 2015 the share dropped to 1 percent of US trade. As American exporters and importers have found it profitable to use foreign-flag ships for nearly all their transportation, Jones Act critics have asked, why not provide the same opportunity to Americans on domestic routes? US airlines are not prevented from purchasing the best aircraft, even if it is foreign made. The cost disadvantage of using US-flag ships is so great that nearly all domestic shippers'

current revenue comes from cargo preference, trade that is required by law to use American-flag ships.³¹

Production of ships in the United States has declined because of a change in relative costs. In fact, the entire world shipbuilding industry has changed. China and South Korea were negligible producers in the early days of the Jones Act, but in 2015 those two countries and Japan accounted for 91.4 percent of new ships (by tonnage).³² The rise in shipbuilding capacity in these countries, combined with the slowdown in world trade since 2007, has resulted in a current surplus of shipping capacity worldwide.³³

The current supply of ships is so large relative to the demand that freight rates are near an all-time low. The large Korean shipping company, Hanjin, went bankrupt in 2016. South Korea's three largest shipyards lost \$7 billion in the same year, and all three are reducing employment: Hyundai Heavy Industries, the world's largest shipbuilder, laid off 2,600 employees in the 3rd quarter of 2016, which was 10 percent of its workforce.³⁴ Daewoo Shipbuilding and Maritime Engineering had expected to lay off 1,400 workers, or 15 percent of its workforce, by the end of 2016. Samsung Heavy Industries had laid off 1,500 workers, or 10 percent of its workforce, by November 2016. Chinese shipbuilders have had a similar experience, and they are currently restructuring.³⁵ At least 20 private shipyards in China closed in 2015, with estimated job losses of 40,000.³⁶ Asian shipyards have laid off more workers in 2016 than the total number of employees in US shipyards that produce oceangoing ships. Foreign shipyards are struggling to survive even though they have much lower costs than US producers.

The small US share of newly produced ships would be even smaller if protection were removed. It is harder to find a US-produced ship today than in the past, and those that are produced are more expensive than foreign-built ships.³⁷ Today there are only seven active major US shipbuilding yards, and four of them produce exclusively military vessels: Bath Iron Works, Electric Boat Company,

31. Frittelli, *Cargo Preferences for U.S.-Flag Shipping*.

32. United Nations Conference on Trade and Development, *Review of Maritime Transport 2016* (United Nations, Geneva, 2016).

33. Costas Paris and Dominic Chopping, "Maersk's Profit Tumbles on Weak Freight Rates, Low Oil Prices" *Wall Street Journal*, November 2, 2016.

34. Bryan Harris, "South Korean Shipyards Shed Thousands of Jobs as Orders Dive," *Financial Times*, November 20, 2016.

35. "Shipping Sector Faces Upheaval," *Wall Street Journal*.

36. *Ibid.*

37. Drewry Maritime Research, "US Cabotage Protection Gets More Expensive," *Container Insight Weekly*, November 17, 2013; Frittelli et al., *U.S. Rail Transportation of Crude Oil*.

Newport News Shipbuilding, and Ingalls Shipyards.³⁸ The US-built fleet is older than the comparable foreign fleet. The ships in the US fleet averaged 33 years old in 2016; those in the global fleet averaged 13 years.³⁹ The newest types of US ships are tankers, partly because US environmental rules now require double-hulled ships. But they are still, on average, 5 years older than the global fleet of tankers.⁴⁰

Higher costs and a smaller market share also apply to the repair and servicing of existing ships by American firms. Also, the kinds of ships in the US commercial fleet are diverging from the kinds of ships preferred by the military. Commercial users place a higher value on saving fuel, but the military places a higher value on speed.⁴¹ Commercial users also prefer more specialized ships, such as roll on–roll off ships that allow automobiles to be driven on and off. The military prefer more versatile ships that can be used for different types of cargo in different kinds of ports.

US shipbuilding has declined; today only three domestic builders of large commercial ships remain. The National Steel and Shipbuilding Company (NASSCO) division of General Dynamics is the largest, and it is the only company that produces military as well as commercial vessels. NASSCO has shipyards in Norfolk, San Diego, and Mayport, Florida. The other two domestic shipbuilders—Philly Shipyard of Philadelphia and VT Halter of Pascagula, Mississippi—produce exclusively commercial ships.⁴² The fact that there is so little overlap between builders of commercial and military vessels weakens the argument that subsidizing producers of commercial ships strengthens military capability and national security. The skills needed to build commercial ships may be different from the skills needed to produce military vessels.

The shipbuilding industry protected by the Jones Act has gotten small, and it is not competitive with foreign-flag vessels in the absence of Jones Act protection. Because Jones Act tankers are not competitive, they often return home empty following a domestic voyage that was protected by the Jones Act.⁴³ The shipbuilders that currently produce oceangoing merchant ships consist of

38. Michael Hansen of Hawaii Shippers Council, “US Ships Built 2000–2016” (Table HSC-877) and “Shipyards Comps May 26, 2016” (Table HSC-876), email message to author, December 5, 2016.

39. “US-Built Fleet Much Older Than Global Fleet Due to Jones Act,” *World Maritime News*, March 22, 2016.

40. *Ibid.*

41. Frittelli, *Shipping U.S. Crude Oil by Water*.

42. “US-Built Fleet Much Older Than Global Fleet Due to Jones Act,” *World Maritime News*; Michael Hansen of Hawaii Shippers Council, “US Ships Built 2000–2016” (Table HSC-877) and “Shipyards Comps May 26, 2016” (Table HSC-876), email message to author, December 5, 2016.

43. Frittelli, *Shipping U.S. Crude Oil by Water*.

“The cost of US-built ships continues to rise relative to foreign-built ships. Delays in building and repairing ships and cost overruns result in fewer and older active ships, which affects national security.”

three shipyards that have produced only 40 large ships over the period 2000–2016.⁴⁴

The recent problems of US builders in producing military vessels reflect their problems in producing commercial ships as well. Two prominent cases have demonstrated US shipbuilders’ inability to deliver military ships on time and on budget. The first is the nuclear-powered supercarrier *Gerald R. Ford*, which is the most expensive ship ever built (\$12.9 billion). In 2016 *Bloomberg* reported that the builder was far behind schedule and the ship may have to be redesigned.⁴⁵ Delays mean the navy has fewer modern ships at sea, and the quality of service from the smaller and older fleet declines. The second example is the new destroyer *Zumwalt*, which has already experienced multiple problems. It was significantly over budget, and following its commissioning in Baltimore on October 15, 2016, it had to stop for repairs in Norfolk and the Panama Canal on the way to its home base in San Diego.⁴⁶ The original budget for this type of destroyer was expected to cover 32 such vessels, but it is now expected to cover only 2 destroyers.

Cost overruns are harmful to both the navy and national security because a budget of a given size will buy fewer ships and less security. These shipyard problems related to quality, cost, and timing reflect general problems faced by US shipbuilders for both commercial ships and military vessels. The cost of US-built ships continues to rise relative to foreign-built ships. Delays in building and repairing ships and cost overruns result in fewer and older active ships, which affects national security.

44. Hansen, “Jones Act Debate.”

45. “Problems with Nuclear Powered Super Carrier: Late Plus Need Redesign,” *Bloomberg*, July 19, 2016.

46. Ryan Browne, “New Cutting-Edge \$4B Navy Destroyer Malfunctions in Panama Canal,” CNN, November 24, 2016.

Flags of Convenience and Globalization

The number of ships flying the US flag has declined, in part owing to the global movement toward the use of “flags of convenience,” also known as open registry.⁴⁷ With open registry, some governments register ships owned by residents of other countries. Most of the open-registry hosts are countries with low-income economies. In 2016, the top five ship-owning economies were Panama, Liberia, the Marshall Islands, Hong Kong, and Singapore.⁴⁸ By international law, all ships must be registered in a country, and ship owners must observe the laws and regulations of the country whose flag they fly. Governments are responsible for monitoring ships flying their flags, including enforcing safety rules. Ship owners are increasingly using flags of convenience because of lower labor costs and more favorable regulations. Jurisdictional competition is part of the broader process of globalization.

The cost of sea transport fell by 80 percent from 1970 to 2000, and flags of convenience were a major contributor.⁴⁹ The implication is that flying the US flag is more expensive than flying foreign flags because of the Jones Act rules. In fact, according to recent estimates, the operating costs of US-flag ships are more than twice the operating costs of foreign-flag vessels.⁵⁰

The movement toward open registry began in the 1920s when American owners—seeking relief from high labor costs and red tape—began to register ships in Panama. The practice eventually expanded to other ship owners and other host countries. As a result, American shippers use foreign-flag vessels to transport more than 80 percent of exports from and imports into the United States. Thus, American-flag vessels have practically disappeared, except for those carrying Jones Act merchandise and other cargo that the US government requires (cargo preference) to be carried on US ships.⁵¹ Of the ships owned by Americans in 2016, 86 percent of them (by weight) flew foreign flags.⁵² The fact that the United States taxes a company’s worldwide income, rather than just US income, also makes it an unattractive place to register ships.

47. Daniel J. Mitchell, “The Threat to Global Shipping from Unions and High-Tax Politicians,” Center for Freedom and Prosperity, August 2004.

48. United Nations Conference on Trade and Development, *Review of Maritime Transport 2016*.

49. Mitchell, “Threat to Global Shipping from Unions and High-Tax Politicians.”

50. Maritime Administration (MARAD), US Department of Transportation, *Comparison of U.S. and Foreign-Flag Operating Costs*, September 2011; Frittelli, *Shipping U.S. Crude Oil by Water*.

51. Frittelli, *Cargo Preferences for U.S.-Flag Shipping*; Mercier and Smith, “Military Readiness and Food Aid Cargo Preference.”

