

An hourglass-shaped graphic with a globe in the top bulb and another globe in the bottom bulb. The hourglass is light blue and has a dark blue top and bottom. The globe in the top bulb is dark blue, and the globe in the bottom bulb is light blue. The text is centered within the hourglass.

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Harbor Maintenance Funding

John F. Frittelli, Resources, Science and Industry Division

Updated January 13, 2004

Abstract. This report reviews recent developments in harbor maintenance legislation and examines the current status of harbor maintenance funding. Recent trends in container shipping and their impact on port dredging requirements are discussed. The report also describes future funding proposals that have been considered. The last section considers the impact funding options may have on the geography of U.S. foreign maritime commerce and discusses the economic efficiency of local and federal cost share arrangements.

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Updated January 13, 2004

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Harbor Maintenance Funding

Summary

The Harbor Maintenance Tax (HMT) was instituted by the Water Resources Development Act of 1986 (P.L. 99-662) to pay for the routine maintenance and operations costs of harbors. Numerous legal challenges to the HMT raise questions about its future and the issue of possible legislative changes. In March 1998, the Supreme Court struck down the application of the HMT with respect to exports, finding that it violated the Constitution's ban on export taxes. Cases regarding the constitutionality of the HMT on imports remain in litigation. The European Union sees the application of the HMT to imports as a discriminatory import tariff that violates the General Agreement on Tariffs and Trade (GATT).

The current Harbor Maintenance Trust Fund balance, in conjunction with the revenue stream from the remaining HMT collections and interest payments, are considered sufficient to cover expenditures for the foreseeable future. However, the results of the legal and trade challenges could reduce or halt incoming revenue. Harbor maintenance dredging requirements are expected to increase in the near-term over recent levels due to current deepening projects at many ports. Larger containerships appear to be the primary driving force behind current dredging activity.

Issues for the 108th Congress include how to finance harbor maintenance in a manner that is both constitutional and not in violation of trade agreements, and how to finance the federal portion of harbor-deepening projects. Key policy questions include: Should the federal government return to using the general fund to finance harbor maintenance? Should a new user fee be established to pay for harbor maintenance? The larger issue that may need to be resolved before a funding solution can be found is: what should the role of the federal government be in port maintenance and dredging? The Water Resources Development Act of 2003 (H.R. 2557), which passed the House, would increase the role of the federal government by increasing its share of the cost in harbor deepening and maintenance projects. This report will be updated as warranted.

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Harbor Maintenance Funding

Why Is Harbor Maintenance Funding Currently an Issue?

Ports handle more than 35% (by value) of the Nation's imports and exports,¹ and the role of water transport in the national economy is growing as trade policies increase the quantity of goods transported. A recent assessment of the U.S. marine transportation system by the Department of Transportation predicts that the total tonnage of U.S. domestic and international marine trade will more than double by 2020.² Ocean carriers are deploying larger ships with deeper drafts to handle the robust growth in maritime trade.

The Harbor Maintenance Tax (HMT) was instituted by the Water Resources Development Act of 1986 (WRDA 1986, P.L. 99-662) to pay for routine maintenance and operations costs of harbors.³ The funds are deposited in the Harbor Maintenance Trust Fund (HMTF). Numerous legal challenges to the HMT raise questions about its future and possible legislative changes. Harbor maintenance dredging requirements are expected to increase in the near-term due to current channel deepening projects at many ports.⁴

This report reviews recent developments in harbor maintenance legislation and the current status of harbor maintenance funding. Recent trends in container shipping and their impact on port dredging requirements are discussed. The report also describes alternative funding proposals that have been considered. The last section examines the impact these and other funding alternatives may have on the geography of U.S. maritime commerce. The decision on how best to finance harbor dredging requires balancing national economic efficiency concerns with local port economic development concerns.

Background

Two points of clarification are helpful in a discussion about the HMT. The first is the distinction between harbor maintenance and harbor-deepening projects. These projects are approved under different procedures and are funded from separate appropriations accounts. Harbor maintenance refers to the routine dredging of harbor

¹ Bureau of Transportation Statistics, *Pocket Guide to Transportation*, December 2000, p. 23.

² U.S. DOT, *An Assessment of the U.S. Marine Transportation System*, Sept. 1999, p.44.

³ For an overview of the HMT and Inland Waterway Trust Fund, see CRS Report RL32192, *Harbors and Inland Waterways: An Overview of Federal Financing*.

