

# **“The Port of New York in the Age of Global Intermodalism”**

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This paper looks at contemporary freight transportation. It asks how certain recent technological and organizational developments in surface freight transportation are shaping the future prospects of the port of New York. Being an historian, I naturally begin by looking at the past.

When I was in college and it came time to study the industrial revolution, our professor, a kindly if not particularly imaginative old gentleman, put a model of a Watt steam engine on the table at the front of the room and said, “well, boys,” for it was all boys then, “here’s what made it happen.” There it was, the technological innovation that lay at the root of everything that occurred in and followed from the industrial revolution. Of course his claim was a gross simplification, but didactically it was not a bad point of departure. The steam engine is as good a place as any to start, so long as it’s meaning and impact are carefully explored and connected to other developments that fed into the making of the modern industrial world. I’d like to be able to report that we then went on to explore other modes of explanation in my college history course, but in fact our professor was an unreconstructed technological determinist.

Today when we look at contemporary seaports, we cannot help noticing the thousands of boxes being moved around in sprawling containerports and being carried in and out of harbors on massive containerships. Are these boxes, like my old professor's model steam engine, the key to the transformations that a changing technology of freight transportation has forced on traditional port cities like New York? And can the way such ports will evolve be grasped by focusing attention on these ungainly but enormously efficient cargo boxes? The answer I propose, not being a technological determinist, is both yes and no.

There can be little question that the use of reinforced truck-trailer- sized cargo containers in maritime shipping has transformed cargo handling alongshore and liner service afloat. Containerization rather quickly replaced breakbulk cargo handling and eliminated the kind of longshore work so vividly depicted in the classic film On the Waterfront. In doing so, containerization dramatically reduced the cost and improved the service of maritime carriers. The container revolution transformed a major portion of a tradition bound and highly inefficient industry, and those companies that did not adopt the new technology soon found themselves driven to the margins or out of business.

Containerization mechanized alongshore cargo handling in maritime freight transportation. In the days when cargo was hoisted aboard and stowed in the hold box-by-box and bag-by-bag, cargo handling costs accounted for roughly half the total costs of moving cargoes between ports thousands of miles apart. Longshore costs were variable costs, for if men were not working a ship, they were not being paid. Containerization reduced by roughly 90 percent both the

variable labor costs alongshore and the time required to load and unload ships. This was an enormous increase in efficiency, but it also required a tremendous investment in mechanical equipment – cranes, travel-lifts, boxes and ships. These investments were capital costs rather than variable costs; you had to pay for them whether they were being used or not. So containerization, like mechanization in other industries, required greatly increased capital investment, reduced unit costs, intensified the pace of work, vastly increased throughput, led to greater competition among firms, and relentlessly forced industrial concentration.

Maritime shipping was soon dominated by a handful of major companies operating increasingly larger ships that called at a decreasing number of hub containerports. The great game in the new world of maritime shipping was to figure out which ports would capture and hold the business. The great question here in Gotham became, can the port of New York maintain its place as North America's foremost Atlantic entrepôt?

I want to suggest that just as the industrial revolution cannot be entirely read out of the steam engine, neither can contemporary freight transportation be entirely read out of the container. So let's take the container off the table and see if there are other ways of looking at the port's future.

One reason to avoid fixating on the number of containers moving through the port is that New York faces real problems on this front. A month ago Peter Tirschwell, the editor of The Journal of Commerce, wrote an article titled "Gotham's gambit." (JoC Week, 10-16 Sep, 2001, p.4) He begins by acknowledging that the port of New York and New Jersey is already close to

being overwhelmed. The Port Authority is well aware of this and is predicting that by 2004 the port will reach its capacity of 3.2 million TEUs per year (that's Twenty-Foot Equivalent Units, the standard measure of container capacity). To meet this challenge the Port Authority is busily expanding port capacity on many fronts. But the real crunch will come after 2004, when, as the article puts it, "it will become clear whether today's short-term space crunch evolves into a long-term problem of stunted growth."

Recognizing this, the Port Authority has even more ambitious plans for long-term port expansion. But can it keep up with the race? The outlook is not promising. Asia is the biggest source for U.S. containerized imports. Most containers carrying goods made in Asia that are bound for the east coast come ashore in California and cross the continent on unit trains. But today more and more boxes are being shipped directly to the east coast via the Suez and Panama Canals. In the race to attract this traffic, New York has been losing to such southern ports as Savannah, Norfolk and Charleston, all of which can provide ample commercial property near the harbor for distribution centers. So even if New York makes heroic efforts to increase its port capacity, its share of the market may slowly decline.

When thinking about this challenge we need to be careful not to assume that "stunted growth" in the competition for container throughput necessarily implies "stunted growth" in the economic and social progress of the entire New York metropolitan area. It is an easy assumption to make, for as we all know, New York became a great city because it was a great seaport, an entrepôt that

combined distinctive geographical advantages with an exuberant commitment to commercial enterprise. But contemporary economists interested in explaining the location of various economic activities are finding that this older “neoclassical” account of the rise of port cities has real limitations. I quickly get lost in the mathematical aspects of their arguments, but their claims, which they do attempt to substantiate, appear to deserve attention. Consider, for instance, an article titled “The role of ports in the making of major cities: self-agglomeration and hub-effect.” (Masahisa Fujita and Tomoya Mori, Journal of Development Economics, vol 49 (1996) 93-120.)

