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Maritime Merchandise Trade in Southeast Asia: Opportunities and Challenges

YingHui Lee

ABSTRACT
While maritime merchandise trade brings about significant opportunities for growth in Southeast Asia, the dependency on maritime merchandise trade also brings about risks and challenges. This paper begins with a brief examination of the maritime merchandise trade situation globally and in Southeast Asia, followed by a discussion of initiatives undertaken to promote maritime merchandise trade in the region. In doing so, the paper makes three key propositions. First, concentration of trade among a few trading partners and the large maritime infrastructure and logistics gap among the Association of Southeast Asian Nations (ASEAN) member states are the two main challenges facing Southeast Asia. Second, case studies of Indonesia and Singapore show that diverse interests and capabilities among ASEAN member states underscores the need for different national strategies for promoting maritime merchandise trade. Third, both traditional and non-traditional maritime security threats constitute significant risk to maritime merchandise trade in Southeast Asia.

Introduction

Despite the rapid development and advancement of global air transport over the last few decades, maritime trade remains the backbone of international trade. According to the United Nations Conference on Trade and Development (UNCTAD) *Review of Maritime Transport 2017*, over 80% of international merchandise trade by volume and more than 70% by value are conducted via the seas.[1] Notwithstanding the global economic slowdown following the 2008 financial crisis, global seaborne trade has increased steadily over the last seven years, in line with the trend in overall merchandise trade growth, reaching 10.3 billion metric tons in 2016.[2] The medium-term outlook appears optimistic, with trade volume expected to expand at a compound annual growth rate (CAGR) of 3.2% over the next five years.[3]

Seaborne merchandise trade based on international ocean shipping is likely to remain the mainstay of the global trading system for the foreseeable future. International Maritime Organization (IMO) Secretary-General Kitack Lim, in his speech at the 2017 International Maritime Forum, highlighted that shipping is expected to remain "the most cost-effective way to transport the vast majority of international trade, [and] will be central to sustainable global development and growth in the future".[4] In discussing the future of global maritime merchandise trade, two emerging trends must be considered.

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First, the growing aversion towards trade liberalisation and the accelerating move towards greater trade protectionism, especially among the advanced economies, is a cause for grave concern. As the world's largest economy and guardian of the Bretton Woods economic system since the end of World War II, the United States is now, ironically, at the forefront of a global roll-back on its commitment towards free trade, especially since the election of Donald Trump as the 45th President of the USA. The Trump administration's "America-first" economic policy has brought about not only serious damage (if not a premature end) to the Trans-Pacific Partnership (TPP), but also a looming trade war with China. Acting against alleged unfair trading practices and the theft of intellectual property by Beijing, Washington, on March 22, 2018, announced plans to impose tariffs on up to USD 60 billion worth of Chinese imports, in addition to the earlier presidential order regarding tariffs on steel and aluminium imports. Beijing's first round of retaliatory measures, involving tariffs on 128 US products such as pork and wine, worth USD 3 billion, kicked in on April 2, 2018.[5] The current roll-back on globalisation has also been observed in Europe with Brexit and a surge in far-right political movements in several Continental European countries, such as France and Italy.

In June 2016, the World Trade Organization (WTO) reported that between mid-October 2015 and mid-May 2016, G20 countries had applied an additional 145 new trade-restrictive measures. This average of 21 new protectionist measures per month was the highest since monitoring began in 2009.[6] Although the rate of increase in the number of new protectionist measures introduced has since decreased in subsequent reporting periods, new trade-restrictive measures continue to be added each month. The report for mid-May to mid-October 2017 saw 16 new protectionist measures being applied by the G20 economies.[7] A recent report by Gowling WLG (UK), the UK branch of an international law firm, echoes this trend towards rising global protectionism.[8] According to the report, the number of new protectionist measures applied each year exceeded the number of new liberalist measures applied every year since the 2008 financial crisis. While more than 6000 new protectionist measures were applied globally from 2009 to 2015, only 2500 liberalist measures were introduced over the same period, signifying an overall net increase in protectionism since 2009.[9] Growing uncertainty in the trade policies of major economies, in line with the continual surge in anti-trade rhetoric around the world, will have adverse impacts on world merchandise trade, including maritime trade. Peter Sands, Chief Shipping Analyst at Baltic and International Maritime Council (BIMCO), the world's largest shipping association, cautioned against the potential devastating effects of "short-sighted political positions" on shipping and related industries.[10] The importance of maritime merchandise trade as a significant enabler for many associated industries, such as port logistics and shipbuilding, and maritime services such as protection and indemnity (P&I) insurance, means that any reduction in maritime merchandise trade will have significant negative consequences for the overall maritime sector.

The second trend is that of innovation and advancements in marine technology, which are crucial for improving the efficiency, productivity and competitiveness of the commercial maritime industry. For example, digitisation in areas such as the introduction of Electronic Certificates (E-Certs) and electronic bills of lading (e-BL) simplify administrative processes and reduce costs associated with traditional paperwork. On the other hand, advancements in automation and robotics bring about improvements in safety of the

marine industry by removing the need for physical human presence in dangerous work environments, as well as improving risk management through reducing the possibility of human error.[11] In addition, automation also helps address the issue of inadequacies in training and the consequent insufficient supply of qualified seafarers, worldwide.[12] Developments in "big-data analytics" allow for better data analysis and understanding of patterns and trends related to shipping traffic, which can help port authorities improve intelligent traffic management. Big data also opens up the possibility for real-time monitoring of ship performance, and helps ship operators optimise and prioritise resource allocation through predictive maintenance.[13] This, in turn, will allow stakeholders in the shipping industry to take proactive actions so as to improve the competitiveness of their business.[14] Similarly, improvements in sensor networks and remote-sensing capabilities will optimise operation and maintenance practices on board ships, through real-time performance tracking and early warning systems.[15] Sensors are also crucial for the tracking and surveillance of maritime security threats, such as piracy. Adoption of these technologies will result in a "smart ship" platform. This will improve maritime safety and security, and act as a positive enabler for the shipping industry and global maritime mechanise trade.[16]

