Essays in Economic & Business History
2021, 39: 129-147
Published January 31, 2022

The Dutch Sappanwood Trade in the Eighteenth Century

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Abstract

In the eighteenth century, the Dutch East India Company (VOC) traded sappanwood, a source of red dye for textiles, in both its Dutch-Asiatic and intra-Asian trade routes. The voyage and cargo records kept by the VOC's bookkeeper-general in Batavia reveal a small but convenient trade that complemented the Company's better-known dealings in spices and textiles. The VOC shipped Siamese and Indonesian sappanwood to the Dutch Republic and Asian markets regularly but in small quantities relative to other goods. Sappanwood was a useful ballast for VOC ships resulting in low-cost shipping for the commodity. In Europe, the VOC earned healthy margins by supplying a competitive red dyestuff to the continent's burgeoning textile industry. In Asia, sappanwood contributed to the VOC's intra-Asian trade system as a commodity useful in acquiring more lucrative goods, especially copper from Japan.

Keywords: Sappanwood; Dutch East India Company (VOC); Bookkeeper-General Batavia; Dutch-Asiatic Trade; Intra-Asian Trade.

ISSN 0896-226X LCC 79-91616 HC12.E2
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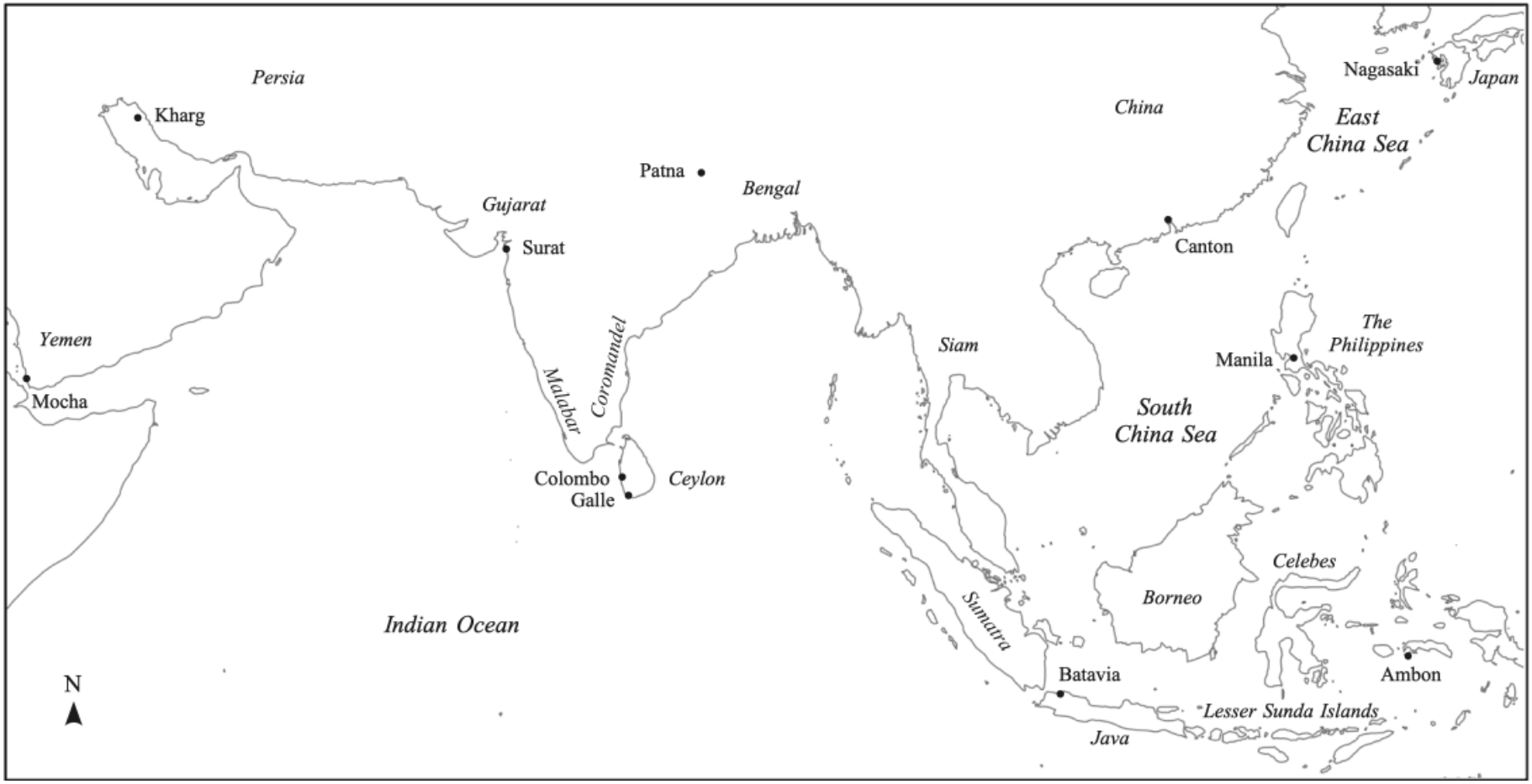
Introduction

The little-known trade in sappanwood has a long history both within Asia and in transcontinental commerce with Europe. Sappanwood, a species of tree native to South and Southeast Asia, was a valuable source of red dye for textiles used by ancient, medieval, and early-modern dyers throughout Eurasia. For centuries before the Portuguese arrived in Asian waters, local merchants traded sappanwood extensively around the Indian Ocean and China Seas for use in dyeing silk and cotton from Persia, China, and India. At least as early as the eleventh century, commercial networks also brought sappanwood to Europe through the Levant for use on the continent's woolen textiles (George Bryan Souza 2004, 45-48). The Portuguese entrance into the Indian Ocean at the turn of the sixteenth century did little to change these trade patterns. The Portuguese dealt minimally in sappanwood: they did not move regional goods among Asian markets to the extent that the Dutch would in subsequent centuries and the Portuguese crown forbade the importation of sappanwood to Europe, favoring instead Portugal's newly-discovered supply of brazilwood, a similar source of red dye found in Brazil (Cameron J.G. Dodge 2018, 5). As a result, the Eurasian trade in sappanwood continued largely as it had before the turn of the sixteenth century despite the Portuguese presence.

Dutch merchants entered the Indian Ocean at the end of sixteenth century. They pooled their capital to establish a number of early companies to trade with South and Southeast Asia, and these united to form the Dutch East India Company (VOC) in 1602. This union established six Company chambers in the Netherlands—Amsterdam, Middleburg, Rotterdam, Delft, Hoorn, and Enkhuizen—that divided responsibilities and profits proportionally to their size and initial investment. From its founding through its dissolution at the very end of the eighteenth century, the VOC held a monopoly on all Dutch trade east of the Cape of Good Hope and west of the Straits of Magellan. The Company's mandate in Asia came with state-like powers: the Dutch Republic allowed the VOC to enter into treaties, equip troops, conquer territory, and establish fortifications in the East. The VOC was thus a trading company at its core but acted as the political and military arm of the Republic in Asia (J.R. Bruijn et al. 1987, 6). The Company used its authority to expand its mercantile reach. It forced the Portuguese out of Indonesia, subdued local rulers, and strategically founded Batavia in northwestern Java to be its administrative center in Asia. The VOC took control of Ceylon in the middle of the seventeenth century and eventually grew its commercial network with trading factories in Persia, India, Siam, China, and Japan (see Figure 1).

