

PORTS AND THE CIRCULAR ECONOMY



Peter de Langen, Henrik Sornn-Friese

Acknowledging the recent push away from linear supply chains to more circular ones, this chapter reflects on the effect of circular economies (CE) on ports and maritime supply chains. Ports handle huge volumes of raw materials, intermediates, and finished products, all of which may be greatly affected by CE.

APPROACH:

The chapter begins with an overview of CE. This is followed by an analysis of the potential implications of the transition toward circular supply chains for the evolution of cargo flows in ports. The general analysis is illustrated with the case of the commodities handled by ports in the United States. The chapter then discusses commercial opportunities for ports resulting from the transition toward circularity, illustrated with cases drawn from the Netherlands, as well as some concluding notes.

MAIN FINDINGS:

- CE can pose a threat to contemporary port models as:
 - It reduces maritime transport volumes due to the reduced demand for primary (bulk) materials that represent the majority of volume handled in most ports.
 - The transition toward circularity in some supply chains goes hand-in-hand with a shift away from global and toward regional supply chains (reducing the need for long distance shipping).
- CE provides ports with new opportunities in terms of logistic-industrial activities. For instance, private investments in recycling and sustainable energy sources have already been substantial, as some ports have attracted for instance storage, assembly, and production facilities for offshore wind.
- The transition towards CE redraws the competitive landscape between ports, as traditional strengths derived from the presence of large fossil fuel based industrial complexes become less relevant. New development paths may emerge, in which cluster synergies still play an important role. Ports can gain early mover advantages through attracting new CE activities earlier than other ports.
- As well as other sites, ports compete with other industrial/logistics sites for attracting CE activities. Ports have potential advantages over other forms of sites due to:
 - their high quality of connectivity (both overseas and to/from the hinterland) that provides access to circular feedstock as well as markets.
 - them being sites with a concentration of demand for circular products (energy, fuel, feedstock, etc).
 - ports being extensive clusters that may have more potential to achieve synergies through clustering and colocation.