Transport costs and prices of Chinese silk in the Spanish Empire. The case of New Spain, c. 1571-1650

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Introduction

Chinese silk was a type of manufactured and semi-finished ware that, alongside other Asian textiles like Indian calico, constituted a large share of the trade between the Atlantic World and Asia through both the Manila Galleon route and the Cape route during the early modern era.[1] These two Asian textiles contributed to developing transformations in the consumption habits of the elite and middle classes in Western Europe.[2] In the case of American markets and material culture, importation of Chinese silk across the Manila Galleon route, which connected the Philippine Islands with Acapulco on the western coast of New Spain, gained more and more importance from 1571 onwards; this being the year in which Manila was founded by Spanish conquerors and exchange of Asian textiles and other goods for American silver expanded across the Pacific Ocean. Chinese silk was so successful among the Hispanic elite across the Americas that a part of what was imported into New Spain was then re-exported to the port of Seville via Veracruz.[3] However, Chinese silk in 17th-century New Spain was usually found in the houses of rulers and the rich. In fact, it transformed the tastes and even clothing fashions

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1. De Vries (2003); Schurtz (1992).
2. Lemire (1991); Berg (2005), pp. 46-60.
3. Chaunu (1956), pp. 1020-1021.

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of New Spanish Creole elites as far back as the early 17th century.[4] Chinese silks did not start to be accessible to segments of subaltern social groups of New Spain until the second half of the 18th century.[5] Many factors intervened in shaping the elitist character of the use and display of Chinese silk in the late-16th and 17th century Americas. The regulating role of fashion and sumptuary laws were among the most important elements that prevented lower social groups from acquiring luxury and semi-luxury textiles in colonial Latin America.[6] Their high prices were another cause. This paper aims to contribute to the understanding of why Chinese silk was more expensive in some areas of the Spanish Empire than in others before the 18th century and why, in New Spain, its high prices made it affordable only to wealthy elites.

Literature on early modern transport and transaction costs has a long tradition that dates as far back as the time of Adam Smith and Karl Marx. This topic has, indeed, been at the centre of fruitful debates. The 19th-century fascination with the extraordinary achievements of European naval technology during the early modern era gave way to a much more moderate view of the supposed transport revolution of pre-modern times. In the 20th century, some scholars published data on overseas trade that were to question the fall in freight costs in the Atlantic Ocean and in trade between Europe and Asia during the early modern era.[7] More recently, and from a renewed perspective, historians are still discussing the timing, limits and economic effects of the convergence of markets driven by a fall in transport costs both within Europe and between Europe and the rest of the world from the 18th to the 19th centuries. This debate has to do with the notion of globalisation. For many scholars, international market convergence, whose best index, or at least prerequisite, is the convergence of commodity prices on a global scale, is synonymous with globalisation.[8] Initially, historians identified the first wave of globalisation after 1820, which is to say that prior to 1820 no long-term convergence of prices on a global scale can be empirically detected.[9] The results of other authors who have tested international price convergence processes during the late 17th and 18th centuries have recently shown a slightly different picture,

4. Armella de Aspe (1992), pp. 51-64; Gasch-Tomás (2014).

5. Yuste López (1995), p. 240. Important European cities like Amsterdam also had to wait until the mid-18th century for Asian imports such as Chinese silk to be expanded across the social scale and purchased by ordinary people: McCants (2007), pp. 455-460.

6. Earle (2001), pp. 186-189.

7. Krishna (1924), pp. 321-323; Davis (1962), pp. 267-289.

8. This is the definition given by Kevin O'Rourke and Jeffrey G. Williamson, which has had a great influence on historiography in recent years. According to them, globalisation refers to the integration of international commodity markets, which may be analysed by measuring the prices of commodities in different and distant markets and by testing their global convergence: O'Rourke and G. Williamson (2002a and 2004).

