**From the *Nanhai* to the Indian Ocean and Beyond: Southeast Asia in the Maritime ‘Silk’ Roads of the Eurasian World Economy**

**200 BC – AD500**

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**Introduction**

 Over world history, exchange of goods and services has been one of the main forms of interactions between human communities located in different regions of the world. With the advent of the Neolithic Revolution and the production of surplus, such trade exchanges ensued within a specific region, and between different regions of the world. Signs of these trading activities between civilizations were evident in the Fertile Crescent as early as five thousand years ago. Trading expansion and coverage became increasingly documented during the Bronze Age in Europe, Eurasia, and Asia (Parker 2012; Kristiansen and Larsson 2005; Higham 1996; Kohl 2007; Liu 2012; Ratnagar 2004, McLaughlin 2014).

Not only do these trading exchanges foster the accumulation processes, they also facilitated and intensified the dynamics between the different social systems’ relations with Nature. The interactive trading process also engenders the transmissions of ideas, cultural traits, and technological knowledge such as the fabrication of metals. These trading circuits increasingly joined different regions closer together in terms of flows of connectivity in the socioeconomic spheres, and in some ways, introduced the sense of duration and space through the categorization of time that is necessary to transport goods from one place to another. Along with this, comes the awareness of the changing seasons in terms of Nature’s rhythms when the transportation of goods and services required the seasonal monsoon or coastal winds to power the sea vessels that carried the goods and peoples to various shores. With time, the trade linkages encompassed different regions with dense networks of trade routes within a region, and also extended these networks between regions.

Towards the end of the prehistoric period (c. 200 BC onwards), these trading networks were extensive, for by then they connected China, Southeast Asia, South Asia, Central Asia, the Persian Gulf, East Africa, Arabian Peninsula, the Mediterranean and Europe through a series of both land and sea trading routes. Trade exchanges via land and sea, and movement of peoples, defined this increasingly global system. China was at one end with the Roman Empire at the other end, and Central Eurasia, South Asia and Southeast Asia geographically somewhat in the middle of the system. From approximately 200 BC onwards (perhaps earlier), the emergence of a Eurasian world system of trade connections extended from the China in the East to the Roman Empire in the West. Such was the scope of the trading system at the dawn of the new millennium that we propose to cover from 200 BC – AD500 with a particular attention on the *Nanhai* (Southern Sea/South China Sea) and the Indian Ocean/Red Sea portions of this Eurasian world economy. Our examination will be on the maritime aspect of the trading routes, commonly referred to as the silk roads in world history.

Southeast Asia’s input in this global trade network has often been underemphasized. Instead, scholars and specialists have awarded world economic expansion to the initiatives taken by Chinese, South Asian, Greek/Roman, and Arabic merchants and the respective core polities in the different regions of this Eurasian world system. There have been some exceptions to the above common orthodox understanding of Southeast Asia place in this world history (Hoogervorst 2013; Manguin 1980, 1993a, 1993b; Chew 2014, 2015). Unfortunately, these studies are only the very few that offer us a re-evaluation of Southeast Asia’s contribution and role in the evolving Eurasian World system in world history. The overwhelming intellectual stance in Western and Asian scholarship continues to declare Southeast Asia as a region that is the recipient of socioeconomic and cultural influences from South Asia, Arabia, and China and as a intermediary or distribution point/*entrepôt*, instead of envisioning it as a region that has played a contributory and productive part in the Eurasian world economy over world history (see for ex., Coedes 1966, 1968, Bellina 2004, 2006). We will address this neglect by examining Southeast Asia’s materialistic practice of producing trade goods for exchange to meet system-wide needs including those of the core centers of the Eurasian world system; thus, emphasizing the contribution and influence of Southeast Asia to the economic expansion of the Eurasian world system instead of treating it as just a intermediary or distribution point/*entrepôt.*

**Southeast Asia in the Maritime World Economy**

**From the *Nanhai* to the Indian Ocean and Beyond: Trade Connections**

As much as the Roman and Indian ships sailed eastwards towards Southeast Asia and China, ships from Southeast Asia were also sailing westwards towards India, Sri Lanka, and the East African coast. Notwithstanding maritime trade routes, the land routes radiating from China, Southeast Asia, India and the eastern Mediterranean were also utilized as well to conduct trading exchange of the Eurasian world economy.

Various timings have been pinpointed of trade connections between the East and the West of the Eurasian world system. According to Kennedy (1898) and Tibetts (1956), trading connections between Mesopotamia and China existed as early as the seventh century BC, and Glover (1996) noted of exchanges between mainland Southeast Asia and India between 360-390 BC. Wang (1998: 13) has stated that Chinese trade with India started towards the end of the first millennium BC. For Southeast Asia, there is archaeological evidence of trade exchanges between mainland Southeast Asia (such as Thailand, Vietnam, Cambodia, Malaya) and South Asia as early as the fourth-second centuries BC (Glover 1990, Glover and Bellina 2011, Hung and Bellwood 2010). Within Asia, localized exchange networks in Indonesia and the Malayan peninsula were existent from the second millennium BC (Glover 1979, 1996; Chew 2001, 2007). But some have even suggested that Southeast Asian merchants and trading communities were already participating in the trading world by 1000 BC, and had substantial commercial contacts with India by the second part of the first millennium BC (Leong 1990: 20-21; Christie 1990; Hall 1985). Archaeological excavations have indicated that perhaps as early as 500 BC, the polities in the Malay Peninsula were already participating in regional trading networks. [[1]](#footnote-1)

In East Asia, intraregional trade routes were established by the 5th century BC (Sarabia 2004, Higham 2002, Hung and Bellwood 2010). Within East Asia, Chinese goods were exchanged by land with the Korean peninsula and via shipping to the Japanese islands. Imamura (1996) and Sarabia (2004) have traced the exchange between China and Japan in the archaeological bronze finds unearthed in Japan that had northern Chinese origins. There were raw materials exchange between Taiwan and Southeast Asia c. 500BC, and nephrites of Taiwanese origin have been excavated in southern Thailand, the Philippines and other parts of insular Southeast Asia (Hung and Bellwood).

Given the above different periodisations, within the Asian region, we can assume that trade occurred between China and the ports on the Indian Ocean by at least the second half of the first century BC when following unification of China in 221 BC, the Chinese pursued expansions to the south (Wang 1958:21). Wheatley (1959:19) reported of Chinese envoys being sent by the Han emperor Wu (141-87 BC) to explore the South Seas as far as the Bay of Bengal. The establishment of commanderies in the south helped to facilitate and establish trade exchanges (Wang 1998). Evidence of Chinese trade in Southeast Asia has been revealed in recent excavations in southern Thailand of the Malayan peninsula (Murillo-Barroso et al 2010).