Maritime Merchandise Trade in Southeast Asia

Southeast Asia is, by nature, a maritime region. The 10 countries of the Association of Southeast Asian Nations (ASEAN) have a combined total coastline length of 105,070 km.[17] With the exception of Laos which is a landlocked country, all the other ASEAN states have access to the sea and ocean. The region is home to the world's largest archipelago, the Malay Archipelago, and also two of the world's largest archipelagic countries, Indonesia and the Philippines. Situated between the Indian and Pacific Oceans, Southeast Asia is strategically located at the crossroads of historical and contemporary international maritime trade between the West (Europe) and the East (China). Many historians argue that the significance of the region as a maritime trading centre was a major reason driving the colonialisation of Southeast Asia by Western powers in the 1800s.[18]

Today, the Straits of Malacca and Singapore (SOMS) are one of the most crucial and busiest waterways in the world – approximately 25% of the world's traded goods carried by sea transits these straits annually.[19] In 2016, a total of 83,470 passages were recorded through the SOMS by the Malacca Straits Ship Reporting System (STRAITREP) – accounting for traffic of 25,786 container ships and 25,439 tankers including very large crude carriers (VLCCs).[20] In terms of cargo capacity, the demand for container shipping in Southeast Asia alone is expected to reach 350 million twenty-foot equivalent units (TEU) by 2040.[21] The SOMS is also a major chokepoint for global oil transit by sea and is especially crucial for the energy security of Asian economies dependent on oil imports from West Asia. The US Energy Information Administration (EIA) estimated that of the 61% of global petroleum carried by sea in 2015, almost a third transited the SOMS – 16 million barrels transit through the straits every day.[22] This number is expected to grow with the rising demand for energy by major Asian economies, especially China. On a wider level, Asia is the largest trading region for maritime merchandise trade, with Asian seaports accounting for 61% of all unloaded and 40% of all loaded goods by ships in 2016.[23]

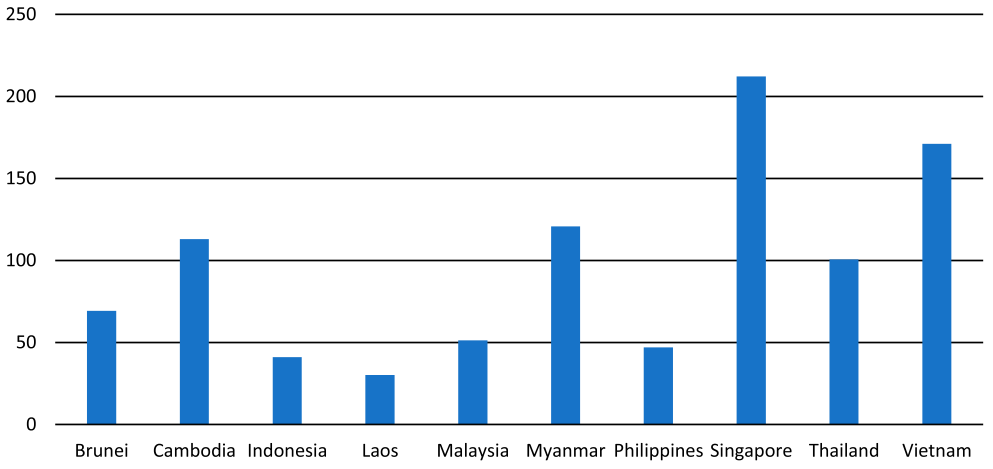

Fig. 1. Total Merchandise Trade of ASEAN States as Percentage of Gross Domestic Product (GDP), 2016.[24]

For several states in Southeast Asia, the trade-to-GDP ratio (total merchandise trade [exports plus imports] as a percentage of national gross domestic product) is significant – approximately 212% for Singapore and 171% for Vietnam. The figures for all ASEAN states for the year 2016 are shown in Figure 1. Six of the world's top 30 busiest ports are found in Southeast Asia.[25] In addition, the Philippines and Vietnam rank among the top 10 shipbuilding nations in the world, while Singapore is among the top 10 global shipping countries.[26] For a region so highly dependent on maritime merchandise trade and related industries for economic prosperity, this paper identifies two key challenges to ASEAN's maritime trade, as discussed below.

High Trade Concentration and Lack of Diversification in Trading Partners

In the case of all ASEAN economies, trade is concentrated in the hands of a few trading partners. The top five trading partners contributed close to or more than 50% of the exports of all 10 ASEAN economies in 2016.[27] For the three facilitating maritime powers in the region, namely Indonesia, Vietnam and Singapore, the percentages stand at 49.01, 49.39 and 50.97%, respectively.[28] Although there has been a slight decrease in trade dependency with the top five trading partners across most ASEAN countries compared to a decade ago, the number remains significantly high.[29] Consequently, ASEAN economies are particularly sensitive to economic fluctuations and policy adjustments of major trading partners. For example, the *Vietnam Freight Transport and Shipping Report Q1 2018*, produced by BMI Research, reported the major risk to the Vietnamese shipping industry as follows: "if the Trump administration were to introduce additional tariffs on Vietnamese imports in the US, this would pose a salient risk to Vietnam's export sector, given the sector's strong orientation to the US economy".[30] Likewise, as per the *Indonesia Freight Transport and Shipping Report Q1 2018*, the "ongoing slowdown in China is a concern as the Asian giant is Indonesia's number one import partner and number two export partner", and is a major downside risk for the Indonesian maritime merchandise trade.[31]