9. Menard (1991), pp. 228-275; O'Rourke and Williamson (2002a), pp. 28-25; Özmucur and Pamuk (2007), pp. 59-85.

however. Prices of tea, tobacco, sugar, slaves and grain experienced a substantial process of integration within Europe and between Europe and America and Asia in the 18th century, which, however, suffered setbacks caused by political events and wars such as the French Wars of the 1790s. It was in the second half of the 19th century, when a global convergence in commodity prices appeared to definitely take shape.[10] These studies dealt with prices of textiles. In all cases, scholars have agreed that prices of Asian silk and calico (*tocuyo*), like those of other long-distance traded commodities, manifested signs of global convergence in the world in the 18th century.[11]

These debates have emphasised that the difference in value of goods across the globe before the 19th century was due to high transport costs and institutional barriers to the transaction. It is, therefore, worth asking about the fiscal and freight mechanisms behind such high transport costs. This paper studies in detail those costs, which, in the case of Chinese silk, made the textile so expensive that it was inaccessible to most people in the Spanish Empire, especially in New Spain, before any sort of price convergence can be detected in international markets.

The paper is organised into three parts. The first part gives some methodological notes on the technique followed to calculate price differentials of Chinese silk across the Spanish Empire. The second part analyses the degree to which the price of some types of Chinese raw silk and silk fabrics rose from place to place in the Spanish Empire. Although most prices of Chinese silk come from the Manila and New Spanish markets, some references will be made to prices of the product at the port of Seville. Finally, the third part deals with some of the main institutional and fiscal causes that determined the high prices of Chinese silk in the Spanish Empire. More specifically, this last part deals with the financing and transport costs of shipping Chinese silk from Manila, where commercial agents and brokers exchanged American silver for goods with Chinese merchants on behalf of Mexican wholesalers to New Spain. An attempt is made to determine what the costs of freight and fiscal charges upon goods exported via the seaborne route of the Manila galleons were by considering the tax burdens imposed by law, and also the actual payments made by Mexican merchants to the state to import Chinese silk into Mexico. Costs will be analysed using sources that have recently been opened to the public, such as private reports of merchandise written by merchants themselves and documents of the merchant guild of Mexico. In other words, these sources will help to see the difference between law and reality in

10. Gallo and Newland (2004); Rönnbäck (2009); Federico (2010); Dobado-González, García-Hiernaux, and Guerrero (2012).

11. This is what Rönnbäck (2009) and Gallo and Newland (2004) have argued against O'Rourke and Williamson (2002a), pp. 34-35 and O'Rourke and Williamson (2002b), pp. 426-427

the payment of import taxes, which is to say contraband, and how this affected prices. The final part also addresses the costs of overland transport of Chinese silk in the viceroyalty of New Spain.

Some notes on methodology

Some scholars have published patchy and scattered data on the prices of Chinese silk in Asia and the Americas during the 17th century.[12] However, no one has attempted a systematic comparison of the value of such goods in the Philippine Islands and the Hispanic markets. To analyse the variation of Chinese silk prices from region to region in the Spanish Empire is not an easy task. Besides a problem of scarcity of sources, some methodological precautions must be taken into account. The first precaution has to do with the statistical method used to measure price dispersion. In this study, I have applied the ratio method, as it better adapts to the research questions here and the price dataset used.[13] This is a simple but efficient method when comparing prices between markets, which consists of measuring price ratios from one market to another (price in the market in which a given price is supposed to be higher, divided by price in the market in which the price is supposed to be lower).[14] The use of this method serves to calculate the level of price increase of Chinese silk from one area to another of the Spanish Empire, and the extent to which seaborne routes were more expensive than land routes in a worldwide empire like the Spanish Empire.

