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The surge in East-West trade in the sixteenth and seventeenth centuries is routinely attributed to European spending habits relative to those in Asia. Europeans developed a powerful taste for Asian goods, but Asians had not yet developed much of an appreciation for European wares. Precious metals flowed eastward to accommodate this trade imbalance. At an abstract level, Western consumer dynamism is thought to have encountered Asian consumer inertia in the early-modern period. Europe was the key.

Flynn (1986), in support of Chaudhuri's (1978) seminal work, has indicated that this conventional argument is flawed. "Precious metals" did not flow from Europe to Asia as a passive, balancing item. A specific metal—silver—did flow from America, through Europe, and onto China. Another specific metal—gold—flowed from China into Europe. In other words, individual precious metals were exchanged for each other; they moved in opposite directions for over a century. It is conventional economic theory which has convinced historians to conceptually combine diverse products (gold and silver) into a singular category called "money," when in reality these individual products were exchanged for one another in prodigious quantities. Economic theory has let us down, not the history profession.

It is clear in the historical literature that gold and silver were traded on a global scale as commodities. Silver and gold are neither more nor less "real" than any other commodity, irrespective of whether they were used for monetary purposes. All mainstream macroeconomics books make a fundamental distinction between the "real" versus the "monetary" sectors of the economy. Our analysis is based upon the model of Doherty and Flynn (1991), a microeconomics-based theory which rejects as artificial the "real" versus "monetary" dichotomy. Turning back to the issue of East-West com-

merce, trade was always "in balance." No one voluntarily surrendered products without receiving equivalent value in return; therefore, no outside balancing agent (monetary or otherwise) was necessary.

Using an unconventional, nonmacroeconomics model, Flynn and Giraldez (1994; 1995) have pointed out why tens of thousands of tons of the particular metal, silver, flowed to China during the early-modern period. Silver was anything but a passive, balancing item. Atwell (1977; 1982; 1986; 1988) has for years stressed the importance of silver imports in Chinese economic history. Also, see Chuan (1969). Ming China had gradually converted both its monetary and its fiscal (i.e. tax) structure to a silver standard by the second half of the sixteenth century. The basis of the monetary system was silver, despite the fact that the Ming government did not mint silver coins. Bullion (sometimes cast in the shape of a shoe) and foreign silver coins performed the functions of money.

If we extend consideration to China's entire tributary system, probably over a third of the world's people were involved in the conversion to a silver standard. This momentous event created a huge demand-side surge in the marketplace which, in turn, prompted a doubling of silver's value within China relative to the rest of the world. (Geiss 1979, 165) High silver prices in China created prodigious profit opportunities for all entrepreneurs participating in the East-West trade. Europeans were middlemen in the movement of silver from America (and Japan) into China; they were neither producers nor end-buyers in the global silver market, however, so it is a mistake to place Europe at the causal center of this commerce. America and Japan dominated on the production side; China dominated on the demand side.

Distinct microeconomic analysis of the silver industry in its own right is essential, but even this is only half the story. An unbiased interpretation requires that we also look at the main Chinese products for which silver was exchanged. Souza (1986, 5) lists the three main export categories which China exchanged for silver: (1) Gold, (2) silk and cotton, and (3) "ballast" (including porcelain) items. The Chinese import side was simple—always dominated by silver—but the composition of China's exports varied depending upon the particular trade route in question. This essay sketches only silk, China's most important export.

It is ironic that focus on silk forces us to ignore the European leg of the silver trade; Europe's main source of silk was Persia (Chaudhuri, 1965, 203–6; Glamann 1981, Ch.6); Steensgaard 1974,

Ch. 9), not China, so Sino-European trade lies outside the scope of this study. Silk dominated Chinese exports via two routes: (1) the trade with Japan and (2) the direct route to America over the Pacific. The two most important entrepôts in the silk-for-silver trade were respectively Macao, transshipment center for the Nagasaki trade, and Manila, linchpin of the Acapulco trade.

