

## Chapter 14

### MARITIME TRANSPORT IN THE UNITED STATES

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- The USA retains a restrictive cabotage regime because it has decided to prioritise strategic factors. The high cost of maritime domestic freight has led to a substitution by other modes and the volume of domestic freight by sea has fallen, as has the size of the US fleet: the shipbuilding sector has also declined.
- Businesses which consign freight have been lobbying against the regulation but have not been effective in comparison with the concentrated influence of the remaining shipping companies (now a duopoly in the domestic container transport sector); the complexity of the policy package and the lack of transparency make its assessment more difficult.
- Container handling is characterised by open and competitive markets and regulation is efficient and in line with good practices: the main challenge is the expected increase in traffic and the risk of congestion, both inside and outside ports: coordination across modes in future will be valuable.

#### 14.1 INTRODUCTION

This chapter analyses the maritime transport sector in the United States of America (USA). It addresses maritime transport in the widest sense possible with a focus on international and domestic shipping, and port infrastructure and related services, particularly container and intermodal facilities. It deals with commercial and competition regulations. Measures of the impact of these policies on the maritime sector in particular and on the USA's economy in general are examined. The US pursues a policy of explicit support to the maritime industry, which means to both the fleet and the shipyards. The cornerstone of this policy is security of supply. The aim is to ensure that the fleet is sufficient to carry US domestic water-borne foreign trade and is capable of serving as a naval military auxiliary in times of emergency. This study identifies some economic consequences of the policy, contrasts the treatment of the shipping sector with that of the port sector and identifies emerging issues.

The US's focus on security follows from the significance of maritime transport in US trade. In 2008, 48% of the value of international trade was transported by sea and in 2007 12% of domestic trade was transported by water (US Department of Transportation 2009). Maritime transport also represents an important part of the US economy, accounting for USD30.9 billion of gross output and employing over a quarter of a million workers (in 2008, of whom about a quarter were in transportation, a third in port services and the balance (40%) in the shipbuilding and repair sector). The US accounts for a large share of world sea-borne trade (17%), mostly petroleum products (44% of the total volume) and containers (in 2008

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US container traffic represented 10% of world traffic). While it has some large ports, only one (Los Angeles) is ranked in the top 20 in the world.

## 14.2 THE CURRENT REGULATORY FRAMEWORK

The first part of this section deals with international shipping and the second part focuses on port infrastructures and related services, most particularly on container and intermodal facilities.

### 14.2.1 Shipping

#### 14.2.1.1 International shipping

There are no barriers to entry in the market for domestic providers in the maritime transport sector; however, there are significant barriers to entry for foreign providers. In cross-border trade the US maintains some cargo preferences (also called cargo reservations). According to the General Agreement on Trade in Services (GATS), cargo preferences are a restriction to market access under mode 1. (GATS splits supply of services into four modes. Mode 1 is cross-border supply, and it applies when service suppliers resident in one economy provide services in another economy, without either the supplier or the buyer/consumer moving to the physical location of the other. [Francois & Hoekman 2009]). According to this restriction, some types of cargo (e.g., government-generated, strategic, military or that financed by certain government programs) can only be transported by vessels that fly the flag of the economy. At the same time, requirements to fly the US flag are quite restrictive. In order to fly the flag the vessel must be owned by a US entity (but may be owned up to 100% by non-citizen interests), the vessel must be crewed by US citizens or lawful permanent residents, all licensed officers must be US citizens and the vessel must be certified by the US Coast Guard. Foreign seafarers are allowed to work on US-flag vessels in the domestic and international trades if they hold a green card but are limited to only 25% of the licensed crew members.

Cargo reservation is a precedent which in the past has widely applied in the maritime transport industry across nations. Nevertheless, although since the 1970s and 1980s most economies have repealed this type of restriction, the US is one of the OECD economies that still applies it. Moreover, as can be seen in Table 14.1, cargo preference laws in the US cover many types of cargoes. Furthermore, considering cross-border trade restrictions, the US is party to a bilateral maritime agreement with Brazil. This agreement includes a cargo sharing clause; that is, it establishes a system of ‘cargo reservation’ between partners based on shares of bilateral or international trade transported by sea. The agreement signed with Brazil states that ‘National-flag carriers of each party shall have equal and *discriminatory* access to the government-controlled cargo of the other party’. Nevertheless, according to the Brazilian Maritime Transport Agency (Agência Nacional de Transportes Aquaviários), the reservation is not applied (Brazilian Maritime Transport Agency e-mail 2009).

**Table 14.1: US cargo reservation schemes.**

Types of cargo reserved	Regulation associated	Share reserved to US-flagged vessels
Military cargo [a]	Military Cargo Preference Act (1904)	100%
Government generated cargo [b] Petroleum	Cargo Preference Act (1954) Cargo Preference Act (1954)	At least 50% of the GT
Agricultural cargoes under some foreign assistance programs [c]	Food Security Act (1985)	At least 75%
Exports for which a government agency makes export loan or credit [d]	Public resolution 17 (1934)	100%

Sources: MARAD website 2010.

Notes: (a) Includes military contract cargo, commercial contractor cargo, personal property cargo, POV shipments; (b) Includes Congressional supplementary for Iraq reconstruction, Federal Transit Administration, AID loans and grants, etc. (c) Includes programs PL480 (Title I to III), Food for Progress, Section 416(b) and Food for Education; and (d) Ex-Im Bank.

There are almost no restrictions concerning the establishment of a commercial presence for a foreign provider, for example, restrictions on foreign ownership. Nevertheless, there is a measure considered by GATS as an impediment to trade under mode 3, namely, that international activities carried out in the US cannot be conducted by a branch. The requirement enables the US to have jurisdiction over the companies, in case of shipwreck for instance. It is also a means for the government to ensure that ships do not clear port without paying their bills.

Concerning discrimination between domestic and foreign providers, there is an important scheme in place with the aim of supporting the US maritime industry as a whole, which means the US-flag fleet, the vessels’ owners and operators and also US shipyards. These support programs are described in Table 14.2. The support can be applied to both international and domestic trade vessels and takes various forms: subsidies, credit guarantees and tax deferrals.

**Table 14.2: Support programs to the US maritime transport industry.**

Programs	Support	Mechanism
The Maritime Security Program (MSP)	US flag merchant marine - operators	Fixed payment to US-flag vessel operators
Voluntary Intermodal Sealift Agreement Program (VISA) [a]	US flag merchant marine - operators	Participants obtain priority consideration in the award of Department of Defence peacetime ocean freight contracts
Title XI - Federal Ship Financing Program	US merchant marine and shipyard	Credit guarantee to private entity seeking to finance the construction or modernization of vessels in US shipyards and for US shipyards seeking to invest in technology
Capital Construction Fund (CCF)	US flag merchant marine - owners and operators	Deferment of Federal income taxes on certain deposits of money or other property placed into a CCF
Small Shipyard Grant Program	Smaller shipyards	Grants for capital and related infrastructure improvements
Technical Assistance Program	Shipbuilding	Various programs to aid the development of more advanced technologies

Source: Source: Global Insight 2009, MARAD website 2010.

Note: (a) VISA is not really a subsidy. Nevertheless, the effect of the program is similar as it ensures a given level of resources for the carriers involved.

With only two exceptions, there is no discrimination in access to port infrastructure and related services for foreign vessels. First, national security measures may deny access to US ports to vessels from some economies. The second exception deals with the maintenance and repair of vessels. The US applies the principle of reciprocity, that is, it assesses tariffs when those services are rendered on US vessels in foreign ports.

Finally, the US applies an exemption on shipping agreements (conferences, consortia, discussion agreements) from US competition laws. Agreements among liner operators and marine terminal operators to discuss, fix, or regulate transportation rates and other conditions of service or cooperate on operational matters must be filed with the Federal Maritime Commission (FMC). The FMC reviews them to avoid anti-competitive behaviour.<sup>2</sup>

**14.2.1.2 Domestic shipping: cabotage**

In general, economies reserve domestic shipping for vessels that fly their own flag, but the requirements in order to provide cabotage service are more demanding in the US. According to the Merchant Marine Act of 1920 (the ‘Jones Act’), vessels must be registered under the

<sup>2</sup> Given the evolution of US regulations (with OSRA in 1998) and that of other economies (the repeal of the exemption in the European Union, for instance) the number of conferences calling at US ports is negligible. The market share of conferences on these routes is also negligible. In other words, in the US, liner shipping is a competitive market. Thus, the exemption of carriers’ agreements from competition law is considered a non-issue.