Secondly, some notes must be made about sources. I use a sample of Chinese silk prices in four Hispanic cities in different continental areas of the Spanish Empire: Manila, Mexico City, Veracruz and Seville. In all cases except Seville, prices are wholesale prices. (i) Prices in Manila have been taken from business reports of merchandise (*memorias de mercancías*) sent by commercial agents from Manila to Mexican wholesalers along with cargo, and

12. For the 17th century there are only two references in literature to prices of Asian goods, among them Chinese silk, in the Spanish Empire. The first is a reference to differences in prices of commodities between China and Japan, on the one hand, and Manila on the other, in the year of 1600: Picazo Muntaner (2003), pp. 227-236. The second is a reference to price differentials of Asian goods between the markets of Manila and Lima in 1620-21: Han-Sheng Chuang (1975), p. 114.

13. Other methods used to measure dispersion and convergence of global prices are the coefficient of variation and the standard deviation of a sample. About the former, see Jacks (2004), pp. 285-329, and Özmucur and Pamuk (2007), pp. 59-85. About the latter, see Feinstein and Thomas (2002), pp. 47-51. These other methods are especially useful in measuring convergence of markets across many markets: Rönnback (2009), pp. 100-102.

14. Although the ratio method has been used to measure mark-up ratios between sale and purchase markets (see O'Rourke and Williamson's works), in this paper I used wholesale market prices, the only exception being, as will be shown, Seville.

business letters. (ii) Chinese silk prices in Mexico City have been collected from notarial records containing payment obligations (*cartas de obligación de pago*) of Asian product sales. (iii) Prices from Veracruz come from customs duties on exports to Castile registered in the "inward registers of merchandise to Seville from New Spain" (*registros de venida de Nueva España*) and the "registers of the *avería* tax" (*cuentas de la avería*). (iv) Prices from Seville have been taken from reports containing purchases of Chinese silk made by the factory (*fábrica*) of the Cathedral.[15] Series are anywhere near complete only for Manila and Veracruz. The list of Chinese silk prices for available years, and use of averages among prices of several pieces of the same type of silk and year for comparison, have helped to draw a picture of the level of dispersion of Chinese silk prices.

The third precaution to be taken is that price ratios have been calculated by transforming Chinese silk prices in *maravedís* into prices in silver grams. This is basically because of the need to correct the effects of the application of different monetary policies by the Crown in the various territories of the Empire, which resulted in changes of the intrinsic value (silver grams) of *maravedí* over time and from place to place. Although most Hispanic currencies had their equivalences in the accounting unit of *maravedí*, these equivalences were only nominal. Thus, one peso of eight pieces (also known as a Spanish dollar), which was the most commonly used currency by American traders in international trade, was nominally equivalent to 272 *maravedís* in all parts of the Empire. However, in Castile the Crown constantly debased the *vellón* currency (silver and copper alloy) by reducing the quantity of silver in it during the first half of the 17th century, which actually meant a debasement of the value of *maravedí* in Castile.[16] For this reason the better way to compare the prices of any product, including Chinese silk, between the Americas and Castile in the 16th and 17th centuries is by transforming them into values in silver grams.

The dispersion of prices of Chinese silk in the Spanish Empire

Price ratios of Chinese silk between New Spanish markets and Manila (Table 1) show the existence of a high dispersion of prices between markets on the two sides of the Pacific Ocean. In most cases, the division of prices between New Spain and Manila had ratios of about 2. This means that if the

15. For more details about sources see Appendix 1.

16. Robert C. Allen and Richard W. Unger have compiled Earl J. Hamilton's "premiums" for *maravedí* in Castile in a data file at http://www.history.ubc.ca/faculty/unger/ECPdb/data.html. Quantities of silver grams equal to one peso of eight pieces in the Americas have been consulted at Leticia Arroyo Abad, 2005, database of the IISH website: http://www.iisg.nl/hpw/data.php#southamerica. Accessed on 01/10/2013.