Despite the various timings suggested, what is clear is that by the beginning of the first century AD, trade flourished between the West and the East of the world system as we have stated above (Tibetts 1956; Colless 1969; Christie 1990; Hall 1985; Glover 1996). By the first century AD, Malay/Indonesian sailors were known to have settled along the East African coast (Taylor 1992; Hall 1985, 2011; Blench 2010). Marshall (1980) has even suggested that Indonesian merchants and seafarers were involved in the Indian Ocean trade as far as Madagascar by the late first millennium BC; and Blench (2010) and Dorian *et al*. (2010) have noted of the transfer of agricultural species such as plantains (*Musa paradisiaca*), water yam (*Dioscorea alata*) and Taro (*Colocasia esculenta*) to the East African coast from Southeast Asia prior to first century AD.

The various seas and straits in Southeast Asia and East Asia circumscribed the trading connections conducted in the eastern zone of the Eurasian world economy. Like the land (silk) routes that linked the east with the west vice versa, the Bay of Bengal, the Andaman Sea, the Straits of Malacca, Java Sea, Makassar Strait, Molucca Sea, Celebes Sea, South China Sea, East China Sea, Yellow Sea, and the Sea of Japan became marine routes linking the East with the West. The two major seas of importance in these maritime routes between East and West were, of course, the Indian Ocean and the South China Sea. Regionally, the Straits of Malacca and the South China Sea were of particular significance for they bordered the major land masses of Southeast Asia and East Asia whereby the global trade was conducted. Networks of local and regional trading ports and centers existed from 200 BC onwards and even earlier, and from these local and regional networks the trading was linked to the trans Eurasian maritime routes of the global system from the East China Sea to the Mediterranean.

From the Roman Mediterranean through to India, merchants utilized the above shipping routes from the Indian Ocean, the Bay of Bengal and the Andaman Sea to mainland and island Southeast Asia seeking products that Southeast Asia had abundant supply. The reverse occurred as well. Taking advantage of the Monsoon winds, depending on the sailing directions, the winds would power the ships towards the east or west towards India and onwards. Sailing east, ships from Southeast Asia would reach ports in southern China such as Guangzchou (Borell 2013), and in turn, Chinese ships would reach the ports on mainland Southeast Asia and eastern Malay Peninsula.

Those sailing east had pepper, aromatics, cloves, various food items, marine products, exotic feathers, and pearls on their trading orders (see for ex., Hoogervorst 2013, Hall 2011, Wang 1958, Manguin 2004)). Usually for shipping from India and Sri Lanka, the port call would be the Isthmus of Kra nearby to Malay Peninsula whereby goods were then transferred by land portage across the Isthmus to eastern Malay Peninsula ports and kingdoms located on the western edge of the Mekong Delta such as Funan. From Funan, ships would call on Pan Pan located on the eastern part of the Isthmus of Kra, Linyi and Chiao-chih located in Vietnam and Hepu and Xuwen on the Gulf of Tonking (Borell 2013; Glover 1990). Sailing along the Straits of Malacca and avoiding the land portage across the Isthmus of Kra only occurred from the fourth century AD onwards.

Further south of the Peninsula Malaya are the islands of Indonesia where a regional networks of export centers provided the aromatic woods and spices that symbolize the Southeast Asian trade. The Sunda Straits and the Java Sea were the main shipping routes where the products from Sumatra, Java, Borneo and the Celebes would be collected at regional centers such as Koying located in southern Sumatra, and from Koying to Funan on mainland Southeast Asia.

Various polities and ports dotted mainland Southeast Asia and Peninsula and Island Southeast Asia. Funan, located on mainland Southeast Asia, was a center not only for the trans Eurasian maritime routes it was also a collection point for the intraregional trade that flowed from island Southeast Asia. According to Chinese sources, it was quite developed economically and politically by the second century AD. Its stage of development even afforded it to send a fleet to take control of some of the smaller polities located in Thailand and eastern Malaya (Manguin 2009; Hall 2011). This was to change by the fifth century as the products from island Southeast Asia started to bypass Funan and the ports on the east coast of the Malay Peninsula with direct sailing from Koying and other collection centers in Borneo and Indonesia to the ports of southern China. Prior to its decline (from the mid-fifth century onwards) as a main trading center for the Southeast Asia, Funan had a developed as an urban center with shipbuilding facilities (Manguin 2009; Hall 2011). Founded according to Chinese sources around the first century AD, Funan had walled cities, palaces, storehouses, port facilities, and even hostelries for visiting foreign merchants. Its capital had a moat surrounding it and a six kilometer long wall. It had an established agricultural economy as well. The latter was developed further when the regional trade of Southeast Asia and those coming from India and Sri Lanka started to bypass Funan on their way to the trading ports of southern China.

The geographic location and ecology of Southeast Asia establishes its economic attributes for its participation in the Eurasian world system. With a mainland that has terrestrial connections with India and southern China coupled with a peninsula and an archipelago of islands that offers potential harbors and ports, Southeast Asia’s location commands the various maritime trading routes connecting the eastern part of the Eurasian world system to the western segment. As such, the maritime shipping that was transporting the goods and peoples from the eastern part of the Eurasian world system to the western portion necessarily has to sail through the waters of Southeast Asia. Before the advent of steam power and the wind being the only source of propulsion, Southeast Asia’s geographic locale positioned it for the trading ships to stop for economic exchange at its various ports located on its coasts and peninsula, and for the merchants and traders to sojourn until the monsoon winds changed their direction.

Endowed with marine resources and a terrestrial ecology that provides optimum conditions for growing and wild harvesting of crops and plant materials sought after in both the western and eastern portions of the Eurasian world system, the various polities of Southeast Asia produced and harvested these materials for exchange. Furthermore, surrounded by seas, according to archaeological analyses, the peninsula and island parts of Southeast Asia developed various shipping crafts and seafaring technologies that were transferred historically to other maritime communities outside the region (Fuller et al 2011, Blench 2010, Hoogervorst 2013, Manguin 1993a, 1993b). *Location* and *ecology* therefore determined the socioeconomic pattern and trajectory of Southeast Asia’s participation in the evolving world system.

Clearly, the various datings of trade linkages identified above are reliant on archaeological finds and the various Indian and Chinese literary sources; and it should not be surprising that future archaeological investigations might further reveal even earlier trade connections. More important to consider are the types of commodities produced and exchanged. What was shipped westwards and eastwards and did the composition of commodities change over the historical period? What were the technologies developed, transferred or imported that shaped the socioeconomic and political patterns and trajectories of the polities of prehistoric and early historic Southeast Asia?

**Southeast Asia’s Trade with the Western Part of the Eurasian World Economy**

Southeast Asia’s participation in the global Eurasian system was connected to its location to the then core consumption areas of India, the Roman Empire, and China. With its ecology, the products exported were both terrestrial and maritime in origin. From the seas, pearls and tortoise shells were some of the commodities exported and from the land, spices, food crops, timber, metals, precious stones, textiles, swords, sewn boats, and animal products added to the rest of the export equation. Recent archaeological studies have indicated that some of the spices and food crops that were shipped from India and Ceylon to the western part of the Eurasian world system, and especially to the Roman Empire, were not solely of Indian origin. Rather, some had their beginnings from Southeast Asia. Recent studies by Blench (2010), Dorian Fuller, Nicole Boivin, et al. (2010, 2013), and Tom Hoogervorst (2013) have provided further materialistic, textual, and linguistic evidence of such origins and transfers.