US flag and also be owned by a US corporation, of which the maximum amount of foreign equity is 25% and at least 75% of its employees must be US citizens.

More importantly, under the Jones Act, cabotage is reserved for ships built in the US. This building requirement has the effect of providing support for US shipyards. The US defines cabotage as ‘cargo services between two points in the US, including its territories and possession either directly or via a foreign port’. According to the cabotage regulations, any domestic leg of an international journey is also considered cabotage. This is an important restriction and more inclusive than that used by some other economies, even if, in practice, many waivers are issued (as reported by experts in 2009).

There are exemptions from the Jones Act. For instance, there is no building requirement for the transport of crude oil from Alaska. Also, with the exception of activities reserved for the US government, the US territories of American Samoa, Virgin Islands and Northern Mariana Islands are also exempt.

These restrictions stem in part from the long decline in the size of the US maritime industry prior to World War I. In 1913 the US fleet was very small in comparison to the US’s engagement in international trade. From the beginning of World War I foreign-flag ships were diverted away from US routes. In order to satisfy the demand for shipping for commercial and military purposes, the US government subsidised the shipbuilding industry. As a result, the shipbuilding industry obtained not only substantial financial resources and but also experience of interaction with policymaking, adding to its capacity to influence the content of the Jones Act.

#### **14.2.2 Port infrastructure and related services**

This section focuses on port services (pilotage, towing and tug assistance, provisioning, fuelling and watering, garbage collection and disposal, port captain’s services, navigation aids, shore-based operational services and emergency repair facilities) and auxiliary services (cargo handling, storage and warehousing, customs clearance, container station and depot, maritime agency and maritime freight forwarding).

It is the task of the Maritime Administration (MARAD) to provide expertise on port financing and port infrastructure, ensure port and cargo security, and license deepwater liquefied natural gas ports. Meanwhile, the Federal Maritime Commission (FMC), which is an independent regulatory agency, regulates certain port activities and is responsible for the registration of Marine Terminal Operators (MTOs). These two entities are both port authorities and private terminal operators. All MTOs are obliged to file a notice with the FMC that they will provide regulated marine terminal services. The FMC reviews agreements, monitors the concerted activities of ocean common carriers and MTOs and produces a market analysis with a focus on activities that are substantially anti-competitive.

The US system is decentralised. Most commercial regulations dealing with ports are issued by local governments and the state governments are responsible for environmental regulation. In the main US container ports, a public port authority owns and maintains the docks and other facilities and is responsible for the overall administration of the property, terminals and other facilities. In these ports, the port authority acts as a landlord; that is, it leases terminals to private operators.

Ocean Transport Intermediaries (OTIs; freight forwarders or ‘non-vessel operating common carriers’) must obtain a licence in order to enter into the market. The FMC issues the licences after the submission of a form, the payment of a fee and a proof of financial responsibility has been provided. Moreover, a company officer has to provide proof of his or her experience.

There are restrictions on the number of port and auxiliary service providers. In general the number of service providers in some areas (e.g., cargo handling, storage and warehousing and pilotage) is limited in ports because of the existence of economies of scale and the scarcity of port space. Thus, it is not uncommon that companies that want to provide these types of services must obtain concessions from port authorities through auction or tender. Major US ports are landlords, so they are responsible for the introduction of new providers when necessary. The right to operate port facilities then is driven by the operators’ financial capacity and willingness to meet safety and security requirements. Various schemes apply to pilotage services in ports: they might be operated by private monopolies (e.g., Long Beach), by pilotage associations (e.g., New York/New Jersey and Houston) or by port authorities (e.g., Los Angeles).

### 14.3 FORCES FOR POLICY CHANGE

This section deals with the main policies that have been put in place to support shipping in the maritime transport industry; that is, the cargo preferences system, various subsidy programs and the Jones Act. It also includes reference to container and intermodal facilities because of their importance in US freight transport.

#### 14.3.1 Cargo preferences

The US government grants preference to US-flag vessels for transporting various types of cargo. From 2005 to 2007 the volume of cargo transported under preference schemes represented a very small share of the total US foreign trade (1.4–1.6% of total US seaborne trade depending on the year). Nevertheless, the revenue generated by cargo preferences transportation was sizable (Table 14.3). For each of the fiscal years between 2005 and 2007 it represented more than USD1.3 billion. Thus, it represents an important share of the total revenues of carriers operating US-flag vessels.

**Table 14.1: Importance of various cargo preference schemes, since fiscal year 2005.**

	FY2005			FY2006			FY2007			FY2008		
	Total tonnage (1000)	Share really reserved	US revenue (1000)	Total tonnage (1000)	Share really reserved	US revenue (1000)	Total tonnage (1000)	Share really reserved	US revenue (1000)	Total tonnage (1000)	Share really reserved	US revenue (1000)
Military cargoes	17 225	92.0	853 086	15 349	88.2	784 848 [a]	19 086	74.0	919 363	n.a.	n.a.	n.a.
Agricultural cargoes	3 779	67.7	379 396	3 655	72.8	414 403	2 554	83.1	319 760	2 796	79.3	430 788
Civilian agencies	859	92.0	80 434	900	93.2	122 951	822	93.2	88 719	841	94.0	95 659
Ex-Im Bank	30	55.7	10 939	27	70.9	16 657	67	42.3	24 724	8	65.7	4 659
<b>Total</b>	<b>21 893</b>	<b>87.7</b>	<b>1 323 855</b>	<b>19 931</b>	<b>85.6</b>	<b>1 338 859 [b]</b>	<b>22 528</b>	<b>75.6</b>	<b>1 352 566</b>	<b>3 644</b>	<b>82.6</b>	<b>531 105 [c]</b>

Source: MARAD website (2010)

Note: Data not available for petroleum reservation scheme. ‘Share really reserved’ is expressed in percent of the total tonnage. (a) Does not include revenue for petroleum.

Military cargo preference is the most important scheme in volume and in value. In 2007 the scheme represented 84.7% of the volume of cargo reserved and 68% of the revenue generated. The share generated by military cargo over the last number of years has undoubtedly been inflated by the conflicts in Iraq and Afghanistan. Nevertheless, the share of cargo that should be reserved according to the law and the share of cargo actually reserved are noticeably different.

This discrepancy is most likely due to the limited shipping capacity of the US-flag fleet. Because the general fleet is relatively small in size, the first issue is gross capacity. There is also the issue of the Department of Defense's need for specialised carriers, such as Roll-on/Roll-off (Ro/Ro) ships, which are insufficient in the US-flag fleet. Moreover, the share reserved to US-flag vessels comes with the condition 'to the extent that such vessels are available at fair and reasonable rates', which means that the various agencies are allowed to contract for foreign-flag vessels if there is a documented lack of availability of US-flag vessels.

From a commercial policy point of view, cargo reservation works much like a quota, by protecting the vessels registered under the American flag. Contrary to the situation in most other economies, there are no restrictions on foreign ownership in order to fly the flag. However, the cost of operating a foreign-flag vessel is lower than the cost of operating a US-flag vessel. Therefore, the operating cost differential comes, above all, from the American crew requirement, which makes for higher labour costs (Table 14.4). This crew-related expenses differential is responsible for more than 75% of the total operating expenses differential for a tanker and 80% for a container ship. Protection of the domestic fleet leads to an increase in the price of shipping services, which results in an opportunity cost for the reserved cargoes' shippers – to transport the cargo on a US-flag ship rather than on a cheaper foreign ship. Most reserved cargoes are consumed by US government departments (e.g., Defense, Agriculture and Transport) so that it is the taxpayers who bear the cost.