TABLE 1 ▪ *Price ratios of Chinese silks (New Spain/Manila), 1600-1640*

Year	Raw silk	Bund-led silk	Floss silk	Long-haired silk	Thrown silk	Weft silk	Silk of cinchona resin (*quina*)	Piece of *'chaúl'*	Piece of damask	Piece of *'gorgorán'*	Piece of taffeta
1601			4.31								
1602	2.60		2.09		2.13						
1603					3.21					1.80	2.23
1604	3.02										
1606					2.29						
1607	4.33										
1613					1.09	1.21					
1614					1.20	1.31					
1627			1.99				1.75*		2.06		
1630			1.97		2.21			3.06	1.70		
1631		2.04*	2.30*		2.29*		2.78*				
1633					1.59				1.48		
1634				1.22	1.36						
1636					2.59						

Source: Appendix 2.

Notes: Numbers with asterisks (*) chart price ratios between Mexico City and Manila. The rest of the figures chart price ratios between Veracruz and Manila.

perfect convergence of prices equalled 1, then the prices of Chinese silk in Mexico City and Veracruz were actually double prices those in Manila. In some cases, price dispersion between New Spain and Manila is between ratios of 3 and 4, which points to three- and fourfold price increases in New Spanish markets in comparison with Manila. It may be supposed that mark-up ratios of Chinese silk between the New Spanish cities and the Philippine capital city would have been even higher, as the merchant reports of merchandise from Mexico City and import tax reports from Veracruz do not give us retail prices but wholesale prices.

There are two years, 1613 and 1614, in which data show fairly similar prices in New Spain and Manila. The four price ratios of thrown silk and weft silk for these years present numbers very close to 1 (1.09, 1.20, 1.21 and 1.31). Two reasons, which have to do with the conjuncture in the trans-Pacific trade, explain why in the early 1610s the prices of Chinese silk between Manila and New Spain fell. Firstly, prices of Chinese silk in New Spanish and Manila markets moved closer in the 1610s because there was an expansion of trade across the Manila galleons in that decade. In 1611-15, the trans-Pacific trade reached the first peak and the highest point of the 16th and 17th centuries.[17] This expanded import supply of Chinese silk in New Spanish markets for a short-term period, which lowered the prices of the product in New Spain. Secondly, the Spaniards met a period of relative peace in Manila and the Pacific Ocean for the first time since the 1570s, which lowered transaction costs, especially costs related to financing of marine risk or bottomry contract loans (*préstamos de riesgo marítimo* or *préstamos a la gruesa*). Loans of marine risk were a common contract in the Hispanic world, which consisted of a loan whose refund and interest depended upon the successful voyage of the ship.[18] Interests on these loans, which in Manila, as will be shown below, were commonly lent by charitable foundations that had premiums of 20-25 per cent, must have dropped in the 1610s, as the period coincided with the Twelve Years' Truce (1609-1621) between the Iberian powers and the Dutch Republic.[19] Although peace was not always respected, military clashes between the Iberians and Dutch lowered in Southeast Asia during the 1610s, as the absence of shipwrecks of Manila galleons in that decade, in contrast to previous and later decades, indicates.[20]

Nonetheless, ratios of little more than 1 indicate that New Spain's merchants did not obtain great profits from the trans-Pacific trade in those years.

17. After the 1610s, volumes of the Manila Galleon trade lowered and prices rose again in New Spain: Chaunu (1960), p. 106.

18. Cruz Barney (1998).

19. Israel (1989), pp. 80-120. Military expenses of the Spanish administration of the Philippines did not stop growing in the late 16th century: Alonso Álvarez (2009), pp. 54-62.