In particular, an overall increase in trade dependency on China, compared to a decade ago, is also observed. For instance, China rose from being Singapore's fourth export destination in 2006 to Singapore's top export partner in 2015, accounting for 13.76% of the total exports of this island state. If the Chinese territory of Hong Kong, Singapore's second largest export partner, is included, the figure becomes even more significant at 25.2%.[32] Similarly, China rose from the fourth to the third spot amongst Indonesia's trading partners over a 10-year period, to reach 10.01% in 2015; and moved up two spots to become Vietnam's second largest export partner from 2006 to 2015.[33] China is now amongst the top five trading partners for eight out of the 10 ASEAN member states.[34] This presents unique challenges for ASEAN economies in light of the ongoing disputes in the South China Sea. The growing asymmetry in trade relations has prompted concerns over China's ability to apply economic sanctions or economic coercion to achieve its political objectives in the South China Sea. Beijing's willingness, if not ability, to put political pressure on its smaller ASEAN neighbours through the use of economic coercion was (for some observers) confirmed during the standoff with the Philippines over the Scarborough Shoal in April 2012. China's decision to quarantine banana imports from the Philippines a month after the standoff was perceived in the Philippines as a direct response to the standoff, despite the Chinese government denying any connection between them.[35] With exports to China accounting for 16% of the total banana exports of the Philippines, it was estimated that the 2012 quarantine restrictions resulted in an economic loss of one billion PHP for the Philippines economy.[36]

The establishment of the ASEAN Economic Community (AEC) in 2015 was crucial for strengthening the resilience of individual ASEAN member states in dealing with the economic uncertainties of major trading partners like China and the USA. As of October 31, 2015, 469 out of the 506 measures targeted for implementation over 2008–2015 have been completed, at an implementation rate of 92.7%.[37] ASEAN has, therefore, made remarkable progress towards an integrated economy. Within the 10-year period from 2005 to 2015, the value and proportion of intra-ASEAN exports and imports in total trade has increased across most ASEAN member states. In 2017, the ASEAN Community Progress Monitoring System reported an 87% increase in intra-ASEAN exports and 69% increase in intra-ASEAN imports between 2005 and 2015.[38] While the intra-ASEAN export/ import share to total ASEAN trade varied across various ASEAN member states from 2005 to 2015, the increase in economic integration has helped ASEAN mitigate global economic uncertainties, especially in terms of providing a safety net against major shocks that reduce demand from major economies.[39]

Moving beyond 2015, the "AEC Blueprint 2025" was adopted as part of the Kuala Lumpur Declaration, "ASEAN 2025: Forging Ahead Together". The partial implementation of the "ASEAN Single Window" in January 2018 will help to further facilitate trade within an integrated ASEAN. The "AEC 2025 Consolidated Strategic Action Plan" lays down concrete lines of action to further promote regional economic integration and ease trade among ASEAN member states, and also with external partners. Further, the "AEC 2025 Plan" also calls for the formulation of appropriate strategies to deal with emerging trade-related megatrends, so as to help trade industries, including maritime merchandise trade, to anticipate and deal with global economic changes.[40] Besides regional integration, ASEAN has also actively promoted trade through the negotiation of free trade agreements with external partners. For example, the formalisation of the ASEAN–

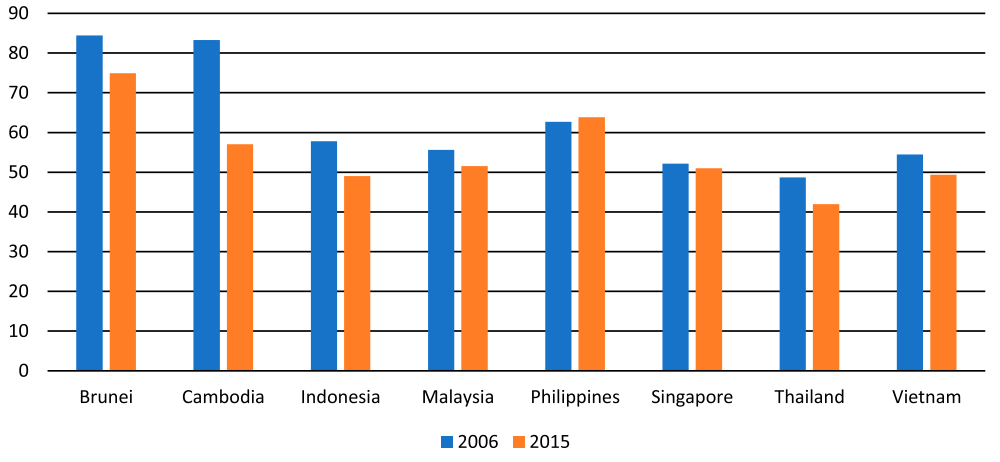

Fig. 2. Contribution of Top Five Trading Partners as a Percentage of Total Exports of Selected Association of Southeast Asian Nations (ASEAN) states, 2006 and 2015.[48]

Note: Laos PDR and Myanmar are excluded due to missing data for 2006.

