

Ocean Shipping Deregulation and Maritime Ports: Lessons Learned from Airline Deregulation

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I. INTRODUCTION

United States ocean shipping deregulation has prompted a great deal of interest and controversy in the various pieces of proposed and recently enacted legislation including the most recent, The Ocean Shipping Reform Act of 1998. Deregulation proposals had included such changes to the industry as allowing for confidential service contracts between shippers and common carriers, eliminating the current rate filing requirements prescribed under Federal law, and for the sunset or transformation of the Federal Maritime Commission.

Major companies and organizations involved in maritime shipping, their customers, and political bodies expressed their opinions, both positive and negative, on the pending legislation regarding this issue. Advocates of deregulation suggested that the market will become more efficient as competition is promoted. They argued that maritime deregulation would force incumbent carriers to streamline their operations and reduce operating costs as well as produce a wider variety of price and service options for customers. Shipper's organizations, such as the National Industrial Transportation League (NITL), favored deregulation, stating that it was essential to the continued health of the maritime industry.

Opponents of maritime deregulation and the pending Act concluded that the negative impacts of this type of legislation far outweigh any efficiencies gained through its passage. First, large shipping customers and those select companies that could negotiate confidential contracts for lower rates would benefit at the expense of smaller volume shippers and importers. Second, opponents predicted that the deregulation would not only destroy the rate setting mechanisms of international shipping conferences but would also drive some carriers into bankruptcy. Finally, the passage of any current maritime deregulation legislation would cause a major shifting of traffic from one port to another. This may cause some major economic hardships for those locales that have invested heavily in port terminal infrastructure.

Policy lessons learned from past deregulatory movements suggest any deregulation bill, like the Ocean Shipping Act of 1998, may have some unintended side effects not apparent on first observation. A previous study on the results of the airline industry deregulation provides a useful foundation for a preliminary discussion on the impact of the dereg-

ulation on the competitive nature of the maritime industry.¹

Twenty years have elapsed since the Airline Deregulation Act (ADA) of 1978 was passed. While the overall results of the ADA have been generally positive when measured at the industry level, study at the airport level yields decidedly different results. There are now more airline passengers and cargo consignments flying at lower air rates than ever before on both domestic and international flights.² However, there also appears to be a recent trend toward concentration by major air carriers at select U.S. airports. Several concerns being raised by this behavior are the ability of an airline to exercise market power, limit competition at a particular airport and potentially raise airfares while reducing the level of service.³

Numerous observations can be made regarding the similarities between the airline and maritime deregulation movements. These similarities include the potential market behavior between the airlines and steamship companies in the use of marketing strategies, the building of the fortress hubs, and the use of physical barriers to entry as a means to possibly reduce competition. In the long run, the end result of these practices in the maritime industry may be contradictory to what is predicted by the advocates of deregulation—increased container rates and reduced service for shippers.

Today, if one is to predict if the maritime deregulation would be considered a success or failure in the year 2002, the answer probably will be a resounding success as measured by the entire industry. However, what will be the answer to that same question posed to the various ports and cities adversely affected by the maritime deregulation?

II. BACKGROUND

In the 1960's and early 1970's, a number of noted economists published a substantial volume of research critical of economic regulation in the transportation industry. Principal criticisms were that pricing and entry restrictions resulted in excessive service, insufficient price competition, inflated transportation costs, and less than adequate profits.⁴ Deregulation occurred first in the airline industry (Air Cargo-1977, Air-

1. See Gary S. Wilson, *Airport Dominance: A Case Study Approach to Competition, Concentration and Policy* (1993) (unpublished doctoral dissertation, University of Illinois (Chicago)) (on file with author).

2. See S.E. Fawcett & D. Vellenga, *Concentration and the Relevant Market in Air Transportation*, 30 J. TRANSP. RES. F. 394, 394-405 (1990).

3. See PAUL STEPHEN DEMPSEY, *FLYING BLIND; THE FAILURE OF AIRLINE DEREGULATION* 1-69 (1990).

4. See Stephen Breyer, *Antitrust Deregulation and the New Marketplace*, 75 CAL. L. REV. 1005, 1005-48 (1987).

line Passenger Deregulation Act-1978), followed closely by trucking (Motor Carrier Act 1980), and railroads (Staggers Rail Act 1980). Researchers and practitioners have suggested that in all three instances, industry movement toward deregulation was well under way prior to its official sanctioning by Congress.