⁴ U.S. DOT, *An Assessment of the U.S. Marine Transportation System*, Sept. 1999, p.33.

channels to their existing depth. Funds in the HMTF are used to pay the federal portion of routine dredging which Congress makes available through Energy and Water Development Appropriations. Harbor-deepening (or widening) projects are new projects that increase the authorized depth/width of harbor channels. Congress authorizes new channel depths through the biennial Water Resources Development Act. Funds for the federal share of harbor-deepening projects are provided from U.S. Treasury general funds.

The U.S. Army Corps of Engineers has the responsibility for both the maintenance and deepening of federal waterway channels.⁵ Funding for dredging harbor berths, the waterside area along the wharf where a vessel is docked, is the responsibility of state or local port authorities.

A second useful point of clarification is the distinction between “shipper” and “carrier”. In everyday usage, the term “shipper” can refer to both the cargo owner and the transporter of goods. In the transportation industry, the term “shipper” is used to identify the owner of the cargo in motion, e.g. the party that pays the freight bill. The term “carrier” is defined as the party providing the transportation service. In a maritime context, the carrier would be the shipowner or operator. Under the current HMT scheme, the shipper is liable for payment of the tax resultant from cargo vessel movements. For passenger vessels, the carrier is liable for the tax.

Legislative History

Prior to 1986, U.S. Treasury general funds were used to pay the federal share for operation and maintenance (O&M) of harbors and for the deepening of channels.⁶ In 1986, Congress enacted cost-share requirements for harbor deepening and maintenance (as shown in the Table 1 below). The HMT was devised to provide stable federal funding for this purpose. The tax was originally applied on an *ad valorem*⁷ basis on commercial cargo for any use of federally-maintained ports (e.g., the loading of exports and unloading of imports, domestic as well as international cargo). In 1986, the HMT was established at 0.04% of the cargo value. This revenue was intended to pay for 40% of O&M costs incurred by the Army Corps of Engineers and 100% of O&M costs of the St. Lawrence Seaway. Section 11214 of the Omnibus Budget Reconciliation Act of 1990 (P.L. 101-508) increased the HMT from 0.04% to 0.125% in order to recover 100% of the Corps’ port O&M expenditures.

⁵ For further information on the Army Corps, see CRS Report IB10120, *Army Corps of Engineers Civil Works Program: Issues for Congress*.

⁶ Prior to 1986, the federal share of operations, maintenance, and deepening of ocean and inland ports was 65%. The remaining 35% was paid by the ports, or by state and local government.

⁷ *Ad valorem* means based on the value of real property.

Table 1. Maximum Federal Cost-Share Requirements for Harbors

Harbor Depth	Construction	Operations and Maintenance
<20 ft. Harbor	80%	100%
20-45 ft. Harbor	65%	100%
>45 ft. Deep Harbor	40%	50%

Source: Water Resources Development Act of 1986 (P.L. 99-662).

In March 1998, the U.S. Supreme Court struck down the application of the HMT with respect to exports, finding that it violated Article I, Section 9, Clause 5 of the Constitution which states that, “No tax or duty shall be laid on articles exported from any state.”⁸ Exports generated about a third of the fund’s revenues. Other court decisions (including decisions by the U.S. Court of International Trade (CIT), the U.S. Court of Appeals, and the U.S. Supreme Court) have established that HMT is constitutional as applied to domestic shipments and the embarkation of cruise line passengers. Cases regarding the constitutionality of the HMT on imports remain in litigation.⁹

The federal government is statutorily required to continue collecting the HMT from non-export cargo and passenger categories. The European Union sees the application of the HMT to imports as a discriminatory import tariff that violates U.S. obligations under the World Trade Organization (WTO). Approximately 80% of HMT collections in FY 1999 were derived from imports, with the remaining revenue coming from collections on domestic cargo (11%), foreign trade zone cargo (8%), and cruise ship passengers (1%).¹⁰ In February 1998, the European Union requested WTO consultations on the issue. A first round of consultations took place in March 1998. Second round negotiations, which included Japan, Norway, and Canada, took place in June 1998. The European Union indicated that if satisfactory legislation was not passed by January 1, 2000, it would ask for a dispute resolution panel. As of December 2003, however, the European Union has not requested a panel.

The Current Status of Harbor Maintenance Funding

The revenues collected from the HMT are deposited into the HMTF. Much uncertainty about the future of the HMTF exists because of the various legal challenges. The HMTF balance was \$1.85 billion at the end of FY2002, as shown in Table 2. Currently, revenue deposited into the HMTF exceeds transfers out of the fund. The HMTF balance increased in FY 1999 as a result of the Energy and Water

⁸ U.S. Supreme Court, *United States v. United States Shoe Corp.*, 523 U.S. 360 (1998).

