

Systemic resilience of maritime transport networks: from local to global

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Abstract

Maritime transport systems play a key role in facilitating the movement of goods globally. As a result of growing trade and supply-chain interconnectivity, maritime transport networks have become increasingly complex and interconnected. At the same time, maritime transport infrastructure and strategic routes are exposed to a wide range of risks, including climatic (e.g., cyclones, droughts) and non-climatic (e.g., geopolitical) ones. These risks may manifest locally yet generate cascading effects with system-wide consequences across the globe. Recent disruptions, such as the Panama drought and closure of the Strait of Hormuz, have highlighted the importance of better understanding the systemic dependencies between the economy and maritime shipping networks.

In this talk, I will discuss past and ongoing research that have sought to advance our understanding of the systemic risks faced by maritime transport across multiple spatial and functional scales. These investigations range from analyses of localised port and chokepoints disruptions, through studies of regional and global spillovers of such disruptions. I will point to the resilience of global transport and economic systems to deal with these shocks, and strategies that can be leveraged to further improve the resilience of these coupled networks to systemic risks.