The results of the various deregulation acts of the last two decades have been controversial. In general, the competitive nature and flexibility of modal operations have occurred as predicted by advocates of deregulation. In the case of trucking deregulation, a number of older carriers either merged with competitors or were forced out of business. There has also been a substantial growth in the number of new for-hire interstate motor carriers. The industry grew from about 17,000 entrants in 1980 to over 60,000 by the early 1990's.⁵ Research suggests that the majority of new entrants focused on full-truckload business that does not require the added expense of operating freight terminals where freight is sorted. In addition, studies have suggested that rates initially declined from 15 percent to 25 percent in the early years of deregulation but that the decrease leveled out with some spot rate increases once deregulation took full effect.⁶

The purpose of railroad deregulation, unlike trucking, was not to encourage more competition so much as to establish an environment whereby a financially weak industry could prosper. While rail rates did not significantly increase due to passage of the Staggers Bill as many had suggested, the service levels experienced a significant decline.⁷ In addition, several recent and proposed mergers have left many shippers wondering if they are really better off than before the Staggers Bill. The airline industry preceded both the trucking and rail industry in deregulation and has been the most heavily studied as to its effects on the health of the industry over the past two decades. As predicted by its proponents, the initial years of deregulation brought an influx of new carriers, driving prices down and forcing older established carriers to match the lower rates of new carriers. The new competitive marketplace, like the trucking industry, resulted in numerous casualties as well as a wave of mergers and acquisitions in the industry.⁸ Recent findings suggest that the airline industry is more concentrated now than at any other time since deregula-

5. See Thomas M. Corsi & Joseph R. Stowers, *Effects of a Deregulated Environment on Motor Carriers: A Systematic, Multi-Segment Analysis*, 30 *TRANSP. J.* 4, 4-28 (1991).

6. See Thomas G. Moore, *Rail and Truck Reform-The Record So Far*, 7 *REG.* 33, 39 (1983); Kenneth C. Williamson et al., *Impact of Regulatory Reform on U.S. For-Hire Freight Transportation: Carriers' Perspective*, 24 *TRANSP. J.* 28, 32 (1985).

7. See Williamson et al., *supra* note 4; Daniel Machalaba, *America's Railroads Struggle to Recapture Their Former Glory*, *WALL ST. J.*, Dec. 5, 1997, A1.

8. See S.A. Morrison & C. Winston, *Empirical Implication and Tests for the Contestability Hypotheses*, 30 *J.L. & ECON.* 53, 53-66 (1987).

tion.⁹ Some policy analysts have suggested that the entry of new carriers into certain airports is limited if not impossible.¹⁰

The effective utilization of airport concentration as a competitive strategy has enabled the incumbent carriers to substantially reduce the amount of competition. A 1989 General Accounting Office report suggested that the ability of major air carriers to establish a dominant position at an airport "might have an anti-competitive impact on the industry and eventually frustrate the goals of airline deregulation."¹¹

The effects of deregulation have varied across the three transportation modes. However, one experience common to all was that each mode experienced drastic industry changes that significantly and permanently altered the manner in which business was conducted.

III. HISTORY OF THE MARITIME DEREGULATION MOVEMENT

Efforts to manage competition in ocean shipping have been in practice for many years through the utilization of the ocean shipping conference system. Conference agreements among major shipping lines began in the nineteenth century in the hopes that they may prevent cutthroat competition among steamship lines.¹² Left unchecked, this destructive competition would lead to many maritime company failures and irregularities in shipping schedules.

Arguments in favor of and in opposition to the conference pricing systems have been made throughout this century. In addition, the continual problems of uneven traffic flow coupled with chronic overcapacity in busy trade lanes such as the Pacific-East Asian marketplace have continually plagued the maritime industry.¹³ Shipping lines have long argued that a conference system is needed to stabilize rates, control capacity and maintain adequate profit levels for the ocean carrier industry.¹⁴ According to its supporters, the bankruptcies caused by a free market pricing system would cause major disruptions in the timely movement of international commerce.¹⁵

9. See Lawrence McGinley, *Republicans Grit Their Teeth and Lead a Call for Partial Reregulation of the Airline Industry*, WALL ST. J., Sept. 21, 1989, A24.