**Spices and Food Crops**

The perishability of the trade of Southeast Asian spices, aromatic woods, and food crops or raw materials that were immediately consumed or converted to other products such as jewelry, has exhibited a significant imbalance in Southeast Asia’s already sparse archaeological record as compared to another region’s export records that consisted of pottery, metal figurines, etc., that have been archaeologically unearthed. Because of this, and besides the lower level of archaeological research on Southeast Asia’s prehistoric and early historic periods, the volume of spices and food crops that formed a large bulk of the Southeast Asian maritime trade with the western and eastern segments of the Eurasian world economy have not been fully revealed, other than excerpts from merchant trading reports or from the Roman or Chinese imperial import notations. Nevertheless, we can get a feel of the volume and the level of profits by proxy from the balance of payment issues faced by the Roman Empire in its trading activities with India (Chew 2015).

Besides the export of spices, aromatic woods, and other maritime products, Southeast Asian food plants have also been translocated to east Africa over the prehistoric period (see for ex., Blench 2010, Boivin et al 2013). Recent archaeobotanical studies have suggested that plantains (*Musa paradisiaca*), water-yam (*Dioscorea esculenta*), taro (Colocasia esculenta), sugarcane (*Saccharum spp*.), and coconut (*Cocos nucifera*) were transferred to the East African coast prior to the beginning of the historic period as part of the trade flows (Hoogervorst 2013).

Spices, as we have mentioned in the previous pages have many uses depending on the sociocultural context. Its uses extend beyond that of elite consumption as luxuries to the level of the lay-person whereby it is consumed for medicinal or religious-cultural purposes (Sidebotham 2011). The Southeast Asian ecology provides optimum conditions for the perpetuation and growth of the spice trade that defined the maritime silk routes from the Indian Ocean to the South China Sea. Location-wise, the ‘Spice Islands” of Maluku, the rainforests of Sumatra, Java and the Southeast Asian Malay peninsula and mainland were the optimum geographic locale for cloves, nutmeg, pepper, cinnamon, and cardamom.

The famous pepper trade of Southeast Asia that supplied the western portion of the Eurasian world economy from India, Ceylon, East Africa, Arabia to the Eastern Mediterranean were mostly the Java long pepper (*Piper retrofractum* ) which was different from the Indian long pepper (*Piper longum*), the latter was also shipped to the Roman Empire from India. As a spice, it was used as seasoning and for medicinal purposes by the Romans. For seasoning, it was sought after in India and the western and eastern parts of the Eurasian world system. The second Southeast Asian pepper that formed a large part of the pepper trade was the cubeb (*Piper cubeba*). Like the Java long pepper, it was also used for medicinal purposes, and as well as an adulterant for the black pepper intended for the Roman market (Dalby 2000, Hoogervorst 2013).

Cloves are the dried unopened flowers of the clove tree (*Syzygium aromaticum*), and for a very long period can only be obtained exclusively from the islands of Ternate, Tidore, Motir, Makyan and Bachan in the Moluccas (Glover 1990). It was exported to India, Ceylon, East Africa, Arabia, Rome and China. They were only grown much later in East Africa and South Asia only after the Dutch arrival to Southeast Asia. Used either as incense, seasoning, condiment, and medicinal purposes, cloves played an important part in the sociocultural lifestyles of the maritime Eurasian world system. According to the list of commodities subjected to tariffs in the port of Alexandria, cloves were imported into the Roman Empire around AD 176-180 (Miller 1969). As a condiment and seasoning it was in high demand in China, and it was an important commodity traded for by Chinese merchants in Southeast Asia. In addition to cloves, ginger of the ginger plant (*Zingiber officinale*) was also another item that was consumed in India, and from India, it was transmitted to the Middle East, Africa and Europe (Hoogervorst 2013). Besides being popular consumable in these places, it was also sought after in China. The ginger exported from India to the West was mostly derived from Southeast Asia, and according to Parker (2008) they were from Java and Thailand. Cinnamon, a popular item shipped to India and the Roman Empire was mostly grown in Madagascar and Indonesia (Parker 2008).

Aromatic woods and gum resins from the tropical forests of Southeast Asia were also major exports. The consumption of these products was completed in the urban core areas of the Eurasian world economy from the western Mediterranean to China. Of these aromatic woods, Sandalwood from the sandalwood tree (*Santalum album*) was utilized for its fragrance, and also as a cosmetic. Its use over time permeated the cultural and religious practices of India and China. Benzoin, a resin from the trees of the genus Styrax was also shipped to India and China, and as an ingredient for incense and perfume that was utilized for religious practices and elite consumption. Other aromatics that were quite popular in the western and eastern ends of the Eurasian world system were myrrh (*Commiphora spp.*) and storax (*Liquidambar spp.*).

**Bronzes, Metals, Timbers, and Stones**

By no means were spices and food crops the only products that were exchanged between Southeast Asia and the western Eurasian world economy. Mainland Southeast Asia’s bountiful supply of metal ores such as tin, gold, timber, and bronzes were also part of the commodity flows from Southeast Asia to India and the other regions of the Indian Ocean (Wheatley 1964, Glover 1990, An 1996, Francis 1996).

 The abundant sources of tin in Thailand and Malaya were mined and exported to India that had a scarcity of tin (Wheatley 1964, Rajan 2011). As the Indian economy expanded there emerged a need for bullion as a form of accumulation. Besides the export of ores, bronze vessels that had a high tin concentration were also part of the list of trading items of the Southeast Asia-India exchange (Rajan 2011). Given such scale of trading activities, by the first century AD or even earlier, the Malayan peninsula was undergoing radical socioeconomic changes (Wheatley 1964a, Saidin 2011, 2012; Manguin 2004). They occurred primarily because of Southeast Asian and Indian merchants and traders who were exchanging their merchandises and wares along the coastal areas of Southeast Asia and India, with the Indians seeking gold that in the past they had obtained from the Mediterranean or Central Asia (Wheatley 1964). Gold, which was widely available in mainland Southeast Asia became a part of the Southeast Asian trade with the western part of the Eurasian world system especially with India. With the prohibition on the export of gold imposed by Roman Emperor Vespasian (AD 69-79), this spurred the Indian merchants to search for gold bullion in Southeast Asia (Hall 1985). Indian ships weighing about seventy-five tons and that could carry up to two hundred persons were sailing between South Asia/Ceylon and China by the beginning of the first century AD (Wheatley 1964b). These metallic ores such as tin and gold were absorbed in the production and accumulation processes, and thus their original source origins can never be completely ascertained from archaeological finds, other than determining from the geological surveys of the historical presence of the mineral in the geological landscape of the geographic space. In view of this, the contribution and the volume of these ores to the production, accumulation and consumption processes of the Eurasian world system on the part of Southeast Asia to the Eurasian world economy can never be fully realized.