52. United Nations Conference on Trade and Development, *Review of Maritime Transport 2016*.

With approximately 23 percent of the world market, Panama has registered the largest commercial fleet today. Panamanian ships typically use low-cost labor, with 40 percent of their seamen coming from the Philippines or China. The wages of these seamen are lower than those of American seamen but higher than median wages in the Philippines or China.⁵³ Wages on American-flag ships are more than five times as high as wages on foreign-flag vessels, a major reason operating costs are so much higher for those American-flag ships.⁵⁴ The globalization of seamen's services has been strongly opposed by seamen's labor unions in the United States and other high-income countries. The operation of ships is labor intensive, and the increase in flags of convenience is part of the globalization process that has provided a supply of lower-wage seamen from low-income countries.

Critics claim that flags of convenience contribute to a "race to the bottom" in safety. Safety does indeed vary among the open-registry ships, as well as among the national registry ships. However, among the open-registry countries with the largest traffic (Panama and Liberia), the safety records are above the average for all ships.⁵⁵ In recent years, their ships had fewer accidents and detentions⁵⁶ than the average ship.

American-Built or Multinational?

Although the Jones Act requires the use of American-built ships, the pervasive practice of offshore outsourcing of components in shipping, as in all manufacturing, calls into question the whole idea of identifying a ship as either entirely American or entirely foreign. Completed ships today are the result of a complex and changing supply chain that includes suppliers of components from many countries. Modern ships are neither 100 percent American nor 100 percent foreign. It has been observed that "the only thing American about an oceangoing ship assembled in the U.S. today is the extraordinarily high price; foreign shipyards provide the design, main engines and other equipment."⁵⁷

In recognition of the importance of outsourcing components, current rules allow substantial foreign components in "American-built" ships. According to these rules, "A vessel satisfies the U.S.-built requirement if 'all major components

53. Mitchell, "Threat to Global Shipping from Unions and High-Tax Politicians."

54. MARAD, *Comparison of U.S. and Foreign-Flag Operating Costs*.

55. Mitchell, "Threat to Global Shipping from Unions and High-Tax Politicians."

56. Detentions are restrictions placed on ships leaving ports because they failed safety inspections.

57. Michael Hansen, quoted in Bryan Riley, "Are Jones Act Ships Really 'Made in the USA'? Well, Sort Of," *The Hill*, June 7, 2016.

of its hull and superstructure are fabricated in the United States.”⁵⁸ Service and repair of ships also use extensive foreign outsourcing; the only restriction is on the percentage of foreign-made steel used in repairs. Foreign elements including ship design, engines, electronic equipment, and many other components are part of modern “American-built” ships.

The Americanness of a ship has become as difficult to quantify as the Americanness of automobiles, computers, iPods, and other electronic equipment. Some of these products contain components from more than 15 countries. Producers of automobiles sold in the United States must provide data on the percentage of domestic content for each model each year. Domestic value added varies substantially by model, and it is not uncommon for a foreign nameplate, such as a Toyota model, to have more US value added than American nameplates, such as General Motors, Ford, or Chrysler. Some Chevrolet models have less than 10 percent US content, and some Toyota models have more than 90 percent US content. For 2016 models, one index of the most American-made models listed the Toyota Camry and the Honda Accord as the top two models, and all of the top five were Japanese nameplates.⁵⁹ Domestic value added varies by year, which would present problems for American ships, whose average age is 33 years. Requiring that Jones Act ships be built in America demonstrates a lack of knowledge of the supply chains in modern manufacturing.

All the American shipbuilders have contractual agreements and other working relationships with foreign firms. For the latest in shipbuilding design and engineering, NASSCO partners with South Korean shipbuilding power Daewoo Shipbuilding and Marine Engineering. Philly Shipyard is a subsidiary of Norwegian Aker ASA, whose shares are traded on the Oslo stock exchange. According to the company website, “Since delivering its first vessel in 2003, Philly Shipyard has delivered more than 50% of all Jones Act ocean-going merchant ships including containerships, product tankers, and large crude oil tankers.”⁶⁰ VT Halter is owned by ST Engineering, whose major shareholder is the government of Singapore. Given the extensive use of foreign outsourcing, it is misleading to describe Jones Act ships as American built. It would be more accurate to say they are assembled in America from components made in many countries. With respect to proposed reforms, claiming that modern Jones Act ships are

58. Sarah M. Beason, Darrell L. Conner, and Mark Ruge, “Myth and Conjecture? The ‘Cost’ of the Jones Act,” *Journal of Maritime Law & Commerce* 46, no. 1 (2015): 23–50, quoting 46 CFR § 67.97.

59. Kelsey Mays, “The 2016 Cars.com American-Made Index,” Cars.com, June 28, 2016.

60. Riley, “Are Jones Act Ships Really ‘Made in the USA’?,” quoting Philly Shipyard, “History,” accessed April 27, 2017, <http://www.phillyshipyard.com/s.cfm/1-9/History>.

entirely American-built is an exaggeration, and eliminating the American-built requirement has strong economic justification.

American Ownership

The Jones Act requires American ownership of ships, but establishing the nationality of owners and keeping the data current is problematic. The majority of ship owners are corporations, not natural persons,⁶¹ and corporate shares are traded continuously on world stock markets. Thus, it is difficult to identify the nationality of owners at a point in time and to monitor changes in ownership over time. According to one interpretation of current law, at least 75 percent of the stock must be owned by US citizens.⁶² Furthermore, since ownership of shares could change by the minute, a specific ship could be “American” one minute but not the next. Hence, some legal experts have claimed that “it is legally and practically infeasible to limit foreign ownership in coastwise shipping companies with widely dispersed shareholders.”⁶³ The problem is the change in stock ownership in the United States: “In the 1930s, not long after the Jones Act was passed, only about 10% of shares in U.S. markets were held by an individual or institution on behalf of someone else (the ‘beneficial owner’). Today, at least 85% of shares are held this way.”⁶⁴

Globalization of the stock market and cross-border ownership have made the American ownership requirement less meaningful and less workable. NASSCO’s partnership with Daewoo, Philly Shipyard’s partnership with Aker, and VT Halter’s partnership with ST Engineering indicate that these firms are far from 100 percent American. A more fundamental issue for national security is operational control of ships, not ownership, because ownership does not imply control. The manager of a ship and the content of a ship are more important for security than the ownership of a ship.⁶⁵

The issue of American ownership also arises for non-Jones Act ships that must have US owners to be eligible for certain government programs (for instance, cargo preference). For example, some American companies such as Sea-Land and Farrell Lines were sold to foreign companies, but to preserve their

61. Daniel Michaeli, “Foreign Investment Restrictions in Coastwise Shipping: A Maritime Mess,” *New York University Law Review* 89, no. 3 (2014): 1047–87.

62. Beason et al., “Myth and Conjecture?”

63. Michaeli, “Foreign Investment Restrictions in Coastwise Shipping.”

64. *Ibid.*

65. Mitchell, “The Threat to Global Shipping from Unions and High-Tax Politicians.”

“American” status, the new foreign owners established US legal entities called documentation citizens. They are companies located in the United States and operated by US citizens but with a “foreign parent.” The chief executive of the parent must submit a document promising not to influence operation of the vessel in a manner unfavorable to the interests of the United States. There has been persistent criticism that the ships are de facto foreign controlled, and some cases have gone to court.⁶⁶

Intermodal Competition

For certain products and certain routes, trucks, railroads, airlines, and pipelines have become important substitutes for ships as a mode of transportation.⁶⁷ Substitution possibilities are greater for some products than for others. For example, pipelines can substitute for railroads, ships, and trucks for transporting oil, but pipelines are not suitable substitutes for coal, grain, and other bulk products. Manufactured products are transported almost exclusively on container ships. Rail and coastal ships are competitors in supplying crude oil to coastal refineries, and “tankers . . . have superior economics in moving crude.”⁶⁸

This intermodal competition is important for the contiguous 48 states, but it is usually less feasible for the noncontiguous Hawaii, Alaska, Puerto Rico, and Guam.⁶⁹ For Hawaii, 98 percent of the products transported to the islands are carried by water. Airplanes are usually not the preferred mode for shipping cattle, but the Jones Act has induced some bizarre substitution in transport. Former US Representative Ed Case (D-HI) reported that Hawaiian ranchers chartered “a weekly 747 out of Keahole Airport to get their cattle to the mainland because that’s cheaper than Jones Act shipping.”⁷⁰ The Jones Act has a larger negative effect on these noncontiguous states and regions, yet they had less political power to protect themselves when the act was passed. Hawaii and Alaska were not yet states, and Puerto Rico and Guam are still territories.

66. Frittelli, *Cargo Preferences for U.S.-Flag Shipping*.

67. Swisher and Wong, “Transport Networks and Internal Trade Costs”; Frittelli et al., *U.S. Rail Transportation of Crude Oil*.

68. Frittelli, *Shipping U.S. Crude Oil by Water*.

69. Asaf Ashar and James R. Amdal, “The Impact of Modifying the Jones Act on US Coastal Shipping” (Final Report 525, National Center for Intermodal Transportation for Economic Competitiveness, Baton Rouge, LA, 2014).

70. Ed Case, quoted in Stacy Yuen, “Keeping Up with the Jones Act,” *Hawaii Business*, August 2012; Hill, “Sinking Ship of Cabotage.”