10. See Stephen M. Rutner et al., *Alternatives for Reducing Delays at the United State's Busiest Airport* 36 TRANSP. J. 18, 18-25 (1997).

11. See Statement of Kenneth M. Mead before the U.S. General Accounting Office (GAO), *Barriers to Competition in the Airline Industry* 1-20 (1989).

12. See DONALD F. WOOD ET AL., *INTERNATIONAL LOGISTICS* 115-16 (1995).

13. See Richard L. Clarke, *An Analysis of the International Ocean Shipping Conference System*, 36 TRANSP. J. 17, 17-19 (1997).

14. See WOOD ET AL., *supra* note 12.

15. See Daniel Machalaba, *Container Ship Firms Embrace Accord on Trade; Shippers Fear Higher Rates*, WALL ST. J., Sept. 23, 1992, A2; Anna Wilde Matthews, *Shipping Cartel to Seek 10% Rate Boost*, WALL ST. J., Nov. 19, 1997, A2.

Opponents to collective ratemaking practices suggest that ocean rates are kept artificially high, thereby allowing inefficient carriers to remain in business under the current system.¹⁶ In addition, advocates of deregulation are quick to point out that individual carrier marketing strategies have already undermined the collective rate setting activities.¹⁷ Many carriers offer independent rate actions, service contracts to large or key customers, and preferential treatment at key ports to differentiate their organization on the basis of price and service.¹⁸

IV. OCEAN SHIPPING ACT OF 1984

In the late 1970's and early 1980's, competition from independent foreign flag operators seeking hard currency for their governments and the rise of non-vessel owning common carriers (NVOCC's) spurred breakdowns in the traditional conference system. As international commerce increased, shippers also became more vocal in their criticism of ill-defined antitrust conference practices. In 1984, the federal government attempted to simplify the confusing patchwork of antiquated laws affecting maritime commerce through passage of the Ocean Shipping Act of 1984. This new law changed many aspects of the maritime industry. The most salient changes were 1) the granting of antitrust immunity for carriers (provided tariffs were filed to the FMC and rates published and open to inspection); 2) the ability of shippers and shipper associations to enter into service contracts with carriers; and 3) the role of NVOCC's as carriers was clarified.¹⁹

Similar to ocean shipping conferences, the 1984 Act granted maritime ports antitrust immunity and the ability to set collective pricing policies. Collective pricing by the ports was allowed for reasons of economic stability for future planning, elimination of destructive competition, protection of public investment, preservation of market share, the need to counter the strength of liner conferences and elimination of management risk.²⁰ Intense competition between ports for market share on the basis of pricing or increased productivity has prevented any exploitation of the ability to set collective pricing similar to shipping conferences.

Since the Ocean Shipping Reform Act of 1984, many business envi-

16. See *Maritime Notes "Alone at the Negotiating Table"*, DISTRIBUTION, Sept. 1994, at 14.

17. See Edward R. Emmett, *Our System is a Throwback to Another Era*, J. COM., Sept. 19, 1997, at 1A.

18. See Richard L. Clarke, *An Analysis of the International Ocean Shipping Conference System*, 36 TRANSP. J. 17, 17-19 (1997).

19. See Stanley O. Sher & John A. DeVerno, *Maritime Reform*, AMERICAN SHIPPER, Apr. 1984, at 11-22.

20. See John H. Leeper, *Collective Pricing in the U.S. Port Industry*, 60 TRANSP. PRAC. J. 249, 249-56 (1993).

ronmental factors have begun to change the competitive nature of the maritime industry market structure. In particular, the carriers' market behavior has had to adjust to a new, more competitive market as well as make changes to operation to accommodate the emerging concepts of supply chain management.²¹ Similar to the airline industry of the 1980's, increased competition forced a series of mergers and acquisitions to take place among the major shipping lines. In addition, many changes to vessel port rotations have altered maritime operations similar to the hub and spoke delivery systems adopted by air carriers.