 Notwithstanding the export of metals such as tin and gold, there was local production of beads and glass for the regional trade with India (Manguin 2004; Bellina 2007). Besides the existence of glass, agate, and carnelian beads that have Indian and Southeast Asian origins, recent studies of excavated garnet beads in Cambodia represent a local bead-making tradition (Carter 2012). The growing dynamics of regional trade between India and Southeast Asia suggest different historical origins for bead production. Studies have revealed of beads of Indian origins, and some that were produced locally in Southeast Asia. Francis (2002) has traced the manufacturing and trading of beads between core centers and civilizations on a global scale starting from 300 BC onwards with India and Southeast Asia as major production centers. The production of beads underscored the development of manufacturing capacity, thereby emphasizing the emergence of core type activities and status for Southeast Asia. Read how Francis (2002:149) has interpreted such a developmental trajectory:

“The bead evidence throws into sharp contrast the regions which we may considered core and periphery. At the beginning of our analysis all of Southeast Asia was peripheral, while the core areas were India and China. In time, core areas arose within Southeast Asia *Funan, the Malaysian Peninsula, Srivijaya, Java* and these areas became beadmakers. Beads, after all were important trade items, and as manufactured items they may be considered to have been markers (not makers) of emerging core areas or states.”

Bellina’s numerous studies (2006a, 2006b, 2007, 2014a, 2014b, etc.) of bead production in Southeast Asia, and that of Francis (2002), have revealed the bead manufacturing process historically, and how it has been carried out according to Bellina within a social political landscape comprising of Indian migrant craftsmen and perhaps locals trained by the Indians. There is yet any historical documentation, inscription, etc. that indicates the presence of Indian craftsmen based in Southeast Asia manufacturing beads (Bellina 2007). The assertion of their presence has been via an examination of the quality of the Indian beads that were found with beads manufactured in India via an inspection of the manufacturing techniques. No concrete archaeological evidence was provided by Bellina for the presence of Indian craftsmen in the excavated prehistoric sites (Khao Sam Kaeo) in southern Thailand (see for ex., Bellina (2007:52, 54)) other than a *tenous* assertion via similarity in the bead manufacturing process to that of Indian craftsmen in Gujerat in northwestern India. This linkage between Gujerati craftsmen and those South Asians that might have moved to southern Thailand as evidence of the presence of South Asians during the late prehistoric and early historic poses another concern. Bellina’s evidence of Gujerati manufacturing process comes from a different historical period, that of 20th century AD (Bellina 2007), instead of a comparable historical period to that of Southern Thailand in the late prehistoric and early historic periods, notwithstanding the fact that Gujerat is in northwestern continent of India, and South Asians who travelled to Southeast Asia in the late prehistoric and early historic periods must have been based in southern part of the Indian subcontinent, and especially in the southeast sector. Hence, Bellina (Indocentric *mentalité* ?) tends to favor the Indian connection as far as we can see that bead manufacturing in late prehistoric and early historic southern Thailand could not have been indigenous in origin rather they were Indian products or products produced by Indian craftsmen in Southeast Asia.

The various sites of bead production located in Burma, Thailand, Thai-Malay Peninsula, Java, Bali, Vietnam and the Philippines suggest an intra-trade network linking these places to the exchange markets within Southeast Asia and beyond (Bellina 2007). Some of these centers coordinated by the Indians were either importing Indian manufactured beads and/or manufacturing local beads. As time progressed according to Bellina (2007), these centers started to produced local beads of somewhat good quality, and as well, were also manufacturing mass produced beads for export. It suggests, as well, that beads viewed as luxuries consumed by the elites have given way to more of a mass consumption item. Such a transformation occurred in the early historic period.

The bead production centers were dependent and connected to urban centers that enabled the distribution and exchange of this product with the rest of the Eurasian world economy. The coastal polities in Southeast Asia, such as Funan, had ports that the bead trade can be conducted intra regionally and inter regionally between Southeast Asia, India, and China.

**Volume of Trade with the West**

It is clear that by the dawn of the new millennia (AD 1) the Eurasian world economy had expanded and grew linking different regions, cultures, and socioeconomic complexes at different level of socioeconomic transformations. The wide variety of merchandises including foodstuffs traded, depending on the consumption patterns of different cultural lifestyles, reflect similar structures and patterns that we experience today though in the past it was of a lesser volume and pace. Within the boundaries of this Eurasian world system were core centers that were more urbanized, more economically developed, and more militarily powerful. These core centers represented the three major civilizations of the Mediterranean, the Indic, and the Sinic. Unlike today whereby we have bountiful information of global trade and volume, two thousand years ago there were no systematic recording of such trading levels. The only information that we can get a feel of the scale of the trade of the system is by examining the import taxes collected by the Romans at entry points whereby ships ferrying merchandise from the East (China, Southeast Asia, South Asia, Arabia) and Africa enter the Red Sea ports and the urban centers located on the Silk Roads of the Roman Empire. The volume of the trade has not been fully documented, and what we know are estimates from projections. Using the taxes collected on goods from the East including East Africa transported on the maritime routes we can obtain an estimate of the scale of the globalized trading volume. From this, we can obtain a sense of the amount of Southeast Asian goods that were a part of this global flow from East to West. The spices and incenses that were shipped to India from the spice islands of Indonesia, and the products of the seas that were also part of the range of exports from the Southeast Asian region to the Indian Ocean and beyond revealed the global nature of the Southeast Asian maritime trade.

 The scale and variety of merchandises that were exchanged between the West and the East including East Africa were diverse. McLaughlin (2014: 88) citing from a Roman legal text gives us a breadth of the goods traded that taxes were paid: aromatics, spices, cotton cloths, animal hides, precious stones, silk, Indian rugs, Indian eunuchs, lions, animals, purple dye, African wool, Ivory, Indian hair, etc. Exports from Rome included wine, precious stones, shells, flax clothing, colored glassware, gold and silver coins. Just like the current global economy, there was balance of payment issues that one core (Rome) center experienced with the East that has been historically revealed. Scholars such as Miller (1969), Hopkins (1988), and Warmington (1923), have noted that there was an adverse balance of payment between the Roman Empire and the East in its trading exchanges.

 The volume of Roman trade has not been fully documented. Scholars such as Miller (1969), Hopkins (1988), and Warmington (1923), have noted that there was an adverse balance of payment between the Roman Empire and India (and even China) in its trading exchanges. Warmington (1923: 273) puts it this way:

“… the Empire taken as a unit was often unable to offer foreign regions in general and to oriental nations in particular sufficient products of its own to balance the article imported from them in large quantities, and the result of this was the draining away from the Empire of precious metals in the form of coined money without any adequate return.”