Silk Production in China

Silk was the main Chinese export which was exchanged for thousands of tons of imported silver throughout the sixteenth and seventeenth centuries. Although we know of no estimates of the volume of silk production spanning the entire Ming dynasty (1368–1644), countrywide production was enormous. Souza (1986, 46) cites Bocarro, a seventeenth-century Portuguese historian who estimated that China produced some 36,000 to 37,000 picols (i.e. almost 2,500 tons) of silk per year early in the seventeenth century, one-third of which (i.e. 12,000 picols = about 800 tons) was exported. The vast majority of the exported silk went to Japan, Manila, and India; Portuguese purchases for the Indian market are said to have diminished by the 1630s, so Japan and the Manila route became the dominant foreign markets for Chinese silk throughout the seventeenth century. Souza's (1986, 50–51) figures for Portuguese exports to Japan show an eight-fold increase in trade between the years c.1600 and 1637; silk comprised 66.8 percent and 89.8 percent of the total value of the cargo in those respective years.

The Ming government established a few very large Imperial silkworks, operations which the Ch'ing expanded after their defeat of the Ming in 1644. According to Shih Min-hsiung (1976, 40–41), the Soochow Imperial Silkworks more than quadrupled in scale, from 173 looms and 504 artisans under the Ming, to 800 looms and 2,330 artisans under the Ch'ing by 1685. The three Imperial silkworks collectively—in Hangchow, Nanking, and Soochow—contained 1,863 looms and nearly 7,000 artisans in 1685. Over 600 looms and more than 2,000 artisans per location constitutes large-scale production indeed, but these factories were not always profitable. Well-to-do households had been assigned as government weavers in the Imperial silkworks and they were obliged to sell to the government at low official prices. Bankruptcy resulted for many.

Technical considerations confined traditional silk production to small-scale, peasant households. Silk production—from planting and

maintaining the mulberry trees, to the raising of silkworms, and on through the formation of cocoons—was exceedingly labor intensive. Supervision of such labor-intensive processes would have been too expensive in large-scale factories, so decentralized production evolved as the cost-effective choice. Availability of inexpensive hand-reeling machines also provided a complementary reason for the growth of silk reeling as a household-based industry; little capital was required. Decentralization characterized the weaving stage as well.

Despite the fact that silk production was based on a decentralized, peasant-household foundation throughout the early-modern period, the government had always been "noted for its assiduous promotion of sericulture" (Shih Min-hsiung 1976, 2) China's tax structure deliberately encouraged domestic silk production, both through positive and negative inducements. On the carrot side, silk production was singled out for exemption from taxation. On the stick side, inordinately high general tax quotas are said to have indirectly forced citizens into silk production. General taxes were onerous and payable exclusively in silver. Since silk exports constituted the primary avenue through which to obtain foreign-produced silver, Chinese citizens were forced to export massive amounts of silk in order to obtain the silver required for general tax obligations. Shih's argument is intriguing in that it suggests a rather direct link between silk and silver.

By commuting tax payments exclusively to payment in silver, the Ming 'Single Whip' tax reform indirectly mandated the production of export items which were acceptable in exchange for silver in international markets. Among all potential export products, the demand side of the silk market was exceptionally robust in both hemispheres. Thus, although silk production appears on the surface to have been the epitome of (decentralized and untaxed) privatization, government fiscal policy provided a powerful driving force in the background. The 'Single Whip' fiscal reform played a crucial role in stimulating silk production because this industry provided a product readily exchangeable in world markets. Silk provided the primary vehicle through which silver could be attracted from its production centers in Japan and America.

Macao, Gateway to Japan

Conservative, official estimates indicate that Latin America alone produced about 150,000 tons of silver between 1500 and 1800 (Barrett 1990, 237), perhaps exceeding 80 percent of the entire world's pro-

duction over that time span (Cross 1983, 397). Despite America's dominance in silver production over those three centuries, Japan seems to have been the primary exporter of silver to China in the late-sixteenth and early-seventeenth century period, shipping perhaps 200 tons per year at times, but falling off dramatically in the second half of the seventeenth century (Kobata 1965; Iwao 1976; Innes 1980, Chapter VI; Souza 1986, 57–58; Tashiro 1986, 2). About 10,000 tons of silver was exported out of Japan and into China in the late sixteenth and early seventeenth centuries (Yamamura and Kamiki 1983, 351), leading Cartier (1969, 461) to conclude that Asia's role in precious metals history has been underrepresented:

> Copper and silver mines were exploited in such an intensive manner under the Bakufu, that it made Japan the principal monetary power in the region, and perhaps in the world.