**Table 14.2: Daily operating expenses for US-flag vs foreign-flag vessels, in 2005 (USD).**

Expense Category	Tanker [a]		Containership [b]	
	US-Flagged	Foreign-Flagged	US-Flagged	Foreign-Flagged
<b>Crew</b>	11 000	2 300	12 705	2 940
<b>Fuel</b>	2 600	1 100	4 410	3 045
<b>Maintenance and Repair Costs</b>	1 200	700	2 310	1 470
<b>Insurance</b>	11 000	11 000	13 335	13 335
<b>Other [c]</b>	2 100	1 500	1 500	1 400
<b>Total</b>	27 900	16 600	34 260	22 190

Source: MARAD 2006 (replicated from USITC 2007)

Notes: (a) These costs are estimated for 40-50 000 dwt tankers that are less than 10 years old; (b) These costs are estimated for a container ship with a volume of 4000 20-foot equivalent units (TEUs) that are less than 10 years old; and (c) includes food, supplies and other vessel expenses.

There is little information in terms of impact assessments relating to cargo preferences, as there has not been regular analysis allowing for the monitoring of this policy. Furthermore, there is only one analysis dealing with all schemes in combination, as most studies focus on one particular type of reservation scheme only. Table 14.5 shows the results from various studies.

**Table 14.3: Results of various assessments.**

Study	Period of Assessment	Schemes Assessed	Estimation	Main conclusion
White (1988)	1984	Agricultural commodities (P.L. 480), Strategic Petroleum Reserve, other shipments	-	Cost for the Federal government are respectively of 130, 43 and 93 MUSD
GAO (1990)	1986-1988	Food Aid (P.L. 480)	Based on ocean freight differentials	The cost differential is in average 128.1MUSD per year - i.e. 9.5% of total program expenditures
GAO (1994)	1989-1993	All schemes	Comparison with charges to carry cargo on foreign vessels	Federal agencies' transportation costs are increased by 578MUSD per year
Department of Defense (1994) [a]	-	Military cargo scheme	-	Additional costs of 476 MUSD on a total bill of 1.15 BUSD for the DoD
Barrett and Maxwell (2005)	1999-2000	Section 416(b) and Food for Progress	-	A premium of 78% is paid for ocean freight due to cargo preference

Sources: Various reports, for details see references.

Note: (a) Not available, information reported from OECD (2001).

The highest estimated cost is associated with military cargo – with estimates ranging from USD352 million to USD969 million according to the year and the study. The difference between assessments can be explained by the different methodologies used to compute the cost of the measure as well as the variation of the quantity of cargo transported under the various schemes. This is particularly true for military cargo, where the difference between cargo transported in peacetime and in wartime is important.

Finally, the various impact assessments do not focus solely on the pecuniary costs of the measures; e.g., the 1990 assessment by the GAO highlights the impact of cargo preferences on the quality of services provided. According to the report, because of the schemes a sizable share of cargoes are loaded late (GAO 1990).

For all these reasons it is very difficult to draw general conclusions from this work beyond the assessment that cargo preferences are costly for the American economy.

If the main objective of cargo preferences is to support the US-flag fleet involved in international trade. Figure 14.1 shows that this objective has not been reached. Indeed, the US-flag fleet decreased substantially over the last two decades. Cargo preferences have not prevented the decline in the size of the US-flag fleet. It may also isolate carriers operating US-flag vessels from international competitive standards and reinforce the fleet's inefficiency.

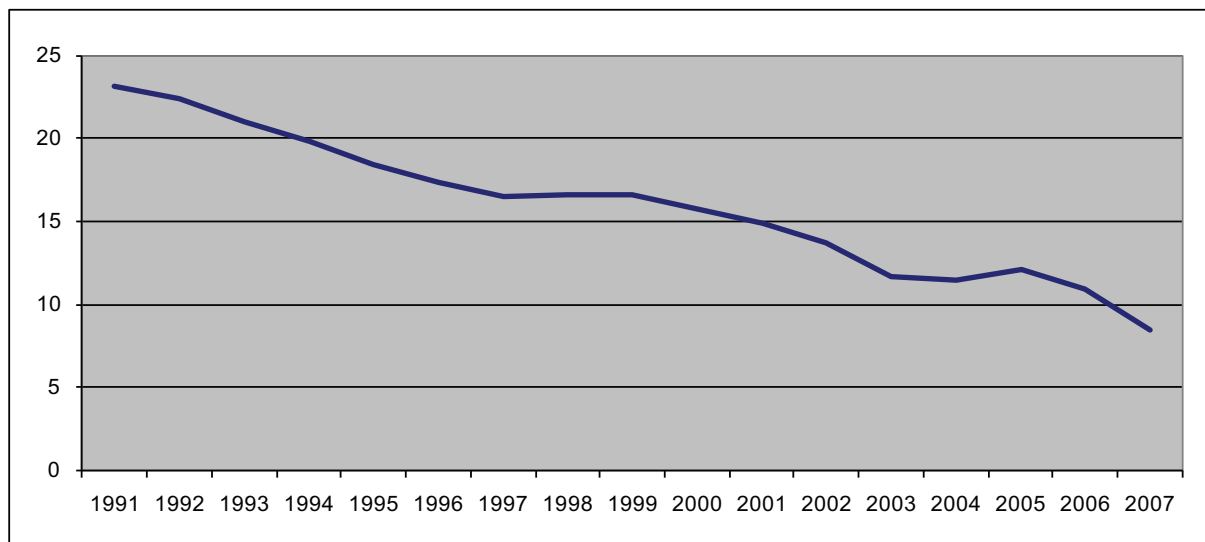


Figure 14.1: Size of the US-flag merchant fleet, ocean-going ships of  $\geq 1000$  gross tons (in million dwt). (Source: BTS 2010)

### 14.3.2 Subsidy programs and the Jones Act

This section examines the MSP and VISA programs and also focuses on Title XI and the Capital Construction Fund (CCF) programs (Table 14.6). The objective of these programs is to support the fleet involved in international trade, whereas the aim of the MSP and VISA programs is more precise. The MARAD website states that ‘These programs are designed to assure the availability of sufficient US commercial sealift capability and the US intermodal system to sustain US military operations overseas in an emergency’. The MSP establishes a fleet of privately-owned, militarily useful vessels and the operators involved in the MSP have to make their ships and commercial transportation resources available on the request of the Secretary of Defense. With the VISA program participants commit to capacity in exchange for priority consideration in the award of Department of Defense peacetime ocean freight contracts. The MSP was created in 1996 because cargo preferences were not able to support the fleet and to achieve the national security objective.

**Table 14.4: Importance of each subsidy scheme, various years.**

Programs	Budget	Associated fleet
The Maritime Security Program (MSP)	156 MUSD authorized annually for 2006-2008 and 174 MUSD for 2009-2011	59 vessels - of which 38 containership. 2.5M of dwt - of which 2M of dwt for containership
Voluntary Intermodal Sealift Agreement Program (VISA) [a]	-	49 Companies, 133 Ocean Going Ships, 178 Tugs, barges and other vessels (More than 90% of the militarily useful vessels in the U.S.-flag fleet are committed to the VISA program)
Title XI - Federal Ship Financing Program [b]	Commitment of 178 MUSD in 2005, no new commitment in 2006-2008, 351 MUSD for 2009	In 2009, for 5 articulated tug or barges (185000 bbi), 9 asphalt tank barges and 30 open hopper barges
Capital Construction Fund (CCF) [b]	n.a	-
Small Shipyard Grant Program	10 MUSD in 2008	-
Technical Assistance Program	n.a	n.a.

Sources: MARAD website 2010.

Notes: (a) VISA is not strictly a subsidy. Nevertheless, the program's effects is similar as it ensures a given level of resources for carriers involved. (b) These programs are linked directly to the Jones Act.