20. Palazuelos Mazars (2012), pp. 382-383.

This likely had to do with the silver value in China. Exchange between China and the rest of the world was largely based on arbitrage – silver value was much higher in China than in the rest of the world, especially than in the producer areas such as New Spain. However, in the 1610s the Purchasing Power Parity of silver manifested signs of balance in the world market, and thus arbitrage mechanisms became less powerful. China's gold-silver exchange ratios were 1:7.5 in 1596, but increased to 1:10 in the mid-Chongzhen period (1627-1644). In other words, silver value had started falling in China, which meant that the exchange of silk for silver was less profitable for American merchants. Furthermore, changes in bimetallic ratios were irregular from year to year, the trend mentioned notwithstanding.[21] Low ratios in some years of the 1610s surely reflected the beginning of a drop in silver value, which might have been profound in some specific years, after decades and even centuries of increase in China. The fact that the economic and political conditions of the Manila galleons' expeditions, regarding the stock of Chinese silk in Manila and war, and therefore costs of trade, changed from year to year, might also have influenced some years' profits being especially low for Mexican merchants.

Data on price ratios of Chinese silk between the two New Spanish markets of the sample, Veracruz and Mexico City, are scant, but also allow us to reach some conclusions (Table 2). An amount of Chinese silk that arrived in Mexico City was re-exported to other places of the viceroyalty and Peru. Another part was sent to the Atlantic port of Veracruz, from where the merchandise was shipped to Seville. Most price ratios between Veracruz and Mexico City are figures very close to 1, which appear to indicate a similarity in prices in both cities. Furthermore, some of these ratios are below 1, which would mean that prices of Chinese silk in Veracruz were lower than in Mexico City. However, it is highly improbable, given that Chinese textiles were exported from Mexico City to Veracruz or, at least, should have crossed the capital city of the viceroyalty to reach the Atlantic port city from Acapulco. Apparently

TABLE 2 ▪ *Price ratios of Chinese silks (Veracruz/Mexico City), 1600-1640*

Year	Bundled silk	Long-haired silk	Thrown silk	Weft silk
1612			1.52	1.31
1621		0.82	1.05	1.02
1625		0.67	0.88	
1627	0.8		0.82	

Source: Appendix 2.

21. Xinwei (1994), pp. 605-606.

matching prices between both cities is likely due to the downward bias of prices shown by the sources from Veracruz.[22] Prices must have been higher in Veracruz than in Mexico City – higher but, as sources indicate, not much higher. Most costs were added to Chinese silk in the journey across the Pacific Ocean in the Manila galleons.

The high price dispersion between markets separated by oceans is also visible in the Atlantic trade. As in the case of the trans-Pacific route, the trans-Atlantic route that linked the Americas with Seville presents a high degree of price differentials in Chinese silk. Price ratios of Seville/New Spain indicate this (Table 3), with ratios of around 2, which, given the differences between sources for Veracruz and Seville, must have been actually higher, as in the case of the Pacific Ocean. Studies on price convergence in the Spanish Empire have shown that price differential of commodities was higher between the Americas and the metropolis than within the American territories.[23] This was also the case for Chinese silk re-exported from New Spain to Castile.

Re-exportation of Chinese silk from New Spain to Castile was also appealing because, although prices doubled from the Americas to Castile, the fact that silk was re-exported indicates the extent to which they were competing. Scholarship has discussed whether Chinese silk in Iberia was competitive for its price or for its quality.[24] Data on Chinese silk from Seville's Cathedral indicates that, regardless of the quality of the Chinese silk, it was cheaper

TABLE 3 ▪ *Price ratios of Chinese silks (Seville/New Spain), 1600-1640*

Year	Raw silk	Piece of damask	Piece of taffeta
1612	3.13*		2.09*
	2.11		
1622		1.70	
1629	1.28		

Source: Appendix 2.

Notes: Numbers with asterisks (*) chart price ratios between Seville and Mexico City. The rest of numbers chart price ratios between Seville and Veracruz.

22. Prices in Veracruz have been calculated from the *ad valorem* taxes charged on the merchandise whose value was established in official texts detailing the prices of merchandise (*afueros*). It seems that these valuations did not reflect precise market prices, but rather civil servants added the market changes of prices later from one year to another, and consequently in some years the prices contained in the *afueros* would have been lower than the actual market prices.