The shale revolution has made intermodal substitution even more important. New sources of domestic crude have replaced imported crude, thus requiring more domestic transportation. But this increase in demand for domestic transportation of oil makes the Jones Act restrictions a costly barrier to trade. Bakken, North Dakota, and Eagle Ford, Texas, are new sources of crude oil that have altered the shipping pattern for crude. Traditionally, pipelines were the preferred mode for transporting oil, but the location of the traditional pipeline network has not been convenient to the new sources. Also, stronger opposition to constructing pipelines, such as the Keystone XL and Dakota Extension, has made it more difficult to extend the network. As a result, more of the new oil has been transported by rail or on coastal waterways. Jones Act-eligible ships are required for coastal shipping of oil, but they are much more expensive than foreign-flag vessels. In addition, there are not many Jones Act tankers, and it is difficult to hire one for a short period or even for a single voyage.⁷¹

To circumvent the Jones Act requirement, some shippers hire foreign-flag vessels and ship crude from Texas to the Atlantic coast of Canada, rather than to nearer northeastern US refineries. Also, “the unavailability of U.S.-built tankers may result in more oil moving by costlier, and possibly less safe, rail transport than otherwise would be the case.”⁷² The sharp increase in oil shipments by rail has resulted in an increase in the frequency of derailments and an increase in damage. These new inefficiencies created by the interaction of the shale revolution and the Jones Act add to the total cost of the act to the US economy. Swisher and Wong have explored the interactions among the different transportation modes and the Jones Act.⁷³

The other modes of transportation do not face the same strict regulation that ships do. In particular, they are not required to buy American-built aircraft, trucks, or railroad equipment, and US tariff levels on imported transportation equipment for all but ships is approximately 1 percent.⁷⁴ As a result, the users of ships bear an extraordinarily high regulatory burden. Conversely, the other modes of transportation have flourished as a result of having access to the best domestic and foreign inputs in the world. In the United States, shipping continues to decline relative to other transportation modes as a share of total transport volume.⁷⁵

71. Frittelli, *Shipping U.S. Crude Oil by Water*.

72. Ibid.; Frittelli et al., *U.S. Rail Transportation of Crude Oil*.

73. Swisher and Wong, “Transport Networks and Internal Trade Costs.”

74. Riley, “Are Jones Act Ships Really ‘Made in the USA’?”

75. Bertho, “Maritime Transport in Australia and the United States.”

What has been the effect of not having Jones Act-like requirements on other modes of transportation when domestic crises occur? It seems clear that trucks, rail, and planes have been more responsive to domestic crises than Jones Act ships. There are not very many of the Jones Act-compliant ships, and some are committed to specific routes, such as carrying oil between Alaska and California. Because they are more dependent on shipping than the contiguous 48 states, the noncontiguous regions are harmed disproportionately by the Jones Act. Perhaps the persistence of the extraordinarily high level of protection received by domestic shipping is a result of the fact that ships are the oldest form of transportation, and the earliest laws protecting domestic shippers were introduced long before the more modern forms of transportation were invented.

4. COST OF THE JONES ACT

Relative Costs

The main economic effect of the Jones Act is to exclude foreign ships from supplying services on domestic routes. By excluding potential suppliers, the act prevents American shippers from hiring what might be their preferred suppliers. It violates the principle of comparative advantage by which Americans benefit from importing a good or service if foreigners have relatively lower costs. Reducing the supply of permissible shipping increases costs, but by how much? Studies have estimated the average cost difference of acquiring a ship, the average cost difference of operating a ship, and the total cost difference (acquisition plus operating) of using Jones Act ships for a specific year. By all these measures, Jones Act ships have been significantly more expensive than comparable foreign-flag vessels.

The cost of producing new ships in American shipyards is four to five times the cost of imported ships.⁷⁶ For

“The main economic effect of the Jones Act is to exclude foreign ships from supplying services on domestic routes. By excluding potential suppliers, the act prevents American shippers from hiring what might be their preferred suppliers.”

76. Hansen, “Jones Act Debate.”

example, purchases of American-built ships by Jones Act shipper Matson between 2003 and 2006 cost four times as much as ships built in Asia.⁷⁷ US-built tankers cost four times as much as foreign-built tankers.⁷⁸ Since there are many different types of ships, from tugboats to tankers, the exact cost difference depends on the type of ship being compared. Because of the large cost difference, severely harmed regions such as Hawaii have requested a waiver from having to pay a substantial premium for new ships.⁷⁹ American producers have been accused of failing to innovate, partly because they have been shielded from competition.

Based on publicly available information, most objective observers agree that American-built ships are significantly more expensive. One dissenter, however, is US Representative Duncan Hunter (R-CA), who has accused Jones Act critics of “dubious claims of higher costs.”⁸⁰ But Representative Hunter has not produced alternative cost estimates. A more fundamental issue for Representative Hunter, and for others who claim there are no cost differences, is why American shipyards need Jones Act protection from foreign builders if American costs are not higher.

Operating costs are often represented by freight rates, and many comparisons have been made between Jones Act ships and foreign ships for similar products and routes.⁸¹ For example, the cost of shipping a standard-size container from New York to Puerto Rico has been much higher than shipping it to Jamaica, which is only slightly farther. Similarly, the cost of shipping from Los Angeles to Hawaii has been higher than the cost of shipping the same product from Los Angeles to Shanghai.

These cost differences have been cited as an approximate measure of the magnitude of the burden imposed by the Jones Act on shippers and their customers. Using MARAD data,⁸² John Frittelli of the Congressional Research Service has shown operating costs of Jones Act vessels to be more than twice as high per

77. Brian Slattery, Bryan Riley, and Nicolas D. Loris, “Sink the Jones Act: Restoring America’s Competitive Advantage in Maritime-Related Industries” (Backgrounder No. 2886, Heritage Foundation, Washington, DC, May 22, 2014; Drewry Maritime Research, “US Cabotage Protection Gets More Expensive”; Donald B. Frost, “Impact of the Jones Act: The ‘Build American’ Requirement,” *Hawaii Free Press*, August 2016.

78. Frittelli, *Shipping U.S. Crude Oil by Water*.

79. Hansen, “Jones Act Debate.”

80. Duncan Hunter, “Jones Act a Lifeline for Puerto Rico and Even Bigger Booster for U.S. National Security,” *The Hill*, June 8, 2016.

81. US International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Third Update 2002*; Federal Reserve Bank of New York, *An Update on the Competitiveness of Puerto Rico’s Economy*; Swisher and Wong, “Transport Networks and Internal Trade Costs”; Frost, “Impact of the Jones Act.”

82. MARAD, *Comparison of U.S. and Foreign-Flag Operating Costs*.

day as comparable foreign-flag vessels.⁸³ Labor was the dominant cost difference, with US labor costs 5.5 times the labor costs for foreign-flag vessels. Another labor cost is crew size, which can be influenced by regulations of the country where the ship is registered. For US-flag vessels, “crew size requirements mandated by statute date back to 1915, when vessels were powered by steam boilers and turbines that required round-the-clock attention. . . . The statute is still in effect.”⁸⁴ An additional problem for Jones Act ships is that their designs are diverging more from the kinds of ships preferred by the military.

Freight rates charged by Jones Act ships are higher than those charged by foreign-flag vessels, and the two sets of rates are not highly correlated with each other. If the market for shipping services were open and competitive, the freight rates would be connected by the possibility of customers switching to foreign-flag vessels if the freight rates of American-flag ships got too high. However, the Jones Act effectively precludes shippers from shopping for better deals from foreign-flag vessels. It denies them access to over 90 percent of the world’s shipping fleet, and in 2015–2016, foreign-flag vessels charged some of the lowest freight rates in history.

Total costs per year are higher for Jones Act ships. Various agencies and individuals have given estimates for the higher production costs for new ships and for the higher operating costs for existing ships per year on various routes.⁸⁵ Hufbauer and Elliott, for example, estimated \$1.1 billion in 1990 for net economic cost.⁸⁶ In its 1999 study, the US International Trade Commission found annual costs of \$1.32 billion to US consumers.⁸⁷ The same study found Jones Act requirements to be equivalent to a 65 percent tariff on shipping services.⁸⁸ Swisher and Wong estimated that repeal of the Jones Act would result in savings of \$1.9 billion for businesses transporting their products.⁸⁹ Economic analyses by individual

83. Frittelli, *Shipping U.S. Crude Oil by Water*.

84. Frittelli, *Cargo Preferences for U.S.-Flag Shipping*.

85. MARAD, *Comparison of U.S. and Foreign-Flag Operating Costs*; Letter from Manuel Reyes to Senator Orrin Hatch and other members of the Congressional Task Force on Economic Growth in Puerto Rico, September 22, 2016; Federal Reserve Bank of New York, *Report on the Competitiveness of Puerto Rico’s Economy*, June 29, 2012.

86. Hufbauer and Elliott, *Measuring the Costs of Protection in the United States*.

87. US International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Second Update 1999*.

88. *Ibid.*

89. Swisher and Wong, “Transport Networks and Internal Trade Costs.”

economists over the last 25 years have uniformly found that the Jones Act is harmful to the US economy.⁹⁰

Critics have charged that comparing freight rates of US-flag carriers and foreign carriers when the Jones Act is in place exaggerates the differences.⁹¹ Although the comparison may provide useful information, it is not exactly an apples-to-apples comparison of conditions with and without the Jones Act. Currently, foreign-flag vessels are exempt from some US laws and from regulations on foreign routes that would apply if they were allowed to serve domestic routes. Examples include minimum wage laws, rules pertaining to overtime pay, legal liability, and certain taxes.⁹² Some new laws, such as requiring tankers to have double hulls, already apply to both foreign- and American-flag vessels, so they would not affect cost comparisons.⁹³ Similarly, the United States has unlimited liability for damages, which increases insurance costs for all ships, Jones Act or not. Hence, operating costs of foreign-flag vessels might be higher if they were allowed to serve the US domestic market, but there is uncertainty about the size of the possible cost difference.