The VOC operated two distinct but interrelated trading systems. The first was the Dutch-Asiatic trade which comprised the movement of goods between the VOC's chambers in the Netherlands and its factories in Asia. Outbound voyages from Europe carried the goods needed for the operations of the Company in the East, including some commodities but mostly bullion for trading, stone, iron tools and nails, munitions, European clothes and books, and coins with which to pay personnel. Ships making the return voyage from Asia carried spices and pepper, cotton and silk textiles, tea, coffee, sugar, copper, tin, and dyestuffs, all of which could be sold for at least a moderate profit in Europe. Batavia acted as the Company's "general rendez-vous" in Asia. It was the primary port of call for newly-arrived ships from the Republic and a gathering point for Asian goods destined for Europe. From the middle of the seventeenth century when the Company captured Ceylon from the Portuguese, Galle became a second, smaller rendez-vous, especially for goods from the western Indian Ocean. Other factories such as those on the Coromandel Coast of India, in Bengal, Surat, and Canton also had direct links with the Republic at various points. Trade volume on Dutch-Asiatic routes grew across the seventeenth century and peaked in the early to mid-eighteenth century (Bruijn et al. 1987, 122-142, 173-194; Kristof Glamann 1958).



Source: drawn by the author from *Natural Earth* (2018).

Figure 1
Ports and Regions Involved in the Sappanwood Trade during the Eighteenth Century

The second system was the intra-Asian trade. The VOC's intra-Asian trade emerged during the first half of the seventeenth century as a solution to the lack of European goods valuable in Asian markets. The VOC arrived in Asia with only precious metals to exchange for the luxuries it wanted to export back to Europe. During the early decades of the seventeenth century, the Company established a monopsony on Indonesian spices, allowing it to dominate the flow of spices out of Maritime Southeast Asia and enter other Asian markets with a desirable product (Paul van Dyke 1997, 43-48). With Indonesian spices in its ships' holds, the Company began to procure Indian cotton textiles, Chinese tea, Javanese sugar, and Japanese precious metals from their sources and move them to where there was regional demand. As the VOC circulated these goods around Asia, it left a portion in Batavia for export to Europe and used the rest to trade in other Asian harbors. As the intra-Asian trade grew, it became not only the means by which the VOC acquired goods for Europe but also an engine for profit in and of itself. Starting around 1630, the intra-Asian trade began to earn proceeds that were sent back to the Company's chambers in the Netherlands and during the eighteenth century intra-Asian profits sustained the Company through internal troubles (Bruijn et al. 1987, 10; Els Jacobs 2006, 2-12). The VOC became so adept at this carrying trade in Asia that it displaced not only rival Europeans but some Asian merchants too. One advantage the Company had over its rivals was its information network. Predictable routes between its established trading factories throughout the region allowed the VOC to act on current price information and plan shipments accordingly (van Dyke 1997, 50-53). Supporting this network was the Company's fleet. The Asia-based ships of the VOC were of a variety of sizes and styles. Such practical diversity allowed the Company to perform all the tasks necessary in running its trade network from extracting goods from small fluvial harbors to shipping products long distances to moving personnel and missives (Robert Parthesius 2010, 89-93).

The arrival and expansion of the VOC in Asia in the seventeenth century altered the patterns of the sappanwood trade. While the Portuguese avoided bringing sappanwood to Europe so as not to cannibalize their trade in brazilwood, the Dutch were happy to increase the competition facing Portuguese and Spanish New World dyestuffs. The VOC began importing sappanwood to the Republic and, for the first time in the trade's history, significant volumes of the commodity arrived in Europe directly by ship from Asia. Some sappanwood did continue to make its way to Europe via the traditional route through the Levant, but this flow was now dwarfed by the quantity of sappanwood arriving on Dutch ships plying the Cape Route. The VOC also took advantage of the demand for sappanwood in Asian markets and incorporated sappanwood into its lucrative intra-Asian trade routes. Now, in addition to Asian merchants, European traders also distributed sappanwood around Asia. Moreover, the VOC's aforementioned advantages in the intra-Asian trade allowed it to dominate the distribution of sappanwood as it did with a number of other goods. Thus, between its routes to Europe and its network within Asia, the VOC came to dominate the global flow of sappanwood.

While not one of the VOC's primary commercial endeavors such as the trade in spices or textiles, the Company's trade in sappanwood is nevertheless compelling: sappanwood was a commodity with demand in both Europe and Asia, a resource whose global flows were largely controlled by the VOC itself, and a factor in textile manufacturing at a time when the textile industry was driving European proto-industrialization. Despite these traits, sappanwood's ancillary role in intercontinental and intra-Asian commerce has left aspects of the trade's organization and economics unexplored. Given sappanwood's wide natural geographic range, where were the VOC's primary sources of the dyestuff? How did the trade's structure and volume differ between its Europe-bound and intra-Asian components? How did sappanwood compete with the number of red dye sources available in early-modern Europe and how profitable was sappanwood for the VOC on the continent?

To explore these aspects of the Dutch sappanwood trade, this study uses data from a project completed in 2013 by Judith Schooneveld-Oosterling and her collaborators called

Bookkeeper-General Batavia (Schooneveld-Oosterling et al. 2013).[1] The project digitized the extant records of the VOC's bookkeeper-general stationed in Batavia who maintained detailed information about each voyage VOC ships made to, from, and within the Company's trade zone in the East. The bookkeeper-general recorded each voyage's origin and destination, the goods transported, and their quantities, monetary values, and attributes in annual books. The records of 54 books survive covering years between 1700 and 1790.[2] While a number of books, and thus years, are missing, each book is a complete record of VOC trade in the East for its given year. Together, the books digitized in the *Bookkeeper-General Batavia* database allow us to reconstruct the Company's sappanwood trade during the eighteenth century.

Sourcing Sappanwood

Like other commodities that the VOC traded, the Company did not organize the production or harvesting of sappanwood. Local harvesters and traders from around the tree's native range in Mainland and Maritime Southeast Asia gathered the wood and brought it to regional ports. From there, VOC ships collected sappanwood and brought it primarily to Batavia, although some VOC ships brought smaller trickles of sappanwood to the Company's stations in Ceylon and Bengal. The Company's primary sources of sappanwood were Siam (although shipments ceased after the Company closed its factory there in 1765) and the islands of Indonesia (most notably Java, Sumatra, Celebes, and the Lesser Sunda Islands). Other regions supplied sappanwood in more limited quantities (see Table 1). Many of these areas were outside the tree's natural growth range but were nevertheless small sources of sappanwood for the VOC because sappanwood was so widely traded by Asian merchants throughout the Indian Ocean and China Seas. Ports in Yemen, Persia, India, China, and Japan all had extensive mercantile links and VOC ships returning from these destinations occasionally carried sappanwood back to Dutch entrepôts. Some shipments of sappanwood bound from Coromandel and Persia to Batavia, for instance, were specifically designated as being “for the homeland” or “for Europe.”[3] VOC merchants may have received a good price, had space in their ships' holds, or needed ballast and decided to bring this sappanwood from further afield back to Batavia for export. Some other shipments of sappanwood that arrived in Batavia, on the other hand, may have simply been left over from the outbound journey. The VOC carried sappanwood to all its major markets in Asia. Thus, some cargoes returning to Batavia may have contained soiled or unwanted merchandise that the Company could not sell in its ports of call. These cases are difficult to identify unless the bookkeeper-general explicitly noted them, as he did for one shipment of sappanwood returned to Batavia from Nagasaki after being “rejected as undeliverable by the Japanese.”[4]

[1] All figures below come from the data compiled in this project unless otherwise noted.