Since the 1984 legislation, the dramatic growth and changing nature of global trade has established different patterns in international shipping. New methods of supply chain management are utilizing more outsourcing, smaller inventories, advanced communications technologies, third party logistics providers, and changing trade routes due to the expansion of emerging nations buying and selling patterns.²² The desire for efficiency and uniformity in global distribution businesses has placed pressure on the maritime industry. The emerging global marketplace, as well as perceived inefficiencies in carrier pricing and operations, has prompted many companies and organizations to support further deregulation provided by various pieces of legislation introduced in Congress.²³

V. THE CURRENT MARITIME DEREGULATORY MOVEMENT

Deregulation of the shipping industry was initially proposed in 1995 in the House backed Ocean Shipping Reform Bill of 1995. Major provisions of the Act, among other items, would allow for individual confidential service contracts, end the public filing of tariffs, and merge the FMC with the Surface Transportation Board to create a new regulatory agency.²⁴ The new Intermodal Transportation Board would enforce both shipping and ground transportation regulations beginning with its establishment in 1999.²⁵ In addition, the current requirement that mandates carriers to provide similar shippers with the same contracts would be eliminated.²⁶

This initial deregulation bill passed the House in 1996 but stalled in the Senate. The bill was reintroduced in 1997 with passage in the House

21. See Gregory S. Johnson, *Logistics Future Lies in Push for Perfection*, J. COM., Oct. 6, 1997, at 10A.

22. See TOM CHADWICK & SHAN RAJAGOPAL, STRATEGIC SUPPLY MANAGEMENT 5 (1995).

23. See Kathleen Martin, *Worldly Desires*, INTERNATIONAL BUSINESS, Jan./Feb. 1998, at 10-11.

24. See David Barnes, *Legislation Kicks Off Debate in Congress Over Maritime Reform*, TRAFFIC WORLD, Mar. 6, 1995, at 16-17.

25. See David Barnes, *Senate Revives 'Surf and Turf' Maritime Deregulation*, TRAFFIC WORLD, July 22, 1996, at 12.

26. See Barnes, *supra* note 24.

but failure again in the Senate. Reasons cited for its failure at the time included 1) the fact it was considered too late in the Congressional session and 2) criticism from a disparate coalition of opponents including organized labor, maritime ports, smaller shippers, the National Customs Brokers and Forwarders Association of America, some foreign-owned carriers, and other cooperative shipping groups.²⁷

Opponents argued that the maritime deregulation bill would eliminate the concept of common carriage in ocean shipping, benefit larger shippers at the expense of smaller and create a two-tiered rate structure that would shift contracting to individual agreements thus destroying the shipping conference arrangement. Organized labor and maritime ports opposed the deregulation bill, arguing that there was no guarantee that confidential information could be obtained to track the movement of goods and service and ensure that terminal contracts and union agreements are being honored.²⁸

A compromise plan that kept some aspects of the 1984 Shipping Act in place as well as providing rate confidentiality in a uniform manner and enough information for organized labor to monitor compliance with collective bargaining agreements was eventually crafted in the Spring and Summer of 1998 and passed out of both Houses of Congress. The Ocean Shipping Reform Act of 1998 was signed into law in October of 1998 and will take effect on May 1, 1999.²⁹

VI. MARITIME PORTS AND DEREGULATION

Along with their historic role as a point of entry and exit to the sea, maritime ports serve several important economic purposes for the cities as well. As a key source of tax monies, jobs, and income derived from processing cargo, the ports have a mission that includes economic development within their geographic political structure.³⁰

As fixed economic entities however, port centers must remain vital to the shipping lines that utilize them and the customers served by them through increasing infrastructure investment or watch their market share erode to competition.

Traditionally, ports with higher operating costs favored a collective pricing system that negated competition for carriers on the basis of cost. Competition was limited to attempting to lock in carriers through attractive long-term leases or by adding additional berths and equipment that

27. See *Shipping Act Reform, 1997 Version*, AMERICAN SHIPPER, Apr. 1997, at 18-20.

28. *Id.* at 18-19.

29. *Clinton Signs Ship Reform Bill*, J. COM., Feb. 12, 1998, at 1-2.