 According to Pliny, the amount of funds transferred to India to pay for the imports were about 50 million *sestertii* (Young 2001, Warmington 1923). This amount might not reflect the total adverse balance as Warmington (1923) has argued that the accumulation of wealth by notable Romans such as Seneca was about 300,000,00 *sestertii*. The total amount to pay for the imports from India, China and Arabia according to Pliny was 100 million *sestertii*. If the point made *by* Warmington (1923) holds, then this amount for three countries would have to be more than this. In spite of the differences in balance of payments, such volumes would also suggest that huge profits were to be made (Tchernia 1997). In view of these estimates, the issue of an adverse balance of trade between Rome and India must have been greater. We can also surmise the size of the imbalance by looking at the volume of trade between Rome and India. Sidebotham (2011) has provided an estimate for the cost of each cargo that a 75-ton capacity Roman merchant vessel carried in the 1st century AD between India and Rome. A vessel of this capacity can potentially carry up to 147 million drachmas worth of cargo. A Greek document, *Muziris Papyrus* that dated back to the second century AD, has revealed another set of figures for a Roman ship involved in the Indian Ocean trade. It showed the Roman vessel carried over 220 tons of Indian merchandise (McLaughlin 2014: 89). When the cargo was removed from the ship so that taxes can be levied the cargo was worth the equivalent of nearly 7 million sesterces. McLaughlin (2014: 94) has suggested that in addition to the cargo carried on the ship*, Hermapollon*, there were also lightweight preciosities such as pearls, gemstones and silk. With this, the total cargo would probably amounted to 10 million sesterces. Scaling up from a single ship as noted in the *Muziris Papyrus*, to the estimated 120 ships that ply the Indian trade with Roman Egypt, the scale and type of goods exchanged per annum are: 16,000 tons of pepper and cotton (556 million sesterces), 10,000 tons of malabathrum and other spices (158 million sesterces), 7,000 boxes or 50 tons of nard (32 million sesterces), 360 tons of turtle shell (18 million sesterces) and 576 tons of ivory (over 14,000 tusks costing 60 million sesterces)(McLaughlin 2014: 93). Given Strabo’s figure that about 120 ships are involved in the Roman-Indian trade each year, a total of 17.64 billion drachmas were estimated to be involved in this trading exchange (Sidebotham 2011, McLaughlin 2014). This is equivalent to 17.64 billion *sestertii.* If this is the estimated volume of trade transacted, then the 50 million *sestertii* amount for the adverse balance of trade Rome suffered must be underestimated. In terms of scale of the adverse balance of payment, one can obtain a feel of this at the level of the Romans by noting that a Roman legionary is paid 4 *sestertii* for one and the half days of pay, and a skilled workman in Roman Egypt had a monthly salary of *25 sestertii*.

Viewing this in another way by the size of shipping required for transport of Indian and Eastern goods to the Roman Empire, this adverse balance is reflected in the size of shipping required for the Roman-Indian trade. Larger vessels were required to carry the voluminous goods from India in comparison to the smaller size ones for the transport of goods to India and the East from the Roman Empire (Warmington 1928, Casson 1989). In this regard, in order to balance (pay) the exchange of voluminous products from India to the Roman Empire and the smaller volume from Rome to India, precious metals such as gold and silver made up the difference in the balance of trade. The gold and silver were shipped to Barygaza, Muziris, and Nelcynda.

**Southeast Asia’s Trade with the Eastern Part of the Eurasian World Economy**

As part of the Eurasian world system, the region of Southeast Asia’s trade was not only with the core urbanized centers in the western portion of the Eurasian world economy. Its proximity to China, Korea, Taiwan, and Japan through its land and sea connections meant that its maritime trade flows with the eastern portion of the system were firmly connected by the end of the prehistoric era. In East Asia, intra regional trade routes were established by the 5th century BC (Sarabia 2004, Higham 2002, Hung and Bellwood 2010). Mostly, they were centered on products such as silk, and ceramic wares. Within East Asia, Chinese goods were exchanged by land with the Korean peninsula and via shipping to the Japanese islands. Imamura (1996) and Sarabia (2004) have traced the exchange between China and Japan in the archaeological bronze finds unearthed in Japan that had northern Chinese origins. One can also assume that the products of Southeast Asia that were shipped to China for consumption would have found their way to Korea, Taiwan, and Japan. Taiwanese nephrite has been found in southern Thailand indicating exchange of raw materials (Hung and Bellwood 2010).

**Trade Connections with China**

Different type of products characterized the trading exchange. From China, silk, pottery and other manufactured wares were exported for natural resources such as wood products, spices, preciosities from the sea, and mineral resources of Southeast Asia. The sea trade routing were as follows: Frankincense, myrrh, camphor, spices, gharuwood, sandal wood, ivory, rhinocerous horns, kingfisher feathers, tortoise shells, and pearls were transshipped from Southeast Asian sources for exchange in the ports of southern China for Chinese manufactures, silk and pottery, the latter was then shipped westwards to India, Arabia, and the Mediterranean.

The maritime trade route from Southeast Asian region to southern Chinese ports conveying spices, aromatics, wood, pearls, rhinocerous horns, tortoise shells, etc., known as the *Nanhai* trade, were shipped from various polities located on mainland and island Southeast Asia (Wang 1958). One such polity in Southeast Asia was Fu-nan, which was a center of accumulation from the 1st to the 6th century AD (Stark 1996; Hall 1985, 1992).[[2]](#footnote-2) By the third century AD, Fu-nan consolidated all the trading centers on the Malayan archipelago making it the unrivalled polity in the region (Wheatley 1964b, Hall 1985, 1992). The Southeast Asian polities such as Tun-sun, Chu-Po, P’an-p’an, Tung Tien, Ch’u-tu-k’un, Chiu-Chih, T’ai-p’ing, Yu-lan, Sui-Shu, Pien/Pan-tou, Pi-Sung, Chin Lin, and Chu-li, played significant roles in this long distance maritime trade towards China on one hand, and towards India on the other (Wang 1958, Wheatley 1964a).

From the first to the third century AD, the trade in wood products grew in Southeast Asia. Gharuwood was imported to southern China, involving merchants from the Malay archipelago, Sumatra, and even as far as Ceylon (Hall 1985). Polities such as Lo-yueh were the collection centers for forest products while P’eng-feng shipped lakawood (Wheatley 1961, Hall 1985). Tun-sun on the Malay Peninsula, a dependency of Fu-nan, was the emporium whereby the goods from the western part of the Eurasian world system are shipped to southern China and the manufactures from southern China are conveyed to India and the Mediterranean.

By the second century AD, the power of China was recognized by the polities in Southeast Asia that led to diplomatic/tribute missions being sent by these countries to the Chinese court. Such diplomatic missions were to obtain political and economic concessions from China (Wang 1958, 1989). They came from as far as Sumatra and Java (Wang 1989, Hall 1985, Dunn 1975). The size of exchange varied from the offering of wood products and luxuries such as pearls to gold, silver and copper. For example, a mission from Lin-yi – founded around AD 192 and situated on the Vietnamese coast (what is modern day Danang) -- brought ten thousand kati of gold, one hundred thousand kati of silver and three hundred thousand kati of copper (Wang 1958:52, Yamagata 1998).[[3]](#footnote-3) The number of diplomatic/tribute missions from Southeast Asian countries varied according to the state of political affairs in China with the rise and fall of dynasties. Missions were lowered during years whereby China had political unrests, and hence, its pursuit of trade exchanges and relations were reduced, and they were increased during times of peace and prosperity such as during the era of the Tang Dynasty — a total of 64 missions was recorded (Wang 1958:122-23). Miksic (2013: 43), however recorded a larger number of such diplomatic missions between the 5th-6th centuries AD (see Table 1). With such political relations, the *Nanhai trade* flourished.