China Free Trade Area, on January 1, 2010, was crucial to increasing trade among ASEAN countries and China. In terms of achieving greater trade diversification and strengthening trade relations with multiple external partners, finalising the ongoing negotiations for the Regional Comprehensive Economic Partnership (RCEP) is crucial for ASEAN. This 16-country free trade agreement will help boost international commitment to free trade and improve ASEAN's resilience to the anti-trade sentiments prevalent in some advanced

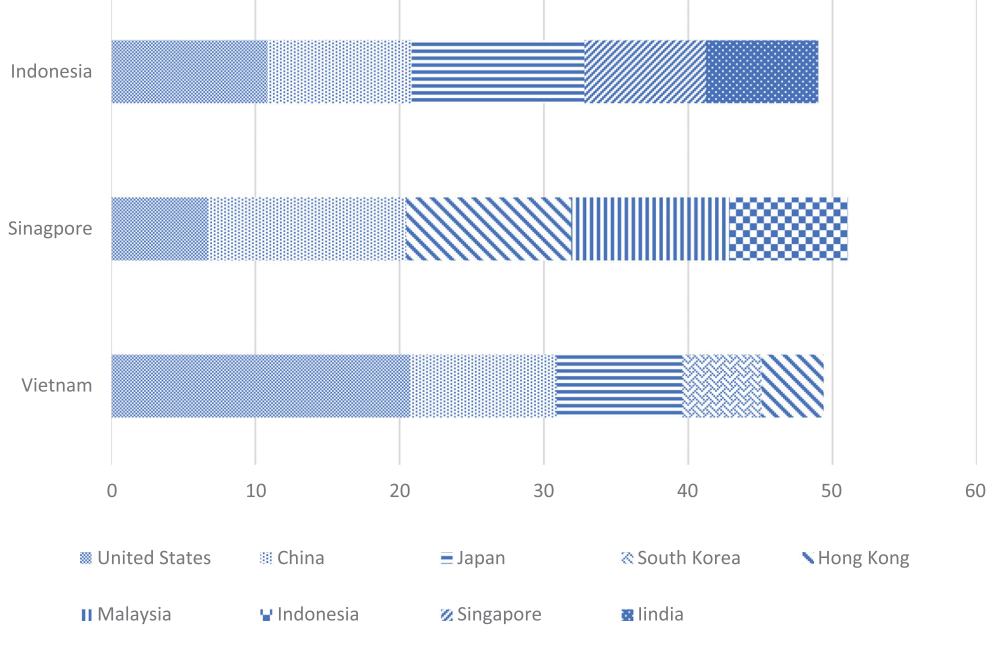

Fig. 3. Top Five Export Partners of Selected ASEAN Countries (%), 2015.[49]

economies. The increased interdependence brought about by RCEP will also provide incentives for the peaceful resolution of conflicts.

Inadequate and Uneven Infrastructure and Logistics Capabilities

The lack of adequate port facilitates is a major limiting factor affecting maritime merchandise trade among many ASEAN countries. Poor-quality infrastructure increases both transport costs and time, hence restricting the ability of ASEAN economies to fully realise the benefits of the maritime trade passing through the region. The World Economic Forum (WEF) "Port Quality Index" shows that port infrastructure in ASEAN has not improved.[41] More significantly, the quality of port infrastructure varies significantly across ASEAN member states. As shown in Figure 4, only Singapore and Malaysia have adequate port facilities, scoring 6.7 and 5.4 in the WEF's Port Quality Index in 2017, well above the world average of 4.063. The only other ASEAN country to be marked above the world's average was Thailand, which reported a score of 4.3 in 2017. All other ASEAN states scored below the world average. Further, capacity-bottleneck is also a major problem for many ASEAN ports. In 2015, there were 47 ports in ASEAN in total; however, most of these ports are operating near (or even beyond) full capacity and hence face issues of congestion.[42] Further, inland infrastructure, such as roads and railways, to facilitate the inward transportation of goods from the ports, is also inadequate in many ASEAN countries, further diminishing the region's potential for maritime trade.[43]

The World Bank's "Logistics Performance Index" also highlights the uneven infrastructure and logistics performance among the ASEAN states. As shown in Figure 5, Singapore stood out as the best performer, with a score of 4.14, and ranked 5th in the world.[44] Malaysia also did relatively well, with a score of 3.43 and a global rank of 32.[45] Only one other country in the region, Thailand, made it into the top 50. The remaining ASEAN countries achieved ranks ranging from 63 (Indonesia) to 153 (Lao PDR).[46] This shows that lack of quality infrastructure and logistics services remains a major impediment to maritime

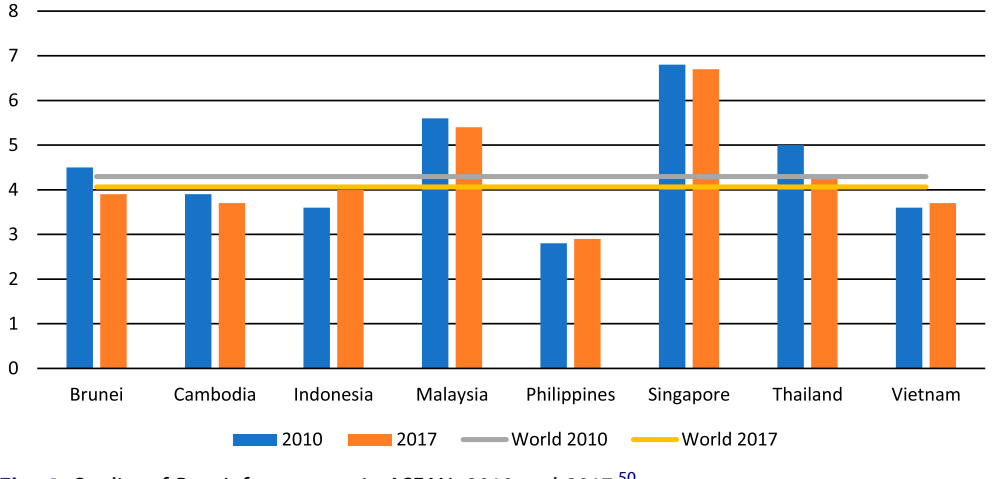

Fig. 4. Quality of Port Infrastructure in ASEAN, 2010 and 2017.[50]

Note: 1 = extremely underdeveloped; 7 = well developed and efficient by international standards. Lao PDR is excluded as data is unavailable for 2010 and Myanmar is excluded as data is unavailable for both 2010 and 2017.

