Resilience in Australia's maritime industry

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Australia's economy and national security are heavily dependent on global maritime trade, but the maritime industry is characterised by globalisation, unfavourable trade practices, and the potential for supply-chain disruption. Australia's heavy dependence on foreign-flagged merchant shipping poses strategic risks for Australia, including risks to items essential to resilience in crises. In contrast, major maritime nations – Norway, Britain, America and China – have well-planned and co-ordinated national shipping industries well-supported by government policy. Australia needs a cohesive government-led maritime strategy with aligned regulation and policy coupled with enduring oversight of the industry.

Key words: Australia; China; Norway; maritime industry; maritime trade; resilience; shipbuilding; strategic risk; United Kingdom; United States.

Resilience in the maritime industry is important. It may affect your health today or the car you drive tomorrow, or indeed whether you will have fuel to be able to drive the car tomorrow. Australians celebrate the fact that we are a maritime nation; even our national anthem displays the virtues of being 'girt by sea'. But few Australians understand that about 90 per cent of our goods by volume and 60 per cent by value come by sea; or that about 98 per cent of our telecommunications pass by undersea cable and not by satellite.

Yet, over a prolonged period, we have gradually reduced the size of our civil maritime fleet from over 85 vessels in the early 1980s to about 13 now, with a prospect that we will have only nine in a few more years. Is that important? What does this really mean to our future prosperity? Some would argue that we have a high standard of living. On reading the recent Productivity Commission report on supply chain vulnerabilities in Australia (Productivity Commission 2021), the conclusion would be that that we are doing okay. But is this just a case of sea blindness? Sea blindness is a term that navies use to show how little a nation understands the purpose of, and need for, maritime trade and a navy.

The 19th-century American naval strategist, Alfred T. Mahan, considered that commercial value cannot be separated from the military in sea strategy. The greatest interest of the sea is commerce. More recently, another American admiral wrote that sea blindness resulted from a public and political lack of understanding of the role the maritime industry plays in the strategic and economic health of the nation (McMahon 2021). So, I take the opportunity today to raise awareness of Australia's maritime industry, to consider whether it is resilient at this stage, and whether we are ready for the next crisis.

Trade Practices and their Impacts on the Maritime Industry

Let us first consider the fundamentals of contemporary trade practices and how the maritime industry is affected by those practices. The term 'globalisation' characterises how the maritime industry works today. It is for the good of the nation – about freer trade practices, about more goods for more people at less cost and in less time to market. It leads to prosperity and higher standards of living. All those are good goals. This current decade is driven by technology – everything from ship design to port infrastructure, freight management systems, tracking systems *etc.* Combine that with improved supply chain management, assurance of reduced inventory, lean management and such, and we achieve a just-in-time capability. In Australia, a lot of our manufacturing has moved offshore to low-cost labour areas, we have seen a dismantling of sovereign capability, and a higher shipping dependency. This introduces more points of supply chain disruption. All of this leads to greater reliance on an efficient maritime industry.

So, what do we mean by an efficient maritime industry, and what might it look like? There are several industry components to consider. The first, obviously, is ships. But, also, it is about: shipbuilding and a national repair capacity; the owners and the agencies that operate the ships; operating the fleet itself and the fleet's domestic or international components; ports, their locations to market, the technology that they employ, and their status – whether they are free or open ports; the associated agencies – the financiers, the brokers, the insurance operators, and those who conduct maritime research and development; and appropriate government regulation and legislation.

There are two important terms to note here. One is the flag register of ships that belong to a certain country or is operated by that country. The other is cabotage, a way in which a nation can control domestic trading

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activity by dictating which ships call at what ports under what flag.

Another important consideration is workforce: mariners, engineers, ship builders *etc*. Importantly, workforce is a demonstration of sustainability. Education systems need to be in place to allow you to continue to run a workforce at the right level to manage your industry. Critically, there should be a balance across all these components, and success requires alignment among them. There is a difference in application across maritime nations which will be covered later in this paper. If, however, you are successful in all of these areas (and you do that by a cohesive plan to integrate all elements effectively), then importantly, you are looking at driving a trading monopoly.

There are some geostrategic effects on maritime trade. Historically, the concept of 'global commons' has been considered as the basis for trade. It is where international law prevails on the high seas. It implies principles like the freedom of navigation and a freedom to use trade routes. There are, however, important choke points that lie within the areas where Australia and its major trading partners operate.