The authors of this article set up their problem in the following way:

The ‘neoclassical port-city model’ sounds quite reasonable, [but] its limitations become clear when we consider the following historical fact. That is, many port cities (in particular, those in developed countries) have continued to prosper even though the initial advantage of cheap water access has long ceased to play an important role. In the U.S., for example, all the ten largest cities in 1920 (i.e., New York, Chicago, Philadelphia, Detroit, Cleveland, St. Louis, Boston, Baltimore, Los Angeles, and Buffalo) were developed as port cities, and most of them remain great cities today, even though their water-based ports contribute little to their leading economic activities today. If they are simply ‘neoclassical port cities,’ then they should have disappeared long ago, when the original advantage of cheap water access became unimportant. Clearly their continued prosperity can be explained only when we consider the ‘lock-in

effect' of some self-reinforcing agglomeration forces. (94; language slightly altered for clarity.)

Now I must admit that I don't find the phrase "self-reinforcing agglomeration forces" transparently clear on first encounter, but the critique of the neoclassical view does have some bite. Fortunately Paul Krugman, who recently co-authored a book titled The Spatial Economy – Cities, Regions and International Trade (MIT, 2000), has stated the alternative to the neoclassical more clearly. As he wrote this past week in his New York Times Op-Ed column, "what keeps New York a great city is circular causation; people and businesses locate there because of the opportunities created by the presence of other people and businesses." (NYT, 3 Oct 2001, A23) So that, I take it, is what "self-agglomeration" is all about.

Here, it seems to me, we have a serious challenge to the traditional claim that as port activity goes, so goes New York. Obviously this challenge depends on the weights assigned to the various sectors of New York's economy today, and if the advocates of the importance of contemporary port activities can demonstrate that the spatial economists have undervalued them, then the critique of the neoclassical view will lose much of its force. But the case must be made in the present, not simply by invoking a long-gone past. All too often we let geographical and institutional continuity dominate our understanding of present realities and future trends. I am reminded of a striking shift of focus mentioned in the memoirs a businessman who served for many years on the Cleveland-Cuyahoga County Port Authority. (Jay Ehle, Cleveland's Harbor, 1996) This Port

Authority was established in 1968 because interested parties in the Cleveland area felt the city and county were not capturing their fair share of the shipping passing through the recently completed St. Lawrence Seaway. But twenty years later the Port Authority's concerns had changed dramatically, and in the 1990s building the Rock and Roll Hall of Fame became one of its largest and most successful undertakings. The ways of economic development and the uses of waterfronts are strange indeed, as all the older port cities now know.

I believe that to carry on a meaningful discussion of the future prospects of the port of New York, we must first understand how freight services are used in today's global economy. The introduction of containers brought about a dramatic reduction in shipping costs, but other breakthroughs have been important too. Deregulation of the transportation industries has enabled carrying companies to charge market rates and to integrate the different modes of transportation. The companies able to use their assets efficiently while providing shippers with the services they need at a cost they can afford to pay have emerged as competitive leaders. Scheduling deliveries just-in-time, a service which originally only trucks could provide, has become standard. Today containers play a central role in this new intermodal system of supply chain management, but they are not the whole story. The main point, however, is that today freight transportation is cheap, fast, reliable and worldwide. Globalization as we know it, which has led to entirely new geographical patterns of production and consumption, could never have grown as it has had there not been a worldwide revolution in freight transportation in the closing decades of the twentieth century.

It's not easy to get a grip on how this profound transformation of freight transportation has played into today's global economy. But for a start, the next time you find yourself gazing at a containership moving through the Narrows or under the Bayonne Bridge, think of all those boxes as inventory in motion. That's how logisticians view them; indeed they define their field as "the management of inventory in motion or at rest." (JoC, 24-30 Sep, 2001, p.16) Inventory, as we all now know, is expensive; lean and nimble production is the goal. In the last two decades of the twentieth century intermodal transportation and supply chain management reduced the ratio of inventory to the nominal GDP from 25% to 15%. That's a considerable reduction in the amount of working capital invested in inventory, and it provided an annual savings of at least one billion dollars in 2000. This is the payoff delivered by just-in-time scheduling. Who could have imagined that we would see at the same time both a global dispersal of manufacturing and an enormous reduction in inventory costs? At the same time this was going on, the value of the goods being shipped in containers and by other means was steadily rising, so that today trucking and airfreight account for 86% of the nation's freight bill. (*ibid.*) This, you will note, is a measure of the value of goods shipped, not their weight or volume. Light weight, high-value components and products are constantly on the move. One interesting interface has FedEx and UPS on one side and the trucks, trains and ships that carry containers on the other. We are in the midst of an ongoing transportation revolution, not at the end.

A few concluding thoughts. The New York metropolitan region is an economic powerhouse. Port planning should begin with examination of what

makes the city a powerhouse, not with anxiety over the fact that other ports are threatening to surpass New York in annual container throughput. New York's first concern in transportation should be to serve its most dynamic industries, which need fast and efficient freight service if they are to remain competitive. I believe the port of New York's greatest challenge is congestion, not maintaining its position as the dominant hub on the Atlantic coast. In the New York region, fast, responsive water service could compete with truck haulage. Let the boxes arrive en masse at some remote, uncrowded site and then move them rapidly over water to docks near the stores and factories waiting for them. Bring the harbor alive, as it was in the nineteenth century, by serving local industries, including the tourist and entertainment industries. Break free of the 'neoclassical theory' of port greatness and use the technologies available to us today to free up our roads and improve the conditions of life in Gotham and its surrounds.

We have all been shaken and saddened by the recent terrorist attacks, but we must not lose our confidence. Port security is now a much greater concern than it was before and some costs in money, time and convenience will have to be paid to achieve it. Limits on the swiftness and nimbleness of freight transportation are as often imposed by social tensions as by technological barriers, yet we have lots of room for improvement. With confidence, resolve and cooperation, the port of New York can in the future be as great as it has been in the past. The only thing we can be absolutely sure of is that it will be different.