Since Japan was not on friendly terms with China, it was necessary to find intermediaries to carry Japanese silver exports. Europeans were convenient middlemen. An accidental landing by a few Portuguese at Tanegashima in the mid-1540s, aboard a Chinese junk, spawned European commerce in Japan. The subsequent establishment of the Portuguese at Macao in 1555 provided secure access to the major market of Canton. Control of Nagasaki was handed over to the Jesuits in 1571, providing the necessary terminus for Portugal's annual Nao ships from Macao. The Portuguese carracks were only 400 to 600 tons at first, but by the end of the sixteenth century there were behemoths of 2,000 tons, "the largest vessels in the world at that time, rivalled in size only by the Great Manila galleons." According to Boxer (1963, 13), a shipping ton at that time referred to a space available for cargo of some 60 cubic feet, which means that the large Naos held some 120,000 cubic feet of cargo. Later on, the Portuguese reduced risk by employing more numerous, but smaller, "galliots" in the Japan trade (Boxer 1963, 13–14).

Silver was obviously the dominant Japanese export in the first half of the seventeenth century. The main export from China to Japan was silk: "For the prosperity, if not the very existence, of Macao largely depended on the silk trade with Japan" (Cooper 1972, 424). Japan was a silk-producing country itself, but Chinese silk was of superior quality and therefore in heavy demand. By order of the Bakufu in 1604, Japan's silk import trade had become monopolized by a merchant group called the "ring" (representing the five shogunal

cities of Edo, Kyoto, Osaka, Sakai, and Nagasaki), designed to keep purchase prices lower than would have prevailed under a competitive regime: "By purchasing at this depressed price, the government controlled a significant portion of the market. With such control over the distribution and sale of raw silk, the Bakufu earned sizeable revenues" (Souza 1986, 59). The Portuguese referred to this system of wholesale buying as the "pancada." Spaniards implemented a similar system in Manila, but widespread corruption led to its replacement by more decentralized fairs early in the seventeenth century. It should be pointed out that, behind the scenes, powerful Indian and Chinese merchants frequently used Portuguese as 'fronts' in this trade; likewise, Jesuits and Macao factors were agents of Japanese merchant families, *daimyos*, and even of the military dictators Hideoshi and Ieyasu (Boxer 1963, 13). Europeans were not so dominant in the inter-Asian trade as was once thought; sometimes they were not even the most crucial middlemen in the silk-silver trade.

It is clear that the lion's share of Chinese silk exports via Macao was destined for Japan. By the 1630s groups of galliots leaving Nagasaki for Macao carried an average of 450 to 600 chests of silver per vessel (Boxer 1963, 138–47). In addition to the Portuguese, sixty to eighty Chinese junks (the larger ones averaging about 600 tons) visited Japan annually between 1613 and 1640, and by the beginning of the seventeenth century Japanese "red seal" ships also offered competition (Boxer 1963, 4). Portuguese silk exports to Japan reached nearly 3,000 picols around 1610, representing about 30 percent of this market. Imports of raw silk alone fluctuated between 2,500 and 4,000 picols annually during the 1620s and 1630s (Souza 1986, 53). After the Portuguese were expelled from Japan in 1639, the Dutch enthusiastically took their place: "The VOC became a regular supplier and competitor during these decades [after 1640] and the market demonstrated oversupply conditions with the importation of over 4,000 picols of raw silk per year" (Souza 1986, 53). Japanese silver exports waned during the second half of the seventeenth century, but gold production surged and Japan became the largest copper producer in the world, much larger than Sweden (Glamann 1981, 174). By 1689 Chinese ships were exporting three times more copper from Japan than were the Dutch (Iwao 1976, 16); copper exports peaked at 5,000 tons annually around 1697–98 (Kobata 1984, 437–38). The famous "closure" of Japan during this period refers to restrictions placed on the movement of people. International trade continued and China was the key market.

Manila and the Pacific Route

Pierre Chaunu's (1951; 1960) work on Pacific trade in the seventeenth century has simultaneously produced insight and misperception. He documented the importance of the direct silk-silver relationship via the Manila Galleons, tracing silk exports through Macao, Manila, Acapulco, Vera Cruz, and Seville. Although admirable in many respects, his work suffers from a methodological flaw. Chaunu's export/import estimates are based on *almojarifazgo* tax receipts registered in House of Trade records in Seville. Chaunu (1951, 460–61; 1960, 250) explains that a rise in the almojarifazgo tax rate from 3 percent to 6 percent between 1612 and 1640 accompanied a 90 percent drop in silk exports via Manila, roughly following Braudel's economic phases in Europe. He dismissed counterarguments which suggested that increased smuggling could have compensated for such a dramatic decline in official trade. Smuggling could not have been so pervasive, he alleged, because collateral evidence also shows that New World silver production—and therefore exports—fell off dramatically by the 1630s (Chaunu 1951, 461). Chinese silk exports via Manila could only be maintained if silver imports from Acapulco were sustained simultaneously. If westbound silver fell off dramatically in the Pacific, then eastbound silk must have subsided too.