⁹ U.S. Department of the Army. *Annual Report to the Congress on the Status of the Harbor Maintenance Trust Fund for FY 1999*. February 2001 (most recent report available). For a discussion of the legal challenges that have been brought against the HMT, see pp. 9-10.

¹⁰ U.S. Department of the Army, *Annual Report to Congress on the Status of the Harbor Maintenance Trust Fund for FY 1999*, February 2001, available at: [<http://www.wrsc.usace.army.mil/iwr/Products/reports/reports.htm#navigation>]

Development Appropriations Act of FY 1999 (P.L. 105-245), which did not require the recovery of Corps of Engineers O&M expenditures from the fund for that year. The current HMTF balance, in conjunction with the revenue stream from the remaining HMT collections and interest payments, are considered sufficient to recover expenditures for the foreseeable future. However, the results of the aforementioned legal and trade challenges could reduce or halt incoming revenue. Should that occur, the fund could quickly be depleted at which point policymakers would have to decide whether the federal government would continue to fund harbor maintenance and if affirmative, would have to develop a mechanism to do so.

There are a number of significant channel deepening (or widening) projects nearing completion, under way, or in the planning stage.¹¹ An obvious concern is the effect these deepening projects will have on future harbor maintenance costs. The DOT expects maintenance costs will likely increase, at least in the near term:

Overall, however, the Nation's future dredging requirements can be expected to grow above recent highs following the completion of current and future deepening projects and the ongoing maintenance requirements associated with these deeper channels.... Upon completion of justified deepening work, an initial increase in maintenance dredging requirements can be expected until the hydrodynamics of the deeper channels begin to stabilize to the new dimensions. The long-term impacts of deeper channels on annual maintenance dredging is somewhat more uncertain, with dredging needs highly specific to each project location and subject to a complex set of variables involving the natural coastal and river processes that affect sediment movement.¹²

In addition to the total amount of material dredged, total expenditures may increase due to an increase in the per unit cost of dredged material. The port industry cites U.S. Army Corps of Engineers' figures which show that over the last 30 years, the total cost of dredging has increased while the volume of material dredged has actually decreased.¹³ A review of the Corps O&M budget on dredging for fiscal years 1990 to 1999 shows a steady increase in total expenditures from \$370 million in 1990 to \$684 million in 1999. The yearly amount of material dredged for maintenance over this same period fluctuates around an average of 236 million cubic yards.¹⁴ Complicating the dredging process is the fact that ports are often located in or near environmentally sensitive areas such as wetlands, estuaries, and fisheries. A growing concern is a shortage of disposal sites and a lack of disposal options. The volume of sediments classified as contaminated has increased but this may be due to new testing requirements.

¹¹ For a current listing of dredging projects see "U.S. Ports - Which is the Deepest?" *JoC Week*, Aug. 27-Sept. 2, 2001, p. 24. Also see, "Big Ships, Big Problems," *American Shipper*, Aug. 2001.

¹² U.S. DOT, *An Assessment of the U.S. Marine Transportation System*, Sept. 1999, p. 33.

¹³ American Association of Port Authorities, *Partnering in Infrastructure Investment*, available at [<http://www.aapa-ports.org/govrelations/resources/index.html>]

¹⁴ U.S. Army Corps of Engineers, *Annual Report to Congress on the Status of the Harbor Maintenance Trust Fund for FY 1999*, Feb. 2001, p. 25-26.

Table 2. HMTF Balances and Transfers*
(millions of US\$)

	FY2002 Actual	FY2003 Est.	FY2004 Est.
Start of Year Balance	1,777	1,854	1,912
Transfers In			
HMT	653	733	787
Interest	77	94	93
Total Transfers In	730	827	880
Transfers Out			
Corps O&M	640	755	812
Saint Lawrence	13	14	14
Total Transfers Out	653	769	826
End of Year Balance	1,854	1,912	1,966

Source: Executive Office of the President, *Fiscal Year 2004 Budget of the United States Government*, 2003.

* Discrepancies in totals are due to rounding.