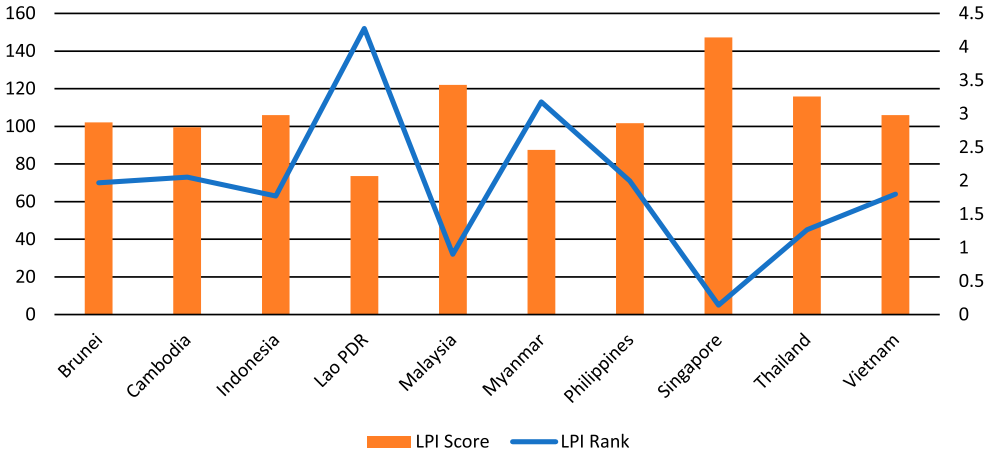

Fig. 5. ASEAN Logistics Performance Index (LPI) 2016.[51]

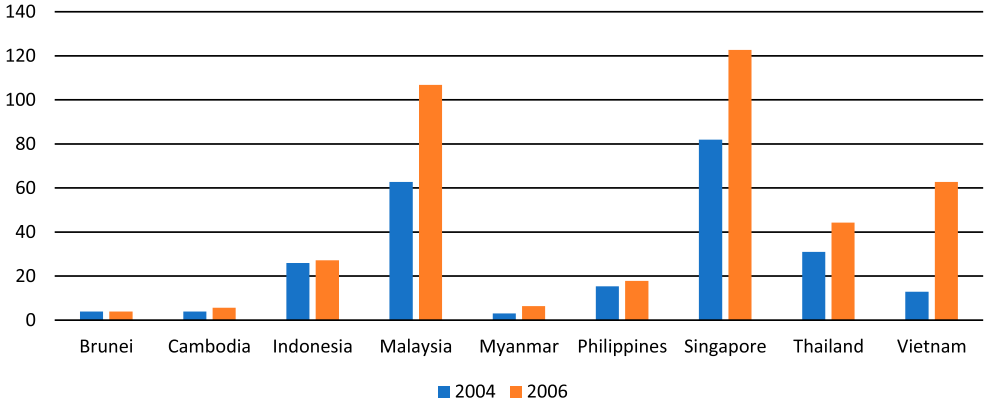

Fig. 6. ASEAN Linear Shipping Connectivity Index, 2004 and 2016.[52]
Note: Lao PDR is excluded due to unavailable data. China's 2004 value equals 100.

merchandise trade in most Southeast Asian countries. In addition, significant variation is also recorded across ASEAN states for the UNCTAD "Liner Shipping Connectivity Index", which specifically measures the connectivity of countries to global shipping networks. While connectivity improved across all ASEAN member states from 2004 to 2016, Singapore and Malaysia significantly outperformed their Southeast Asian counterparts (Figure 6).[47]

Efforts to improve intra-ASEAN connectivity are laid out in the Master Plan on ASEAN Connectivity (MPAC) 2025, which builds on the incomplete initiatives in MPAC 2010 and also incorporates newly proposed initiatives. As of May 2016, 39 initiatives under the original MPAC 2010 have been completed while 52 remain incomplete.[53] Specifically, with regards to the aim of accomplishing an integrated, efficient and competitive maritime transport system, as of end-May 2016, only one out of the four initiatives under MPAC 2010 has been completed.[54] While continued efforts are being made to

operationalise the roll-on/ roll-off (ro-ro) routes,[55] ASEAN continues to work towards enhancing the capacity of 47 designated ports.[56] MPAC 2025 focuses on five strategic areas to improve seamless connectivity within ASEAN to improve the region's competitiveness. These are sustainable infrastructure, digital innovation, seamless logistics, regulatory excellence and people mobility.[57] Examples of initiatives related to improving connectivity and trade, specifically maritime connectivity and trade, include the following:[58]

- Initiative 1 – Establish a rolling priority pipeline list of potential ASEAN infrastructure projects and sources of funds.
- Initiative 2 – Establish an ASEAN platform to measure and improve infrastructure productivity.
- Initiative 8 – Strengthen ASEAN competitiveness through enhanced trade routes and logistics.
- Initiative 9 – Enhance supply chain efficiency through addressing key chokepoints.