Chaunu's argument now seems flawed because precious metals history has been revised since his studies a generation ago. American silver production did decline, but only later in the century and, even then, far less dramatically than scholars once supposed (Brading and Cross 1972; Cross 1983; Barrett 1990; Morineau 1985). More to the point, mounting evidence indicates that there was no secular decline of silver exports over the Pacific route during the seventeenth century. This should not surprise us because China's main source of silver—Japanese mines—definitely declined in the second half of the seventeenth century. It is to be expected that exhaustion of Japanese mines stimulated demand for New World silver in the second half of the seventeenth century; Spanish America was the sole alternative source. The best evidence today indicates that at least P2 million of silver per year traversed the Pacific via the Manila galleons throughout the seventeenth century (Chuan 1969, 79). In short, there was no secular decline in the Pacific leg of the silk-silver trade.

Almojarifazgo tax records support the contention that official silver exports via Acapulco declined, but we have to be cautious in

interpreting these records. Not only did smuggling increase during the seventeenth century, it became dominant. C.R. Boxer (1958, 545) labels official bills of laden for silk shipments from Manila as "an elaborate farce." He went on to explain that the statutory limit was 4,000 piezas of silk per galleon, for example, but it is known that the San Jose sank in 1694 with 12,000 piezas aboard, followed by an even larger ship with cargo space for 18,667 piezas. Aside from regular cargo, each member of the crew was allowed to transport one chest. Private chests literally clogged decks, cabins, passageways, storerooms and even magazines. Space for cargo was sometimes created by removing cannons, which were placed in the hold as ballast. "The extreme was reached when in some cases galleons towed a flotilla of rafts on which would be secured water-tight bales" (Hayes 1934, 1696). In addition, the packaging and sealing of chests itself became an important specialty: "This work was done by Chinese whose skill and patience enabled them to double the amount of goods stowed in similar chests by the packers in Spain" (Hayes 1934, 1696). Thus, even declared chests carried more cargo than formally authorized.

Heavy losses by merchants from Seville and Cadiz made them acutely aware of competition from the Manila traders. They pressured the King to issue trade prohibitions in 1587, 1591, 1593, and 1636. Again, these enactments were always doomed because authorities in both Manila and Acapulco cooperated in systematic deception of the home country: "Virtually all Manileños attempted to circumvent the law, and Mexican officials generally aided them by tolerance or outright cooperation" (Reed 1967, 129).

No one disputes the fact that the Manila trade around the turn of the century was substantial. For example, cargo captured from the Santa Anna, which was plundered and burned off the California coast in 1587, was valued at P2 million; Cavendish sailed triumphantly up the Thames "with his sails of Chinese damask and his riggings of twisted Oriental silk" (Perez Gilbert 1956, 44). The *permiso* of 1593 (reaffirmed in 1604 and 1619) prescribed a maximum (mostly silk) cargo value of P250,000 (out of Manila) and P500,000 (upon arrival in Acapulco). That is, the legal limit was set at one quarter of the value carried aboard the Santa Anna.

The literature is full of instances, however, which reveal that these permiso were utterly ineffective: "In fact at the opening of the seventeenth century the drain of pesos from Mexico to the Orient through the Philippines was estimated at P5 million annually, with

a reported P12 million being smuggled out in 1597" (TePaske 1981, 436). The Santo Tomas in 1601 carried five times (P2,500,000) the legal limit, half a million pesos more than was captured from the Santa Anna fourteen years earlier. Reports from 1688 in Manila indicate that P2 million in Acapulco was the normal cargo. In 1698 the San Francisco Xavier is reported to have brought cargo valued at P2,070,000, a volume repeated in 1699 (Legarda 1955, 361). Looking at the entire seventeenth century, Chuan (1969, 79) estimates that silver exports via Acapulco and Manila maintained a pretty consistent level of about P2 million throughout. Most of the actual trade was simply not reflected in official tax records:

> Thanks to this widespread fraud and evasion, the amount of silver shipped from Mexico and thence to China in an average good year might be about two million pesos, and shipments of more than double that amount were not entirely unknown (Boxer 1958, 546).