The Impact of Containerships on Dredging Needs

In the early 1980s, deep draft colliers (coal ships) fueled debate over U.S. port dredging needs. Today, however, ever-larger containerships are the primary driving force behind current dredging activity. Although oil tankers are among the largest vessels in the world fleet, their size peaked in the 1970s and 1980s. A supertanker often transfers its cargo at sea rather than in port. Typically, a supertanker stays at sea for extended periods, loading at offshore platforms or single-point moorings and discharging at designated “lightering” zones offshore where a supertanker transfers part of its cargo to a smaller shuttle tanker. The shuttle tanker delivers the crude oil to the refinery on shore. Dry bulk vessels (ships that carry grain, soybean, ore, or coal) have also grown in size since World War II but at present there does not appear to be a trend towards larger vessels in this category.

In the container ship category, however, “the 1990s ushered in a wave of vessel size increases that seems to have no limit.”¹⁵ As the volume of containerized cargo increases, the liner industry is replacing smaller vessels with drafts of 38-40 feet with larger ships requiring drafts of 45-50+ feet. The larger ships can carry 2,000 to 3,000 additional containers saving the carrier an estimated \$25 per container on voyage costs. The economic advantage of these mega-ships derives from the principle of

¹⁵ Brian Slack, “Globalization in Maritime Transportation: Competition, Uncertainty, and Implications for Port Development Strategy,” Aug. 2001.

economies of scale as ship costs do not increase as fast as capacity.¹⁶ Ship size in the past was restricted by the dimensions of the Panama Canal. The development of a double-stack train (DST) network that began in the early 1980s allowed shipping lines to move containers efficiently across the continent by rail, reducing the need to move traffic through the Canal. By forming alliances or merging, carriers are better able to absorb the risk of mega-ship investment. In addition to getting bigger, container ships are expected to be more prevalent in the near future. Today, 55% of general cargo in international marine trade is being moved in containers. By 2010, it is expected that containerized market share will increase to 90%.¹⁷

Differences in service patterns between container and liquid or dry bulk carriers also account for the greater need of container ships for deeper access channels. Bulk tankers are usually chartered per voyage and therefore have more flexibility in waiting for tidal action to ease their passage in port. Container ships, however, operate in a more time-sensitive environment, calling various ports on a rigid and advertised schedule. Tidal restrictions would severely disrupt their service performance.

Alternative Funding Options That Have Been Considered

A Carrier-Based User Fee

In its decision the U.S. Supreme Court stated that a user fee based on the value of service provided to a marine carrier would not violate the Constitution. In August 1998, the Clinton Administration proposed a new revenue generating system using a Harbor Services User Fee (106th Congress, H.R. 1947). The payment of the Harbor Services User Fee (HSUF) would be placed on the carrier, rather than the shipper (who pays the current HMT). The HSUF was based on a vessel's capacity, as measured by vessel capacity units, which are a volumetric measurement of ship size based on net tonnage or gross tonnage as appropriate, and its frequency of port use per voyage. Revenues from the fee would be deposited into the Harbor Services Fund, which would fund both routine maintenance and harbor-deepening projects. The proposal was aimed at satisfying the Supreme Court ruling by establishing a close link between the revenue collection and the service provided, while being consistent with trade obligations.

Industry observers have noted that shifting the tax burden from shippers to shipowners concentrates the tax burden. With the HMT, a large number of shippers pay a relatively small fee, but with a HSUF, because there are many more shippers than there are shipowners, a few (shipowners) would pay a relatively large fee. This reality has political implications. Ports and carriers opposed having the federal contribution for deepening projects taken from an industry-supported fund, rather

¹⁶ "The New Wave in Giant Ships," *Fortune*, Nov. 12, 2001.

¹⁷ U.S. DOT, *The Impacts of Changes in Ship Design on Transportation Infrastructure and Operations*, Feb. 1998, p. 1.

than from general revenue. Another criticism raised of the Clinton Administration's proposal was that a user fee would place U.S. ports at a competitive disadvantage to foreign ports and that bulk commodities, such as grain and coal, would be disproportionately affected. The European Union has indicated that it considered the Clinton Administration's proposed fee to be an unfair trade practice.

General Revenues

The 106th Congress did not pursue the Clinton Administration's proposal nor other proposals, such as a return to funding maintenance and dredging from general revenues (H.R. 1260). Supporters of H.R. 1260 claimed that general revenues were the only option because no user-fee system could equitably raise revenues from the users of navigation facilities. Citing GAO figures, they also maintain that waterborne trade is already heavily taxed by 11 federal agencies collecting 124 fees.¹⁸ U.S. Customs collects over \$20 billion annually in assessments on the commercial maritime industry, most of which are import duties.