30. Tom Baldwin, *Philadelphia Story*, J. COM., Feb. 12, 1998, at 1B.

often resulted in excess capacity.³¹ The quality of service necessary for coastal ports to be able to attract cargo, however, varied with their ability to acquire supporting land for terminal operations and the need for dredging to maintain necessary channel depths. Due to the need for continual dredging for many ports on the East Coast to allow calls by larger deep-draft container ships, the ports levied a harbor maintenance tax on all exports and imports, created by the Water Resources Development Act of 1986, to maintain the depth of navigable waterways through dredging for all United States maritime ports.³² After a series of court cases within the United States questioned the constitutionality of assessing the harbor tax upon exporters, the Supreme Court declared the tax unconstitutional in March of 1998. At this writing, individual ports will be required to pay for future dredging; a development that may add considerable cost to ports as carriers shift to ever-larger vessels.³³

VII. SOME LESSONS TO BE LEARNED FROM AIRLINE DEREGULATION

While deregulation as a whole has benefited the growth of the airline industry, there exists a conspicuous lack of competition at many major United States airports.³⁴ The series of mergers during the mid 1980's, changes in marketing strategies (such as frequent flier programs) coupled with a growing problem of physical facilities and airway constraints in many cities has limited competition severely.³⁵

Policy makers have offered two basic solutions: (1) Add physical capacity or (2) use the current capacity more efficiently.³⁶ Since there has been little in the way of new airport construction since deregulation, the addition of more capacity seems unlikely. In both options, major carriers currently in a dominant position at major hub airports have refused to cooperate by shifting these underutilized resources to new entrants, fearing that their competitive position would be negatively affected. Further, the movement of mobile capital (airplanes) from one market to another

31. See JAN OWEN JANSSON & DAN SCHNEERSON, *PORT ECONOMICS* 4 (1982).

32. See *United States Shoe Corp. v. United States*, 118 S.Ct. 1290, 1295 (1998); Karin L. Bogue, *The Harbor Maintenance Fee: Permissible Fee or Unconstitutional Tax*, 65 J. TRANSP. L. LOGISTICS & POL'Y 41, 41-56 (1997).

33. See M. Fabey, *After Supreme Court Axes Harbor Tax, Ports and Corps of Engineers in Search of a Few Good Million*, J. COM., Apr. 17, 1998, at 1A; Bill Mongelluzzo, *How Big Ships will Change Port System; Some Facilities Face Inevitable Demotion to Feeder Status*, J. COM., Sept. 29, 1997, at 1A; NATIONAL COUNCIL ON PUBLIC WORKS IMPROVEMENT, *FRAGILE FOUNDATIONS: A REPORT ON AMERICA'S PUBLIC WORKS* (Feb. 1988).

34. See Jim Glab, *Deregulation - Has it Worked Too Well?*, FREQUENT FLYER MAGAZINE, Sept. 1998, at 26-34.

35. *Id.*

36. See Gary S. Wilson, *Airport Dominance: A Case Study Approach to Competition, Concentration and Policy* (1993) (unpublished doctoral dissertation, University of Illinois (Chicago)) (on file with author) at 277-324.

may leave the hub airport at a competitive disadvantage.³⁷ As an example, the major air carriers operating out of O'Hare Airport and the City of Chicago oppose the building of a third metropolitan airport. The airport would most likely lie outside of the city's jurisdiction and include additional landing slots and boarding gates for competitors that are currently blocked from entering the Chicago market.³⁸

Both airports and ocean ports feature public and private entities competing and cooperating with each other in a common marketplace. For example, a "public" port facility consists of private marine terminals, lift equipment and container facilities utilized by individual carriers.³⁹ Similarly, airports are publicly owned and operated with air carriers building their own gates or lease terminal space for long periods of time.

The problems currently experienced by passengers at many airports may be similar to the ones shippers will face at many ports with the passage of deregulation. Like the airports, two areas that may have a great impact on the competitive nature of ports are the distinct but interrelated areas of liner marketing strategies and geographic physical constraints. While these two factors predate the onset of the maritime industry deregulation, it may be argued that ocean shipping reform will further change the nature of competition at maritime ports in a similar fashion to how deregulation has affected U.S. airports.

VIII. LINER MARKETING AND OPERATIONAL STRATEGIES

Ocean shipping lines are entering a period of transformation that will impact ports in dramatic ways. A surge of mergers, alliances and acquisitions over the last two years will continue to shrink the number of competing carriers. This movement will eventually lead, as we have seen in the airline industry, to large integrated operations with global ownership, multiple trade lanes and large "jumbo" container vessels making fewer port calls. The port rotation (is the sequence in which the vessel will call ports) has led to the marginalization of those ports that are not the first entry or last exit point. Ports not directly on the sea (e.g., Baltimore or Philadelphia) and those in the middle of a rotation (e.g., Oakland) must fight to avoid being bypassed or accept the status of a feeder port for a small group of large load centers, also known as megaports. The greater efficiencies of container carriers also bring greater scrutiny by carriers of the ports they choose to serve. For example, two large carriers serving the Port of New York, Sealand and Maersk, have both indicated