Scholars are aware of this problem, but the Jones Act has been in effect for so long that there is no useful data on costs of foreign-flag ships serving the US domestic market. One possible solution is to waive the Jones Act for a period of perhaps five years.⁹⁴ This experiment would provide data on true cost differences attributable to the Jones Act. A disadvantage is that a period as short as five years would be too short to allow long-term investors in shipping capacity to make full adjustments. An alternative would be to do robustness tests with a trade model that allowed operating costs to vary depending on whether the Jones Act were in effect.⁹⁵

As a practical matter, on international routes where both American and foreign buyers of shipping services have a choice between US- and foreign-flag ships, they almost never hire US-flag ships. MARAD did a 2011 study showing that operating costs of US-flag ships were 2.7 times those of foreign ships.⁹⁶ With world freight rates at historic lows in 2015–2016, the cost difference was even

90. Krueger et al., *Puerto Rico—a Way Forward*; Michael Hansen, “Clinton’s Chief Economist Supports Jones Act Reform for Hawaii,” *Hawaii Free Press*, April 24, 2012.

91. Beason et al., “Myth and Conjecture?”

92. *Ibid.*

93. US International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Second Update 1999*.

94. Federal Reserve Bank of New York, *Report on the Competitiveness of Puerto Rico’s Economy*, June 29, 2012; Federal Reserve Bank of New York, *An Update on the Competitiveness of Puerto Rico’s Economy*.

95. Swisher and Wong, “Transport Networks and Internal Trade Costs.”

96. Maritime Administration, *Comparison of U.S. and Foreign-Flag Operating Costs*.

greater.⁹⁷ Note that this limitation applies only to comparing *operating costs*, not to *building costs*. All comparisons of the cost of acquiring newly built ships show much higher costs for American-built ships.⁹⁸

By distorting transport costs, the Jones Act also distorts the pattern of trade. In some cases, the additional cost of using Jones Act ships has induced Americans to import products, rather than buying from nearer American states. An example is the rock salt used to treat icy roads in the winter. This item is widely produced in the United States, but states such as Maryland and Virginia import most of their salt from Chile through the Panama Canal rather than from the Port of South Louisiana.⁹⁹ The additional cost attributable to the Jones Act has caused this wasteful trade distortion. In other cases, the Jones Act induces businesses to export products rather than sell them in nearer domestic locations. The recent increase in domestic oil production has resulted in greater transportation distortions and a larger total cost from the Jones Act. Some crude oil has been shipped from the Texas Gulf Coast to eastern Canada, bypassing northeastern US refineries, because of the Jones Act.¹⁰⁰

Monopoly Power

By excluding foreign suppliers, the Jones act also reduces competition for shipping services. The increased monopoly power given to domestic firms allows them to charge higher markups over cost, and it allows them to offer shipping schedules and types of ships that customers would not choose absent the act. There are four companies serving Puerto Rico from Jacksonville, Florida, and their executives have been convicted of conspiring to fix freight rates on routes from Florida to Puerto Rico.¹⁰¹ More generally, Frittelli believes the small and shrinking size of the Jones Act commercial fleet is a factor limiting competition for cargoes.¹⁰²

5. DISTRIBUTION OF COSTS BY REGION AND INDUSTRY

The effects of the Jones Act vary by region. The negative effects are most severe in the noncontiguous regions of Hawaii, Alaska, Puerto Rico, and Guam, where

97. Frost, "Impact of the Jones Act."

98. Bertho, "Maritime Transport in Australia and the United States."

99. Slattery et al., "Sink the Jones Act."

100. Frittelli, *Cargo Preferences for U.S.-Flag Shipping*.

101. Letter from Manuel Reyes to Senator Orrin Hatch and other members of the Congressional Task Force on Economic Growth in Puerto Rico, September 22, 2016.

102. Frittelli, *Cargo Preferences for U.S.-Flag Shipping*.

“The negative effects [of the Jones Act] are most severe in the noncontiguous regions of Hawaii, Alaska, Puerto Rico, and Guam, where trucks, rail, and pipelines cannot substitute for foreign shipping banned by the Jones Act.”

trucks, rail, and pipelines cannot substitute for foreign shipping banned by the Jones Act.

Puerto Rico

The Jones Act has contributed to the current economic disaster in Puerto Rico in which the territory defaulted on its debt.¹⁰³ A 2010 study at the University of Puerto Rico concluded that the island lost \$537 million per year as a result of the Jones Act.¹⁰⁴ Because of higher shipping costs, Puerto Ricans pay more for imports and receive less for exports. Puerto Rico consumers pay higher prices for goods shipped in Jones Act vessels because shippers pass on their higher transport costs to consumers the same way they would pass on a sales tax.

According to a study from the Federal Reserve Bank of New York, shipping a container from the US East Coast to Puerto Rico cost \$3,063, but shipping the same container to nearby Santo Domingo, Dominican Republic, cost only \$1,504, and to Kingston, Jamaica, only \$1,607.¹⁰⁵ The price of electricity in Puerto Rico is higher than in any of the contiguous 48 states.¹⁰⁶ Because of the added costs attributable to the Jones Act, some Puerto Rico companies have imported goods from Canada rather than from US states in order to avoid the cost premium from the Jones Act. Puerto Ricans seeking relief from the Jones Act point to the nearby American Virgin Islands, which have benefited from exemption from the Jones Act since 1922.¹⁰⁷

103. Federal Reserve Bank of New York, *Report on the Competitiveness of Puerto Rico's Economy*; Federal Reserve Bank of New York, *An Update on the Competitiveness of Puerto Rico's Economy*.

104. Alliance for Innovation and Infrastructure, “Jones Act.”

105. Federal Reserve Bank of New York, *Report on the Competitiveness of Puerto Rico's Economy*; Federal Reserve Bank of New York, *An Update on the Competitiveness of Puerto Rico's Economy*.

106. Congressional Task Force on Economic Growth in Puerto Rico, *Report to the House and Senate*, 114th Congress, December 20, 2016.

107. Letter from Manuel Reyes to Senator Orrin Hatch and other members of the Congressional Task Force on Economic Growth in Puerto Rico, September 22, 2016.

Puerto Rico has also suffered from the additional monopoly power the Jones Act has given American-flag shippers. Manuel Reyes of the Puerto Rico importers' association has also criticized American-flag shippers of hypocrisy because the same companies that serve Puerto Rico also serve the Dominican Republic and Central America with foreign-flag vessels that are cheaper.

The adverse effect of the Jones Act on transport costs has had a long-term negative effect on the development of Puerto Rico as a regional trading center. Between 2000 and 2010, the volume of 20-foot containers shipped through Puerto Rico declined by more than 20 percent, while volume more than doubled in nearby and smaller Jamaica,¹⁰⁸ which is not constrained by the Jones Act. More recently, Puerto Rico is falling behind Jamaica in its attempt to become a regional logistics hub in anticipation of the expanded Panama Canal, which opened in June 2016.¹⁰⁹ In their study of Puerto Rico growth, Susan Collins and her coauthors noted that Puerto Rico was losing out to Jamaica as a regional trading center. They recommended that “the United States could assist the island’s development as a regional business center by exempting it from these transportation restrictions.”¹¹⁰ In this regional competition, being subject to US law is harmful to Puerto Rico.

These unfavorable transport costs have been imposed on a territory that is much poorer than the rest of the United States, and the economic crisis has resulted in a massive outmigration to the contiguous US states. Income per capita in Puerto Rico (\$19,000) is only about one-third that of the mainland United States (\$57,000).¹¹¹

Hawaii

Hawaii has been severely harmed by the Jones Act, partly because of its great distance from the West Coast of the US mainland and because of its inability to use substitute modes of transportation that are used on the mainland. For example, Hawaiian State Senator Sam Slom has stated that one could ship a 40-foot container from Los Angeles to Honolulu for \$8,700 using a Jones Act-compliant ship, but the same container could be shipped from Los Angeles to Shanghai

108. Federal Reserve Bank of New York, *An Update on the Competitiveness of Puerto Rico’s Economy*; Michael Hansen, “Jones Act Shackles Puerto Rico; No Jones Act Frees Jamaica to Grow Its Economy,” *Hawaii Reporter*, February 13, 2013.

109. Hansen, “Jones Act Shackles Puerto Rico.”

110. Collins et al., *Restoring Growth in Puerto Rico*.

111. World Bank, “World Development Indicators,” database, World Bank Group, accessed December 10, 2016.

for \$790 using a foreign-flag vessel.¹¹² Hawaiian sugar growers have been at a disadvantage in the US mainland market, relative to growers in the Philippines and Latin America, because of higher transport costs caused by the Jones Act.¹¹³ In fact, the last sugar plantation on Hawaii closed its sugar operation in 2016.

Hawaii bears higher costs for food, energy, and all imports because of the Jones Act. In fact, Hawaiian energy costs are highest among the 50 states. In addition to long-distance shipping, Hawaiians also use ferries to travel among the islands of the state, and the ferries are more expensive because of the Jones Act requirement to buy American-built ferries. There is a bill before the state legislature (NTJAR) requesting exemption from the section of the Jones Act requiring the purchase of American-built ships for oceangoing vessels.¹¹⁴

Alaska

The Jones Act has also been harmful to Alaska. The act was introduced in 1920, when Alaska was still a territory, and it had the effect of forcing the only two Canadian steamship lines out of the Alaskan market. The surviving lines serving Alaska were both based in Senator Jones's home state of Washington.¹¹⁵ "Ernest Gruening, Democratic governor of the Alaska Territory from 1939 to 1953, said: 'Senator Jones no doubt assumed, and correctly, that this would be most helpful to some of his constituents there (in Washington), as indeed it proved to be, but at the expense, the heavy expense, from that time on, of our voteless citizens of Alaska.'"¹¹⁶

Alaska has been a major producer of oil, and oil shipped to California or Hawaii must be transported on more expensive Jones Act ships. The Jones Act-compliant tanker fleet consists of 10 ships, all operating primarily between Alaska and California.¹¹⁷ Alaskan crude production has declined by 46 percent over the last decade, and the Jones Act crude oil fleet has also declined. As a result of the Jones Act, Alaskans receive less for their oil and Californians and Hawaiians pay

112. Slattery et al., "Sink the Jones Act."

113. Hansen, "Will the Jones Act Cause Hawaii's Last Sugar Plantation to Close?"; Leroy Laney and Ken Schoolland, "Jones Act Unfairly Hurts Hawaii while Jeopardizing Security of U.S.," *Honolulu Star-Advertiser*, December 6, 2015.