Other considerations are the disruptors to maritime trade. Disruptors can be as simple as an accident. A recent example is the blocking of the Suez Canal for over a week by the Taiwan-owned ship, *Ever Given*. According to data from Lloyd's List, the effect of closing the canal led to a loss of approximately US$9.6 billion in trade per day (Russon 2021). The second disruptor relates to choke points and trade routes – territorial disputes and ownership claims can have a major impact when countries seek to change the freedom of passage through straits. A third issue is piracy, which is still prevalent in certain parts of the world, particularly in Somalia, Southeast Asia and around west Africa.

The consequence of these geostrategic effects is the need to re-route major trading lines causing cost increases, including insurance and fuel costs. While these factors are not new, they challenge the 'lean trading concept'[2] and test resilience; they introduce the notion that disruption is as detrimental as destruction when seeking to influence maritime trade.

Australia's Trading Environment

Let us now consider Australia's trading position to see how our maritime industry has to adapt to national needs. Our top 10 two-way trading partners are China, United States, Japan, South Korea, United Kingdom, Singapore, New Zealand, India, Germany and Malaysia. We export mainly to Asian markets, with China being our largest export market. Australia is the 22nd-ranked export market globally, while China is ranked the first. Our top exports are minerals, fuels, rural and manufactured goods. In the import market, the top five includes China, United States, Japan, Germany and Thailand, with predominance again around the Asia-Pacific area. Australia is rated 23rd as an import market. China again is ahead as the 2nd-ranked import market globally. Of particular note is our dependency on China.

Of all the items traded, there are critical items for our national resilience – goods that affect productivity or our economic survival, *e.g.* fuel. About 98 per cent of our fuel is imported, 90 per cent from Singapore. The International Energy Agency agreement demands that developed nations hold about 90 days' capacity in their fuel stocks (IEA 2018). In 2015, it was alleged in open reporting at the time that Australia only had 12 day's supply of diesel. The government's response, under a fuel security programme, was to consider strategic holdings in the United States and using ships at sea to carry it. Given that most of the oil tankers that service Australia are foreign-flagged, adopting this course would involve strategic risks. Similar issues arise with our strategic holdings of pharmaceuticals and agricultural products.

The Maritime Industry of Major Maritime Nations

Before examining the current state of Australia's maritime industry and its effect on our national resilience, let us consider how four major maritime nations balance their maritime industry components.

Norway

Norway is a long-standing maritime trading nation with a small land area (340,000km^2) and population (5.4 million). The land is inhospitable but resource-rich. It has the world's largest sovereign wealth fund (mainly from offshore oil), a strong fishing industry and a strong domestic coastal trade. Norway is an innovative nation, now pursuing autonomous e-ships to deliver trade on coastal routes between fjords. It has adapted to the changing market, particularly where fuel is concerned. Consequently, within Norway, shipping is considered as an industry in itself. In 2014, shipping accounted for 6.7 per cent of Norway's gross domestic product (GDP) (OECD 2017) – so, shipping is not just an enabler.

All elements of the industry are aligned under a government strategic plan supported by legislation. Called the maritime cluster, it includes shipping agencies, ship owners, the merchant fleet, ports, and related government regulation. The Norwegian fleet at one stage was the third largest globally. It has over 1700 vessels in two flagged arrangements. Norway is the 19th-largest shipbuilding economy globally and has military and commercial joint ventures. Over 110,000 people are employed in the industry. There is significant correlation between the operating fleet and shipbuilding capacity. This results in a successfully integrated maritime industry likely to be resilient in the face of future industry disruption or a crisis.

United Kingdom

Britain has an economy long supported by maritime

[2]The 'lean trading concept' refers to the business practice of minimizing on-shore inventories, maximizing off-shore manufacturing in low-cost countries and just-in-time delivery of completed goods.

trade, and a maritime industry supported in legislation. There is an enduring relationship between the Royal Navy and the Merchant Navy. This was demonstrated during the Falklands War in 1982, during which the harmonisation of the merchant marine and the Royal Navy was evident when the ships taken up from trade (STUFT) comprised over 40 commercial vessels – liners, roll on – roll off ships, container and cargo ships, freighters, tankers, support vessels and tugs – all British-flagged. Britain then had over a 1000 suitable ocean-going ships able to be requisitioned under the relevant international regulation which allows a nation to requisition only its own-flagged vessels.