Table 1

Diplomatic Missions to China

Kingdom Location Number of Missions Dates (AD)

Holodan Java 6 430-440

Pohuang Southeast Sumatra 7 445-464

Gantoli South Sumatra 5 455-564

Poli Bali 3 470-524

Panpan Malay Peninsula 12 455-589

Langkasuka Malay Peninsula 3 515-556

Champa South Vietnam 25 420-589

Funan South Mekong Valley 17 43—589

According to Wang (1998: 111), the *Nanhai* trade was distinguished by three phases of development. The first phase that lasted for five centuries from the first century AD onwards was dominated by a concentration in preciosities consumed by the court and the lords. The second phase had a more religious emphasis whereby “holy things” were imported into China besides the preciosities and natural resources. This occurred for two centuries with the third phase extending for three centuries through the Tang to the Sung Dynasties. In this third phase, there was a shift to spices and drugs that were introduced earlier but by this period had generated a consumer demand for these items. The increase in market demand of the *Nanhai* trade products from the fifth century AD onwards revealed the establishment of a wider consumer market that was emerging in the urban centers of China, some of this urbanization was facilitated further by China’s global trading relations within the region, and with the West via both the sea and the silk routes. The *Nanhai* trade had grown to such a scale that by AD 987 (during the Sung Dynasty), the southern maritime trading relations provided a fifth of the total cash revenue of the state (Wheatley 1959: 24, Hall 1985).

**Transportation**

The transportation of goods is a key feature in structuring the trading exchanges between the regions of this evolving Eurasian world system. Various modes were utilized depending on the costs, the locations, and surrounding landscapes where the goods were to be delivered (Sidebotham 1986, 2011; Warmington 1928). Two main forms were utilized: animals and ships. For the land trading routes of the Eurasian world system, pack animals such as donkeys, horses, and camels (Arabic and Bactrian animals) were the main beasts of burden utilized to transport the goods across vast stretches of land linking the trading marts of Europe, eastern Mediterranean, Central Asia, Arabia, East Africa, India, Persia, Southeast Asia, and China. It was more economical and efficient with the scale of goods -- depending on the monsoon winds -- that are moved in terms of volume and weight to be transported in ships via the vast maritime routes of the various oceans and seas that surrounded the Eurasian world economy (Chew 2007). In addition to the consideration of size and weight of goods to be transported, costs for overland routes were high especially for distances over 120-160 km (Sidebotham 2011). Because of this, when the items to be shipped were not luxuries that would secure a high profit, but were goods for mass consumption, the maritime route was the modality of transportation of choice. In certain cases, it was a combination of both maritime and land routes during periods when there was a hiatus for sailing between March and October whilst waiting for the wind directions to change. In these conditions, whenever possible, the land route was chosen if the required goods were consumed year round. Estimates of animal power that were contracted exhibited the scale. For 220 tons of cargo transported between Berenike on the Red Sea and Alexandria would utilize over a thousand camels and 160 camel drivers with armed guards (Mclaughlin 2014:90).

Being dependent on the winds to propel the ships during this period of world history, shipping times and costs were contingent on the wind directions that prevailed during certain times of the year. Prior to the discovery of the monsoons, the sailing times were much extended as the ships had to hug the coasts of the various continents that circumscribe the Eurasian world economy in order to reach the distant shores such as from Alexandria in Egypt to Berenike on the Red Sea and onwards to Barbarikon and Barygaza on the northwestern part of India. Likewise, Indian shipping from Barbarikon and Barygaza would need to sail following the coast to the Persian Gulf, and along the coast of Arabia to reach Okelis that is located on the entrance to the Red Sea. It is clear that with the discovery of the monsoon winds, the sailing times would be reduced as the ships then could sail directly from one land mass across the ocean to another provided that their construction were of suitable strength (Hourani 1995, Parkin and Barnes 2002, Tomber 2008). Ships from east African ports can sail directly across the Indian Ocean to Barbarikon or shipping from the Red Sea ports can sail directly to northwestern India or southern India and Ceylon. As well, ships from Southeast Asia can take advantage of the monsoon winds to sail from Southeast Asia to India and beyond undertake their return journeys during a different period of the monsoon season. Likewise, shipping from India can sail from southern and eastern Indian ports via the Straits of Malacca to eastern mainland Southeast Asia and southern China. Given such natural environmental parameters such as the changing directions of the monsoon winds, the extended period between the direction of the wind change, and the state of technology existing then for shipping propulsion, an explication of the shipping utilized would be useful to understand the social exchanges and institutional structures along these trading routes across the Eurasian world economy.

**Ships of the Maritime Eurasian World System**

Without placing any priority in terms of importance and types of ships that ply the oceans of the Eurasian world economy, our explication begins from west to east. The seminal works of Hourani (1995), Manguin (1980, 1993), Ray (2003), Hoogervorst (2013) provide us with an overview of the cultures and technologies that were involved in the maritime transportation from the ancient times. The maritime sphere of the Eurasian world system has a long tradition of seafaring. The Eastern Mediterranean has a long history of maritime activities with the Minoans, Greeks, Phoenicians, and Romans, depending on the historical period, dominating the sea lanes of the trade routes (Casson 1991, 1994, 1995). The Red Sea, East Africa, and the Arabian Sea regions had their Arabic seafaring culture and included Greek/Roman sailors and merchants (Hourani 1995, Sidebotham 2011, Young 2001). The South Asian region also had a long history of South Asian sailors and shipping owners (Mookerji 1987; Ray 2003). Southeast Asia, especially Island Southeast Asian region has been noted by various archaeological studies for its seafaring sailors and ships reaching as far as the East African coast by the first millennium BC (Manguin 1980, 1993a, 1993b; McLaughlin 2011; Ray 2003). The East Asian region especially China, has also a long historical practice of voyaging sailors and ships plying the South China and East China Seas, and the Indian Ocean as far as East Africa depending on the time period (Deng 1997).

Hourani’s (1995) focus on the Arab seafaring offers a view of the early origins of this maritime activity undertaken by Arab sailors. Because of the lack of good timber suitable in this region for ship construction that could undertake voyages over large expanse of oceans, Arab shipping initially was restricted to coastal routes along the Red Sea, the Arabian coast, the Persian Gulf, and East Africa. According to Hourani (1995), only when Indian shipping reached the Red Sea and Persian Gulf region and the possibility of importing timber from India for ship construction was it possible then for shipping from this region to sail directly across the oceans and seas to the distant lands such as South Asia. Prior to this, during the times of Alexander, the Phoenicians and the Greeks were also the seafarers in the Red Sea and the Persian Gulf. Greek-Roman sailors plus those of Arabic origins dominated the seafaring trade of the region. On the whole, Arab and Greek/Roman merchant ships plied the Red Sea and the Arabian coast (Young 2001). With the conquest of Egypt by the Romans, Roman/Greek ships along with Arab shipping dominated the Red Sea, the Arabian Coast, and East Africa. In the *Geography* by Ptolemy, it was noted that Greeks were sailing to Ceylon, and it has been suggested that they even sailed as far as the Malay Peninsula (Hourani, 1995:35). Such voyages reduced in frequency by the third century AD with the collapse of the western part of the Roman Empire during the third Dark Ages (Chew 2007). Persian shipping in the Arabian Sea and the Persian Gulf received a boost with the rise of Persian Sassanid Empire in AD 225. Persian shipping went as far as Ceylon for exchange of trade goods from Southeast Asia and China.