114. Michael Hansen of Hawaii Shippers Council, "US Ships Built 2000–2016" (Table HSC-877) and "Shipyards Comps May 26, 2016" (Table HSC-876), email message to author, December 5, 2016.

115. Bryan Riley, "The Jones Act: Protecting Special Interests, Not America," Heritage Foundation, June 15, 2016.

116. *Ibid.*

117. Frittelli et al., *U.S. Rail Transportation of Crude Oil*.

more.¹¹⁸ These added costs will become more important as the Arctic northern route opens. Arctic warming has already increased the demand for icebreakers that the Coast Guard does not have, but they would be available from Norwegian and Russian operators if the Jones Act did not block their participation.

Northeastern United States and Energy

The shale revolution has reduced US crude oil imports and increased the importance of domestic trade that is subject to the Jones Act. It has changed the geography of production and consumption of energy in the United States. As production in North Dakota increased, the price of West Texas Intermediate (WTI) crude oil in the United States fell relative to the world price of Brent crude oil. In 2011 the discount on US oil reached a peak of nearly \$28 per barrel below the Brent price. This discount on WTI made it attractive to ship crude oil from North Dakota to refineries in Philadelphia and other northeastern refineries.¹¹⁹ In the absence of pipelines coming directly from North Dakota, the profitability of using rail, trucks, and Jones Act ships increased. Some pipelines have been extended since then, and the price difference has narrowed considerably.

In general, the pattern of energy trade is influenced by domestic transport costs that are affected by Jones Act restrictions on ships. Opposition to pipelines and accidents with rail make domestic shipping a better alternative, except for the Jones Act restriction. Evidence of the Jones Act as an impediment to efficient transportation came from the disastrous 2012 Hurricane Sandy, when it was necessary to exempt foreign-flag vessels from the Jones Act in order to allow them to ship oil to the hurricane-damaged Northeast. Foreign-flag ships could transport oil for one-third the cost of US-flag ships, and after experiencing the brief waiver, Bostonians were more aware of the penalty they pay for the Jones Act. During this crisis, the *Boston Herald* described the Jones Act as a “smelly piece of protectionism.”¹²⁰

A Congressional Research Service study states that “the Jones Act may have a profound impact on where crude oil is sourced and how it is transported.”¹²¹ Jones Act-eligible tankers cost four times as much as foreign tankers, and the cost difference has induced people to ship oil from Texas to Canadian refineries

118. General Accounting Office [now Government Accountability Office], *The Jones Act: Impact on Alaska Transportation and U.S. Military Sealift Capability*, September 30, 1988.

119. Slattery et al., “Sink the Jones Act.”

120. Walker, “Why Can’t You Cruise from One U.S. Port to Another?”

121. Frittelli et al., *U.S. Rail Transportation of Crude Oil*.

rather than to the closer northeastern US refineries. Energy Information Agency data indicate that five times as much crude oil has been shipped from Texas to Canadian refineries as to northeastern US refineries. An advantage of shipping to Canada is that shipping from Texas to Canada costs \$2 per barrel, whereas shipping from Texas to northeastern refineries costs \$5–\$6 per barrel. The cost difference for a standard (300,000 barrels) tanker is about \$1 million. Thus the Jones Act has distorted the transportation route for crude oil. In fact, the Jones Act cost premium sometimes makes it more profitable to ship crude oil from Africa to the American Northeast than to supply northeastern refineries from the American Gulf Coast.¹²²

The supply of US natural gas continues to increase since the shale revolution, and the United States recently became a net exporter of natural gas.¹²³ However, Hawaii and Puerto Rico are unable to benefit from cheaper natural gas. US shipyards have not yet produced a Jones Act–eligible liquefied natural gas tanker that could supply Hawaii or Puerto Rico.

Agriculture

Trade in agricultural products has also been distorted by the Jones Act. Puerto Rico farmers and cattle ranchers have imported feed grain and crop fertilizers from Canada rather than buying from New Jersey because products shipped from New Jersey to Puerto Rico were subject to higher Jones Act freight rates.¹²⁴ Puerto Rico farmers imported agricultural inputs from Canada even though St. John, New Brunswick, Canada, is 500 miles farther than the New Jersey port.

N. E. Piggott and B. K. Goodwin¹²⁵ studied the effect of repealing the Jones Act on North Carolina importers of soybeans (mostly from other states) to feed animals. (The effect of the Jones Act on agricultural producers depends on whether a state or region is a net importer or net exporter of the agricultural product being transported.) Piggott and Goodwin found that repealing the Jones Act would result in a small net gain to the United States as a whole

122. Frittelli, *Shipping U.S. Crude Oil by Water*; McCown, “Keeping Up with the Jones Act.”

123. Robert Wall and Doug Cameron, “Where Are the Toilets? Order Glut Stretches Giant Jet Makers to the Limit,” *Wall Street Journal*, February 24, 2017.

124. Slattery et al., “Sink the Jones Act.”

125. N. E. Piggott and B. K. Goodwin, “Modeling Spatial Market Linkages with Variable Transactions Costs: A Repeal of the Jones Act and Impacts on North Carolina Soybean Producers” (Working Paper, Department of Agricultural and Resource Economics, North Carolina State University, Raleigh, 2001).

because exporters of soybeans from Ohio and other states would gain more than North Carolina soybean growers would lose after the repeal. This study followed the importation of soybean meal from Brazil by North Carolina hog farmers, who claimed that Jones Act restrictions made it profitable to import from Brazil rather than from their traditional sources in the American Midwest.¹²⁶ Although the United States remains the world's largest producer and second-largest exporter of soybeans, whenever Jones Act transport costs are high enough relative to the cost of buying from Brazil and using lower-cost foreign-flag vessels, soybeans are imported to East Coast ports such as Wilmington, North Carolina, and Norfolk, Virginia.¹²⁷

The Distribution of Gains and Losses

The Jones Act is an example of a policy that persists even though it is wasteful for the nation as a whole. Total costs exceed total benefits, but the benefits are concentrated and the losses are diffuse.¹²⁸ Beneficiaries are shipbuilders and their employees, members of seafarer unions, and carriers that are protected from competition. Carriers like Matson are in a complex situation in which they lose from paying more for American-built ships but they gain from being protected from foreign competitors. These groups know how they are affected by the law, and it is easy for them to organize and lobby for continued protection.

Conversely, the costs of the Jones Act are spread across millions of Americans, most of whom have never heard of the act. The annual cost per person is small, even though the total cost summed over millions of consumers is large. The additional cost of transportation is not very visible to consumers because it is shifted forward at every link in the supply chain; for example, the additional transportation costs of energy are one reason why electricity costs in Hawaii are the highest among the 50 states. Hence, individual consumers have little incentive to learn about the Jones Act and to lobby in favor of its repeal. Consequently, Congress has been more responsive to the well-organized beneficiaries than to the diffuse and poorly organized losers.

126. "Debate Intensifies on Jones Act," *Joc.com*, 1999, http://www.joc.com/debate-intensifies-jones-act_19990603.html.

127. Karl Plume, "Brazilian Soybeans Reach U.S. East Coast, More Cargoes En Route," *Reuters*, May 27, 2014; Hansen, "Will the Jones Act Cause Hawaii's Last Sugar Plantation to Close?"

128. Olson, *Logic of Collective Action*.

6. EFFECT OF THE JONES ACT ON NATIONAL SECURITY

External Benefits to Security

The Jones Act is intended to increase national security by providing shipping for the military in their foreign operations and by improving domestic shipping in order to contribute to a quicker and more effective response to domestic disasters. Presumably these benefits would include producing and operating commercial ships that might also have military value, as well as providing training on building and operating commercial ships that would also have value in foreign military operations or in domestic rescue operations. Proponents of the Jones Act have also recently claimed that the act protects against terrorism.

US Military Abroad

Whatever the act might have contributed to US military operations abroad in the past, the potential contribution must be diminishing. The Jones Act-eligible fleet continues to get smaller and older. The number of large Jones Act commercial ships was 193 in 2000, but by 2014 there were only 90.¹²⁹ The total Jones Act fleet of all sizes contains more ships, but a large percentage of the vessels are ferries or tugboats, which would contribute little to distant military actions. The earlier contributions of Jones Act ships to US military operations in Afghanistan and Iraq were judged to be minimal by prominent analysts. Rob Quartel, former US federal maritime commissioner and maritime security analyst, has written unfavorably about the contributions of Jones Act ships during the Gulf War: Of the “armada” of 460 ships that transported military materials into Saudi ports, “no Jones Act vessels participated. . . . The success of the military sealift—a brilliant feat of logistics—occurred despite (rather than because of)” the Jones Act. The Jones Act had to be suspended to provide for fueling of ships.¹³⁰

More recent experience of US military action abroad also indicates that Jones Act ships made a negligible contribution to overseas transportation. According to Slattery et al., “The Jones Act fleet is unable to meet the needs of the U.S. military which routinely charters foreign-built ships to fulfill additional sealift needs.”¹³¹ The Maritime Administration’s Ready Reserve Fleet was created to transport army and marine troops and equipment during the initial stage of

129. MARAD, *Consolidated Fleet Summary and Change List*; Slattery et al., “Sink the Jones Act.”

130. Rob Quartel, “America’s Welfare Queen Fleet: The Need for Maritime Policy Reform,” *Regulation* 14, no. 3 (1991): 58–67.

131. Slattery et al., “Sink the Jones Act.”

foreign military action, which it did in the early stages of the wars in Afghanistan and Iraq. But as of 2014, 30 of the 46 ships in the Ready Reserve Fleet were foreign built.¹³² Furthermore, if military leaders lack confidence in leasing foreign-owned ships, they could buy foreign-built ships outright, as they would buy a high-quality foreign-built weapon.

