

Maritime Transportation: The Global System of Shipping and Ports

International trade has grown considerably over modern history, and with technological advances and expanded networks of production, it has surged since the 1950s. The cost of airline transport has decreased considerably, highway infrastructure has been extended to hinterlands throughout the world, and containerization has allowed for the efficient movement of goods across multiple modes of transportation. However, despite the progress that has been made in numerous modern modes of transportation, the majority of global trade, in fact more than 90 percent of world trade in terms of tonnage, travels by a centuries-old vehicle – the ship. Seaborne trade volumes have increased by 13.5% since 2000, 73% since 1990, and 182% since 1970 (as shown in **Exhibit 1**), and they are not expected to slow down in the near future.¹ Researchers have forecasted that by 2020 the total volume of cargo shipped by water will be double that of 2001.² It is vital for today's global supply chain managers to understand the essentials of the shipping industry and port operations, since they are integral to the import and export processes. This note, therefore, will give an overview of maritime transportation and the key players, as well as the global system of ports and the primary challenges facing the industry.

Overview of the Maritime Transportation Industry

A central point in the seminal economist Adam Smith's work was that trade was vital for both the division of labor and specialization, which he viewed as essential for resource efficiency and economies of scale. In *The Wealth of Nations*, Smith predicted that shipping would be the source of cheap transport that would fuel the world economy. He wrote, "As by means of water carriage a more extensive market is opened to every sort of industry than what land carriage alone can afford."³ The situation today accurately reflects the specialization and continually-expanding global import-export network that Smith envisioned. In 2006, goods loaded at ports worldwide were estimated to have reached a historical record of 7.4 billion tons.⁴ Although world trade overall hit record highs that year, competing modes of transportation (most notably air freight) were not nearly cost-competitive enough to take a significant share of trade away from the shipping industry. It has been estimated that in terms of volume, shipping carries roughly four times as much cargo as rail and four hundred times as much as is carried by air.⁵

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