[2] A 55th book, covering the year 1800/1801, also survives. I have excluded this book here because it is an anomaly of residual record-keeping after the dissolution of the VOC in 1799. Table A in the Appendix summarizes the VOC’s sappanwood trade for those years for which records are available. Each book spanned two calendar years, from September 1 of one year through August 31 of the next. In the text and graphs that follow, I refer to each book by the second of the two years out of convenience. Thus, the first data point on graphs is 1701 from the 1700/1701 book. All guilder values (*ƒ*) refer to Netherlands guilders. The bookkeeper-general recorded values in East Indian guilders through 1777 at which point the office changed to accounting in Netherlands guilders. I have converted all East Indian guilders to Netherlands guilders by deflating them 20 percent, in keeping with the Republic's statutory difference between the two currencies. All weights are given in Amsterdam pounds (lbs).

[3] “voor patria” (*Bookkeeper-General Batavia* voyage IDs 15932, 17063, 17067, 18302, 14709, 14710); “voor Europa” (voyage ID 8597).

[4] “voor onleverbaar door de Japanners uitgeschoten” (voyage ID 9794).

Table 1
Sources of Eighteenth-Century Sappanwood Shipments Carried by the VOC to Batavia, Ceylon, and Bengal

Source	Value (ƒ1000)	Percentage of Total
Siam	754	64.3
Indonesia	378	32.2
Other (India, Yemen, China, Japan, and Persia)	41	3.5
Total	1,173	100

Source: Schooneveld-Oosterling et al. (2013).

VOC ships did not carry all the sappanwood that arrived at Dutch ports in Asia. For every guilder of sappanwood that the Company exported from Batavia to either the Dutch Republic or other Asian destinations, VOC ships brought just ƒ0.73 of sappanwood to Batavia. This imbalance implies that just over a quarter of the sappanwood that the VOC shipped out of Batavia arrived there on the ships of Asian merchants that distributed sappanwood throughout the region alongside the Company. Asian merchants also carried some sappanwood away from the Dutch entrepôt. Especially during the first half of the century, sappanwood was a popular return cargo for the tea-bearing junks that arrived at Batavia from China (Jacobs 2006, 234). The presence of modest inbound and outbound flows of sappanwood on non-Dutch ships shows the extent to which Asian merchants participated in the trade despite the VOC's commercial dominance.

Further insight into the VOC's diverse sources of sappanwood—including the sources of the sappanwood brought to VOC ports by non-VOC ships—comes from the descriptions the bookkeeper-general included with outbound cargoes (see Table 2). The two most common varieties listed reflect the Company's primary sources mentioned above: "Siamese" and "Bimanese" (after the Sultanate of Bima in the Sunda Islands of Indonesia). Other rarer varieties were more specific, such as "Ambonese," after the small, far eastern Indonesian island of Ambon. The handful of cargoes labelled as "Javaans," "Jakatraas," or "Ceylons" imply that the VOC may have sourced some sappanwood locally from near Batavia or the ports of Galle and Colombo on Ceylon. A few ships leaving Bengal had "Patnase" sappanwood onboard, presumably from near Patna up the Ganges river. The variety "Manillese," traded

Table 2
Varieties of Eighteenth-Century VOC Sappanwood Exports from Asia to the Dutch Republic and their Average Invoice Prices in Asia

Variety	Value (ƒ1000)	Percentage of Total	Average Price (ƒ/100 lbs)
Siamese	553	40.5	2.61
Bimanese	398	29.2	2.25
Manillese	22	1.6	4.91
Other (Javaans, Jakatraas, Ceylons, Patnase, and Ambonese)	14	1.0	2.31
Mixed, various, or not listed	378	27.7	2.63
Total	1,365	100	2.50

Source: Schooneveld-Oosterling et al. (2013).

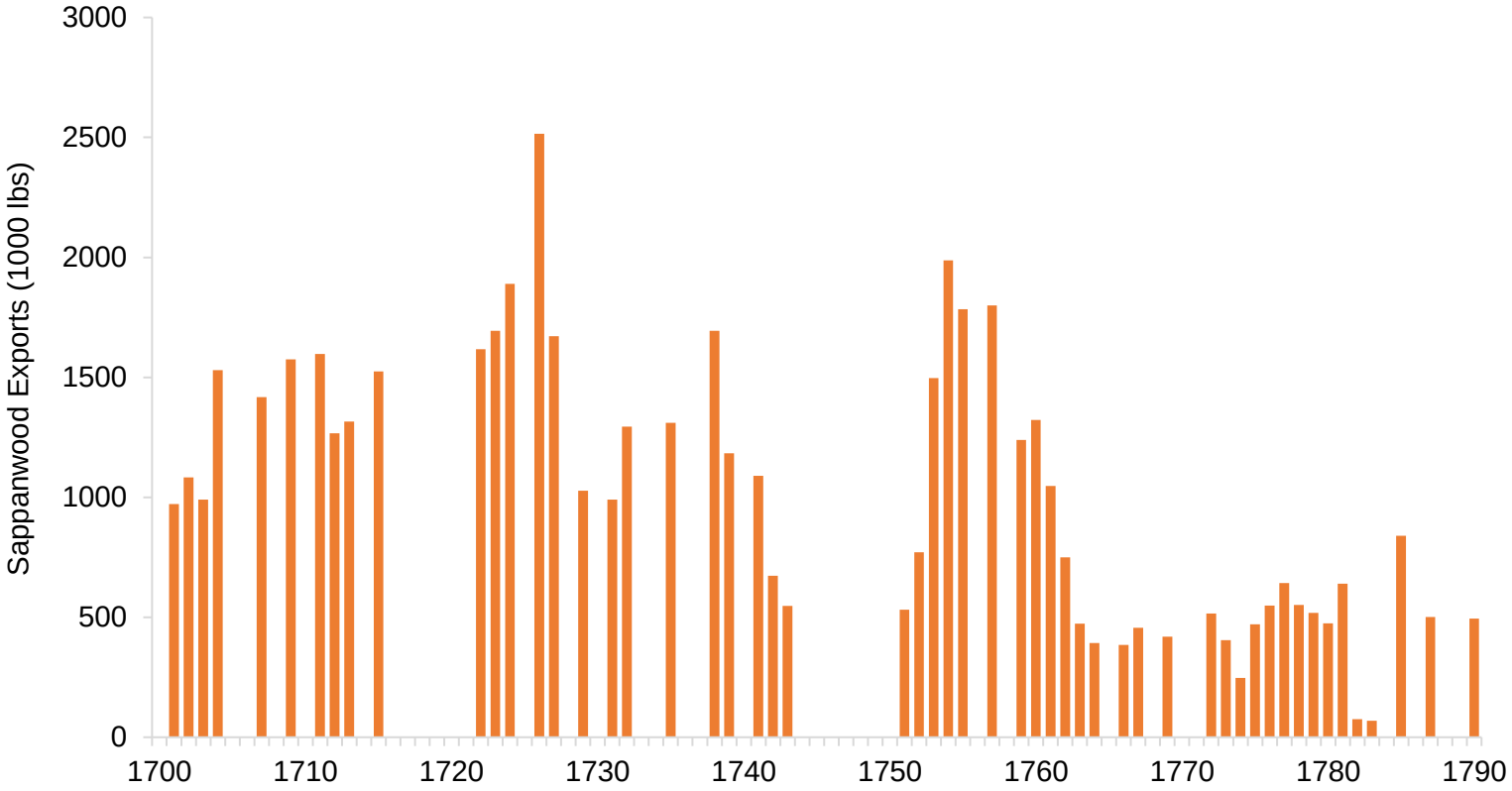
sporadically by the VOC throughout the century, suggests that some sappanwood came from as far as the Philippines.