Given the nature of recent US military action in Afghanistan, Iraq, and Syria, speed is increasingly important. Airlifts are faster than ships, as demonstrated by a NATO exercise during the summer of 2016, in which US troops were flown from Fort Bragg, North Carolina, to Poland and the Baltic countries non-stop in a day by refueling in midair. Jones Act ships traveling in domestic waters are not well prepared for quick deployment to distant parts of the world. Furthermore, private commercial ship owners are increasingly interested in using fuel-saving ships that are slower, but military leaders increasingly prefer faster ships that sacrifice fuel economy.¹³³ Jones Act ships cannot support the military effectively if Jones Act-compliant ships have the wrong characteristics.

National Security and the Four Jones Act Conditions

The contribution of the Jones Act to national security can be evaluated in terms of the four conditions it places on ships involved in domestic trade. Ships must be American built, American owned, American flagged, and American crewed. Proponents of the act claim that ships satisfying these conditions of Americanness strengthen the merchant marine and the navy and increase national security. If the addition to national security is large enough, one could justify bearing the cost inefficiencies caused by the Jones Act. This is the national defense argument for protecting a domestic industry, and it goes back to Adam Smith. However, it has frequently been misused by producers whose goods contribute very little to national defense.

Ships built. Developments in the world economy and the shipping industry have weakened the claim that American-built ships add to national security. Whatever their contribution to national security was in the past, the contribution of US shipyards must be much smaller today. The rise of foreign shipbuilding and the decline in domestic shipbuilding have left the US industry with much smaller capacity and production.

132. Ibid.

133. Frittelli, *Shipping U.S. Crude Oil by Water*.

There is little overlap between US shipyards producing commercial ships and those producing military vessels. This circumstance calls into question whether the skills learned producing commercial ships are transferable to producing military ships. What is produced in the United States is done with the assistance of substantial outsourcing from foreign producers, including technical assistance. Some critics have claimed that protecting domestic producers has caused them to become technological laggards.

In addition, shipping has faced more stringent regulation than other forms of competition. American airlines are not required to buy American-built aircraft. Airbus of Europe, Embraer of Brazil, and Bombardier of Canada are prominent suppliers of planes to American airlines, and these foreign producers are not considered threats to national security.

Ownership. Globalization and legal developments have made the whole concept of American ownership ambiguous. Most ship owners today are corporations rather than individuals. Globalization of financial markets implies that stock market trades can change the citizenship of owners of shares of corporations on a daily basis. Also, American companies that were bought by foreign firms now have foreign parents, which calls into question those companies' de facto independence from the parents.

Flag. If requiring ships to fly the American flag ever added to national security, it must add much less today. The drastic decline in the size of the US-flag fleet is partly a result of the rise of flags of convenience. The American-flag fleet today is small and uncompetitive, and almost all the revenue it earns is from business that requires the use of US ships by law. Foreign-flag ships have more favorable regulations and taxes, and their standards are a result of international regulatory competition.

Crew. How much can American crews contribute to national security? American crews are more expensive, and they are employed almost exclusively on American-flag vessels. Since the American-flag fleet is much smaller than it was, so is the number of American crews, and so is their contribution to national security.

Domestic Disasters

An important aspect of national and economic security is the capacity to respond quickly and effectively to domestic natural and human-induced disasters such

as hurricanes, floods, oil spills, loss of electrical power, and breaks in oil pipelines. Foreign-flag ships that could assist in reacting to disasters are precluded from doing so by the Jones Act. This weakness in the Jones Act, which reduces the elasticity of supply of crucial services, has been acknowledged explicitly by the government's allowing the relevant federal agencies to waive portions of the Jones Act in emergencies.¹³⁴ However, a decision about a waiver is discretionary and uncertain, and a request takes time to pass through the bureaucracy when conditions require a speedy response.

In September and October 2016, breaks in the Colonial Pipeline, which sends gasoline from Texas to New York, created gasoline shortages and price spikes in the Southeast. The demand for shipping increased, and freight rates on Jones Act ships increased. The shortages and price increases could have been smaller without Jones Act restrictions on the use of foreign-flag ships.¹³⁵ Traders and shippers expressed an interest in hiring US-flag tankers, but Kinder Morgan reported that its Jones Act-compliant tankers were all committed to other routes.¹³⁶ In an attempt to speed the response to the gasoline shortage, governors of several states waived some restrictions on truckers. Federal authorities had previously waived Jones Act restrictions following Hurricanes Katrina and Rita in 2005 and Hurricane Sandy in 2012, but critics are asking why waivers are superior to completely repealing the Jones Act. In these domestic disasters, the Jones Act interfered with a quick and efficient response to the problem and reduced national security.

“Some critics [of the Jones Act] have claimed that protecting domestic producers has caused them to become technological laggards.”

134. MARAD, *The Economic Importance of the U.S. Shipbuilding and Repairing Industry*.

135. Alison Sider and Nicole Friedman, “More Than Half of U.S. Pipelines Are at Least 46 Years Old,” *Wall Street Journal*, November 2, 2016.

136. “Alabama Pipeline Chokes Supplies in the Carolinas,” *News and Observer*, September 18, 2016.

Terrorism

Some Jones Act proponents have claimed that American crews are a deterrent to terrorism. One such supporter has claimed, “It makes no sense to add to the burden facing domestic security agencies by allowing foreign-owned ships operated by foreign crews to move freely throughout America’s inland lakes, rivers and waterways.”¹³⁷ According to the General Accounting Office (now the Government Accountability Office), there have been no known examples of foreign seafarer involvement in terrorist attacks and no definitive evidence of extremists infiltrating the United States on seafarer visas.¹³⁸

If foreign crews would be security risks on domestic routes, why are foreign crews allowed on all the ships that transport imports to and exports from the United States on foreign-flag vessels? With the proper work visas, foreign crews can remain on the US mainland as long as their ships are in port.¹³⁹ Why would foreign seamen be more likely to be terrorists than the millions of foreigners who legally move about the country freely with the aid of student and tourist visas? There is no evidence that sorting seamen by citizenship is an accurate way to detect terrorists.

Protecting against terrorism is a legitimate goal, but operational control of ships is far more important for security than is the citizenship of owners. The US Coast Guard and the International Maritime Organization have agreed on this point.¹⁴⁰ Ship managers are directly responsible for their ships to authorities in the country where the ship is registered. Ships can be leased from owners, and they can be used for nefarious purposes that are unknown to the owner. For terrorism, the ownership issue is analogous to car ownership versus car rental. Terrorists have rented cars and used them for purposes that would not be approved by the car rental company that owned them. Hence, knowledge of ownership is not very informative.

Regarding terrorist acts committed in the United States since 9/11, more than 80 percent of the acts have been committed by US citizens or legal permanent residents.¹⁴¹ The American-born terrorist Anwar al-Awlaki observed that

137. Daniel Gouré, “Venerable Jones Act Provides an Important Barrier to Terrorist Infiltration of the Homeland,” Lexington Institute, March 24, 2016.

138. Government Accountability Office, *Maritime Security: Federal Agencies Have Taken Actions to Address Risks Posed by Seafarers, but Efforts Can Be Strengthened*, January 18, 2011.

139. Beason et al., “Myth and Conjecture?”

140. Mitchell, “The Threat to Global Shipping from Unions and High-Tax Politicians.”

141. Peter Bergen, “Jihadist Terrorism 15 Years after 9/11: A Threat Assessment,” *New America*, September 8, 2016, accessed April 5, 2017.

“jihad is becoming as American as apple pie.”¹⁴² Searching for prospective terrorists by citizenship would not have been an effective method of preventing these domestic terrorist acts.

The open registry countries with the largest volume of trade have been very cooperative with US authorities on efforts to combat terrorism. After the 2001 attack, both Liberia and Panama agreed to allow US authorities to board ships flying their flags if there was evidence that terrorists or drug smugglers were aboard.¹⁴³ Also more important than citizenship of owners or crews is a security agreement after 2001 that provided rules for entering ports. Monitoring the loading of ships may also be more important for protecting against terrorism than the citizenship of owners and crews.

7. POLITICAL ECONOMY OF THE JONES ACT

Supporters of the Jones Act

The main beneficiaries of the Jones Act are those groups protected from competition: shipbuilders, ship owners, and labor unions representing seafarers.¹⁴⁴ The International Transport Workers’ Federation, which represents unions in high-income countries, also provides support for the act.¹⁴⁵ The act is currently supported by a number of Congress members from both parties, and it also had the support of the Obama administration. Representative Duncan Hunter of California, as mentioned above, has been a strong supporter. The San Diego shipyard of NASSCO, in Representative Hunter’s district, is the largest US shipyard employer, with about 3,100 employees in 2014.¹⁴⁶ Philly Shipyard employed 1,100–1,200 workers.¹⁴⁷ Representative Hunter and others signed a letter to then-president Obama urging him to honor commitments to the US maritime industry when considering trade agreements such as the Trans-Pacific Partnership (TPP) and the TransAtlantic Trade and Investment Partnership (TTIP). The United States Navy League has also been a defender of the Jones Act.

142. Peter Bergen, *United States of Jihad: Who Are America’s Homegrown Terrorists, and How Do We Stop Them?* (New York: Broadway Books, 2016), 19.

143. Mitchell, “Threat to Global Shipping from Unions and High-Tax Politicians.”

144. “Strong Bipartisan Support for Jones Act, Mariners,” Seafarers International Union, May 2014; Leo Ryan, “CETA and Shortsea Shipping,” Canadian Shipper.com, February 4, 2015.