The revenues that U.S. Customs generates are deposited directly into the general fund of the U.S. Treasury. Some have proposed designating a portion of these revenues to fund harbor maintenance. Opponents of this plan assert that since most Customs duties are collected from importers, exporters would not be contributing their share for harbor maintenance. In its decision the Supreme Court stated, "This does not mean that exporters are exempt from any and all user fees designed to defray the cost of harbor maintenance. It does mean, however, that such a fee must fairly match the exporters' use of port services and facilities."¹⁹

Issues for Congress

There are a number of policy questions that are intertwined with the question of how to finance harbor maintenance in a manner that is both constitutional and not in violation of trade agreements. The fundamental question is who should pay for dredging: port users or taxpayers? If it is decided that port users should pay, which users in particular: shippers or carriers? Whether the federal government or local port authorities should administer the fee and whether a nationally uniform fee or a port-specific fee is more equitable and efficient are also key questions. In addition to these issues, policymakers may revisit the cost sharing arrangement between federal and non-federal sources.

Answering these questions involves a trade-off between maximizing the overall efficiency of the U.S. maritime transportation system and the economic development of specific coastal cities. While economic analysis provides a framework for

¹⁸ U.S. General Accounting Office, *Commercial Maritime Industry, Updated Information on Federal Assessments*, testimony before the House Subcommittee on Water Resources and Environment, Committee on Transportation and Infrastructure, Nov. 3, 1999, T-RCED-00-36.

¹⁹ U.S. Supreme Court, *United States v. United States Shoe Corp.*, 523 U.S. 360 (1998).

evaluating financing options, the answer to each of these questions is inherently a political choice. As one study on dredging explains, “The conflict over funding is a conflict of values and goals, a conflict about who pays and who benefits. Those conflicts can only be resolved in the political process with political compromises.”²⁰

The Status Quo

One option is to maintain the status quo - that is, to continue funding harbor dredging through a cargo-value-based tax. Some observers view the present system as at least one step more efficient than funding from general revenues. If port users are required to pay at least part of the cost of dredging, they argue, it promotes a more efficient use of resources because the users are not likely to pay more in fees than they hope to save in shipping costs. Also, if port users are required to pay for dredging, they are likely to require that the government spend their resources on the most worthwhile projects. Conversely, they argue, if general taxpayer revenue is used to pay the full cost of dredging, funds will more likely be wasted on unjustified or marginally useful projects.

Others contend that the present funding system is broken and must be overhauled because the original intent of Congress was to have both exporters and importers paying the tax. They argue that it is unfair that importers are essentially paying for the dredging needs of exporters. Some also contend that the legal and trade challenges to the HMT make it an unstable funding source. Some economists believe a user fee system could be re-structured in such a way as to promote better use of the nation’s marine transportation system.

Economic Efficiency

Advocates of a port-specific, carrier-based fee argue that, from an economic efficiency point of view, the user fee model would be superior to other funding models.²¹ They argue that (1) the shipowners rather than the shippers should pay the fee and (2) the fee be port-specific rather than nationally uniform. This funding scheme would, they claim, optimize transportation efficiency because it would allow market forces to allocate cargo to the most efficient ports. The rationale for their argument is as follows.

They argue that the present HMT funding scheme inflates the supply of larger ships. Although larger ships save money on the ocean leg, they increase costs at port because, among other things, they require deeper channels and berths. However, shipowners do not fully calculate these costs in their decision to build larger ships because dredging costs are borne by others, namely port authorities, shippers, and

²⁰ National Research Council, *Dredging Coastal Ports: An Assessment of the Issues*, Washington, D.C. (National Academy Press) 1985.

²¹ See Alan L. Blume, “A Proposal for Funding Port Dredging to Improve the Efficiency of the Nation’s Marine Transportation System,” *Journal of Maritime Law and Commerce*, v. 33, no. 1, January 2002; and Shashi N. Kumar, “User Charges for Port Cost Recovery: The U.S. Harbor Maintenance Tax Controversy,” *International Journal of Maritime Economics*, v. 4, no. 2, June 2002.

taxpayers. To the extent that dredging costs are external to a shipowner's cost-benefit analysis, their decisions regarding fleet investment will be biased in favor of larger ships. On the other hand, if these costs were internalized by the shipowners through payment of a dredging fee based on ship size, ship investment decisions would more accurately reflect the true cost of bigger ships. Supporters of a carrier-based fee ask why U.S. taxpayers should finance deeper channels only to help (mostly foreign) container carriers realize marginal cost efficiencies on the ocean leg of their voyages.