The implication of these different sources for sappanwood's use is uncertain. The period's dyers in Europe rarely mentioned individual types or sources of sappanwood but instead considered the dyewood as a homogenous product (Dominique Cardon 2016, 47). On the bourse in Amsterdam, sappanwood was likewise listed uniformly (N.W. Posthumus 1946, 448-449, table 204).[5] In the Batavia bookkeeper-general's records, many shipments of sappanwood did not have a variety listed or were recorded as mixed or various, which would further imply that the exact geographic source was not all that important. Conversely though, some ships carried multiple cargoes of sappanwood that were each listed separately, such as the *Zeepaard*, which carried distinct quantities of “Bimanese,” “Manillese,” “Javaans,” and “Jakatraas” sappanwood from Batavia to Amsterdam in 1787 (Voyage ID 518). Furthermore, Dutch merchants selling sappanwood in Europe reported that different markets had different preferences, with German and Baltic traders favoring Indonesian sappanwood and French and Italian buyers preferring sappanwood from Siam (Souza 2004, 54). Regardless of the conflicting treatment by European dyers, merchants, and the VOC, different sappanwood varieties commanded different prices in Asia. “Siamese” sappanwood was more expensive on average than “Bimanese” but both averaged between $f2$ and $f3$ per 100 pounds for the century. “Manillese” sappanwood was the major outlier at $f4.9$. Unlike “Siamese” or “Bimanese” sappanwood, the “Manillese” variety only appears in the bookkeeper-general’s records for Europe-bound cargoes, implying that exclusively Asian traders brought it from the Philippines to Batavia and Ceylon. This trade pattern is logical given that Spain, a mercantilist rival of the Dutch, would not have welcomed VOC ships to its Philippine ports. With no VOC vessels sourcing the variety directly, the higher price of “Manillese” sappanwood may be the result of more middlemen being involved in bringing it from Spanish-held islands. Other varieties ranged widely in price from “Ambonese” ($f1.5$) on the low end to “Ceylons” ($f4.6$) at the high end, but their small individual volumes make drawing conclusions difficult. What these varieties do reinforce, however, is that occasional sources from further afield supplemented VOC sappanwood sourced primarily from Siam and Indonesia.

Exports to Europe

The VOC exported sappanwood to Europe continuously during the eighteenth century. Of the 1,153 voyages that left Batavia for the Republic during the years for which the bookkeeper-general's records survive, 825 (72 percent) carried sappanwood. An average of 21 VOC ships brought sappanwood from Asia to Europe annually and while the trade did ebb and flow, no year saw fewer than three Europe-bound cargoes. For the first six decades of the century, the quantity of exports by weight remained quite consistent, generally hovering between one and one and a half million pounds annually (see Figure 2). This period was punctuated by a handful of higher volume years, mostly clustered in the mid-1720s and mid-1750s. The decades from 1760 through 1790 saw a weakening of the trade, however, with much lower annual exports of around half a million pounds. This decline in exports may have been supply-driven. Average annual sappanwood imports to Batavia fell after the Company closed its trade post in Siam in 1765. Incoming shipments from Indonesia picked up somewhat for the remainder of the century but they were nowhere near enough to make up for the lost volume from Mainland Southeast Asia. The result was about half as much sappanwood coming to Batavia on VOC ships annually as before the closure.

[5] After 1705, the commodity changed from “Sappan wood” to “Sappan wood of Siam” but beyond this, no different locations or varieties are given. Furthermore, no reversal in designation occurred after 1765 when the Company stopped directly sourcing sappanwood from Siam with the close of the factory there.



Source: Schooneveld-Oosterling et al. (2013).
Note: absence of bar denotes records missing for relevant year

Figure 2
The European Export Trade: Annual VOC Sappanwood Exports to Europe, 1700-1790

Batavia and the ports of Ceylon were the primary harbors from which the VOC shipped sappanwood back to the Republic for the duration of the century, accounting for the vast majority of exports (see Table 3). Starting in the 1730s, the trading posts of Bengal, which for the first third of the century had shipped sappanwood to Ceylon for re-export to Europe, began sending sappanwood cargoes to Europe directly. Other ports actively exported sappanwood to Europe for shorter periods. The 1750s saw Dutch ships depart Canton with sappanwood for the Republic and in the 1770s a number of ships left from ports on the Coromandel coast of India. These patterns in the sappanwood trade paralleled the larger trends of which Dutch ports were engaged in direct commerce with the Republic (Bruijn et al. 1987, 77-80). On the European side, the six chambers divvied sappanwood imports almost perfectly according to the claim each had to goods as laid out in the Company's charter (see Table 4). Close to half of all sappanwood arrived in Amsterdam, just shy of a quarter arrived in Middleburg, and the remainder was split more or less evenly between Hoorn, Rotterdam, Enkhuizen, and Delft.

Table 3
Asian Points of Departure for Eighteenth-Century VOC Sappanwood Exports to the Dutch Republic

Source	Value (f1000)	Percentage of Total
Batavia	923	67.6
Ceylon	252	18.4
Bengal	151	11.1
Canton	30	2.2
India	10	0.7
Total	1,366	100

Source: Schooneveld-Oosterling et al. (2013).

Table 4
European Ports of Arrival for Eighteenth-Century VOC Sappanwood Imports to the Dutch Republic

Port of Arrival	Value (f1000)	Percentage of Total
Amsterdam	640	46.9
Middleburg	326	23.9
Hoorn	105	7.7
Rotterdam	99	7.2
Enkhuizen	99	7.2
Delft	97	7.1
Total	1,366	100

Source: Schooneveld-Oosterling et al. (2013).

The VOC may have traded sappanwood continuously but the commodity's share of hold values was quite small. By Glamann's estimate, dyestuffs as a whole made up only eight percent of the value of VOC cargoes bound for Europe around the turn of the eighteenth century, compared to 23 percent for spices and pepper, and almost 55 percent for silks and other textiles (Glamann 1958, 13). Sappanwood was just one of the many dyestuffs exported to the Republic, the likes of which included ambergris, gum, and indigo. The median cargo of

sappanwood represented just 0.5 percent of the total value of Europe-bound holds during the eighteenth century and the largest individual cargoes rarely exceeded two percent.