145. Mitchell, “The Threat to Global Shipping from Unions and High-Tax Politicians.”

146. Frost, “Impact of the Jones Act.”

147. Ibid.

Eric Smith, vice president of the American Maritime Partnership, claimed that the Jones Act is harmless because “it doesn’t cost the consumer a single penny.”¹⁴⁸ A similar argument has been made by Representative Hunter, who said that “the Jones Act . . . has always been a target for Wall Street and corporatists.”¹⁴⁹ These arguments miss an important point: namely, when shippers pay higher costs by using Jones Act ships, they shift those costs onto consumers and other end users in all the affected regions in the same way that sales taxes are shifted to consumers. Corporations do not gain from paying higher shipping costs, just as they do not gain from paying higher sales taxes.

The high cost of acquiring American-built ships acts as a barrier to entry for Jones Act carriers. Matson, a Jones Act carrier, supports the act even though it requires the carrier to pay more to acquire an American ship and pay more for an American crew. The reduction in competition allows Matson to charge freight rates that are substantially above the rates charged by foreign-flag vessels. In 2016 freight rates charged by foreign-flag vessels were near all-time lows, but customers of Jones Act carriers were prevented by the act from taking advantage of the low rates. The high cost of acquiring a ship also induces owners to keep them longer, which results in an older Jones Act fleet.

The fact that the Jones Act has lasted so long, in spite of strong criticism, reflects the effective lobbying support by its proponents. Lobbying has also been effective in increasing enforcement of the law.¹⁵⁰ In terms of efficacy, the Jones Act lobby has been compared to the considerable effectiveness of the sugar lobby. However, this long-term political success does not imply that the policy is good for the country. It may simply mean that a small special interest group has been effective at transferring income to itself from the general public. The Jones Act is an example of a program with large total costs and small total benefits, but the costs are diffused and the benefits are concentrated. That makes it easier for beneficiaries to mobilize an effective coalition to support the act. However, widely diffused costs make it more difficult for victims to form an alliance against the act. Some defenders of the act have ridiculed the losses by describing the cost per consumer as “the transport costs on a can of beans.”¹⁵¹

148. Eric Smith, quoted in Slattery et al., “Sink the Jones Act.”

149. Hunter, “Jones Act a Lifeline for Puerto Rico and Even Bigger Booster for U.S. National Security”; Tim Sansbury, “Senator Presses USDA to Release Jones Act Study,” JOC.com, August 12, 1998.

150. McCullough and Wong, “Troubled Waters.”

151. Hansen, “Jones Act Debate.”

Jones Act proponents have regularly claimed that job creation is a major benefit of the act. Matthew Cox, CEO of Matson, has claimed that the industry employs 500,000 workers directly or indirectly.¹⁵² However, is the act intended to produce quality ships at low cost, or is it a jobs program intended to employ more people, regardless of how little they produce or what the ships cost?

There is a famous anecdote about the economist Milton Friedman commenting on a jobs program. Friedman observed workers digging a canal with shovels and expressed surprise at the absence of heavy earth-moving machinery. When a government official explained that this was a jobs program, Friedman asked why the workers didn't use spoons rather than shovels.¹⁵³ If the purpose of the Jones Act is to employ more people, regardless of how much they produce, why not have the workers use primitive tools rather than modern tools? If jobs are more important than useful output, would producing sailboats be as satisfactory as modern ships? Confusing costs and benefits can be very misleading.

To evaluate the net benefits from producing modern ships of a given quality in American shipyards, one should compare the value of the ships produced with the cost of production, including labor costs. Adding workers, who must be paid, adds to the costs of the project, not the benefits. If the industry employed as many as 500,000 workers, why is production of ships and the market share of US-flag ships so small? Small output and large employment imply low output per worker and high labor costs. Maybe this is why it is so expensive to build new ships and why operating costs of American-flag ships are more than twice as high as costs for foreign-flag ships. It may also be the reason why the industry continues to decline over time.

Policies in Other Countries

Many other countries also have restrictions on foreign carriers that protect domestic carriers.¹⁵⁴ Japan and China have particularly strict laws,¹⁵⁵ although some regard the United States as having the most restrictive policies in the world.¹⁵⁶ The European Union has recently liberalized its cabotage laws. Australia provides

152. Hunter, "Jones Act a Lifeline for Puerto Rico and Even Bigger Booster for U.S. National Security."

153. George Will, "Infrastructure Boondoggle," *News & Observer*, November 27, 2016.

154. European Commission, "Maritime Transport: Commission Clarifies EU Rules on Cabotage and Reports on Developments in This Sector," April 22, 2014.

155. Kristian Bryng and Martin Jonassen, "Maritime Cabotage—New Guidelines from the European Commission," April 22, 2014.

156. Bertho, "Maritime Transport in Australia and the United States."

no protection for its domestic shippers. Canada has its own version of the Jones Act.¹⁵⁷ Liberalization is a sensitive subject, and protected workers steadfastly resist change. In the discussion of cabotage laws in the recent Comprehensive Economic and Trade Agreement negotiations between Canada and the European Union, the Seafarers' International Union of Canada strongly objected to any weakening of Canada's cabotage laws.¹⁵⁸

The existence of protectionist laws in many countries implies that there are large potential gains from mutual elimination of trade barriers. However, US presidents and their negotiators have steadfastly refused to offer to end the Jones Act.¹⁵⁹ For example, the United States refused to discuss reform in the 1995 World Trade Organization (WTO) negotiations of maritime services.¹⁶⁰ The United States also refused to ratify an OECD treaty that would have limited shipbuilding subsidies. In response to a Japanese claim that the Jones Act violates WTO rules, the United States argued that the Jones Act was protected by a special rule that dated back to the 1947 General Agreement on Tariffs and Trade.¹⁶¹ During the NAFTA trade negotiations, the United States sought and received an exemption from liberalization of the Jones Act. After the United States also received a Jones Act exemption in WTO negotiations, the US position was described as follows: "U.S. negotiators insisted on retaining one such item that was for them the most sacrosanct of the sacred cows, the Jones Act."¹⁶² President Obama and his transportation secretary, Anthony Foxx, had strongly stated their support for the Jones Act, and former US Trade Representative Michael Froman had stated that the Jones Act protections were not negotiable.¹⁶³

157. Michael Hansen of Hawaii Shippers Council, "US Ships Built 2000–2016" (Table HSC-877) and "Shipyards Comps May 26, 2016" (Table HSC-876), email message to author, December 5, 2016.

158. Ryan, "CETA and Shortsea Shipping."

159. Slattery et al., "Sink the Jones Act."

160. Gordon Tullock, Arthur Seldon, and Gordon L. Brady, *Government Failure: A Primer in Public Choice* (Washington, DC: Cato Institute, 2002).

161. David Hanson, *Limits to Free Trade: Non-Tariff Barriers in the European Union, Japan, and the United States* (Northampton, MA: Edward Elgar, 2010).

162. Craig VanGrasstek, *The History and Future of the World Trade Organization* (Geneva: World Trade Organization, 2013), 66, quoted in Slattery et al., "Sink the Jones Act."

163. Slattery et al., "Sink the Jones Act"; "Strong Bipartisan Support for Jones Act, Mariners," Seafarers International Union.

Jones Act Reform History

Opposition to the Jones Act has come from shippers' representatives and from legislatures in Hawaii, Alaska, Puerto Rico, and Guam.¹⁶⁴ They cite the many studies (see section 4 above) concluding that the Jones Act imposes significant net losses on the national economy. Rob Quartel, a former maritime commissioner, headed the Jones Act Reform Coalition from 1995 to 1999.¹⁶⁵ The coalition supported a bill, introduced by Senator Sam Brownback of Kansas in 1998, that would allow foreign-built bulk ships in US coastal waters but would continue to require US flags and crews.¹⁶⁶

In 2010, Senator John McCain submitted a bill to repeal the Jones Act. More recently, in 2015, McCain introduced an amendment to the Keystone Pipeline bill that would exempt carriers from using American-built vessels and weaken the American ownership provision.¹⁶⁷ Senator McCain, chairman of the Senate Armed Services Committee, has long opposed the Jones Act and has said on numerous occasions that the Jones Act has no value for national defense. However, so many other senators support the Jones Act that McCain stated in 2011 that if he brought a reform bill to a Senate vote, he could not get 20 votes.¹⁶⁸

In 2010, the Hawaii Shippers' Council introduced a bill to exempt carriers from noncontiguous regions that use oceangoing ships from the requirement to use American-built ships (NTJAR). The proposal would retain all the other features of the Jones Act for coastal vessels. The NTJAR bill has been introduced into the legislatures of Hawaii, Alaska, Puerto Rico, and Guam.¹⁶⁹

Exempting some or all shippers from the American-built requirement appears to have the strongest economic justification among the proposed reforms. The cost of acquiring new ships for American-flag and foreign-flag carriers can be compared directly, and the additional costs of American ships are substantial. Also, allowing American shippers to acquire the least costly ships would put

164. Letter from Manuel Reyes to Senator Orrin Hatch and other members of the Congressional Task Force on Economic Growth in Puerto Rico, September 22, 2016; Michael Hansen of Hawaii Shippers Council, "US Ships Built 2000–2016" (Table HSC-877) and "Shipyards Comps May 26, 2016" (Table HSC-876), email message to author, December 5, 2016.

165. "Debate Intensifies on Jones Act," *Joc.com*; Michael Hansen of Hawaii Shippers Council, "US Ships Built 2000–2016" (Table HSC-877) and "Shipyards Comps May 26, 2016" (Table HSC-876), email message to author, December 5, 2016.

166. "Debate Intensifies on Jones Act," *Joc.com*.

167. Chris Schultz, "The Jones Act: Outdated or Vital?," *Law Street*, January 22, 2015; Hansen, "Jones Act Debate."

168. Tony Munoz, "McCain Takes Dead Aim at U.S. Maritime," *Maritime Executive*, January 18, 2015.

169. Michael Hansen of Hawaii Shippers Council, "US Ships Built 2000–2016" (Table HSC-877) and "Shipyards Comps May 26, 2016" (Table HSC-876), email message to author, December 5, 2016.