They also argue that the present scheme, which creates a national pool of funds for channel dredging, results in naturally deep harbors subsidizing shallower ports. Naturally deep harbors, they argue, should be allowed to reflect their lower dredging costs in the rate structure they offer ocean carriers. Carriers would be attracted to those ports that require the least amount of dredging because the user fees at those ports would be less. The present system, they say, levels the playing field among ports with different dredging requirements. It draws traffic away from more efficient ports to less efficient ports, thereby raising the Nation's overall cost of moving goods through the marine transportation system. In general, East Coast and Gulf Coast ports are shallower and require more dredging than West Coast ports which tend to have naturally deeper channels. In addition, since exporters currently are not paying the HMT, ports with traffic profiles heavily skewed toward imports contribute more to the fund than do ports that primarily rely on export cargo. Cross-subsidies among ports would be eliminated if funds generated at a particular port were reserved solely for that port's local dredging needs rather than becoming part of a system-wide fund.

Some observers defend cross-subsidies among ports asserting that the HMT facilitates the development of a maritime network that is national in scope. They note that the Highway Trust Fund also redistributes gas tax monies from heavily populated states to sparsely populated states. This redistribution is justified on the grounds that populated states share an interest with rural states in developing and maintaining an interstate highway system that provides national inter-connectivity. Other observers argue that while the trust fund mechanism may be suitable for developing a national highway system it is not suitable for seaport development. A Transportation Research Board report presents the following view:

Arguments for cross-subsidies based on scale economies, whatever their validity for highways, do not apply to ports. U.S. seaports do not constitute a network that is analogous to the highway system, since the value of a port does not depend on the existence of other ports in the same way that the value of a road increases if its connectivity to other roads increases. Therefore the highway program cannot be used as a model for justifying the use of revenues generated at high-volume ports to subsidize maintenance and improvements at low-volume ports.²²

Supporters of a carrier-based, port-specific user fee believe there is sufficient competition among ports to allow for a market solution to the problem. Since ports compete with one another on their population base, intermodal connections, and labor costs, these observers ask why ports should not compete on the costs of

²² Transportation Research Board, *Freight Capacity for the 21st Century*, Washington, D.C., 2003, p. 38.

dredging their harbors as well.²³ The intermodal facility of containerized cargo and the development of a double-stack train network in much of the country has generated competition not only between nearby rival ports, but even ports on opposite coasts.²⁴ The term “discretionary cargo” refers to freight that can be routed economically through more than one port, typically cargo originating or destined for the interior of the country or the far coast. Port rationalization by the liner carriers, which consolidates cargo at fewer ports, has also intensified competition between ports. Based on the competitive climate ports face today, some believe the market provides enough incentive for ports to invest in dredging without federal involvement. Advocates of a port-specific, carrier-based fee argue that this replacement fee is the most appropriate scheme for ensuring adequate harbor depths while at the same time preventing excess dredging.

Economic Development

While the replacement fee described above may be an economic prescription for financing port dredging, it does raise distributional issues. Harbor communities generally view their ports as engines of economic development for the city and surrounding region.²⁵ While containerization has reduced the number of jobs onsite, ports still generate jobs offsite with the many businesses that serve the ports, such as freight forwarders, custom house brokers, warehouses, trucking firms, etc. In addition, there are the importers and exporters that choose to locate near a port to save on shipping costs. However, a port-specific funding system is likely to favor large ports over small ports. With more ship traffic, large ports would not have to charge as much per ship or shipment to recover dredging costs as smaller ports. Some small ports might either have to close or service only small ships.

Economic development is a significant public policy goal with respect to ports and, in fact, was a rationale for the creation of port authorities in the late 1800s and early 1900s. At that time, marine terminals were largely owned and controlled by private railroads. As railroads merged, each railroad acquired additional port terminals as nodes in their track network. Rather than develop infrastructure at each port, railroads found it advantageous to consolidate their investment at only selected ports. Not unexpectedly, port communities with neglected harbor facilities were dissatisfied with railroad control over local port development. Therefore, they created a central public authority to ensure that port development would be more in line with the public interest.

The railroads’ strategy of concentrating cargo flow through fewer ports is not unlike the strategy container carriers have adopted today. As carriers deploy larger ships to achieve economies of scale on the high seas, these ships are calling fewer

²³ Theodore Prince, “Dredging Up Problems,” *Journal of Commerce*, Feb. 18, 1999, p. 5A.

²⁴ David Newman and Jay H. Walder, “Federal Ports Policy,” *Maritime Policy and Management*, v. 30, no. 2, 2003.