While it represented only a small percentage of the value of VOC holds, sappanwood played a crucial role in maximizing the use of space—and therefore the profit—from each voyage. Carefully packed ships could make use of logs and wedges of sappanwood as a form of ballast or chocking. They would fill void space in a ship's hold and prevent other pieces of cargo from moving around. Bruijn and his collaborators highlight how "the transport of [bulky dyestuffs like sappanwood] often fitted in conveniently with a main cargo like textiles" (Bruijn et al. 1987, 189). The *van Alsem*, which made a voyage from Bengal back to the Republic in 1734, was strategically packed to maximize the use of hold space:

> For the lower layer saltpetre and cowrie (from the Maldives) were poured in and then covered with mats. On top of this was put a layer of pepper. Above this the cases and bales of textiles were placed, first the coarser kinds, then the more valuable ones. The layers were separated by mats. Any remaining spaces in between the cargo and the hull were filled in with pepper and sapanwood [*sic*] – small tree trunks of c. 60 cms in length and c. 10 cms width. This *garniering* (trimming) had to prevent the shifting of the cargo. *Bindrottings* or rattan was also used for this. In bundles of 65 pounds this stowage could be sold at home at a small profit. (Bruijn et al. 1987, 191)

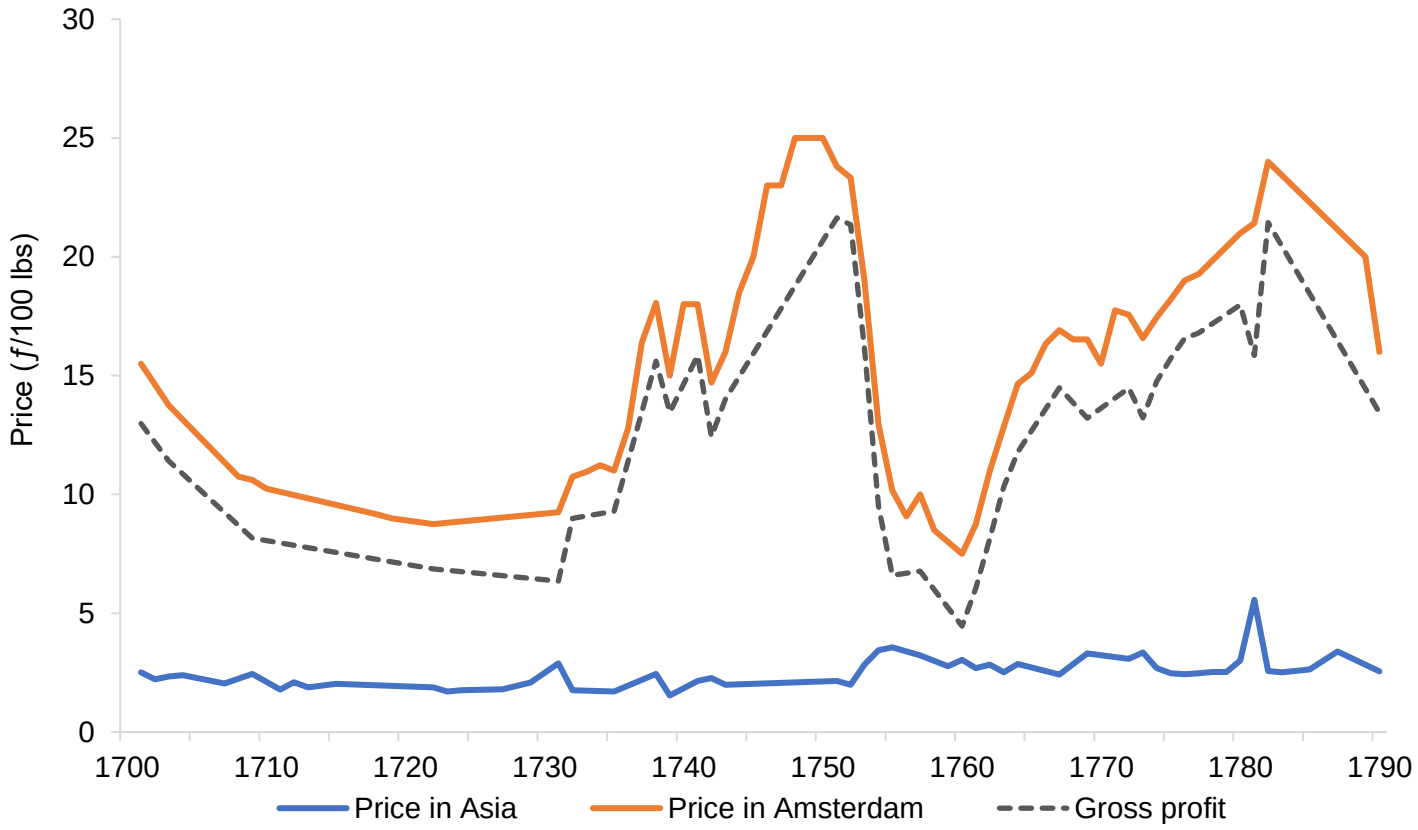
A number of the bookkeeper-general's records refer to sappanwood placed "into the underlayer" or "at the bottom" of holds to help with this manner of packing.[6] In Europe, dyers would trim, grind, and shave sappanwood to use as an ingredient in their craft anyway. As such, the cosmetic condition of sappanwood was of minimal importance and sappanwood could be cut down in Asia to meet the constraints and needs of ships' holds. The VOC could thus transport sappanwood to Europe cheaply by making productive use of space.

Once in Europe, sappanwood proved to be a profitable commodity for the Company. For most of the century, the prices at which the VOC acquired sappanwood in Asia averaged between $f2$ and $f3$ per hundred pounds annually. In Amsterdam, average annual prices for sappanwood at the bourse ranged from $f7.5$ to $f25$. Gross profits thus varied from $f4.5$ to $f21.6$ and gross margins from 59 percent to 91 percent with a median of 84 percent (see Figure 3).[7] Expressed in terms of the Company's mark-up, sappanwood sold in Amsterdam for 6.1 times what the Company paid for it in Asia on average. While sappanwood could not compete with premier luxury goods such as spices, these returns made sappanwood highly profitable for a ballast good for which expectations were lower. Other ballast goods such as tin and copper averaged mark-ups of only 1.7 during the eighteenth century. Saltpeter, another ballast good, and the blue dyestuff indigo both averaged around 3.2 (Pim de Zwart 2016, 526-527).[8] This estimate of sappanwood's profitability comes with some caveats: that small quantities of sappanwood arrived in Amsterdam by trade routes not controlled by the VOC, that only half of VOC-imported sappanwood went to Amsterdam, that the VOC may have received a higher or lower price for the commodity at auction than at the bourse, and that these gross profits take into account only the cost of goods sold and not the costs of outfitting ships, paying salaries, and the like. That said, low average prices in Asia, efficient transportation, and demand from European dyers made sappanwood a profitable supplementary good for the VOC's export trade to Europe.

[6] "tot onderlaag," "in deze bodem." Some examples include voyage IDs 1374, 15932, and 18750.

[7] Gross margin refers to the portion of the sell price in excess of the purchase price, i.e., gross margin = (price in Amsterdam – price in Asia) / price in Amsterdam.

[8] Mark-up = price in Amsterdam / price in Asia.