The MSP and VISA programs as a consequence work in conjunction, so that more than 90% of the militarily useful vessels in the US-flag fleet are committed to the VISA program and over 77% of that capacity comes from MSP vessels.<sup>3</sup> Carriers can legally be engaged in either or both of the MSP and VISA programs and at the same time transport reserved cargo, which means they can benefit from multiple support schemes. For instance, since military cargo is reserved for US-flag vessels and consequently is highly lucrative for carriers, the Department of Defense pays them to commit to capacity in the VISA program. Clearly, because of this 'double dipping', this type of support is more costly for the taxpayer but without any corresponding enhancement of benefits. As shown in Figure 14.1, the creation of the MSP in 1996 may have prevented the decline of the fleet's size for a few years, however, after only 3 years the MSP was already insufficient and the decline began again. Furthermore, the complexity of the system leads to a lack of transparency, which further complicates the effective monitoring of these programs.

Finally, the MSP subsidises the operators of US-flag vessels even though maritime regulation does not require national ownership in order to fly the flag. Hence, an important share of the US-flag fleet is operated by foreign carriers. This leads to the situation where the US government, in supporting its fleet by allowing preferences, is directly subsidising foreign carriers. For instance, as of 1 July 2009 the container ship fleet in the MSP program represented 2 million dwt and more than 80% of the capacity of the entire MSP fleet. Among this fleet, 98% of the deadweight tonnage was operated by three foreign-owned carriers.<sup>4</sup>

The Jones Act in effect works like a cargo preference system, reserving domestic maritime transport for US built and operated vessels. This adds to the costs of providing the services, due to the higher building costs and crew costs compared to ships from the rest of the world. There are, however, subsidies to offset this cost increase for the shipyards (Title XI – see Table 14.6) and for companies that want to buy a Jones Act vessel (the CCF).

<sup>3</sup> Carriers with vessels enrolled in the MSP agree to make their ships available to the Department if VISA is activated. In Stage III of VISA, those ships which receive the MSP subsidy must devote 100% of their capacity to Defense cargo; but those ships which opt into VISA but do not receive the MSP subsidy must devote only 50% of their capacity to Department of Defense cargo.

<sup>4</sup> They are APL Marine Services (subsidiaries of Neptune Orient Line, Singaporean ownership), Maersk Line Ltd and Farrell Lines (subsidiaries of AP Moller-Maersk Group, Danish ownership) and Hapag Lloyd (German ownership). The fourth carrier, Waterman Steamship Corporation, is US owned.



Table 14.7 lists impact assessments that have computed the cost of the Jones Act system. The first conclusion is that the Jones Act is much more costly than other support programs. This is, above all, due to the huge differential in construction cost. The difference is presented in Table 14.8. The price of a vessel built in an American shipyard was two, three or even four times higher than the representative new construction price reported by UNCTAD for an equivalent, or a larger, vessel of the same category in the same period. The additional operating and construction costs are supported by taxpayers via subsidies and by the consumers of the services, that is, first the shippers, but ultimately the final consumers of the goods.

**Table 14.5: Results of various Jones Act impact assessments.**

Authors	Methodology	Period assessed	Cost estimation
White (1988) [a]	Based on government transfers	1984	Higher cost of \$2 billions to transport goods in the coastal trade
Congressional Budget Office (1994) [a]	Based on government transfers	1983	Cost of \$1.3 billion for the US economy
Hufbauer and Elliot (1993)	Partial equilibrium model	1990	Net cost of \$1.1 billion for the economy
ITC (1995)		1992	Net welfare gain of 2.8 billions USD in case of repeal of the Jones Act
ITC (1999)	Computable General Equilibrium - Operating and capital costs [b]	1996	Net welfare gain of 1.3 billion USD in case of repeal of the Jones Act. Gain of 380 MUSD for the build liberalization only
ITC (2002)		1999	Net welfare gain of 656 millions of USD in case of repeal of the Jones Act. Gain of 261 MUSD for the build liberalization only
ITC (2004 and 2007)		No quantitative assessment	

Sources: Various reports, see references.

Notes: (a) The report is not available; information comes from Papavizas & Gardner 2009; (b) Partial equilibrium for assessing the removal of the domestic build requirement of the Jones Act.

**Table 14.6: Major US commercial shipbuilding programs and representative new building prices, selected years (USD million).**

Original Name	Builder	Capacity	Delivery	Price	Representative newbuilding price	Price differential in %
<b>Crude Carriers</b>						
Polar Endeavour	NGSS Avondale	140,000dwt	2001	166	41 [a]	405
Alaskan Explorer	GD/NASSCO	193,000dwt	2005	210	58 [b]	362
Alaskan Adventurer	GD/NASSCO	193,000dwt	2005	210	58 [b]	362
Alaskan Legend	GD/NASSCO	193,000dwt	2006	210	81 [c]	259
<b>Containerships</b>						
Manulani	Aker Philadelphia	2502 TEU	2005	145	42 [d]	345
Maunalei	Aker Philadelphia	2503 TEU	2006	145	46 [e]	315

Sources: Shipbuilding history website 2010, UNCATD 2009.

Notes: In this table are presented prices for buyers. Hence, data includes subsidies directly paid to shipyards. (a) For tanker of 110 000 dwt, 2000. (b) For tanker of 1100 00 dwt, 2005. (c) For tanker of 110 000 dwt, 2006. (d) For full container ship of 2500 TEU, 2005. (e) For full container ship of 2500 TEU, 2006.

The various methodologies explain the variability of the results presented in Table 14.7. Nevertheless, contrary to the assessments of cargo preferences, the studies of the Jones Act are more interesting for the purposes of this case. Of particular interest will be the most recent of the periodically released United States International Trade Commission (USITC) assessments because, as they use a similar methodology, they will allow a comparison with the Jones Act's cost over time. According to various USITC studies since 1995, the cost of the Jones Act to the US economy has decreased. The USITC computed that if the Jones Act had been repealed in 1992 there would have been a welfare gain of USD2.8 billion; for 1996 the welfare gain of the repeal had decreased to USD1.3 billion; and to USD656 million for a repeal in 1999. Interestingly, the reduction in the cost of the Jones Act could potentially be explained by the decrease in the volume of domestic shipping as shown in Figure 14.2 (USITC 2002).

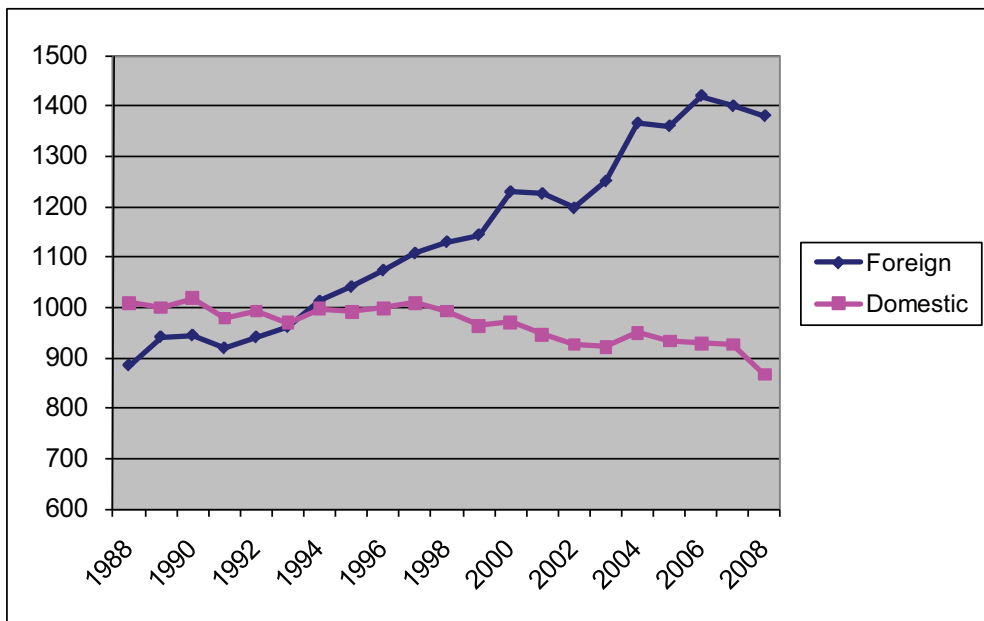


Figure 14.2: Volume of foreign and domestic shipping, in millions of tonnes. (Source: BTS 2010)

During the same period the operating cost differential had increased – for example, between 2003 and 2005, from USD8700 to USD11 300 for a tanker and from USD11 500 to USD12 070 for a containership. The building cost differential is presumed to have increased as well. Thus, the decrease in cost could be explained by a volume effect and not a price effect.