However, while discussing the implications of maritime trade dependence and the strategies in place to improve competitiveness of the shipping industry at a regional level, it is also important to acknowledge the diverse interests and challenges that exist within ASEAN. While we often refer to Southeast Asia as a maritime region, in fact only half of the ASEAN member states are conventionally referred to as "maritime Southeast Asia" – namely, Brunei, Indonesia, Malaysia, Philippines and Singapore. The other five are often referred to as being part of "mainland Southeast Asia". Further discussions on the different priorities and development plans of ASEAN countries are highlighted in the next two case studies, which concern Indonesia and Singapore.

Indonesia: Focus on Maritime Infrastructure Development

As the world's largest archipelagic country, comprising 13,466 islands with a combined coastline of 54,716 km, Indonesia is, undoubtedly, a maritime nation.[59] Since it is the largest ASEAN economy straddling strategic major sea lanes between the Indian and the Pacific oceans, maritime trade presents Indonesia with a huge potential for economic growth.

Despite the development of a maritime identity, and, more specifically, an archipelagic outlook, as an essential part of Indonesia's strategic culture, as early as the 1950s with the 1957 Djuanda Doctrine, the country remained largely focused on land-based priorities throughout most of its post-Independence years.[60] The army-dominated rule under the presidency of Suharto not only resulted in severe neglect of the Indonesian Navy but also affected commercial maritime infrastructure such as port facilities. Although successive presidents after Suharto have paid more attention to the maritime domain, Indonesian ports continue to suffer from severe underinvestment and inefficiencies. As such, the main limiting factor for Indonesia in realising the full economic potential of maritime merchandise trade is the lack of quality infrastructure and maritime logistics capabilities. This results in poor connectivity and high shipping costs within the archipelago, especially in respect of the outer islands of Eastern Indonesia. As a result, many of these islands remain unconnected or loosely connected to each other and, therefore, remain isolated

from the national economy. According to a World Bank report, the cost of shipping a 40-foot container from Jakarta to Singapore is USD 185, almost three times cheaper than the USD 600 cost of shipping from Jakarta to Padang.[61] In addition, infrastructure at many existing ports has suffered from neglect and poor maintenance over the years. Inefficiency of the existing ports severely affects Indonesia's international connectivity as well as its internal and external maritime trade. For example, the main international sea port, Tanjung Priok, is operating close to full capacity and has a longer average dwell time (of 5 days compared to 3 days) than other major regional ports.[62] In this respect, Indonesia lags behind its immediate competitors in the region – Singapore and Malaysia – as shown in Figures 4, 5 and 6. This is undermining the country's maritime merchandise trade. As per an estimate by The World Bank, logistics costs in Indonesia are amongst the highest in the world, amounting to 24% of GDP.[63] It was also estimated that the Indonesian government and business would benefit from a savings of USD 70 billion to 80 billion per year if logistics costs were brought down to 16% of GDP.[64] Congestion of roads leading to the major ports further adds to the inefficiencies.[65] As a consequence, Indonesia's maritime trade and commerce has failed to realise its full potential.

As such, President Joko (Jokowi) Widodo's vision of a global maritime fulcrum (GMF) presents huge opportunities for Indonesia's maritime merchandise trade. During his presidential campaign, Jokowi pledged to revive the country's maritime history and culture and transform Indonesia into a "global maritime axis".[66] The call to rejuvenate Indonesia's maritime culture and identity was reiterated by Jokowi during his inaugural speech on October 20, 2014, after being elected President.[67] During the 2014 East Asia Summit in Nay Pyi Taw, he presented his vison on the GMF, which consists of five main pillars. These are: rebuild Indonesia's maritime culture, maintain and manage marine resources, develop maritime infrastructure and inter-island connectivity, advance maritime diplomacy, and strengthen the navy and maritime defence forces.[68] Of direct relevance to improving connectivity and maritime trade is the plan for the improvement of 24 seaports, including five hub ports and 19 feeder ports, known as the "Sea Toll Road" project. Domestically, this project will boost maritime commerce within the country, especially between Java and other islands. Internationally it aims to develop Indonesia into a hub for international trade in the broader ASEAN and Indo-Pacific regions.[69]

On March 1, 2017, the Presidential Decree on Indonesian Ocean Policy, which includes the National Document on Indonesian Ocean Policy, and the Plan of Action for implementing the various programmes, was introduced to further coordinate maritime development in the country.[70] The Indonesian Ocean Policy consists of seven policy pillars, an expansion from the five pillars that had been spelt out in the GMF. These are: (1) marine and human resources development; (2) maritime security, law enforcement and safety at sea; (3) ocean governance and institutions; (4) development of maritime economy; (5) ocean space management and marine protection; (6) maritime culture; and (7) maritime diplomacy.[71] The fourth pillar (the development of the maritime economy) is directly related to promoting Indonesia's maritime trade. Under this pillar, there are eight specific policy programmes aimed at enhancing maritime economic development and seven programmes to improve maritime infrastructure.[72]

Indonesia's ambitious infrastructure projects require huge investments. According to an estimate by Indonesia's Ministry of Planning, a total of USD 53 billion would be required for the Sea Toll Road project alone.[73] Indonesia will need an investment of

USD 500 billion over the next five years to finance its ambitious pipeline of 245 infrastructure projects, which includes building roads, ports and bridges.[74] Budgetary constraints, due in part to the legal cap on the fiscal deficit of 3% of GDP, means that private investment, including international investment, will be crucial for financing the various infrastructure projects.[75] In May 2016, Jokowi signed a presidential decree easing foreign investment in Indonesia, including raising the foreign ownership cap for maritime cargo handling at ports from the previous limit of 49% to 67%.[76] In November 2016, Indonesia also secured a USD 400 million Logistics Reform Development Policy Loan from the World Bank.[77] Indonesia is also set to benefit from regional efforts such as the MPAC. For example, 14 of the 47 ports designated for upgrade under the MPAC are located in Indonesia.[78]