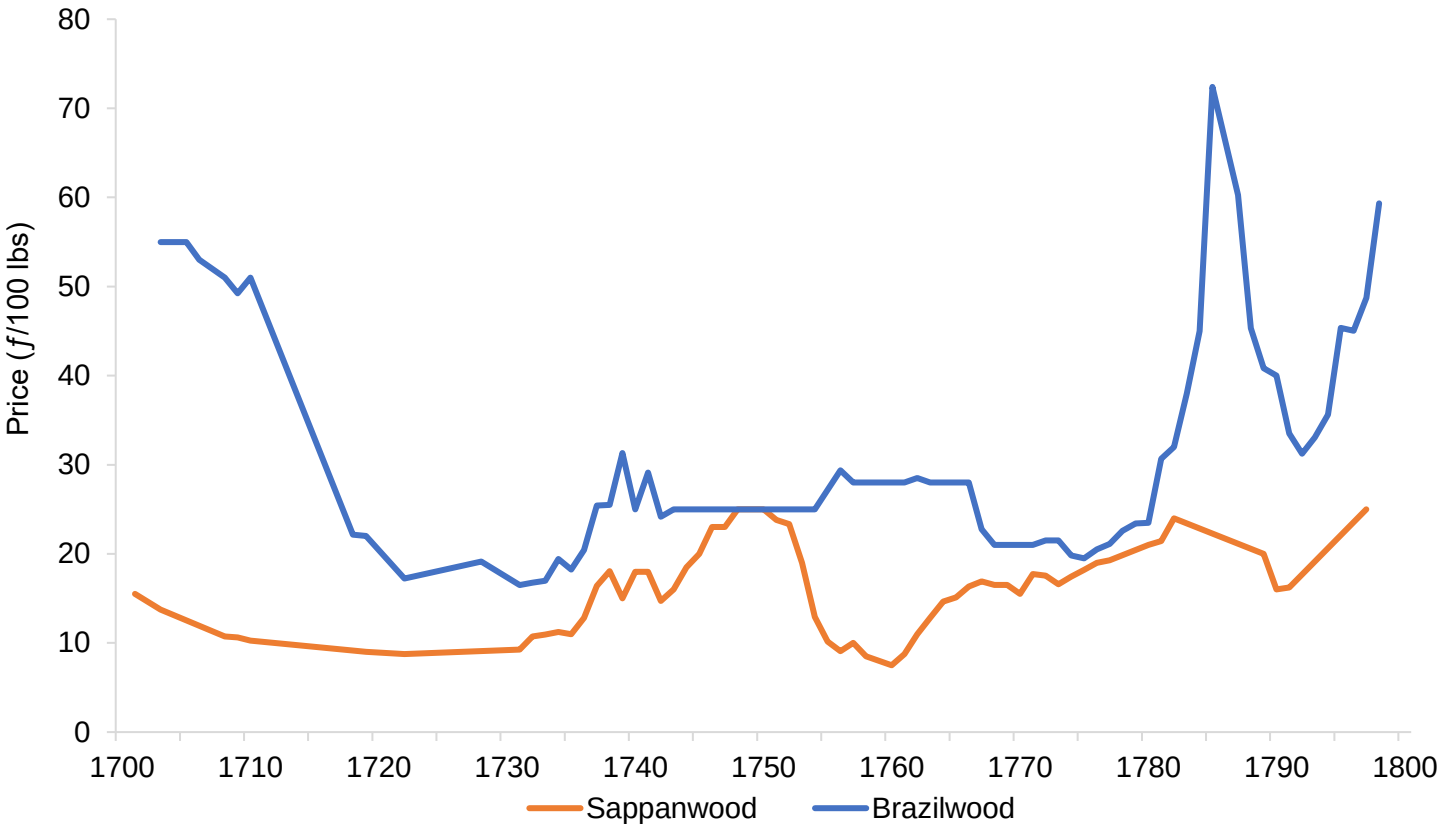
Sources: Schooneveld-Oosterling et al. (2013); Posthumus (1946, 448-449, table 204).

Figure 3
A Profitable Commodity: Average Annual Sappanwood Prices in Asia and Amsterdam, and the Gross Profit on the Commodity, 1700-1790

Sappanwood was one of a handful of red dyestuffs available to Europe's dyers. Sappanwood had been available in European markets since at least the Middle Ages and complemented two indigenous sources of red dye. One was madder, a flowering herb found throughout the continent. The other was kermes, a species of small insect that lives on oak trees around the Mediterranean. The Iberian expansion into the New World in the sixteenth century added two new red dyestuffs to this group. From Mexico, the Spanish brought cochineal, an insect similar to kermes that lives on cacti. From Brazil, the Portuguese started importing brazilwood, a species of tropical tree closely related to sappanwood. While these five sources all produced red coloring agents, different dyes occupied different roles within a dyer's repertoire. Each had its own properties that made it best suited for certain applications. Madder, for instance, was renowned for its colorfastness but produced a dull shade of red (Jean Hellot et al. 1901, 13, 133). This made it most suitable for less expensive fabrics and weaves. The insect-based dyes, kermes and cochineal, produced vibrant shades of red but were expensive. They found their place on luxurious silks and high-quality woolens where the intensity of the hue was worth the price (Cardon 2016, 49-57; Hellot et al. 1901, 90, 280). The dyewoods, brazilwood and sappanwood, were not as colorfast as either madder or the insect-based dyes but they still produced an array of rich hues. Dyers would often take textiles dyed with a base of another dye and finish them with brazilwood or sappanwood to add nuanced shading (Cardon 2016, 47, 52, 59, 65, 67, 80-82; Hellot et al. 1901, 309-315). Such differing characteristics and uses meant that the red dyestuffs available in early-modern Europe, while certainly comparable, were not perfect substitutes even if they did all produce red dye.

As a similar species with similar properties, brazilwood was sappanwood's closest substitute. Dyers used the same refining process for both. The wood arrived in Europe as logs or blocks stripped of bark and outer layers to meet the requirements of transoceanic transport. Dyers would shave off chips of these larger pieces to add to dyeing recipes (Cardon 2016, 47; Hellot et al. 1901, 215, 283). Sometimes refining was more centralized. Amsterdam, with its sizeable textile industry, came to boast a more industrial facility for refining brazilwood and sappanwood. The Rasphuis (Saw-house), as it was known, set convicted felons to work on gangsaws to rasp these dyewoods into powder for the city's dyers (Simon Schama 1988, 19-20). Between brazilwood and sappanwood, dyers came to regard the former as the higher-quality dye source. They found brazilwood produced more vibrant colors and was more powerful by weight than its Asian competitor (Cardon 2016, 47; Hellot et al. 1901, 284). Brazilwood's advantages meant that it generally commanded a higher price than sappanwood. Brazilwood prices at Amsterdam's bourse during the eighteenth century were always higher than those of sappanwood except for a few years in the middle of the century when they were equal (see Figure 4). The prices of the two did not always move together, suggesting that supply considerations may have impacted their prices more than demand for red dyewood. Most notably, the price of sappanwood dropped sharply in the early 1750s, a period of consecutive years of increasing sappanwood imports that were some of the highest of the century's second half. Especially at the beginning and end of the century, the regularity of VOC sappanwood imports kept sappanwood prices less volatile than those of brazilwood, which had to come to Amsterdam by way of Portugal.

The Dutch-Asiatic trade in sappanwood gave the VOC a product to compete with its rivals in the European market for red dyestuffs. Sappanwood was a Dutch alternative to Portuguese brazilwood (although sappanwood was the slightly lower quality option) and to a lesser extent to Spanish cochineal (which dyers used a little differently). The trade also gave the VOC an advantage over British and French merchants which did not have access to valuable overseas red dyestuffs of their own, although these rivals did gain greater access to sappanwood as their presence in the East increased over the course of the eighteenth century. The VOC itself imported no significant quantities of other red dyestuffs to Europe during the eighteenth century and so did not cannibalize its trade in sappanwood. (The VOC did deal in



Source: Posthumus (1946, 444-445, table 202, 448-449, table 204).

Figure 4
Dyewood Competition: Average Annual Prices in Amsterdam for Sappanwood and Brazilwood, 1700-1800

both madder and cochineal but in the opposite direction, carrying them from Europe to Asia to trade for goods there, and in much smaller quantities than the sappanwood it traded in intra-Asian markets.) The sappanwood trade was thus complementary to the Company's overall trade from Asia to Europe. It added a commodity to compete with other red dyestuffs imported by the VOC's Iberian rivals and did not interfere with the Company's other Asian imports.