Furthermore, the Jones Act results in a high cabotage service price. Moreover, between 2003 and 2008 the producer price of coastal shipping increased much more than the freight trucking rate. The producer price for rail transport increased at the same rate (US Department of Labor, Bureau of Labor Statistics 2010). Hence, consumers substituted other modes of transport for coastal shipping (Figure 14.3). This in turn has reduced the volume of domestic shipping and thus raised the cost of the Jones Act. The reduction in volume can also be explained by reductions in domestic production and the shipment of crude oil. Additionally, substituting rail and road transport for domestic shipping leads to congestion on land.

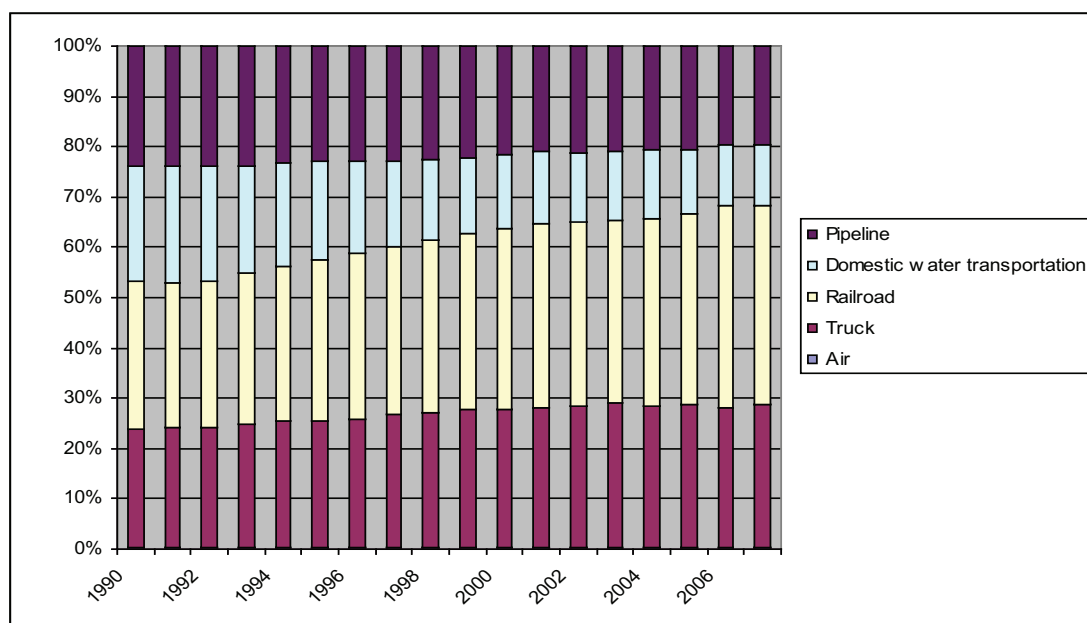


Figure 14.3: US domestic transport share by modes (ton/miles of freight). (Source: BTS 2010)

The combination of cargo preferences (on various types of international trade and on domestic shipping) and the various subsidy programs could not prevent the decline of the US-flag fleet (Figure 14.1). Additionally, since the mid 1980s, the Jones Act and related subsidies have not prevented the decline of the shipbuilding sector. There has been a strong decrease in the number of shipyards and in employment in the shipbuilding and repair sector (Figures 14.4–5).

In conclusion, cabotage regulation has had an important impact on the cost of domestic shipping but it has also had implications for international shipping. The definition of cabotage used by the US considers the domestic part of an international journey as cabotage. In theory, foreign carriers providing international shipping services cannot call at multiple US ports without employing a ‘Jones Act vessel’. Thus, the law prevents carriers involved in international shipping from rationalising the use of their vessels. It leads to higher costs for providers and higher prices for consumers. Even if waivers are issued, according to experts the system is burdensome and inefficient.

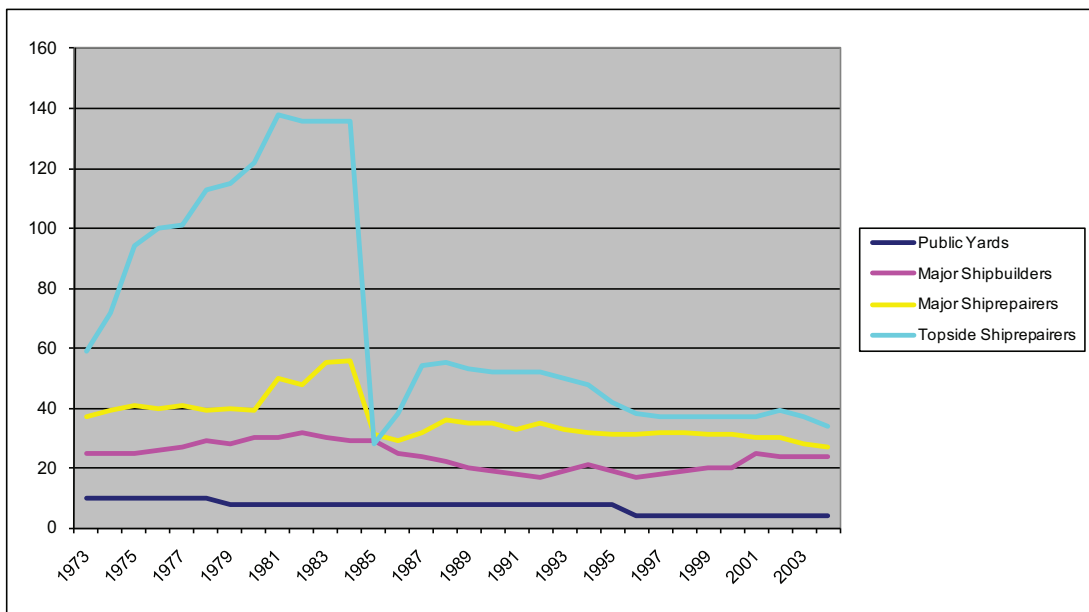


Figure 14.4: The number of shipyards in the US. (Source: Shipbuilding history website 2010)

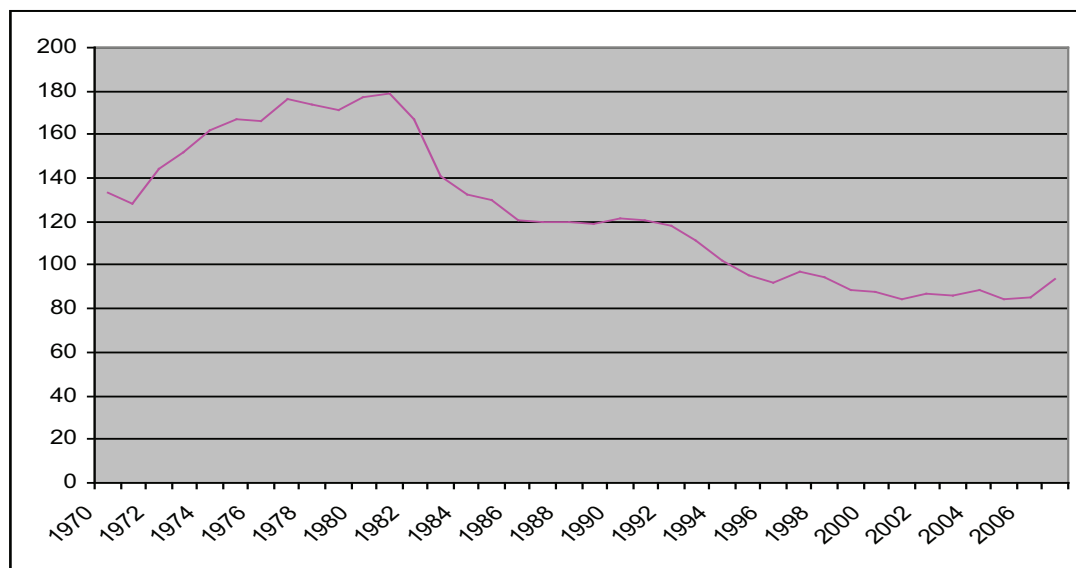


Figure 14.5: Employment in the shipbuilding and repairing sector (,000). (Source: Shipbuilding history website 2010)

### 14.3.3 Port infrastructure and related services

This section examines the challenges faced by US ports, focusing on capacity constraints and congestion risks, including congestion within ports and rail and road bottlenecks in and around ports.