Besides traditional funding sources for infrastructure development such as the World Bank and the Asian Development Bank (ADB), Indonesia can also benefit from China's Belt and Road Initiative (BRI) and related funding mechanisms such as the Asian Infrastructure Development Bank (AIIB) and the Silk Road Fund. However, delays to the flagship Jakarta-Bandung High Speed Rail project reflect problems with land acquisition, which continue to be Indonesia's main obstacle in infrastructure-development projects. This is despite the passing of the Land Acquisition Bill, otherwise known as "Law No. 2/2012: Acquisition of Land for Development in the Public Interest", in December 2011.[79] Specifically with regard to cooperation and funding from China under the BRI, there continues to be domestic scepticism towards receiving funding from China, as a result of both strained historical relations and a widespread fear of overdependence and the loss of sovereignty to the Chinese. For example, Jokowi's proposal for potentially increasing China's shareholding composition in the Jakarta-Bandung High Speed Rail project from 40% to 90% has led to accusations of him "selling" Indonesia off to China.[80] Recent controversies over Chinese funding and the consequent acquisition of the Hambantota Port in Sri Lanka are likely to increase suspicion of Chinese investment in Indonesian infrastructure projects.

Singapore: Focus on Maritime Innovation

As a relatively highly developed economy with one of the largest and most modern ports – not only within the region but globally as well – the challenges Singapore faces differ significantly from those of Indonesia. The main challenge for Singapore is the competitiveness of its port in the face of rising competition in the region, especially from ports in China such as Shanghai and Ningbo-Zhoushan.[81] Therefore, in order to stay ahead in the face of rising regional competition, the Maritime and Port Authority of Singapore (MPA)'s long-term strategy is to transform Singapore into a vibrant international maritime centre (IMC). Besides focusing on upgrades to physical port infrastructure, through initiatives such as the "Next Generation Tuas Port",[82] Singapore has also focused on building a comprehensive ecosystem of technical and commercial maritime services in order to promote Singapore as a strategic location of choice for global maritime business in Asia. To differentiate itself from other maritime hubs and centres in the region, Singapore adopted the "London-Plus" development strategy in 2003, focused on leveraging the city-state's strengths as a hub port while also developing other maritime service clusters. This strategy proved successful in enriching Singapore's overall maritime

commerce ecosystem. Today, Singapore has one of the highest concentrations of international shipping groups and maritime service providers. For example, the number of international shipping groups based in Singapore has increased from around 20 in the year 2000 to over 140 today.[83] Similarly, the number of International Groups of Protection and Indemnity (IG P&I) has increased four-fold, from two to eight, over the same period.[84]

In a 2017 study by the Norwegian consultancy firm Menon Economics, Singapore was named the world's top maritime capital.[85] Singapore clinched the top spot across three of the five categories – shipping; ports and logistics; and attractiveness and competitiveness – while placing second for maritime technology and fourth for finance and law.[86] Singapore made significant improvements in the area of maritime technology, jumping to the second spot from fifth place in 2015, underscoring the emphasis on technology and innovation as the main future engine of growth for Singapore's maritime sector. Singapore's *International Maritime Centre 2030 Strategic Review* identified the vision for Singapore to become the "Global Maritime Hub for Connectivity, Innovation, and Talent".[87] The document outlines five broad strategies for Singapore to improve competitiveness as a hub for maritime trade and commerce, as follows:[88]

- Expand and deepen the maritime cluster.
- Strengthen linkages and network effects.
- Develop a vibrant maritime innovation ecosystem and promote digitisation.
- Develop a multi-skilled maritime workforce with a global mindset.
- Establish Singapore as a global maritime standard-bearer.

The vision for Singapore to be a Global Maritime Hub for Connectivity, Innovation and Talent was reiterated in the Sea Transport Industry Transformation Map, launched by the MPA on January 12, 2018.[89] One theme that stood out in Singapore's plan for enhancing the maritime trade and commerce was the focus on innovation. Innovation is a key driving theme across all five strategies highlighted in the *International Maritime Centre 2030 Strategic Review*, and it is not restricted to the third pillar on "innovation". For example, Recommendation 1.1 ("Continue to grow the number of shipping players"), as part of Strategy 1 to "Expand and deepen the maritime cluster", calls for the development of "commercial and technical capabilities including areas such as Big Data, research and development … [and] greater support for Singapore-based entrepreneurial ventures".[90] Various initiatives have been implemented by the government to drive innovation in the maritime sector. For example, in 2013, the "Maritime Cluster Fund – Productivity" (MCF PD) was set up to provide funding for maritime companies to improve their productivity via the adoption of innovative technologies.[91] Similarly, in March 2017, the "MPA Living Lab" was launched to encourage industry cooperation in the deployment of technological capabilities and innovative solutions in four key areas. These are: (1) data analytics and intelligent systems; (2) autonomous systems and robotics; (3) smart innovation and infrastructure; and (4) safety, security and environment.[92]

The focus on innovation is in line with Singapore's recognition of the ongoing digital revolution and the need for creativity and innovation in order to fully harness the opportunities and stay competitive in the digital era. As the 2018 ASEAN Chair, Singapore has made "innovation" one of the major themes of its chairmanship. The drive for innovation

in the commercial maritime sector is part of a larger national initiative to strengthen Singapore's ability to meet future economy challenges, as spelt out in the *Report of the Committee on the Future Economy*.[93]