Sappanwood in the Intra-Asian Trade

Sappanwood also played a supporting role in the VOC's intra-Asian trade. Sappanwood served as a "barter good" for the VOC in Asia: it was not one of the Company's marquee products but it could be used to obtain them due to its widespread demand throughout the region (Jacobs 2006, 202, 281-282). By far the largest market for VOC sappanwood in the eighteenth century was Japan (see Table 5). As in Europe, there was significant demand in Japan for sappanwood as a dye source. Unlike in Europe, however, Japanese dyers had few other sources of red dye available to them: New World brazilwood and cochineal rarely if ever reached Japan and Old World madder and kermes were more common in Europe, the Middle East, and Persia than in East Asia. Furthermore, during the eighteenth century the only foreign traders that the Tokugawa Shogunate allowed in Japan were the Dutch and the Chinese. This restrictive trade policy further limited the range and quantity of overseas dyes available in Japan. During the course of the eighteenth century, Japanese dyers began overcoming this paucity of choice by using the petals of the safflower plant, which could be grown locally in Japan, to produce red hues that rivaled those of sappanwood in the eyes of Japanese consumers. This domestic alternative resulted in some import substitution but sappanwood continued to be an important product for the Japanese market throughout the century (Ryuto Shimada 2006, 60-61, 162).

Table 5
Asian Destinations of Eighteenth-Century VOC Sappanwood Shipments

Destination	Value (ƒ1000)	Percentage of Total
Japan	512	71.9
China	64	9.0
Coromandel and Malabar	42	5.9
Surat	40	5.6
Persia	33	4.6
Yemen	21	3.0
Total	712	100

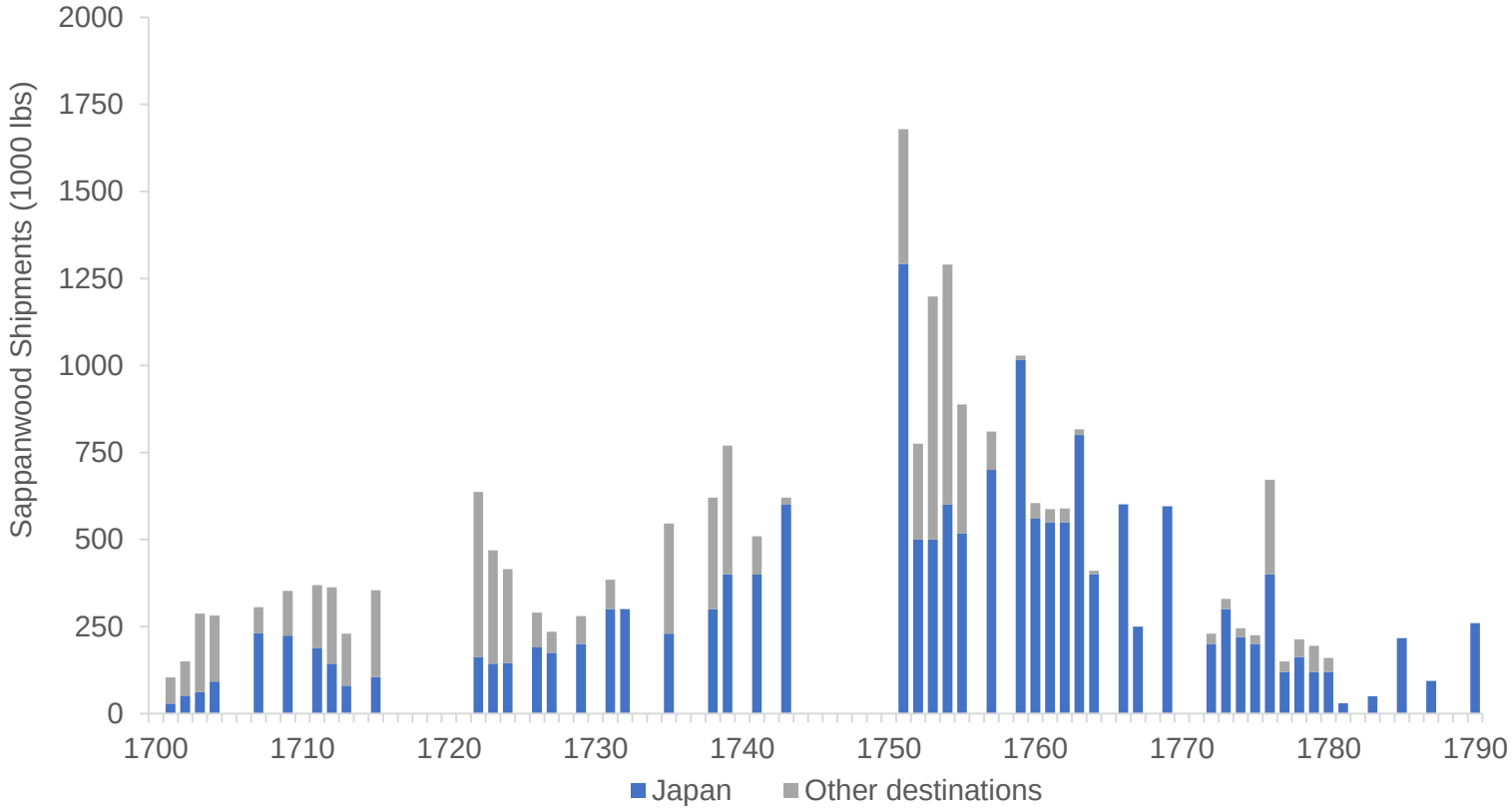
Source: Schooneveld-Oosterling et al. (2013).

The VOC relied on Japan as its most important source of precious metals, which the Company needed for its trade with South Asia. By the eighteenth century, Japan had stopped trading gold and silver with the VOC but continued to supply the Company with copper. The VOC directed most Japanese copper to Bengal, India, and Surat to acquire cotton textiles. These cotton textiles were used in turn to procure spices in Indonesia or more sappanwood from Siam in a commercial gyre typical of the Dutch intra-Asian trade (Glamann 1953, 51-54; Shimada 2003, 50; Shimada 2006, 61-63, 133). Thus, demand for copper by the VOC and for red dyes by Japanese dyers resulted in regular VOC sappanwood shipments to Japan, with at least some sappanwood arriving in Nagasaki in all but one year of the bookkeeper-general's records. It helped that Siam, the VOC's primary source of sappanwood for most of the century,

lay conveniently on the route from Batavia to the Japanese Archipelago. The VOC sappanwood trade with Japan was particularly strong during the 1750s and 1760s when a combination of Japanese export restrictions and declining copper production led the price of copper in Nagasaki to increase (Shimada 2003, 41-44). The VOC's response was to increase sappanwood imports to maintain the quantities of copper it exported to South Asia.