The salient point is that if an average of P2 million of silver flowed out of Acapulco annually, then an equivalent value of silk was flowing into Acapulco from Manila (and therefore from China).

Silk for Silver

Division of this article into separate sections—one on the Macao trade and the other on the Manila trade—is artificial, of course. Events of the 1630s make it clear that Macao and Manila were competitors, and sometimes collaborators, in the global marketplace for silk and silver. In describing the ineffectiveness of the 1633 royal prohibition of the Macao-Manila trade, Boxer (1963, 141) says that "40 large trading-junks brought so much silk to Manila that the galleons bound for Mexico in 1634 could not take it all." Schurz (1959, 135) calmly states that the "usual value of the annual imports from Macao to Manila at this period [around 1633] was reliably estimated at about a million and a half pesos" in the period 1632–1636; remember that this is six times greater than the legal limit, and we are talking about trade via Macao! Upon arriving at Manila in June 1635, the new Governor of the Philippines forbade departure of Acapulco-bound galleons, "on the plea that the Mexican port was overstocked with Chinese goods" (Boxer 1963, 155). In 1635 the King also named Pedro Quiroga to investigate. By enforcing existing levies, Quiroga's

inspector in Acapulco exacted such heavy duties from the next shipment that, by merely enforcing existing levies, "these two galleons allegedly yielded more money to the Crown than the sum total which had been collected from all the previous galleons . . . with the result that the Manileños defaulted on their debts to their Chinese and Macaonese creditors, who returned home bankrupt in 1637–1638" (Boxer 1963, 155). Merchants in Manila reacted by refusing to freight another galleon until the old order of things was reestablished. From 1636 to 1637, the only vessel that sailed for Mexico was a patache "with a cargo worth P150,000 consigned to the account of the all-powerful . . . Olivares, chief advisor of the king" (Zaide 1979, 509). The king was forced to retreat from enforcement of existing tax laws; otherwise, the trade would have been extinguished altogether. In 1640 a second visitador was appointed, "Juan Palafox y Mendoza, more tactful and reasonable than his predecessor, assumed a conciliatory policy" (Zaide 1979, 510). In other words, Palafox looked the other way as smuggling resumed its domination of the Pacific trade.

It should surprise no one that this mid-30s trade blockage in Manila created tremendous commercial opportunities for participants in the Macao-Nagasaki leg of silver's journey. Portuguese exports alone from Nagasaki in November 1637 were valued at 6.1 million guilders [about P2.4 million] (Boxer 1963, 147); if this is an accurate number, then more than P5 million (128 tons) of silver must have been exported from Japan then because the Portuguese accounted for less than 50 percent of Japan's export trade (Souza 1986, 58). The Quiroga catastrophe led to the bankruptcy of particular merchants and financiers in Macao and China, but other participants in the Japanese leg of the trade enjoyed wonderful opportunities.

The silk-silver industry was a dual-engine craft capable of flying on a single engine. When silk failed to exchange for silver via Manila, Nagasaki-Macao picked up the slack. Later in the seventeenth century, Japanese silver supplies became exhausted faster than their American counterparts. Kishimoto-Nakayama (1984, 233) states that Japanese silver exports to China increased after the 1656 ban on coastal trade by the Ch'ing, peaked at 2,600,000 taels (= P3.25 million) in 1661, and only then faded into insignificance. Therefore, Acapulco-Manila became the primary engine fueling the silk-silver trade in the second half of the seventeenth century. In other words, Chinese silver imports may have declined later in the seventeenth century, but the decline was attributable to lower Japanese silver

exports. The Manila galleons continued to bring 2 million pesos of silver per year.

So robust was the Pacific trade that as late as 1703 the government of Mexico City built permanent facilities in its central plaza for a market named the "parian," after the famous Chinese parians in Manila. Is the following description of this vital Mexican market consistent with Chaunu's perception of a moribund Pacific trade?