37. *Id.*

38. See Dennis Byrne, *Mayor's Airport Plan Needs an Upgrade*, CHI. SUN TIMES, Feb. 7, 1999, at 26.

39. See JANSSON & SCHNEERSON, *supra* note 31.

that large-scale capital improvements and reduced costs will be necessary for continued use of the port in the next year.⁴⁰

The relationship between the build-up to ocean shipping deregulation and the liner marketing strategies described has not been addressed by researchers at this time in part due to the ongoing nature of the process. Further, there has been little research by policy makers as to the exact causality of the relationship between the two. Edward Emmett, chairman of the NITL, argues that the question of rationalization of port calls would take place with or without deregulation.⁴¹ Major port operators have suggested otherwise. Observations from airline deregulation suggest that ports may evolve into a series of four or five hub points for specific carriers. The carriers at the hub will restrict competition by limiting access to scarce terminal/storage space and intermodal access to rail and highway transportation facilities through dedicated equipment. It is possible that the monopoly on a given facility cost structure and transit times will restrict entry and eventually lead to carrier rate increases. To further reduce the competitive nature of the market, there is a possibility of replacing conferences in the future with "discussion groups" among large carriers that set policy guidelines among themselves as to maritime port use.⁴²

IX. PHYSICAL CONSTRAINTS

The competition for cargo at many ports has led to tremendous pressure to invest in infrastructure development. Carriers have asked ports to add available land, deepen channels for much larger container-ships, add and modernize existing intermodal rail connections, form separate connections for truck traffic and/or create dedicated freight corridors, and manage waterfront work rules practices.⁴³ Demands for growth at the ports may also be hindered by infrastructure bottlenecks far outside of control of a port authority. For example, the ports of Seattle and Tacoma are hampered by intermodal rail connections in eastern Washington.⁴⁴

To remain competitive, ports must create sophisticated coalitions that involve local cities, counties, state and governmental bodies as well

40. See Peter Tirschwell, *Now Maersk Considers Alternatives to New York*, J. COM., Feb. 17, 1998, at A1.

41. See Edward Emmett, *In His Own Words; "Our System is a Throwback to Another Era"*, J. COM., Sept. 19, 1997, at 1A, 14A.

42. See Bill Mongelluzzo, *Feds Scrutinize Discussion Agreements; Their Ability to Affect Rates Concerns FMC*, J. COM., Feb. 20, 1998, at 13A.

43. See Bill Mongelluzzo, *How Big Ships Will Change Port System*, J. COM., Sept. 29, 1997, at 1A.

44. See Bill Mongelluzzo, *Megaports are Facing Increasing Problems; Support Infrastructure as Key to Efficient Handling of Cargo*, J. COM., Feb. 20, 1998, at 1B.

as public and private sector competitors to gain consensus on the overall direction of port facility development. The intricate public/private relationships that exist in maritime ports leave the municipality in which the port is located exposed to complex questions of how to mediate between competing private interests. How heavily should the private sector be subsidized at the cost of creating fewer potential users of the maritime port?

In addition to all of the concerns cited rest a series of tangential public interest questions related to port development and its effects on the offshore environment and historical preservation of a city's waterfront. There is an ongoing debate over the effects of increased harbor dredging on offshore fishing grounds, particularly on the East Coast. Preservationists and politicians have moved to block the wholesale demolition of historic waterfront buildings as well as the sale of attractive waterfront acreage to foreign flag shipping operators.⁴⁵

The growth of large containerships is dividing the port industry into two camps - an elite tier of large megaports with deep harbors and excellent inland infrastructure and a second tier of feeder ports that cannot accommodate the new vessels.⁴⁶ The enormous financial resources needed to provide adequate road, rail, and terminal infrastructure demanded by the ocean carriers has created fierce competition in Washington D.C. for scarce federal funds to ensure a ports status among the leaders. This is also a never-ending cycle with giant megaports facing increasing difficulties in securing infrastructure financing, more large land parcels, dredging deeper channels to facilitate calls of the jumbo carriers and gaining adequate rail/highway access when they get there. Recent evidence suggests that credit-rating agencies question the large debts taken on by municipal ports to remain as chosen load centers.⁴⁷

Ocean carriers and their customers are asking ports to think like marketing managers rather than traditional operations personnel. Unlike marketing managers, however, maritime ports must operate in an environment where few variables are completely within their control and the geographical movement of the facility is limited. Facilities and locales designed around commercial needs of another era bedevil their attempts to address current logistical needs. Some experts suggest that the large megaports of the future may not be near major population centers, thereby enabling them to facilitate the construction of specially designed

45. See Bill Mongelluzzo, *Long Beach, Tired of Battling D.C., Suggests Cosco Give Up On Navy Site*, J. COM., Sept. 25, 1998, at 1A.