Britain was the world's biggest shipbuilder until the 1950s, but the tally of British-flagged ships has now declined significantly – to less than 500 ships; and the sector now accounts for only about 0.06 per cent of GDP. Britain, however, intends to retain an integrated maritime industry in a post-Brexit economy. It has not imposed cabotage since the 19th century; and government involvement is still profound. Recent government maritime strategies have been used to free up market mechanisms. To attract industry, tax benefits have been introduced for British-flag registration; a tonnage tax will ease costs and increase training commitments; and there is a government-endorsed maritime shipbuilding strategy for commercial and military vessels.

United States

Over the past 70 years, the United States maritime industry has been predominant in America. While more liberal maritime trade practices were enshrined in other maritime nations like Britain, the United States continues to be characterised by the *Merchant Marine Act of 1920* (known as the 'Jones Act'), which provides for the promotion and maintenance of the American merchant marine and, in effect, balances sovereign resilience and national security with economic security. Specifically, it requires that, for maritime commerce within United States waters and between United States ports, all ships must be built and owned and flagged in the United States and be crewed by United States citizens.

The Jones Act was created to generate a domestic seafaring capability including shipbuilding and repair, both commercial and military; a United States-flagged merchant fleet which would be available to the military; and a competent workforce across the whole enterprise. It was a deliberate and disciplined strategy; it simplified customs and border controls; and commercial security was assured through the dedicated use of a United States-flagged international fleet and prescribed entry points for foreign freight shipping. The United States also has a trade reservation where it requires, say, all liquified natural gas exports to be carried in United States-flagged ships.

The Jones Act has worked up to a point. There remains a thriving domestic maritime trade. Recent views of the Act point towards an emphasis on national security. The Department of Homeland Security says that, without the Jones Act, it would be difficult to oversee foreign ships arriving in the United States. The United States Navy considers that the Jones Act is essential to ensure that a strategic sea-lift capability and navy shipbuilding can survive in America. The United States Department of Defence considers that maintaining a United States-flagged fleet is in the national interest and it supports America maintaining a capability for building commercial vessels.

When considered through a national security lens, the effect is obvious. America's military forward deployment policy is paramount. About 95 per cent of military equipment is moved by sea to support United States' global operations; and some 70 per cent of the domestic maritime industry is available to support the military. United States-flagged ships constitute about 30 per cent of all container vessels globally and 90 per cent of all tankers, most of which are suitable for use by the military.

The Jones Act, however, has detractors who sought to repeal it in 2020 on economic grounds – they saw it as protectionist rather than globalist. Now, further legislation is being pursued, including the tanker security programme under the *Energizing American Shipbuilding Act of 2021*. This requires a certain percentage of natural gas and crude oil exports be transported on United States-built and United States-flagged vessels.

Despite the strong correlation of legislation and significant shipbuilding under these arrangements, shipbuilding in America has actually declined over the last 30 years. At the time of the cold war, there were 20 shipyards for major ship construction; now there are eight – four commercial and four military. In contrast, in 2019 China had 1291 ocean-going ships under construction and America eight.

China

When considering China's maritime industry capability, it is wrong to focus solely on the size of China's commercial or military fleet. After World War II, when China relied heavily on foreign shipping services, China adopted a policy of building up its domestic commercial fleet to meet the continuing demands of international trade – a similar intent to that of the Jones Act in America. But the Chinese economy is not a free-market one; it is a state-managed economy with an industrial policy. When a strategic sector is identified, China uses a whole-of-government approach to build it up. Thus, China has embarked on a global maritime trade path which ties together all elements of the maritime industry in a deliberate and disciplined strategy to achieve its global economic objectives.

In terms of shipbuilding, the number of yards has grown in recent years to over 2000, a mix of civilian and military. There has been consolidation between major companies to improve efficiencies and the arrangements are managed under a single ship management office. In terms of ports, domestic ports and ports

associated with the global belt-and-road initiative have been modernised with state-of-the-art technology and are managed centrally. Three of the global top 10 financial and brokerage institutions for shipping are now Chinese. It is assumed that control through mortgage over new shipping will be another path that the Chinese will seek to take. Legislatively, government strategic plans over the last 50 years have been for China to become the world's biggest ship builder and trader. From a workforce perspective, over 400,000 ship-building staff are now available across 2000 domestic shipyards and there are over 115,000 students in various nautical academies as mariners and engineers, and in research and development.