> The florescence of the Manila-Acapulco trade induced the Mexican authorities to establish a shopping center or market at the main square (plaza) of Mexico City . . . It contained many stores selling all kinds of oriental goods which came from Manila. From these stores, the city government obtained substantial annual income in the form of rentals which the store owners paid to the city treasury . . . (Zaide 1979, 490).

Nor does Gemelli Careri's description of his late-seventeenth century visit to the Philippines elicit visions of commercial collapse on the other side of the Pacific trade:

> The author of nature placed Manila so equally between the wealthy kingdoms of the East and of the West that it may be accounted one of the greatest places of trade in the world. (quoted in Zaide 1979, 505)

The trade between Mexico and Peru offers yet another reflection of the vitality of the flourishing Manila trade:

> The royal plan was to wall off Mexico and prevent Chinese merchandise from ruining Spanish markets in other colonies. It failed signally. Annual imports of merchandise in the Manila galleon totaled nearer 2,000,000 than 250,000 pesos, the only real limit to the trade being the fact that the ships permitted could not carry any more, and the cheaper Chinese wares were smuggled into Peru in defiance of royal restrictions. (Borah 1943, 97)

Once again, silk was the crucial import into Peru. Prior to the founding of Manila in 1571, silk raising had become almost "one of the great permanent Mexican industries," but "large-scale importations of Chinese silks [from the Philippines] began about 1579, and about that time [Mexican] domestic silk culture began to decline" (Borah 1943, 85, 90). Imports from China were ruining the market for finished Spanish silks, but the Philippine trade brought large supplies of yarn, which benefitted the Mexican silk guilds:

> A welcome addition to New Spanish yields, Chinese silks enabled the guilds to vary their fabrics, for the Oriental yarn was more suitable for smooth thin weaves than the heavier, better-wearing Mixtecan prod-

> uct. With the expansion that resulted from this new supply, silk manufacturers in Mexico City, Puebla, and Oaxaca gave work to more than 14,000 people. (Borah 1943, 90)

A substantial portion of Mexico's output of finished silk products headed for Peru, the world's most prodigious source of silver at the time. A decree in 1604 attempted to suppress all trade between Mexico and Peru, but Legarda (1955, 354) concludes that the "degree of . . . fidelity with which this decree was observed may be gleaned from the fact that it had to be reissued in 1609, 1620, 1634, 1636, and 1706." The decree of 1634 was partially successful in blocking Mexican silk products, but this desperate act ironically encouraged the flow of finished Chinese silk to Peru and thereby led to the destruction of Mexico's powerful silk guilds (Borah 1943, 97). In sum, imports of Chinese silk destroyed sericulture in Mexico shortly after the founding of Manila in 1571, but imports of Chinese yarn was a boon to Mexico's silk weaving guilds for a time. The Crown forbade Mexican-Peruvian trade, but this simply enhanced opportunities for those importing Chinese goods:

> Once the Crown began to place restrictions upon shipment of Chinese goods from New Spain to Peru, smuggling and fraud at both ends of the trade became far more lucrative and took place on a scale that can be described as gigantic. (Borah 1954, 114)

The silk-silver exchange via the Manila galleons did not miss a beat due to the 1634 prohibition; Boxer (546) concludes that "contemporary accounts... prove that the luxury loving Limenos continued to secure Chinese silks despite all regulations . . ." The 1634 prohibition seems to have stimulated Pacific trade, rather than retard it, as products from Manila comprised 90 percent or more of manufactured goods traded between Mexico and Peru (Borah 1954, 123). In 1735 two Spanish commissioners, Jorge Juan y Santacilla and Antonio de Ulloa, visited Central and South America and secretly reported on the prevalence of illicit Pacific trade:

> Juan and Ulloa saw Chinese porcelain for sale in the shops of Lima, and Chinese silks were sold and worn quite openly from Chile to Panama, where the Oriental stuffs predominated on the garb of the Spanish population, from the vestments of the priests to the mantos and silk stockings of the Limenas. (Schurz 1959, 370)

Again, this description is inconsistent with the view that trade via Manila had begun a protracted, secular decline a century earlier.

Whether one looks at the most recent information on silver production in Spanish America, silver exports via Acapulco, the Chinese silk trade via Manila, or the trade between Mexico and Peru, each facet is consistent with the same picture. An average of about P2 million worth of silver travelled annually westward to China throughout the seventeenth century (sometimes considerably more), and an equivalent volume of (mostly) silk sailed eastward to America in exchange.