Arabic and Greek/Roman ships were constructed of wood of different varieties. Arabic ships were made out of teak or coconut wood. Teak was not a tree that grows in the region but was imported from India, probably from the Himalayan region, and its importation has been continuous since 3000 BC (Chew 2001). This practice of importation of teakwood was also reported in the *Periplus* (Casson 1968). Teak was chosen because once seasoned it does not split or crack, or shrink and lose its shape. Besides teak, wood from the coconut tree was also utilized in the construction of Arabic ships. The wood was from Southern India, Ceylon, the Maldives, Laccadives, and perhaps even from Indonesia. According to Hourani (1995), either the wood was imported or the ships were built in the Maldives and the Laccadives.

The typical Arab ship for the seafaring trade was the *dhow.*  It is a general term applied to all sailing vessels of the western Indian Ocean (Hourani 1995). Traditional Arab vessels were constructed by laying the keel on the ground and horizontal planks were fastened to the keel on each side by the use of stitches of fiber. Using fiber to tie the planks together instead of nails were typical of the shipbuilding technique for ships built along the Red Sea, the East African coast, the Persian Gulf, the Malabar and Coromandel coasts of India, and the islands of the Maldive and Luccadive (Hourani, 1995:93; Sheriff 2010). Iron nails were only used after AD 1500 following the Portuguese and Chinese ships that had visited the western region of the Indian Ocean. After that, those boats that were fiber attached were only seen along coastal routes primarily for fishing. This technique of building ships produced vessels that were not strong enough to meet strong winds and high seas for the stitches would often snap, and the vessels would have to undergo constant repair before they were seaworthy again. The probable reason that stitching was continued was its relative cheapness to vessels that were built with iron nails even though the manufacture of iron had been discovered in India, Iran, and Egypt. During the early periods, iron making was a small scale expensive process and the utilization of iron in shipbuilding was not pursued on a grand scale until it was necessary to build vessels that can compete with the growth of commerce in the Indian ocean following the arrival of the Europeans. The rationale for the need to switch to iron nails and the resultant robustness of the constructed ships explained by Hourani (1995) as outlined above is a possible explanation. How accurate does it explain the changing construction practice needs to be reconsidered in light of what has been discovered in maritime archaeology and shipwrecks in Southeast Asia (Manguin 1993a, 1993b; Flecker 2005). Stitching continued to be used on Arab and Indian ships albeit with evolved construction technology for ocean going ships as late as AD 800 as the Belitung shipwreck has shown (Flecker 2005). The practice was also continued in Southeast Asian shipbuilding assemblage.

 The type of wood for the mast of the ships was similar to those that were used for the hulls. Teak or coconut wood was utilized for the masts supposedly with some measuring seventy-six feet in length. Cotton cloth or even the leaves of the palm or coconut trees were employed as the materials for the sails.

The Greek/Roman ships plying the waters of the Red Sea and the Indian Ocean were usually less than seventy-five tons, though some as large as 200-350 tons that had length up to 120 feet long were also part of the fleet (Sidebotham 2011, Young 2001, McLaughlin 2014). The piers at Berenike had docking space up to this length. In terms of construction, the shell first method was employed with timbers joined edge to edge with dowels and nails. The hulls of these ships were sheathed with pitch, and even lead was used to retard the marine organisms from invading the hulls. Later on in the Roman period, ship construction was changed whereby the internal ribs were assembled and the hull was then built around these ribs. Supposedly, this changed in construction technique enabled the vessel to be built much more quickly and cheaper. Large sized timbers of either cedar or teak was used for the ribs to strengthen the ships and heaper planking formed the hull. Cedar from Lebanon, including teakwood was used during construction in Roman Egypt. The teak wood was either imported from India or employed in repairs during port visits to western India. Indian cotton was used for the sailcloth. Usually a large centrally placed sail on the ship was the design to catch the monsoon winds, and at the same time to withstand the waves caused by the rough seas during the monsoon season.

Insular Southeast Asia has also a long tradition of maritime activities. Manguin (1993a ,1993b:190) has highlighted this indigenous shipbuilding tradition: “the evidence shows an original, structurally unique technical assemblage which was developed as early as the Chinese or Indian Ocean neighbouring traditions.” In an earlier publication, Manguin (1980: 276) has further suggested that the Southeast Asian tradition of building of ocean-going ships was adopted and adapted by Chinese shipwrights in the 8th-9th centuries AD when China started to build ocean-going ships. Time-wise, before this the Chinese had only coastal or river ships and crafts, and these vessels did not have the necessary features of ocean-going ships. From this, Manguin (1993a, 1993b) reasoned that it was the Southeast Asian ships that visited southern Chinese ports that became exemplars (rigging of multiple masts and sails, v-shaped hulls with keel and stem post, and fastening of several sheaths of planks to the hull) that the Chinese shipwrights adopted. Deng (1997) and Guangqi (2000) however, have noted that the Chinese had established long-range sea routes to the Arabian/Persian Gulf region by the time of the Western Han Dynasty, and by the beginning of the early first millennium AD, Chinese ships had reached Ceylon and beyond. Since these timings of their works were based on literary accounts, the question still remains whether it was Chinese merchants and travelers sailing on Arabic or Southeast Asian vessels or on Chinese ships that reached the Arabian/Persian Gulf region, and even the eastern provinces of the Roman Empire. Supporting Manguin’s (1993a, 1993b) view of Southeast Asian nautical technology, Hall (2011: 44-45) has also written of the contributions of Southeast Asian seafaring in connecting the maritime silk trade routes between India and China where Southeast Asian ships provided the transportation vessels*.* Hoogervorst’s (2012) seminal study has summarized concretely via archaeological and linguistic analyses the contributions of Southeast Asian seafaring technologies to the shipbuilding traditions of the Indian Ocean, such as methods of plank-fastening, rigging, outrigger device and a specific type of paddle. The Southeast Asian influence was much stronger in the eastern part of the Indian Ocean, in the Bay of Bengal area, than in the Arabian Sea. In turn, as well the Southeast Asians were also adopting the seafaring technologies of the South Asians. To this end, exchanges and communications in the form of trade on the maritime silk route have fostered the hybridization of shipbuilding and nautical technologies among different cultures and littoral groups of the Eurasian world system.