“Currently the Jones Act has two effects: it harms consumers by raising prices of all transported products, and it acts as a subsidy to producers by allowing them to receive a higher price for their products.”

shipping on the same basis as airlines and other transportation modes. US airlines that serve domestic routes regularly use Bombardier planes assembled in Canada and Embraer planes assembled in Brazil. They also use aircraft made by Airbus, which is considered the major European producer, although Airbus uses many components made in the United States.¹⁷⁰ Similarly, many truckers on domestic routes drive Toyota, Mercedes, and other foreign-built trucks.

Production Subsidy

It is possible to have a moderate reform that would eliminate the adverse effects of the Jones Act on shippers and all the final consumers of shipped goods while still protecting shipbuilders' jobs. For purposes of illustration, suppose the act applies only to shipbuilding. One possible moderate reform would eliminate all the “American” requirements for building, owning, flagging, and crewing ships, but it would pay a production subsidy from the government budget to shipbuilders and their workers. Currently the Jones Act has two effects: it harms consumers by raising the prices of all transported products, and it acts as a subsidy to producers by allowing them to receive a higher price for their products. These two effects are equivalent to the effects of a tariff or import quota, which are a tax on imports and a subsidy to domestic production.¹⁷¹

If the goal of policy is to maintain a minimum level of domestic ship production consistent with some notion of national security, the goal can be achieved at a lower cost to the economy by replacing the Jones Act with a production subsidy on shipbuilding. By allowing owners to be foreign or domestic and to buy foreign or domestic ships and to hire foreign crews and fly foreign flags, the current high costs to consumers could be avoided. There would still be a cost to the nation of producing ships at artificially high costs,

170. Robert Wall and Doug Cameron, “Where Are the Toilets?”

171. Robert C. Feenstra and Alan M. Taylor, *International Economics* (New York: Worth, 2008), 370.

but these costs would be lower than the present costs of the Jones Act. Carriers would be free to choose ships and crews based on cost and quality, and competition among foreign and domestic carriers would induce carriers to pass on the lower costs to consumers, just as sales tax reductions are passed on to consumers.

If readers are skeptical about carriers passing on lower prices, observe the large drop in gasoline prices that followed the substantial drop in crude oil prices around the world from 2014 to 2016. As crude oil prices dropped from over \$100 per barrel in April 2014 to below \$40 per barrel in February 2016, retail gasoline prices in the United States dropped from \$3.79 per gallon in April 2014 to \$1.83 in February 2016. The main beneficiaries of ending Jones Act restrictions would be consumers in Hawaii, Alaska, Puerto Rico, and Guam.

The idea of substituting a production subsidy for the Jones Act prohibition on buying foreign ships has economic merit, but it has many practical complications. The first question is whether to subsidize only shipbuilding or also the operation of ships. The second is how large the subsidy should be. Is the goal to continue the current level of production or to increase or decrease production? Production subsidies for both construction and operating costs were a basic part of the Merchant Marine Act of 1936. The initial construction differential subsidy was 20 percent, but by the 1980s, it had increased to 50 percent. In 1982 the Reagan administration ceased funding the subsidy program.¹⁷²

Buyout

A more complete reform would eliminate all Jones Act restrictions on ships and their owners, flags, and crews, but it would also include a buyout of current workers to compensate them for possible loss of jobs. The compensation would be analogous to the tobacco buyout that ended the tobacco program, which had been in place since 1936.¹⁷³ Compensation could be limited to shipyard workers, or it could also extend to ship operations. The goal would be to eliminate the negative effects of the Jones Act on all the end users of shipped products but without continuing the inefficient production that would occur with a production subsidy, as discussed above. However, the buyout reform would recognize the strong and enduring political influence of workers and their labor unions, who have been protected since 1920 and who might support a Jones Act reform

172. Frost, "Impact of the Jones Act."

173. A. Blake Brown, Randal R. Rucker, and Walter N. Thurman, "The End of the Federal Tobacco Program: Economic Impacts of the Deregulation of U.S. Tobacco Production," *Review of Agricultural Economics* 29, no. 4 (2007): 635–55.

“The Jones Act has had the same negative effect on the economy as any tariff or trade barrier, without providing any significant improvement in national security.”

that included a buyout, whereas they would not accept such a reform otherwise. As a result, the nation as a whole would be more prosperous, and the gainers would include current shipyard employees.

For example, according to one estimate for oceangoing ships, there are about 4,000 employees in shipyards, repairs, and ship operations.¹⁷⁴ If they were compensated \$100,000 per year indefinitely, the cost to the government’s budget would be \$400 million per year. All estimates of the net cost of the Jones Act to the economy are greater than this amount, so in this scenario, there would be a net gain to all parties. More realistically, workers do not live forever. If their average age is 50, they could be offered a 15-year annuity of \$100,000, and after 15 years, there would be no more cost to the budget. Exact amounts are negotiable, so annual payments of \$50,000 per year would have a total budgetary cost of \$200 million per year. Exact amounts also depend on the number of workers and businesses compensated.

Skeptics might doubt the feasibility of a buyout, but the buyout of tobacco growers, who had been protected since 1938, was accomplished over a 10-year period, 2004–2014.¹⁷⁵ Production quotas on tobacco ended, and a total payout of \$9.6 billion was made over that period, which allowed recipients to adapt to the phaseout of the program. The tobacco buyout was financed by payments from tobacco companies rather than from taxpayers. A peanut program also ended with a buyout of growers in 2002, but it was paid for by taxpayers over a 10-year period. A repeal of the Jones Act, combined with a buyout of current workers, would be beneficial for the nation as a whole, including workers who are currently protected by the act.

174. Frost, “Impact of the Jones Act”; Michael Hansen of Hawaii Shippers Council, “US Ships Built 2000–2016” (Table HSC-877) and “Shipyards Comps May 26, 2016” (Table HSC-876), email message to author, December 5, 2016.

175. “What Does the End of the Tobacco Buyout Mean?,” Southeast Farm Press, November 27, 2013; Brown et al., “End of the Federal Tobacco Program.”

8. CONCLUSION

The Jones Act is a curious survivor from the mercantilistic period when governments heavily regulated most economic activity.¹⁷⁶ Adam Smith's classic work *The Wealth of Nations* was largely a criticism of this excessive regulation of economic activity. The Jones Act, which follows the mercantilistic tradition, became law when waterborne transportation was the dominant mode of moving goods. By reducing competition for shipping services, the Jones Act has imposed large net costs on the US economy. The negative effects of the act on the contiguous 48 states have been reduced somewhat by the development of alternative modes of transportation. However, geography limits the noncontiguous regions from using these substitute modes of transportation, and consequently the act has done the most damage to Hawaii, Alaska, Puerto Rico, and Guam.

The Jones Act emphasis on ships that are built, owned, crewed, and registered in the United States has much less meaning today because of globalization. Extensive offshore outsourcing implies that ships assembled in America usually have substantial foreign components. The globalization of financial markets makes American ownership less meaningful and even unworkable. The rise of flags of convenience implies that the Jones Act deprives users of domestic routes from access to the lower-cost foreign-flag vessels that now dominate world shipping.

The Jones Act has had the same negative effect on the economy as any tariff or trade barrier, without providing any significant improvement in national security. Recent increases in US domestic oil production have increased the demand for domestic transport, which has made the Jones Act restrictions even more costly barriers to efficient transportation. The contribution of Jones Act ships to American military action abroad has been negligible, and the act has interfered with the ability to use ships to quickly respond to disasters in the United States. There is no evidence to indicate that Jones Act requirements reduce terrorism in the United States.

The Jones Act could be reformed in a variety of ways, ranging from radical to mild. Here are some alternative reforms:

- *Repeal the act permanently without any compensation.* This would be an extreme reform that would eliminate the net economic loss the act imposes on the US economy. It would be analogous to giving Americans access to the best current shipping technology at no net cost to the economy. It would

176. Hernando de Soto, "The Real Enemy for Trump Is Mercantilism, Not Globalism," *Wall Street Journal*, November 27, 2016.

give the broadest choice to domestic users of shipping, including responders to domestic disasters. It would provide net benefits to Americans without a cost to the government's budget.

- *Repeal the act permanently and replace it with a production subsidy.* This would be less extreme than repealing the act. It would avoid the consumer costs to users of domestic ships while retaining the burden of high-cost production and operation of ships. A practical limitation is that a production subsidy was paid from 1936 until it was abandoned in 1986, because the budgetary cost was deemed to be out of control.¹⁷⁷
- *Exempt all regions from all features of the act temporarily for some fixed number of years.* The economy would gain the effects of repeal for that time period only,¹⁷⁸ and the experiment would provide data about the relative costs of US- and foreign-flag vessels operating in US waters.
- *Exempt only certain regions from certain features of the act.* For example, allow noncontiguous regions to buy foreign-built ships for use on ocean-going routes (NTJAR proposal). Total gains would be smaller than with total repeal, and other features of the Jones Act would remain in place. Bills seeking this kind of exemption have been introduced in the legislatures of Hawaii, Alaska, Puerto Rico, and Guam. Senator John McCain has introduced a similar bill in the US Senate. Eliminating the American-built requirement has the strongest economic justification of the proposed reforms. Extensive use of foreign components by US shipyards makes the claim of Americanness very weak. Also, allowing shippers to select from a wider range of ships would give them the same opportunities as airlines, trucking companies, and other transportation modes. The exemption would gain more political support if current employees of shipyards producing oceangoing merchant vessels were compensated for their possible loss of jobs. Gains to consumers should be large enough to compensate losers and still retain net gains for other parties.
- *Leave the Jones Act in place in its current form.* This inaction would mean, of course, that those negatively affected by the Jones Act would continue to bear its net economic costs indefinitely.

177. Frost, "Impact of the Jones Act."

178. Federal Reserve Bank of New York, *An Update on the Competitiveness of Puerto Rico's Economy*.

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