

INTRODUCTION: Shipping supply chains in Asia are being tested by global crises

In recent years, a succession of global shocks has tested the resilience of maritime supply chains. Beginning in the early part of 2020, the COVID-19 pandemic exposed the fragility of the global web of 'just in time' supply chains as retailers ran short on stock due to reduced global shipping. The Russian invasion of Ukraine in February 2022 put enormous strain on the world's grain supplies, as Russia prevented Ukrainian grain exports exiting the Black Sea. In 2024, the war in Gaza sparked Houthi rebels in Yemen to target shipping in the Red Sea. And disruptions at two critical maritime corridors—the Panama Canal and the Suez Canal—are forcing states and companies to reassess their concept of trade maps. This has caused delays in maritime trade and imposed significant imposts on the cost of shipping between major economic centres, such as from Europe to East Asia.

Maritime supply chains are particularly crucial to the prosperity and functioning of societies worldwide, with global maritime operations carrying approximately 70 percent of international trade by value and 80 percent by volume. There are many different types of seaborne cargo vessels that transport goods; from container, reefer and general cargo ships, tankers and dry bulk carriers, and multi-purpose and roll-on/roll-off vessels. Types of supply chains also differ markedly. For example, fishing supply chains include inter-dependent fishers, fishing agents, processors and distributors, through to wholesalers, retailers and eventually consumers. This sits in contrast with data supply chains which rely primarily on undersea cables as critical parts of the supply chain infrastructure. Millions of people are directly and indirectly employed in maritime supply chains across many different countries and industry sectors.

The importance of shipping supply chains to economics and trade remains paramount. This is especially true in maritime Asia, which is geographically defined by the oceans, seas and waterways that connect it. In 2050, the five largest economies on the planet will reside in the littorals of the Indian and Pacific oceans. Linkages across the seas and waterways of maritime Asia are crucial for the security and prosperity of this region. Currently, over 60 percent of global maritime trade is shipped through the Indo-Pacific. The process of production and distribution of

commodities and information are largely through regional supply chains at sea. These trade linkages across the seas are vital for the world's security and prosperity. With a majority of global maritime trade shipped through the Indo-Pacific, the sea lines of communication (SLOC) that connect Europe and the Middle East with East Asia remain an ongoing concern. A large portion of global energy trade is also dependent upon the navigable SLOCs across this region and through its multiple narrow straits and contested spaces.

Increased global tensions and an array of non-traditional threats are threatening supply chain resilience in maritime Asia. There are five major challenges to maritime supply chains.

First, for businesses in the shipping industry, geopolitical risks are among some of the top current concerns. Recent geopolitical tensions around the globe have transformed the issue of supply chains to be increasingly viewed through the lens of national and international security. Supply chains are highly strategic in their makeup and utilisation. The disruption of energy and defence supply chains, and of those in new and emerging industries such as critical minerals, can pose a direct threat on the national security of states. Risks to shipping in crucial trade corridors, or what are geopolitically referred to as 'choke points', could 'potentially force countries and companies to redraw trade maps that have been built over decades'. One example in maritime East Asia is the concern over the People's Republic of China's ambitions in the South China Sea, and whether it aspires to turn the sea into a 'Chinese lake'—which reflect concerns about military freedom of navigation and commerce. The COVID-19 pandemic also highlighted issues of 'sovereign resilience' and the important roles that national governments are still required to play in order to ensure the smooth and orderly trans-shipment of goods and services across the globe (Jasmine Lam).

Second, coercive geo-economic tactics present global supply chains with issues more generally (Hanizah Idris), but also specifically in the maritime realm, as regulations and tariffs can create barriers to shipping. One example, during the height of Australia-China bilateral tensions in 2020, sailors were stuck at sea for months because Chinese authorities refused to let a ship unload its cargo of Australian coal.

Third, there is greater awareness of the need to make supply chains more resilient in the face of emerging cyber threats. The digital economy that relies upon the access and flow of data is only expected to grow across Asia. In the digital age, maritime supply chains are also increasingly at risk of cyber threats, where malicious actors

may exploit vulnerabilities in shipping and/or ports to disrupt activities (Jeslyn Tan). The administration of US president Joe Biden has expressed increasing concern about the extent of Chinese manufacturing presence in US port operations, largely based on potential cyber threats.

Fourth, supply chains interact with other non-traditional security challenges such as environmental concerns. Climate change, for example, is disrupting trade through the Panama Canal as a 'withering drought' has created major traffic jams as lower water levels mean fewer ships can pass through. The United Nations Conference on Trade and Development (UNCTAD) has released its most recent flagship 'Review of Maritime Transport 2022' and called for increased investment in maritime supply chains, which need to be better prepared for coming global crises, climate change and the transition to a low-carbon energy future. Decarbonisation will also mean an enormous shift in the way global trade in goods is shipped around the globe, for both ports (Peggy Chen and Prashant Bhaskar) and ships (Peter Nuttall; and Peter Cook).

Fifth, maritime security challenges presented largely by non-state and criminal organisations such as piracy and terrorism present threats to global maritime supply chains. While these are sometimes described as 'non-traditional', piracy is as old as maritime transport (John Bradford) and is one of many major challenges to human security, rights and safety for maritime workers (Sallie Yea; and Mary Ann Palma-Robles and Lowell Bautista); and fishing supply chains (Andreas Salim).

Maritime supply chains make up a complex, interconnected web of trade tentacles that drive large portions of the global economy. As the articles in this edition demonstrate, these global issues are prevalent in maritime Asia. While the world relies enormously on maritime supply chains for security, development, livelihoods, social connections and prosperity, in the context of geopolitics, supply chain resilience at sea will remain an ongoing area of concern and focus.

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