 The Southeast Asian ocean-going vessel, the *jong* or known to the Chinese as *Kun-lu bo,* was constructed using the stitched plank and lashed-lug technique (Manguin 1980, 1993a, 1993b). The earliest Southeast Asian vessel excavated in Pontian (Malaysia) has been dated to be between 3rd- 5th century AD (Booth 1984). Similar to Arabic/Indian shipping construction, stitching continued to be used to hold the planks of the ships together. The stitches and lashings were made from the fiber of the sugar palm (*Arenga pinnata)*. The technique has protruding lugs carved out of the inner side of the planks to allow lashing to hold the planks together. This construction technique changed as time progressed with wooden dowels replacing the sewing of the planks together. The changed building method utilizing dowels gave more rigidity to the hull for ocean travel.

According to Chinese literary accounts of Southeast Asian vessels and what were discovered in excavations, the main features of these ships are the following: a) they were large, about 50 meters in length with a carrying capacity of 500-1000 persons and perhaps 250-1000 tons; b) Iron was not used in their construction; c) the vessels have several layers of planks; and d) they were rigged with multiple sails and masts for efficient ocean travel. Given the size and tonnage of these ships, Manguin (1993a: 264, 2004) has suggested that these vessels were constructed by the “incipient coastal states such as those that appeared on the Malay peninsula around the beginning of the Christian era.”

By the Chinese Han period (206 BC- AD 220), a maritime silk route from southern China to South Asia was established (Guangqi 2000). China with its long history of maritime tradition by the period of the Western Han Dynasty (206 BC – AD24) had ships that were multi-decks sailing the coastal waters (Deng 1997). Their length was approximately fifty meters and they carried 600-700 passengers. Instead of stitching used to secure the planks of the vessel, iron nails and clamps were employed by the 8th century AD. There was also multiple sheathing of the hulls. The axial suspended rudder was commonly employed. Lug sails were also mounted. The ocean going vessels, known as junks, became associated with Chinese shipping, and the shape and style of this vessel according to Manguin (1993a) is usually associated with Chinese ships. That should be reconsidered in view of the cross-pollination of Southeast Asian and South Asian shipbuilding technologies (Manguin 1980, 1993a, 1993b, Hall 2011). Most of China’s shipping expansion and ocean going activities developed during the Tang-Song Dynasty period (AD 617- AD 1279) and reached its peak during the Ming Dynastic period (AD 1368-AD 1644).

**The Seafaring Technologies of Southeast Asia**

For Southeast Asia, the various seas that surrounded its land mass also conduced the technologies that were developed to sustain its political-economic activities. Widely known in the eastern portion of the Eurasian world economy for its seafaring capacities and connection to the seas - just like the Minoans and Mycenaean Greeks in the second millennium Bronze Age Mediterranean – Southeast Asia’s maritime nautical technological innovations were adopted and transferred to the Indian Ocean littoral communities and to China (Manguin 1993, Fuller et al. 2011, Hoogervorst 2013). Summarizing Hoogervorst’s (2013) and Manguin’s (1985a, 1985b, 1993) findings, South Asia, East Africa, and China adopted and modified some elements of Southeast Asia’s nautical technological innovations such as vessel types, plank fastening, rigging, and other devices as such the outrigger. The adoption process was not of a one-way direction. The Southeast Asians were also open to adopting nautical technologies from South Asia and Arabia.

In terms of boat types, according to Manguin (1985a, 1993) up to the Han Dynasty, the Chinese ships were mostly designed for coastal and river shipping. Péronnet (2013) also noted of the development of maritime navigation in southern China around Canton. Later on when China started to be involved in the *Nanhai* trade, Chinese ships were patterned after foreign ships that we assume were of Southeast Asian origin. Descriptions of large foreign ships with four sails set to the wind that took advantage of the Monsoons were discussed in the Chinese literary accounts (Manguin 1993).

Construction of ships and boats in terms of fastening the planks together for the hull was via the method of sewing. This manner of ship construction was very much different than the ship construction undertaken in the Mediterranean whereby iron nails were used instead to hold the planks together. Sewing the planks together requires that the cords be passed through lugs. Such a design is often called the lashed–out method. In addition to the stitching of the planks, dowelled edges were also introduced to hold the planks together. This lashed-out dowelled design is a technique that was much in use in Southeast Asia from the Philippines to Indonesia and the Malayan archipelago, and according to Hoogervorst (2013) was introduced to the other regions of the Eurasian world economy.

The type of sails that were used for maximizing on wind propulsion was a necessary feature to replace oars and paddles. The sail design that was in use for Southeast Asian vessels had the shape of a rectangle. Hoogervorst (2013), citing Richard LeBaron Bowen (1952), suggested that this design was probably invented in Indonesia, and the use of unfixed sprit spars to hold the sail was certainly a Southeast Asian invention.

For making ships seaworthy in light of the speed generated by the use of the winds for propulsion, a design for balancing the craft was important. Different construction designs were used, and the one that is depictive of indigenous Southeast Asian origin was the outrigger device that stabilized the craft from capsizing during maneuvers. The use of the outrigger device was evident in crafts in the Indian Ocean such as Ceylon, the East African and South Asian coasts.

**Conclusion**

Given the above, a globalizing world economy was in the making from the late prehistoric period that extended from the West to the East incorporating civilizations, kingdoms, and the various oceans and seas. A global division of labor existed incorporating various regions in trading exchanges throughout the Mediterranean Sea, the Red Sea, the Persian Gulf, the Indian Ocean and the South China Sea. It was a maritime world of seas and oceans connecting the various lands resulting in cultural and technological transmissions and hybridizations, notwithstanding the conflicts and wars that erupted from time to time. Expansion of the world economy was by no means unending, for at various long historical periods there were punctuations of socioeconomic downturns, the origins and factors for these contractions were not discussed in this chapter but were attempted elsewhere (see for ex., Chew 2007, Chew and Sarabia 2016). Despite some of these fluctuations, the Eurasian world economy continued on its globalizing trajectory to this day whereby every ocean has now been incorporated, with the exception of the Arctic Ocean. Therefore, we should seriously consider that the maritime world is global in nature

It is also clear from the above discussion that the Southeast Asian region developed a level of social, economic and political complexity that we cannot easily categorize it as just a place composing of distribution centers/entrepôts. The volume of trade flows it has with the western and eastern segments of the Eurasian world economy must lead us to realize that a substantial level of socioeconomic and political transformations had taken place; and that there were polities in Southeast Asia that were involved in not only the extraction and the cultivating of natural resources, minerals, plants, and food crops, but as well in the manufacturing of beads, pottery, bronze wares, iron items, figurines, jewelry, etc., and undertaking political relations with other core centers in the Eurasian world system. Given the linkages of Southeast Asian polities with the other parts of the Eurasian world economy, Southeast Asian socioeconomic development needs to be reassessed, and its historical place in world history has to be reconsidered.

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1. For example, the discovery of the Dong Son drums in the eastern part of the Malayan peninsula similar to those of the earlier Dong Son culture located in the Red River Delta of Vietnam is indicative of how much distance these drums have travelled (Jacq-Hergoualc’h 2002, O’Reilly 2007). [↑](#footnote-ref-1)
2. Roman coins and products have been discovered among the ruins of Fu-nan (Stark 1996, Wheatley 1964a). [↑](#footnote-ref-2)
3. 1 kati is equivalent to 1.1 lbs. [↑](#footnote-ref-3)