46. See Robert Mottley & Chris Gillis, *U.S. Ports and Superships*, AMERICAN SHIPPER, Sept., 1998, at 96-98.

47. See Bill Mongelluzzo, *In a Sea of Red Ink*, J. COM., Mar. 3, 1998, at 1B.

cargo loading and unloading points.⁴⁸ The current competition between cities, counties and states for revenue sources to pay for infrastructure development, and the conflicting need to cut fees to carriers for their use, may only be settled by the Federal government. Failing this, ports may need to cooperate with one another more closely to ensure their individual economic livelihoods.

The relationship between the ongoing deregulation efforts and physical constraints at maritime ports suggests that individual ocean carriers may be in a position to exert pressure on the ports in much the same way dominant hub carriers in the airline industry can leverage airports. Selected maritime megaports will seek to lock up ocean carrier tenants through the use of long term contracts. However, ocean carriers will seek to play ports off against each other to extract concessions on fees and infrastructure improvements. To continue as a major megaport will require constant attention to infrastructure with no guarantee that they will remain one of the favored ports in the future.

X. CONCLUSION

Several observations from airline industry deregulation suggest that applying free market competition to the international shipping industry may not bring about greater competition and lower prices as predicted. First, changes in liner marketing and operations strategies may defeat the original intention of maritime deregulation, namely more service options and better container rates. Practices such as mergers to form international alliances and multiple port rotations to satisfy supply chain considerations may eventually cause an increase rather than a decrease in container rates.

Secondly, physical constraints at maritime ports such as available berthing space, infrastructure congestion, costly dredging requirements and access to inland points, may act to further restrict competition to a handful of carriers at a small number of megaport facilities.

Thirdly, while shipping customers wait for the benefits of reduced costs and increased services from deregulation, a smaller number of competing ocean carriers will possibly be able to enact the "fortress" hubs prevalent in the air industry. Surviving carriers in deregulation will be able to support extensive supply chain needs of global businesses through a handful of major maritime ports that are configured to precise intermodal needs.

Fourthly, export and import customers may have little choice as to what carrier can be used with the possible exception of routing cargo through Canadian ports. As in many United States cities, airline passen-

48. See Mongelluzzo, *supra* note 43.

gers have little or no choice as to the airline that might fly to a specific destination. Dominant airlines control the majority of landing slots as well as the physical facilities-gatespace and baggage areas.

Lastly, service may well deteriorate and grow redundant rather than improve to meet customer niche requirements in the deregulated maritime environment. For example, by the early 1990's, the major U.S. passenger airlines were operating similar hub and spoke route structures, minimalist passenger services, mileage based loyalty programs and ownership of reservation systems as travel agents issue fewer tickets. The result has been a downward spiral of customer expectations and pricing policies more along the lines of commodity based products than towards adding value to passengers.⁴⁹ A lesson learned from the airline industry which may be applicable to the maritime industry is greater concentration of key transportation components with increased market power for fewer firms. For example, capacity constraints at the busiest U.S. airports have resulted in increasing linkages of major U.S. airlines with those of other countries and static competition resulting in significantly higher airfares.⁵⁰

Many observations from the airline industry suggest that further policy research be performed in examining the effectiveness of deregulation, not just in the overall industry but also upon site-specific market factors such as maritime ports. The true test of the success or failure of ocean shipping deregulation will be how it will affect the ports, since that is where freight moves to and from in international commerce.

49. See GARY HAMEL & C. K. PRAHALAD, *COMPETING FOR THE FUTURE* 53 (1994).

50. See Jerry Ellig & Wayne H. Winegarden, *Airline Policy and Consumer Welfare*, 61 *TRANSP. PRAC. J.* 411, 411-30 (1994).