#### 14.3.3.1 Congestion in ports

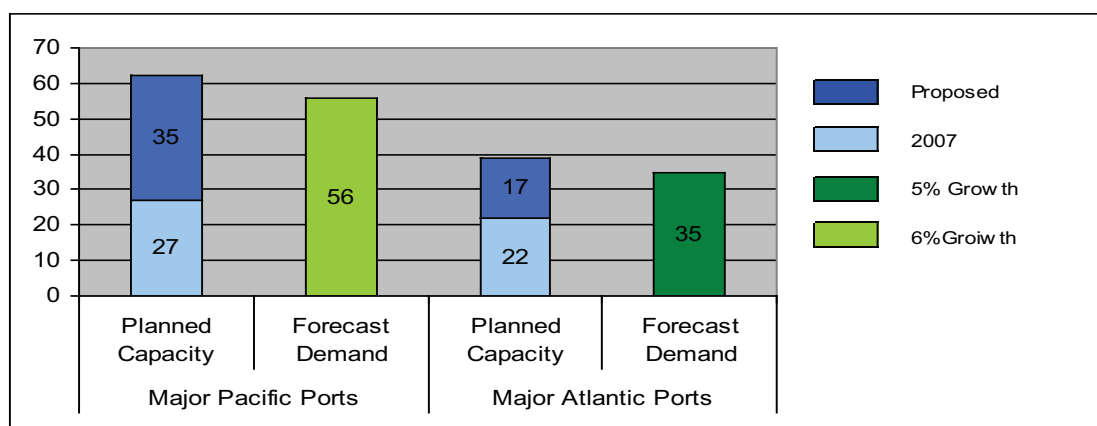
During the 2000–07 period container throughput more than doubled (Table 14.9). Despite a decrease in 2008 and 2009 because of the global financial crisis, container traffic is expected to increase again in the coming years. This is particularly true for West Coast ports because of trade growth in manufactured goods from East Asia (Figure 14.6). Thus, in 2020 port capacity would need to have increased by 107% in major Pacific ports and by 59% in major Atlantic ports in order to satisfy future demand.

**Table 14.7: Evolution of container throughput in the first 10 US ports (in TEUs).**

		2000	2007	Evolution 2000-2007
1	Los Angeles (13) [a]	3 227 743	8 355 039	159
2	Long Beach (15) [a]	3 203 555	7 312 465	128
3	New York/New Jersey (19)	2 200 343	5 299 105	141
4	Savannah (40)	720 231	2 604 509	262
5	Oakland (45) [a]	988 773	2 387 911	142
6	Norfolk (52)	850 400	2 128 366	150
7	Seattle (57) [a]	959 883	1 973 504	106
8	Tacoma (59) [a]	647 017	1 924 934	198
9	Houston (65)	733 134	1 768 687	141
10	Charleston (66) [b]	1 246 181	1 750 000	40

Source: Containerisation International 2010, US Department of Transportation 2009

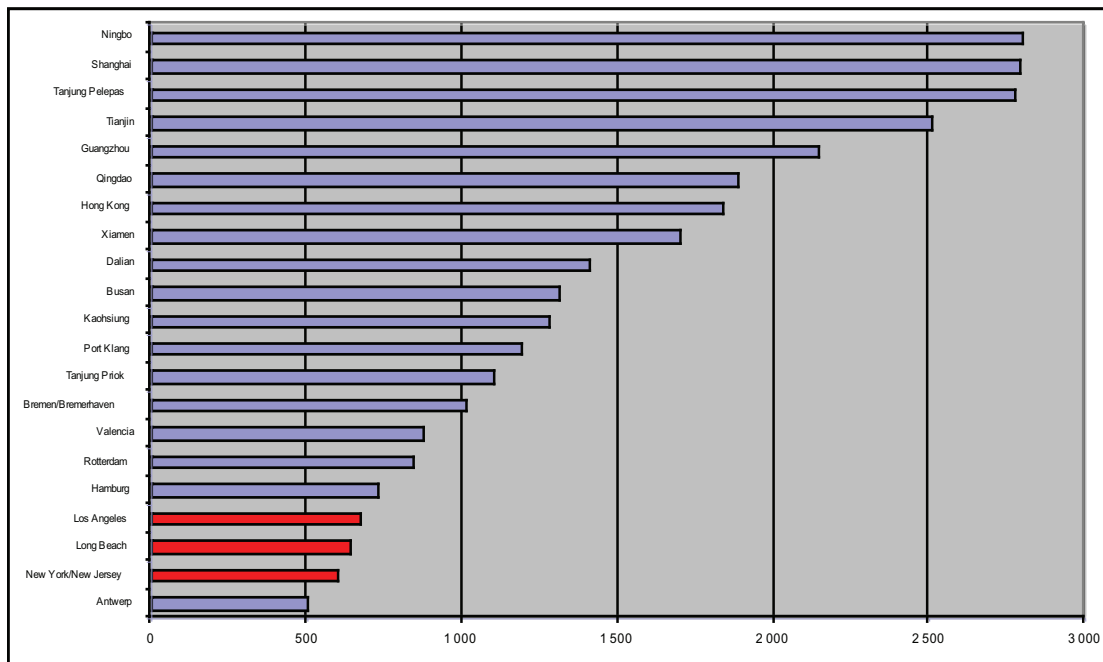
Notes: In brackets is the world rank of the port in terms of container throughput; (a) West Coast. (b) Reported from July to June.



**Figure 14.6: Capacity and demand by 2020 by major ports (million TEU). (Source: MARAD 2009)**

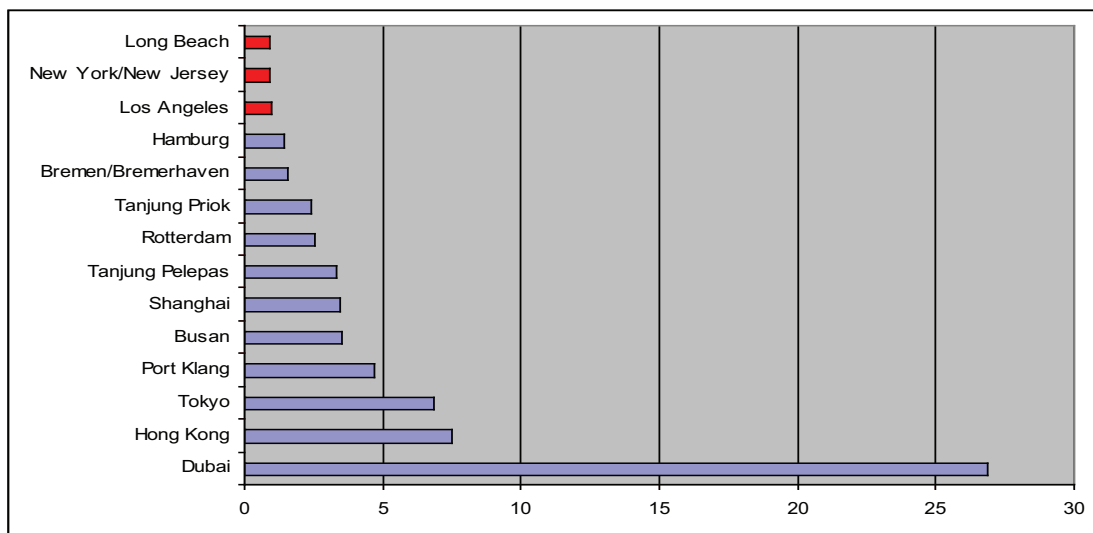
Such a huge increase in port traffic could lead to congestion, which would increase costs for shippers and consumers. It also gives incentives for shippers to shift from US ports to less congested ports in Canada or Mexico (MARAD 2009a). This issue can be seen in two different ways: as a problem of investment in new infrastructure and as a problem of full and efficient use of existing capacities. Indeed, the performance of ports in the US measured by two different indexes is low by comparison with other international ports (Figures 14.7–8). Given the main international ports' performance, US ports have room for progress to attain

the full potential of berths and of port surfaces. Therefore, it would seem that, before investing in new capacity, US ports could rationalise existing ones. This would allow ports to handle increased numbers of containers with the same level of infrastructure.