Threats to Maritime Merchandise Trade in Southeast Asia

Unresolved maritime territorial and boundary disputes among some Southeast Asian countries, and between Southeast Asia and extraregional powers, presents the foremost risk to maritime merchandise trade in the region. The conflict that has attracted the most regional and international attention is undoubtedly the competing claims over islands and bodies of water in the South China Sea between Brunei, Indonesia, Malaysia, Philippines, Vietnam and China.[94] In 2012, tensions escalated when two Chinese surveillance vessels and a Philippine warship were involved in a standoff in the Scarborough Shoal area over the attempted arrest of Chinese fishermen by the Philippine Navy. In 2014, bilateral relations between China and Vietnam also deteriorated, with the deployment of the Hai Yang Shi You 981 Oil Platform by the Chinese state-owned company China National Offshore Oil Corporation, in disputed waters off the Paracel Islands. The ruling by the Arbitral Tribunal in July 2016 in the Philippines versus China case, which China has rejected, further soured relations between China and some ASEAN neighbours.

Heightened tensions in the South China Sea do not augur well for regional peace and stability, which are crucial for maritime merchandise trade to thrive in the region. More importantly, China's island-building and its militarisation of islets in the South China Sea has increased its "Anti-Access and Area Denial" (A2/AD) capabilities in the South China Sea. Sea access and unimpeded freedom of navigation (FoN) through sea lines of communication (SLOCs) are crucial for maritime commerce.[95] While China has provided reassurances regarding FoN on numerous occasions to its ASEAN neighbours, at least for the passage of commercial vessels through the South China Sea, maritime trade warfare remains a strategy available to China.[96] According to Christopher McMahan,

> *the idea of maritime trade warfare is to attack or neutralize the commercial shipping of one's enemy, make it more difficult for the enemy to continue waging war by disrupting the enemy's military supply chain that uses the sea, or both.*[97]

While many scholars have argued that the present interdependent nature of the global economy, together with the complexity of global maritime commerce, means that countries including China are unlikely to engage in maritime trade warfare, the mere prospect of access to a major commercial shipping route being restricted is a risk for global maritime trade.[98]

Southeast Asia also faces myriad nontraditional maritime-security threats. For the year 2017, 101 incidents of piracy and armed robbery against ships were reported by the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia Information Sharing Centre (ReCAAP ISC).[99] Several areas in Southeast Asia were highlighted as areas of concern, including the Straits of Malacca and Singapore, the South China Sea and the Sulu-Celebes Seas.[100] Incidents of the abduction of ship crews in the Sulu-Celebes Seas are also associated with the threats of maritime terrorism posed by the Abu Sayyaf Group operating in southwestern Philippines.[101] These nontraditional

security challenges increase the risk to commercial shipping within and through the region, which results in an increase in cost to companies, in terms of increased insurance premiums etc.

Both traditional and nontraditional threats are transnational in nature, underscoring the importance of regional cooperation both within ASEAN and with external partners and stakeholders. On the South China Sea issue, during the 31st ASEAN Summit meetings in Manila in November 2017, ASEAN and China agreed to start negotiations for a code of conduct (COC) in the South China Sea. To tackle the rampant issue of piracy in the Strait of Malacca in the late 1990s and early 2000s, Indonesia, Malaysia and Singapore established the Malacca Strait Patrol in 2004. This initiative has been successful in reducing incidents of piracy, based upon which the Lloyd's Joint War Risk Committee dropped the classification of the Malacca Strait as a war-risk area, in August 2006.[102] Similarly, the Framework Trilateral Cooperative Agreement between Malaysia, Indonesia and the Philippines on the Sulu Sea Patrol Initiative (SSPI) was agreed upon in July 2014 to address increased maritime security threats in that region.[103]

Conclusion

This paper has made a number of key propositions with regards to the implications of maritime merchandise trade dependency in Southeast Asia.

First, the outlook for maritime merchandise trade remains positive for the region despite the challenges posed by the concentration of trade among a few trading partners. ASEAN has made concerted efforts to diversify its trade relations through initiatives such as RCEP. In 2015, the formation of the AEC and efforts towards further regional integration through AEC 2025 were additional steps that served to increase the resilience of ASEAN economies in dealing with global economic fluctuations and the policy uncertainties of major economies. The "AEC Blueprint 2025" and, more specifically, the "MPAC 2025" have set out specific goals to reduce the maritime infrastructure and logistics gap amongst ASEAN's member countries.

Second, in trying to enhance maritime merchandise trade in Southeast Asia, the application of a one-size-fits-all approach is not considered prudent. Diverse interests and capabilities among ASEAN states underscore the differing priorities observed in the respective countries. For Indonesia, improvement in maritime infrastructure and lowering logistics costs is the top priority, and the government has injected a huge amount of funds into port modernisation programmes under the broader framework of the GMF. Initiatives such as the BRI also provide additional funding sources for maritime-connectivity projects. However, Indonesia must remain cautious of the loan-financing models relevant to such projects. It remains to be seen whether Indonesia can overcome domestic challenges to improve its competitiveness in international maritime trade. With one of the largest and most modern ports in the region, the challenge for Singapore is to stay ahead of rising regional competition, especially from Malaysia and China. As part of the national initiative on innovation and digitisation, Singapore's main strategy is to increase competitiveness through innovation.

Third, traditional and nontraditional maritime security threats continue to threaten maritime merchandise trade in the region. In recent years, significant effort have been made to manage these threats through cooperation initiatives. Safe and secure SLOCs,

which are crucial for the unimpeded flow of goods, must not be overlooked. ASEAN countries must continue to work towards greater cooperation both within ASEAN and with extraregional powers.

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