²⁵ See, Amy Helling and Theodore H. Poister, “U.S. Maritime Ports: Trends, Policy Implications, and Research Needs,” *Economic Development Quarterly*, v. 14, no. 3, August 2000.

ports because there are dis-economies of scale while the ship is in port. Some industry observers note the emergence of a “hub and spoke” system consisting of load center ports where the largest ships call and a system of feeder ports serviced either by smaller coastal ships or, more likely in the United States, by railroads. If the maritime industry is moving towards a market-oriented selection process of large ports and feeder ports, a port-specific funding scheme is likely to compliment or even accelerate this trend while a system wide fee is likely to impede it, to the extent that it levels the playing field among ports. The issue of harbor maintenance funding, therefore, appears to involve a trade-off between a national interest in economic efficiency and the local interests of some harbor communities not to be relegated to feeder port status.

Cargo Diversion

As can be gleaned from the above discussion, much of the debate regarding harbor maintenance funding revolves around the issue of how it would affect the geography of U.S. maritime commerce. In addition to inter-port competition among U.S. ports, however, there is also the issue of competition with ports in Canada, Mexico, or in the Carribean. With regard to the present funding mechanism, the HMT, U.S. ports near the Canadian and Mexican borders claim that it diverts cargo to nearby ports across the border. WRDA 1986, which established the HMT, required the DOT to submit an annual report quantifying the amount of U.S. cargo transhipped through Canada.²⁶ The report shows that since the late 1980s, when the report was first published, 4% to 6% of U.S. liner trade has been transhipped through Canadian ports on a yearly basis. The report also notes that Canadian cargo is transhipped through U.S. ports. However, cargo diversion may be attributable to other factors that outweigh any influence of the HMT. Regions in northern New England may determine that routing cargo through Montreal, which is closer than New York or Boston, is the most economic choice. Carriers (and exporters) may prefer to route European bound cargo from particular U.S. origins through Halifax because it offers a later sailing date (and cargo cut-off time) than New York or Boston. In addition to these considerations, rail rates, trucking costs, or port throughput rates may be cheaper via Canada for particular U.S. cities or towns.

Some observers argue that while diversion of cargo through ports of an adjacent country may be lost business for a particular U.S. port, the Nation as a whole, and U.S. shippers in particular, may benefit from routing cargo in this manner. If importers and exporters in the upper Midwest, for instance, can move cargo more economically to and from Europe through the ports of Montreal or Halifax, one could argue that they have benefitted from importing the transportation services of Canada.

As with a cargo-value-based tax, policymakers might consider what effect a carrier-based fee would have on cargo flow through domestic ports. As a ports expert has asserted, a fee based on ship capacity may have a very different effect on

²⁶ U.S. DOT, Maritime Administration, *U.S. Exports & Imports Transhipped Via Canada & Mexico*, 1999. Available at [<http://www.marad.dot.gov/publications/pubs.html>]

cargo flow than a tax based on cargo value.²⁷ A fee that is based on vessel size might induce carriers to avoid the tax by diverting their largest ships to a nearby foreign port, such as Vancouver, Halifax, or Freeport, in the Bahamas. By transshipping U.S. bound cargo from large ships to smaller, feeder vessels at these foreign ports, carriers could save a substantial amount in harbor user fees. Transshipment at these foreign ports would not necessarily mean less cargo for U.S. ports. The same amount of cargo might arrive but on smaller, coastal feeder ships. Paradoxically, if the fee reduced the size of ships calling at U.S. ports, there would be less need for deeper channels.

Carriers contend that a carrier-based fee could be roughly equivalent to a container ship's daily operating cost and would thus significantly influence their port rotation decisions. However, there are additional cost considerations that may limit transshipments. The cost of load and discharge handling at an additional port is significant. Transshipment could also increase transit time due to missed connections or increase the risk of cargo damage due to additional handling. Ports with a large local population base, such as New York, would presumably still attract vessel calls with or without a user fee.

Stakeholder Perspectives

No matter which party a dredging fee is levied upon (carriers or shippers), and regardless of how it is administered (at the port level or federal level), the ultimate payers of the fee or tax are import consumers and export producers. However, how the tax is levied and administered does make a difference politically. With regard to shipper groups, one can say that shippers of high-value, low volume commodities are likely to prefer a tax based on cargo tonnage rather than cargo value. Conversely, high-volume, low-value shippers are likely to prefer a tax based on cargo value rather than cargo tonnage. It is also worth noting that shifting the user fee from shippers to shipowners would concentrate the tax because there are many more shippers and shipments than there are shipowners and vessel port calls. Concentrating the tax may influence the decision making process because, as some observers maintain, a small group that has more to lose may have more incentive to organize, and make themselves felt politically, than a larger, more diverse group that has less at stake individually. According to some, this political dynamic partly explains the failure of the HSUF proposed during the Clinton Administration. With regard to ports, one could expect that low-volume ports with high-cost dredging requirements would prefer a system-wide, uniform fee while high-volume ports with low-cost dredging needs would prefer a port-specific fee.