Note: Computed as the total TEUs throughput divided by the length of container berths.

Figure 14.7: Port productivity in international ports, 2009. (Source: Data from Containerisation Online 2010)



Note: Computed as total TEU throughput divided by total container terminal surface in squared metres.

Figure 14.8: Port productivity in international ports, 2009. (Source: Data from Container International 2010 and related port authority websites)

### 14.3.3.2 Rail and road bottlenecks in port surroundings

As noted in Section 14.3.3.1, ports have witnessed a strong increase in container traffic in the last decade. Whereas the cargo throughput increased in ports, too few investments have been made in other modes of transport. This leads to rail and road bottlenecks, notably in the ports' surroundings. Bottlenecks slow access to ports and increase delays within ports because of

the waiting time to unload cargoes, which in turn decreases the efficiency of the entire logistics chain. In this respect bottlenecks are partly responsible for poor port performance.

Table 14.10 gives an indication of the congestion of land transport in port surroundings. For instance, in 2005 in the areas of Long Beach and Los Angeles, the annual delay per container was 72 hours on average. Again we can note that congestion is particularly prevalent on the West Coast.

Other data gives us some indication of bottlenecks around ports. For instance, in 2007 the area where the average truck speed was the lowest was close to ports (US Department of Transportation, Federal Highway Administration 2008). All this data highlights the importance of building new infrastructure and improving the efficiency of existing ones.

**Table 14.8: Landside annual traffic delay per container in surrounding urban areas, 2005.**

Port	Container traffic rank	Delay	
		Hours	Rank
Los Angeles/Long Beach [a]	1-2	72	1
New York	3	46	16
Savannah	4	n.a.	n.a.
San Francisco Bay Area ports [a] [b]	5	60	2
Virginia ports [c]	6	30	42
Seattle [a]	7	45	19
Tacoma [a]	8	45	19
Houston	9	56	7
Charleston	10	31	40

Source: US Department of Transportation, 2009

Notes: (a) West Coast ports; (b) San Francisco Bay Area ports: Oakland, Redwood City, Richmond, San Francisco and Stockton; and (c) Virginia ports: Norfolk, Richmond and Newport News.

## 14.4 SCOPE FOR FURTHER REFORM

The last policy change in shipping was the Ocean Shipping Reform Act (OSRA) in 1998. It dealt with the exemption from competition law of liner carriers' agreements. In spite of many proposals to reform the maritime regulatory framework, in particular the Jones Act and cargo preferences, nothing has been done since that time. This section considers why those changes have not occurred and discusses the most recent changes that have occurred in container and intermodal infrastructures.

### 14.4.1 Shipping

US policy is motivated by concerns about the security of supply. It involves the use of cargo preferences and cabotage regulation. However these are costly for consumers and taxpayers with significant effects on the allocation of resources within the economy. Some of the consequences of the policy are apparently inconsistent with its purpose, since even the legislation which was designed to support US-flag vessels could not prevent the decline of the US fleet. In these respects, it might be expected that the policy package would come under pressure for change. There are, however, several sources of countervailing pressure.

The first difficulty for policymakers comes from the likely impact of reforms on employment. The maritime transport sector employs hundreds of thousands of people (Table 14.11, Figure 14.5). Repealing the cargo preferences measure would directly affect the shipboard jobs of 6000 Americans (GOA 1994). According to the USITC report (2002), abolition of the Jones

Act would affect about 7700 maritime workers (full time equivalent; FTE) and about 3100 FTE workers in the shipbuilding sector. These changes would be associated with responses through the political system.

**Table 14.9: US employment in water transport and related industries, 2003–08 (,000).**

	2003	2004	2005	2006	2007	2008
Transportation	54.5	56.4	60.6	62.7	65.5	65.2
Port Services	93.8	91.5	93.9	99.3	100.1	97
<i>Cargo Handling</i>	40.8	40.8	42.8	45.6	46.2	44.9
<i>Handling</i>	53	50.7	51.1	53.7	53.9	52.1
Shipbuilding and Repair	92.6	90.8	92.2	95.1	101	104.5
<b>Total</b>	<b>240.9</b>	<b>238.7</b>	<b>246.7</b>	<b>257.1</b>	<b>266.6</b>	<b>266.7</b>

Source: US Department of Transportation 2009

Another difficulty in reforming the maritime transport policy comes from the fact that the ‘losers’ are diffuse and not easily organised whereas the ‘winners’ are few and very well organised. Government support to the maritime industry represents an important share of the revenue of some carriers. In relation to cargo preferences, 118 US-flag vessels participated in moving preferential cargo in 2006. At the same time, more than 50% of the revenue of some operators was derived from this trade in preferential cargo (Global Insight 2009). Whereas the aim of the system was to support the fleet, in fact it only subsidises a very few companies. In relation to the Jones Act, at the end of 2008 only two carriers operated Jones Act container vessels – Horizon Lines Inc. and Matson Navigation Inc.: 67% and 87% of the fleets of these carriers, respectively, were involved in the cabotage market. At the end of 2008 the domestic container transport was a duopoly, with Horizon Lines operating 55% of the fleet and Matson Navigation 45%. Experiences from various studies of regulation indicate that the more concentrated is a market, the easier it is to organise and defend a favourable regulation.

There are groups in the US which oppose the Jones Act. In 1995 an initiative called the Jones Act Reform Coalition, mostly comprised of shippers, was formed with the objective to repeal, or at least to reform, the regulations on cabotage. The Coalition relied on the economic arguments surrounding the inefficiency of the present system. In the same year, by way of reply, some carriers, shipyards and other maritime interests involved in the domestic shipping market formed the Maritime Cabotage Taskforce. Despite the evidence provided, the efforts of the Coalition were not seriously considered by Congress (Papavizas & Gardner 2009).

#### 14.4.2 Port infrastructure and related services

Over recent years, most of the port and related regulation reforms have concerned security issues (see Annex Table A14.1), the one exception being the creation of the Office of Port Infrastructure Development and Congestion Mitigation (OPIDCM) in May 2009. The objectives of the OPIDCM are manifold: coordinating port infrastructure projects for a variety of entities, coordinating and directing studies of port and intermodal facilities and leading national efforts to reduce congestion, including highways and railways.

In relation to port congestion, during fiscal years 2007–10 the projected annual capital expenditures in public ports were on average more than USD2.3 billion, representing an increase of 125% in comparison with 2006 (Table 14.12). The most prominent expenditures were to be on container facilities. Despite the fact that the West Coast represents a market share of 55% of the containers entering the US (vs 40% for the East Coast and 5% for the Gulf ports), only 30% of the investments were allocated to West Coast ports (vs 50% for the East Coast and 20% for the Gulf ports).

**Table 14.10: US public port capital expenditures by region, historical and projected (USD,000).**

		Type of facility					Infrastructure [b]	Dredging	Security	Total
		General cargo - Ro/Ro	Container	Bulk	Passenger	Other [a]				
2 006	Atlantic	95 715	157 431	2 550	27 507	30 718	10 896	78 228	21 418	424 463
	Gulf	26 660	110 996	28 449	26 960	63 578	45 086	40 309	17 464	359 502
	Pacific	36 409	72 212	2 383	2 158	92 757	16 921	25 529	8 559	256 928
	<b>Total</b>	<b>158 784</b>	<b>340 639</b>	<b>33 382</b>	<b>56 625</b>	<b>187 053</b>	<b>72 903</b>	<b>144 066</b>	<b>47 441</b>	<b>1 040 893</b>
Annual average (2007-2011)	Atlantic	178 691	328 101	20 484	63 410	214 890	56 388	201 952	17 350	1 081 266
	Gulf	163 764	141 834	59 851	5 804	65 063	58 920	26 728	26 834	548 797
	Pacific	14 250	204 883	21 080	62 718	252 621	124 740	12 527	23 270	716 089
	<b>Total</b>	<b>356 704</b>	<b>674 817</b>	<b>101 416</b>	<b>131 932</b>	<b>532 573</b>	<b>240 048</b>	<b>241 207</b>	<b>67 454</b>	<b>2 346 152</b>
Evolution Total, in %		125	98	204	133	185	229	67	42	125

Source: MARAD, 2009

Notes: (a) Equipment (computer, maintenance etc.), buildings/improvements (maintenance, fire stations, administration etc.), real estate development, crane electrification conversion, customer facilities, terminal development, maintenance, administration, property/infrastructure, land, new accounting systems, HVAC systems, new roof on administration buildings, feasibility studies, marinas, moorage, fireboats, environmental, recreation, information technology and boat launches; (b) Rail, road and utilities inside or outside of terminals.