The results are quite staggering. As a ship building nation, China now accounts for about 40 per cent of newly-built commercial ships globally. In the last decade, China also constructed over 90 warships. China has over 5500 merchant ships engaged in international trade; 20 per cent of all containers carried by the top 10 global carriers are Chinese. Two-thirds of the world's top 50 container ports are managed by Chinese concerns, and they manage about 70 per cent of the world's shipping containers. The People's Liberation Army Navy is now believed to be numerically larger than the United States Navy. China also has a coast guard of 150 modern cutters and a maritime militia estimated at about 2000 vessels. Recalling the two notions that I proposed earlier regarding the industry at large – *i.e.* the creation of a trading monopoly; and the ability to disrupt rather than destroy – both are now within the capability of China.

Australia's Maritime Industry

So, having looked at how others do it, let us see how Australia's industry compares. As a geographically-large nation with a small population, we operate a global shipping network. Locally, the sector includes domestic cargo, offshore oil and gas support, agriculture, tourism and fishing. In 2018, the estimated annual revenue generated by the maritime industry was about AU$6.9 billion dollars which added approximately $2.3 billion to the economy. About 10 per cent of global sea trade passed through Australian ports, the busiest being Port Headland supporting the iron ore trade between Australia and China.

As I noted earlier, however, there has been a persistent decline in Australian-flagged ships over the past 50 years – from 85 in the early 1980s to 13 at present, and possibly nine only by 2024. The pre-dominance of foreign-flagged ships can be attributed to two factors: the high costs of Australian operations; and a decades-long liberal approach to allowing foreign operators to conduct coastal trade, despite efforts to redress the situation via reforms in the *Coastal Trading (Revitalising Australian Shipping) Act 2012*.

In terms of shipbuilding, there has been a persistent decline in commercial shipbuilding yards due mainly to high production costs. Two yards, Austal and Incat, though, are still viable commercial operations. Small yards are now for leisure craft only. It is important to note that the last Australian-flagged coastal trader was built in China. In terms of military shipbuilding, it is a different story. With a continuous naval shipbuilding plan (Defence 2017), the government has invested vast funds to produce ships for the military. There are two major yards, one in Osborne, South Australia, and the other in Henderson, Western Australia.

In terms of ports, there is a disparate management of ports, mainly state-based, with foreign ownership of companies in Darwin and Newcastle.

As to government legislation, there have been no significant reforms to legislation over the last few years, and as a result we have witnessed diminishing Australian ownership and increasing numbers of foreign-flagged vessels. That said, there has been consideration of disparate corporate tax measures and a seafarer's tax.

Of note, unlike in Norway, there is no significant maritime cluster nor a significant cohesive strategy in associated government agencies. There are suitable structures to manage the high level of foreign ownership, but little engagement of ship finding or financing for domestic markets.

In terms of workforce, a recent skill study undertaken by Maritime Industry Australia Limited pointed to diminishing numbers and a lack of recognition of the relationship between the mariner skills and industrial skills needed to manage ports and the industry itself (MIAL 2018).

In summary, the Australian maritime industry is characterised by several factors. The industry is led by market forces and is reactive. It is focused on economic security, which has legislative support. There is, however, little focus on national security implications in terms of fuel security or other key critical trades. This has led to several peak bodies promoting strategic fleet skills management and regulatory changes. The biggest consideration is that there is no cohesive overall plan and consequently the risks to resilience are growing. *(See Bulding Maritime Resilience figure next page.)*

Conclusion

Evidence suggests that China is on the rise to becoming the dominant global maritime trading nation and may well be it already. China's approach encompasses a cohesive, deliberate and disciplined co-ordination of all components of the maritime industry into a single national outcome. The benefits to China could be trade monopoly and the ability to dominate the market forces in today's globalised trading regime. Other trading nations will feel the pressure.

Nations mentioned earlier which have retained some elements of a sovereign maritime industry will be able to manage resilience better than most. Australia's maritime industry position on resilience, however, is mixed. The naval shipbuilding plan (Defence 2017) will generate a modest sovereign capability. Exports and

imports will necessitate ongoing industry performance and ports will continue to operate, but increasing foreign ownership of the international fleet, combined with a loss of sovereign manufacturing capability, raises a risk to our resilience in a crisis.

Be it a global pandemic, trade monopoly, or conflict, experience has shown that a cohesive government-led maritime strategy, with aligned regulation and policy coupled with enduring oversight of the industry, is required. This can mitigate the extent of the risks in the future. But, sadly for Australia, sea blindness remains a national characteristic.

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