Cost Share Formulas

Those who view ports as a public good, generating nationwide benefits, believe port maintenance and improvement should be financed through general revenues. Ports argue that they are a vital component of the nation's economy. To the extent that deeper ship channels lower transportation costs, they argue, they reduce the cost

²⁷ Asaf Ashar, "Misunderstanding the Harbor Tax," *Journal of Commerce*, May 26, 1999, p.5A.

of commodities, making imported inputs less expensive and making exports more price competitive. The maritime industry also does not like the fact that the HMT is running a surplus - that more money is collected by the tax than is used to pay for dredging.

Some economists argue that, while federal aid may be justified in the early stage of an industry's development, shipping is now a mature industry and therefore should be self-supporting. They argue that returning financing of harbor dredging to general revenues amounts to a corporate subsidy and leads to overcapacity in port facilities.²⁸ The strong demand for channel deepening has been characterized by critics as "a race to the bottom." They argue that overcapacity puts downward pressure on port revenues leading to unhealthy port facilities requiring more public assistance. Some analysts contend that not every port needs to become a super-port. It is less likely that U.S. taxpayers will squander money on unnecessary dredging, they argue, if greater market discipline is brought to the process of examining investment risk in port infrastructure.²⁹

Some believe that the cost-share requirements of WRDA 1986 are out of date due to the growing prevalence of larger containerships. They believe the federal government should increase its investment in harbor dredging by eliminating the 45-foot threshold, essentially revising the three-tier cost share formula to a two-tier formula. In other words, the non-federal cost-share would decrease from 60% to 35% for deepening projects and from 50% to 0% for maintenance projects with harbor depths between 45 feet and 53 feet. The Water Resources Development Act of 2003 (H.R. 2557, sec. 2003), which passed the House, would authorize this change in cost share arrangements.

In 1986, when the cost sharing formula was established, vessels requiring more than 45-foot draft were considered highly specialized ships. While container ships were increasing in size during the 1980s as well, it was believed that the dimensions of the Panama Canal would limit the draft requirements of most of the container fleet to under 40 feet. The emergence of double-stack container trains in the mid-1980s made transcontinental transport by rail more competitive as compared with the all-water route through the Panama Canal. The size restrictions of the Panama Canal, therefore, became less of a limiting factor and carriers began deploying "post-Panamax" ships - ships too big to fit through the Panama Canal.

Opponents of reducing the local cost share argue that it is only at the "first in" or "last out" port of call that container ships are likely to be fully loaded. When container ships call at ports in between the first and last ports of call, they are usually not fully loaded and therefore do not require their full draft. They caution that

²⁸ One economic study of WRDA 1986 projects concluded that requiring local cost sharing decreased overall spending on these projects. See Alison DelRossi and Robert Inman, *Changing the Price of Pork: The Impact of Local Cost Sharing on Legislator's Demands for Distributive Public Goods*, NBER Working Paper 6440, Mar. 1998. Available at [<http://www.nber.org/papers/w6440>].

²⁹ David Luberoff and Jay Walder, "U.S. Ports and the Funding of Intermodal Facilities: An Overview of Key Issues," *Transportation Quarterly*, v. 54, no. 4, Fall 2000.

lowering the local cost share requirement will level the competitive field between ports, impeding the market's natural selection process of allocating cargo to the most efficient ports.

Dredging Fees and Short-Sea Shipping

Coastal shipping interests also seek to return financing of harbor dredging to general funds. They believe more containerized cargo could be taken off congested highways, such as I-95 along the eastern seaboard, and moved by barges or fast-speed ferries along the coast. They believe a fee system, whether paid by carriers or shippers, is an impediment to coastal shipping because it raises the price of coastal shipping relative to truck and rail alternatives. Others disagree, noting that trucks contribute to the cost of their infrastructure by paying fuel and other taxes into the Highway Trust Fund and railroads pay for their infrastructure primarily by themselves. Some believe charging port users for harbor infrastructure promotes equity among competing modes and reduces price distortions in modal choice.