Elsewhere in Asia, the trade was smaller and more variable. The VOC traded sappanwood in markets outside Japan sporadically or periodically for a few consecutive years before stopping. In some cases, geopolitical events altered trade patterns; in others, the Company may have been reacting to fluctuations in local price and demand. For instance, VOC sappanwood exports to China were almost all clustered from the late 1730s through the late 1750s, a period when many European trading companies began flocking to Canton to access the Chinese market. The trade with India, on the other hand, stretched from the beginning of the century through 1780 but was intermittent. This longer period saw the VOC bring modest shipments of sappanwood to the Malabar and Coromandel Coasts off and on. Shipments to Surat in Gujarat were mostly small and scattered except for 1751 through 1755, a period which comprised five consecutive boom years that accounted for three quarters of the Company's sappanwood imports to the city during the century. Further west, the trade with Persia was regular until the Safavid Empire fell in 1722. After a decade-long hiatus, sappanwood shipments resumed in the 1730s during a brief Safavid resurgence before ceasing again in the early 1740s. The only other shipments to Persia came during the VOC's thirteen-year presence on the island of Kharg (1753-1766) when the island served as the Dutch base of operations in the Persian Gulf. In this way, the trade in sappanwood was no different than other VOC intra-Asian trades in the region, such as sugar, which fluctuated along with Persia's political situation (Ghulam Nadri 2008, 74-75). The VOC also shipped small quantities of sappanwood to Mocha in Yemen, primarily during the first half of the century. By the second half of the century, the Company began to withdraw from its trade routes in the western Indian Ocean due to concerns over their profitability and vulnerability to foreign attacks (Nadri 2008, 76-78).

As a whole, the intra-Asian component of the VOC's sappanwood trade was half the size of the trade with Europe. By invoice value, VOC ships carried almost ƒ1.4 million of sappanwood to the Republic over the course of the eighteenth century and about ƒ700,000 to Asian destinations. In terms of volume, the intra-Asian trade experienced a boom in the 1750s and early 1760s but otherwise saw much lower annual volumes both during the first half of the century and in the century's closing decades (see Figure 5). Almost all VOC sappanwood destined for Asian ports (93 percent) departed from Batavia, although some ships did sail straight from Siam and Indonesia to other destinations. This is in contrast to the European export trade which saw a significant minority of sappanwood depart from Ceylon and Bengal and never saw the commodity travel directly from the source. The breakdown of varieties traded also differed somewhat from that of European exports. "Siamese" sappanwood dominated the intra-Asian trade to a greater degree, making up 68 percent of the trade's value, largely due to its primacy in the trade with Japan. Mixed and unlabeled cargoes (18 percent) and "Bimanese" sappanwood (13 percent) were much smaller by comparison. The major similarity between the intra-Asian and European trades was sappanwood's small share of hold values. The intra-Asian trade's median of 0.8 percent is higher than the 0.5 percent for Europe-bound cargoes but highlights that in Asia too, sappanwood was a small (albeit regular and convenient) trade for the VOC.



Source: Schooneveld-Oosterling et al. (2013).
Note: absence of bar denotes records missing for relevant year

Figure 5
The Intra-Asian Trade: Annual VOC Sappanwood Shipments to Asian Destinations, 1700-1790

Conclusions

Sappanwood was a small facet of the VOC's commercial activities but it fit conveniently into the Company's overall trade system. The primary regions where the VOC acquired sappanwood—Siam and Indonesia—were easily accessible from Batavia and on the Company's regular trade routes. Sappanwood had pre-existing demand in both Europe and Asia and was physically useful on voyages as a ballast good. The VOC carried sappanwood frequently on both Dutch-Asiatic and intra-Asian trade routes but in small quantities relative to other commodities. In Europe, sappanwood's low intercontinental transportation costs and demand from the burgeoning textile industry made it a profitable commodity that yielded strong gross margins. Sappanwood also gave the Company a red dyestuff to compete with New World alternatives imported by the Iberian powers. In Asia, sappanwood was an integral component of the VOC's intra-Asian trade system. While the VOC traded sappanwood in all of its major intra-Asian markets, Japan dominated. Sappanwood could be acquired inexpensively in Southeast Asia and exchanged for copper in Japan. This copper was then used elsewhere to acquire other goods for Asian markets or for Europe. In this way, sappanwood was a cog in the VOC's engine of intra-Asian commerce that generated profits and helped the Company acquire more lucrative products.

The sappanwood trade illustrates some trends of the VOC's operation in the eighteenth century. One was the erosion of Batavia as the general rendez-vous for Europe-bound commerce. As the eighteenth century progressed, more Asia-Republic shipping left from Colombo, Galle, Bengal, and Canton rather than strictly from Batavia (Bruijn et al. 1987, 134-142). While Batavia was the port of departure for the majority of sappanwood exports to Europe, the above ports all participated in this trade. Ceylon and Bengal in particular shipped moderate quantities of sappanwood back to Europe for most of the century. Batavia's role in the intra-Asian trade, however, did not erode. With the exception of a small minority of cargoes departing directly from Siam and Indonesia, almost all Asia-bound sappanwood left from Batavia. Another trend of the VOC's eighteenth-century operation was the withdrawal of the Company from markets in the western Indian Ocean during the century's second half (Nadri 2008, 76-78). As a result of this retreat, VOC sappanwood rarely reached Yemen, Surat, and Persia after the 1750s despite its utility as ballast. There are still some aspects of the VOC's sappanwood trade that deserve further inquiry. For instance, an understanding of sappanwood harvesting in Siam and Indonesia would reveal more about the VOC's supply of the resource and the environmental impact of the trade. Furthermore, compiling the sale prices of sappanwood in the VOC's intra-Asian markets and comparing them with the bookkeeper-general's invoice prices would provide more information about the Company's margins on the dyestuff in Asia. Beyond these areas of opportunity, what we see here from the records of *Bookkeeper-General Batavia* is a resource that was valuable in both Europe and Asia and complemented the VOC’s larger, better-known commodity trades.

Acknowledgements

I wish to thank the anonymous reviewer and the editors whose comments and suggestions helped improve this article.

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Appendix
Table A
Annual Values and Weights of Sappanwood Transported by the VOC to All Destinations during the Eighteenth Century for Years for which the Bookkeeper-General's Records are Available

Book Year Ending	Value (ƒ1000)	Weight (1000 lbs)	Book Year Ending	Value (ƒ1000)	Weight (1000 lbs)	Book Year Ending	Value (ƒ1000)	Weight (1000 lbs)
1701	57.2	2,467	1742	29.5	673	1777	39.8	792
1702	53.7	1,233	1743	54.9	1,167	1778	40.5	765
1703	75.2	2,703	1751	90.1	2,211	1779	26.3	713
1704	97.0	1,812	1752	109.1	1,546	1780	24.5	635
1707	71.6	1,724	1753	106.2	2,695	1781	38.5	670
1709	86.4	1,928	1754	181.1	3,277	1782	5.5	75
1711	87.5	1,966	1755	143.1	2,673	1783	3.2	119
1712	87.4	1,630	1757	123.5	2,610	1785	59.5	1,057
1713	74.5	1,547	1759	100.5	2,267	1787	40.9	595
1715	76.6	1,879	1760	112.0	1,927	1790	41.0	755
1722	80.6	2,255	1761	92.9	1,634			
1723	90.5	2,163	1762	81.0	1,339	Total for years for which records are available	3,665	81,248
1724	86.8	2,305	1763	74.0	1,290			
1726	84.8	2,805	1764	47.6	803			
1727	64.3	1,906	1766	42.4	986			
1729	68.4	1,308	1767	21.8	706			
1731	83.5	1,375	1769	46.1	1,055			
1732	56.5	1,594	1772	38.9	746			
1735	79.5	1,857	1773	41.6	734			
1738	84.3	2,314	1774	17.2	492			
1739	87.5	1,953	1775	36.1	696			
1741	67.4	1,599	1776	54.5	1,222			

Source: Schooneveld-Oosterling et al. (2013).