Strategic Maritime Chokepoints: Global Shipping and Maritime Industry Perspectives

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Although the world ocean covers over 70 percent of the globe, commercial shipping routes are remarkably concentrated. Strategic chokepoints are narrow waterways where sea routes converge due to geography. Examples include the Malacca Straits, the Strait of Hormuz, the Strait of Gibraltar, the Suez Canal, and the Panama Canal.

Global shipping companies do not view maritime chokepoints as strategically important, but rather as a geographic reality for their businesses. In contrast, global port operators, bunkerers, ship repairers, and other maritime support services view having a physical presence at maritime chokepoints as a competitive advantage because such waterways create a geographic concentration of global shipping routes. This paper examines why strategic chokepoints are important to certain maritime industries but not others.

Over 90 percent of international trade is carried by sea, but global shipping and maritime industries have received little attention in scholarly journals and books, including those focused on maritime security. Martin Stopford has examined global shipping from a maritime economics perspective[1] and Marc Levinson has written about how containerization reshaped the global economy.[2] National Defense University's Institute for National Strategic Studies has published insightful articles on strategic chokepoints, such as those by John Noer[3] and Donna Nincic,[4] but only Daniel Coulter's piece on the rise of hub ports[5] starts to provide the maritime industry perspectives offered by this paper.

Global Shipping Industry

The world's commercial shipping industry is diverse and includes businesses ranging from container lines following a fixed schedule to bulk carriers transporting commodities, including wet bulk cargoes such as crude oil and refined petroleum products and dry bulk cargoes such as iron ore, coal, and grains. Furthermore specialized shipping companies transport heavy machinery, oil rigs, livestock, automobiles, and many other cargoes that cannot easily fit in 20-foot or 40-foot containers.

For this paper, the most important difference among global shipping businesses is between container carriers, which operate a fixed liner schedule with planned stops at various container ports, and bulk carriers and specialized shipping companies, which often operate on demand. Container shipping lines depend on reliable delivery times and face monetary penalties for delays within their control. They operate in a global hub-and-spoke system of container ports, with large transshipment hub ports connecting to smaller regional container ports.

In contrast to container lines, bulk carriers and specialized shipping companies usually operate on demand, carrying goods from one port to another, sometimes with stops a multiple ports. Bulk shipping companies range from large to small and have diverse business models. Some bulk ship owners operate their own vessels, while others charter their ships to vessel operating companies. Certain bulk shipping businesses have long-term contracts with shippers, particularly in specialized bulk cargoes such as liquefied natural gas. These bulk carriers with long-term contracts operate scheduled services similar to container lines.

In general, global shipping companies do not derive any competitive advantage from strategic maritime chokepoints. Shipping lines operating a fixed schedule may have a minor business interest in having a physical presence at chokepoints, but only if there are limited transshipment ports in the general vicinity. Rather, the global shipping industry approaches strategic chokepoints as a geographic reality to take into account when planning voyages.

Global Port Operators and Maritime Support Services

Global port operators have consolidated over the last two decades and three companies now dominate the industry: (i) Singapore-based PSA International, (ii) Hong Kong-based Hutchison Port Holdings, and (iii) Dubai-based DP World. All three of these global port operators have invested in container terminals and transshipment hubs along the world's strategic chokepoints. Given the hub-and-spoke nature of containerized shipping, the geographic consolidation of global sea routes in strategic chokepoints presents a business opportunity and securing deep water ports near such waterways is a source of competitive advantage.

Maritime service providers supporting the global shipping industry also derive competitive advantage by locating near maritime chokepoints. Bunkering is one example. Large cargo ships use bunker fuel, the least-refined variant of oil akin to asphalt. Bunker fuel is a byproduct of oil refineries. Due to easy access to numerous oil tankers, many large oil refining complexes have mushroomed near strategic waterways, such as in Singapore. The Port of Singapore and the Port of Fujairah on the Arabian Sea coast of the United Arab Emirates are the world's two largest bunkering ports, selling 42 million metric tons and 24 metric tons of bunker fuel, respectively, in 2015.[6] Their strategic locations near the Malacca Straits and Strait of Hormuz provide a concentration of passing ships that require bunker fuel.

Modern shipyards compete on technical expertise, quality, price, and turnaround time. Geography remains a competitive advantage for ship repair and facilities providing routine ship maintenance. Singapore has world-renowned ship repair and maintenance facilities, including companies such as Keppel and Sembcorp Marine. Gibraltar also has a thriving ship repair sector, largely due to its geography near key shipping lanes.

There are numerous other maritime support industries, including freight forwarding, classification societies, insurance, financing, maritime law, and maritime arbitration. On the surface, it would seem that these other industries would be unaffected by the geography of strategic chokepoints. Administrative work, in theory, can be done anywhere in the Internet age. But these other maritime support industries often gravitate toward seaports with proximity to global shipping lanes, including ports near strategic chokepoints.

Conclusion

At the dawn of the 20th century, Mahan recognized the strategic importance of key waterways as a means of facilitating the concentration of naval power.[7] From a maritime industry perspective, the geographic concentration of global shipping through strategic maritime chokepoints is a business reality for shipping companies and a potential business opportunity and source of competitive advantage for global port operators and other maritime support services. Perspectives from the global shipping and port sectors offer another way to analyze the strategic importance of maritime chokepoints.

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[1] Martin Stopford, *Maritime Economics* (Routledge, 2009).
[2] Marc Levinson, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger* (Princeton University Press, 2006).
[3] John H. Noer with David Gregory, *Chokepoints: Maritime Economic Concerns in Southeast Asia* (Institute for National Strategic Studies, National Defense University, 1996).
[4] Donna J. Nincic, "Sea Lane Security and U.S. Maritime Trade: Chokepoints as Scarce Resources," Chapter 8 in Sam J. Tangedi, *Globalization and Maritime Power* (Institute for National Strategic Studies, National Defense University, 2002).
[5] Daniel Y. Coulter, "Globalization of Maritime Commerce: The Rise of Hub Ports," Chapter 7 in Sam J. Tangedi, *Globalization and Maritime Power* (Institute for National Strategic Studies, National Defense University, 2002).
[6] "6 Countries are Responsible for Almost 60% of All Bunker Sales." *Ship and Bunker*. http://shipandbunker.com/news/world/608701-6-countries-are-responsible-for-almost-60-of-all-bunker-sales
[7] A.T. Mahan, *The Problem of Asia and its Effect upon International Policies* (London: 1900), 72.