As can be seen in Figure 14.6, most of the demand for TEU capacity in ports will be covered by proposed investments. An important question concerns the placement of these investments. Because main ports are located close to megalopolises where land is scarce and expensive, they are close to their maximum sizes. This points to a need for the development of secondary ports, which means an extensive development of US ports. In this respect the OPIDCM would help to coordinate investments in various ports, thereby helping to make the US port network coherent and avoiding duplication of investments.

Yet bearing in mind the bad performances of US ports, the question is whether investing in new capacities is the most efficient way to address the congestion issue. As already noted, congestion could be addressed by the intensive development of facilities. The poor performance of the three main US ports cannot be explained by a lack of competition between terminals within ports – which is the norm in the US (Table 14.13). In these ports the container handling market is competitive.

**Table 14.13: Container handling operators in the three main US ports.**

Port	Operators	Berths length [a]	Portainers [b]
Los Angeles	West Basin Container Terminal LLC [a]	1200'	4SPP
	West Basin Container Terminal LLC [a]	3500'	5PP - 3P
	Trans Pacific Container Service Corporation [b]	4050'	11PP
	Port of Los Angeles Container Terminal [c]	2180'	3 (50') - 1 (34')
	Yusen Terminal [d]	5800'	4SPP - 4PP - 2P
	Seaside Transportation Services LLC [e]	4700'	8PP
	APL Terminal - Global Gateway South	4000'	12SPP
Long Beach	APM Terminal	7190'	14SPP
	California United Terminals [f]	2100'	5 (50')
	Total Terminals International [g]	5000'	14 (100')
	International Transportation Service, Inc. [h]	6379'	17 (50 and 100')
	Long Beach Container Terminal, Inc.	2750'	7 (100')
	Pacific Maritime Services	5900'	15 (100')
	SSAT Long Beach LLC	3600'	10 (100')
New York/New Jersey	SSA Terminals	1800'	3 (100')
	American Stevedoring - ASI Terminals	2080'	2 (80') - 1 (90') - 1 (100')
	Global Marine Terminal	1800'	6PP
	Port Newark Container Terminal	4400'	3 (170') - 6 (220')
	Maher Terminal	10128'	9 (120') - 7 (100') -
	APM Terminal	6001'	4SPP - 8PP - 1 (85')
New York Container Terminal	3012'	3 (80') - 6 (120')	

Sources: Port corporations' websites 2010

Notes: (a) Feet; (b) Number of container cranes with height in feet in brackets – SPP=Super Post Panamax, PP=Post Panamax, P=Panamax.



Various reports by the MARAD or by independent bodies highlight ways to improve US port performances. One proposal concerns investment in new technology to improve the organisation of arrivals and the management of containers in terminals. Indeed, this is the objective of various OPIDCM programs: Agile Port Systems, the Centre for the Commercial Deployment of Transportation Technology (CCDoTT) and the Cargo Handling Cooperative Programme (CHCP). Another requires changes in labour regulations to allow extended hours of work in ports, such as the opening of truck gates and access to warehousing. Other reports advise procedural changes that would allow port authorities to offer proper incentives to limit the time containers stay in the port, for instance through higher demurrage costs.

With respect to bottlenecks in port surroundings, the most dramatic increase in capital expenditure for the next few years concerns infrastructure – rail, road and utilities inside or outside terminals (Table 14.12). The increase of 239% is encouraging. Moreover, it is to be hoped that this effort will be sustained by the OPIDCM, whose role is to coordinate investments between different transport modes. But it will have to focus on investment in new capacities and in improved infrastructures such as high speed trains.

## 14.5 CONCLUSION

While governments pursue non-economic objectives, there are often available a variety of policy tools for those purposes. Some are more costly than others, and may also be less effective. Regular processes for making transparent and then assessing policy in quantitative terms relative to its objectives can contribute to effective structural reform. The case of shipping policy in the US highlights the value of establishing these processes and also linking them to policy-making processes.

US policy is designed to support a US-flag fleet and American shipyards. The policy which applies to both international and domestic shipping entails costs for the American economy, according to a series of assessments. One objective of the policy is to have a strong fleet that will help to maintain maritime skills within the workforce. Another is for security reasons. These objectives are laudable. Nevertheless, the policy package has incurred significant costs.

Furthermore, measures to curb the costs did not reach their goals. In order to cut major sources of inefficiency, and to be in line with the OECD's maritime regulation, the US would have to repeal cargo preferences and abandon its building requirement in cabotage. The cargo preference system represents only a tiny share of the economy's waterborne international trade and this would be a symbolic reform. The building requirement of the Jones Act would lead to much higher gains. Yet despite the economic analysis, the government maintains all these policies in place at a cost to consumers and taxpayers and to the benefit of a limited number of carriers (and even foreign carriers). The difficulties of reform can be explained in part by the operations of well-organised interest groups and the effectiveness of their efforts compared to those who are in favour of reform.

The decision to implement reform is difficult, considering the cost for those who now gain from the policy and in loss of employment. In addition, the regulatory framework relating to shipping is complex, with overlaps between supporting measures that lead to a lack of transparency that makes the assessment of the various policies difficult. Regular work on the assessment of the policy is likely to assist the development of lower cost options for the same policy objectives.

In contrast to shipping, the auxiliary services, and in particular container handling, are characterised by open and competitive markets. Regulation is efficient and in line with good practices in the major US ports. The main challenge is the expected increase in traffic and the risk of congestion inside and outside ports. In order to cope with congestion, a balance will be sought between extensive and intensive development of the major ports, which entails the development of secondary ports, and the improvement of performances at them. An effort towards coordination and a harmonious development between modes would be valuable.

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ANNEX 14

Table A14.1: Recent policy changes in maritime transport.

Sector	Area of policy change	Associated regulation	Year of change	Description of change
Liner shipping	Regulation and competition	Ocean Shipping Reform Act	1998	Abolition of the obligation for carriers to publish publicly freight rates and service contracts. Shippers and carriers are allowed to engage in confidential agreements
Port and infrastructures	Security	Maritime Transportation Security Act	2002	Plan to coordinate action between federal, state, and local governments to respond to security incidents involving maritime assets and infrastructure and various measures.
Port and infrastructures	Security	Critical Infrastructure Information Act	2002	Framework for the submission of information regarding critical infrastructures
Port and infrastructures	Security	Container Security Initiative	2002	The "24-hours rule" requires detailed description to be reported on cargoes travelling to the US 24 hours prior being loaded on vessels.
Port and infrastructures	Security	Security and Accountability for Every Port Act	2006	Required the development of the National Strategy for Transportation Security. The objective is to secure the national transportation system and to prepare to respond to terrorist threats or attacks to transportation infrastructure
Port and infrastructures	Creation of a new agency	Office of Port Infrastructure Development and Congestion Mitigation	2009	Objectives are to coordinate port infrastructure projects for a variety of entities, coordinate and to direct studies of port and intermodal facilities and leading national efforts to reduce congestion (including highways and rails).
Port and infrastructures	Security	Security and Accountability for Every Port Act	2009	Develop and implement a strategic plan to enhance the security of the international supply chain

Sources: MARAD website 2010, MARAD 2009a