Summary and Conclusion

> Silk was the dream commodity of the project-makers; at the beginning of the 17th century silk was for Asian trade what gold and silver had been for the *conquistadors.* (Steensgaard 1974, 367)

It is a mistake to conceptually combine silver and gold into categories such as "precious metals" or "money." Doing so has led to the conventional conclusion that "precious metals" flowed from the West to the East in order to compensate for a European trade deficit. Europe's 'real'-sector imbalance necessitated compensatory 'monetary'-sector flows of precious metals to Asia; European real-sector demand was the center of the action. This scenario distorts reality. The fact is that a particular metal, silver, flowed into China and another particular metal, gold, flowed out of China. Combination of these two metals into a singular category precludes understanding of the causes of global trade in the early-modern period. Proper interpretation of early-modern trade requires (microeconomic) analysis of each product independently.

Silk was China's dominant export. This article attempts to place China's silk industry in the context of its global exchange for silver. Although silk production in China was decentralized, based on a peasant-household foundation throughout the early-modern period, China's government encouraged its domestic silk industry via a unique tax structure. First, silk production was normally exempt from direct taxation, which encouraged silk's supply side. Second, the Ming Dynasty had consolidated numerous tax levies via its famous 'Single Whip' tax reform, which stipulated that taxes had to be paid exclusively in silver. This tax reform led to a doubling of silver's value in China

relative to the rest of the world, which in turn gave merchants around the world ample incentive to ship silver to China on a unprecedented scale. But silver had to be traded for something produced in China. Silk turned out to be the Chinese product in heaviest demand in both hemispheres. Chinese people swapped their silk for foreign silver because they needed silver to satisfy general tax obligations. Silk and silver shared a unique, symbiotic trade relationship.

Japan and Spanish America were the primary markets for Chinese silk exports. Japan was China's main source of silver in the late-sixteenth and early-seventeenth centuries, so it is not surprising that Japan was also a major importer of Chinese silk. Chinese and Japanese merchants were important participants in the silk-for-silver trade via Macao, as were the Portuguese and (later) the Dutch. The other major entrepôt in the silk-silver trade was Manila, center of Chinese silk's exchange for Spanish American silver. In the 1630s Macao became a dominant factor in the Manila leg of world trade in silk and silver, aside from its crucial role in the Japan trade. It is important to keep in mind that the silk-silver trade provided a fundamental underlying structure which connected the economies of China, Japan, Macao, Manila, Taiwan, Southeast Asia, Spanish America, Europe, and many other parts of the world. Even though it was Persian (rather than Chinese) silk that Europe imported, Europe was deeply entangled in the global silk-silver web. It was not unlike today's oil market; squeeze one source of supply or demand and everyone is affected.

Conventional wisdom, based on Pierre Chaunu's study of tax records, holds that the Acapulco-Manila trade was vigorous up to the 1630s, after which it declined (along with the production of New World silver). Since Chaunu's work a generation ago, research demonstrates that American silver production did not fall off rapidly as previously indicated; it was larger in the seventeenth than in the sixteenth century. In addition, conservative estimates now maintain that about P2 million of silver annually passed via Manila into China throughout the seventeenth century. The robust trade after the 1630s was not detected by Chaunu because he analyzed only official tax records, while smuggling was pervasive:

> Quantities of silver left the New World through the ports of Buenos Aires and Sacramento and through the Manila Galleons. At the peak of these activities, perhaps as much as 6 million pesos per year (159,000 kg), or half the output of Peru, was diverted to these channels from the Seville trade. (Cross 1983, 420)

One of the most promising methods for cross-checking silver flows from Acapulco may be to investigate the volume of Chinese silk passing via Manila to Spanish America. There is no evidence that the Pacific silk trade fell off in the seventeenth century. On the contrary, Mexico City established a 'parian' in the early eighteenth century and the city of Manila thrived in the second half of the seventeenth century. Manila's only function was as entrepôt for the silk-silver trade.

A clearer picture of the global silver trade emerges upon investigation of the primary product for which silver was exchanged—silk. China dominated the supply-side of silk and the demand-side for silver. Japan and Spanish America dominated the supply-side of silver and the demand-side for Chinese silk. Sketchy and preliminary as it is, this essay suggests that silk history might provide fertile ground for cross-checking silver history and vice versa. Certainly both industries need to be studied in the context of global history.

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