

Carbon in the Box: Can Maritime Transport Become Greener?

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The magnitude and success of 21st Century international trade would have been impossible without containerization and the long-haul container ship. Intriguingly, the innovation emerged not so long ago: Malcolm McLean made inter-modal transport with standardized containers a reality in the mid-1950s. Today, approximately 90 percent of international trade transport is done by container ship. The story is wonderfully told by Marc Levinson in his 2006 book "The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger;" a second edition was published in 2016.

Like any great invention, container ships have positive and negative aspects. Some of the perceived negative aspects are fictitious. For example, after 9/11, some trumpeted overwrought fears that container ships made "America, the vulnerable." This, comically, was buttressed by "Container Bob," who some touted as a second-wave terrorist ensconced comfortably in a container ship headed to America. He wasn't a terrorist or dangerous, and returned to a life of anonymity.

Unfortunately, not all container ship related fears are mirages. Like all forms of transport, container ships are contributing to an existential threat: the climate crisis.

Although arguably not as climate detrimental as aviation and trucking per tonnage shipped, the impact is still staggering, especially because it is the dominant method of trade transport. Although precise measurement is lacking, some analysts estimate that maritime transport contributed 1 billion tonnes

of greenhouse gas emissions between 2007 to 2012 and that maritime transport approximates 3 percent of all global carbon emissions.

A second problem is that container ships, consuming the dregs of the petroleum quality spectrum, belch other nasty pollutants, especially sulphur dioxide, nitrogen oxides, and particulate matter. These pollutants cause serious health problems for both humans and marine life. A recent study estimated that these shipping pollutants cause per year the premature death of 403,300 humans and asthma for 14 million children.

An immediate and complete transformation of maritime shipping's environmental footprint would be economically detrimental and politically infeasible. A massive curtailment would devastate global trade and harm national economies. Switching exclusively to other types of transport would be prohibitively expensive and actually generate more carbon emissions.

What is to be done? Quick technological and regulatory fixes are lacking. Unlike road transport where lithium-ion batteries will thrive if governments provide sufficient incentivisation, there is no apparent technological solution. Indeed, the only current method that has some impact is to slow ships down, which reduces the volume of emissions per journey. International regulation is also daunting, especially considering the "flag of convenience" dynamic. As one analyst posed, who "owns shipping emissions?"

Optimism is thus absent. For now, there is only a strategy of incrementalism and "hope for the best."

The International Maritime Organization (IMO), which historically has been more concerned with protecting rather than regulating the shipping industry, has been shamed into taking some initial baby steps. Beginning in January 2020, the IMO has deemed that the sulphur content of fuel used on most commercial ships may not exceed 0.5 percent, down from the 2012 limit of 3.5 percent. If complied with, the regulation will modestly reduce sulphur pollutants.

Regarding carbon emissions, the IMO went aspirational by reaching an agreement in April 2018 that calls for shipping companies to reduce carbon emissions by the year 2050 to 50 percent of their 2008 level. Without tangible regulations however, such as a carbon tax, there will be no incentivisation for appropriate technologies or better production and distribution choices to emerge.

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