23. Gallo and Newland (2004), pp. 573-596.

24. Lorenzo Sanz (1986, pp. 442-443) defended that the quality of Chinese silk was higher than the quality of European silk. Picazo Muntaner (2004, p. 502) has recently claimed that the quality of Chinese silk was low. None have offered precise data on prices.

than Castilian silk (Table 4). Competition for Castilian silk in the 17th century, thus, did not come only from north-western European textile industry but also from Chinese industry.[25]

TABLE 4 ▪ *Average prices of silk produced in Castile and China (maravedís/vara or onza). Seville, early 17th century*

Year	Velvet from Castile	Velvet from China
1608	1,683	1,564
	Taffeta from Castile	Taffeta from China
1612	258	170
	Satin from Castile	Satin from China
1612	799	340
	Raw silk from Castile	Raw silk from China
1612	161	136
	Damask from Castile	Damask from China
1610	948	442
1613	883	442

Source: Archivo de la Catedral de Sevilla (henceforth ACS), Fábrica, Adventicios.

Notes: *Maravedís/vara* is for damask, taffeta, velvet and satin; *maravedís/onza* is for raw silk.

Most silk from Castile is from Granada. For the rest the exact origin in Castile is not specified.

What shaped prices of Chinese silk in New Spain? Transport costs and financing in the Manila Galleon trade.

The following lines focus on merchant expenses and financing of the trans-Pacific trade during the first half of the 17th century, as a way of looking at why the prices of Chinese silk were so high in New Spain with respect to Manila and the mechanisms behind price increases in Chinese silk when they were shipped from market to market in the Spanish Empire. Measuring the entire transport costs of a given trading route is an almost impossible task, even for today's exchanges for which accurate statistical sources are available. The extraordinary quantity of factors that intervene in transport and transaction costs is simply immense. An absolutely perfect analysis of this type must include, among other things, detailed analyses of an extensive list of prices, technological characteristics of ships, expenses derived from sailors' work, taxes paid on imports, payments of commercial agents, investment in credit to finance trade, expenses coming from the not always measurable expenses of commercial monitoring, and investment in insurance capable of fac-

25. Fortea Pérez (1983).

ing high-risk commercial operations, not to mention the production costs of the product, among many other factors.[26] Given the limited sources for early modern trade, this paper aspires to highlight how Mexico City wholesalers' financing of the Manila Galleon trade, commercial operations in the marketplace of Manila and performance of an arbitrage system of trade affected the shape of high prices of Chinese silk in New Spain in comparison with prices in the *entrepôt* of Manila. Most space, nonetheless, will be devoted to Mexican financing of the Galleon trade and how it affected the price of Chinese silk in New Spain, as new sources shed light on freight costs and investment of Mexico City's wholesalers.

In principle, according to the Crown's plans, trade in Manila should have been monopolised in the hands of those who had the title of resident (*vecino*) of Manila to guarantee Spanish presence in the archipelago. In practice, however, over time Mexican wholesalers and moneylenders controlled trade in the marketplace of Manila through their commercial agents. Mexico's merchants maintained such control in three different ways: with occasional agents and brokers (*factores*, *tratantes*) who were sent to Manila, especially in the early days of the Manila Galleon route; with *encomenderos* who took up residence in Manila and managed businesses and shipments on behalf of Mexico's merchants; and with family companies, one of whose members usually took up residence in Manila. Of course, sometimes it is difficult to distinguish between the three different types, especially between the latter two.[27]

Reports of merchandise which have been recently opened to research, along with business letters, sent by merchants and commercial agents (mostly *encomenderos*) in Manila to the traders in Mexico City in the early decades of the 17th century, are privileged sources for understanding the costs of transporting Chinese silk across the Pacific Ocean. These reports contain not only lists of imports bought in Manila and forwarded to New Spain, but also some of the expenses derived from the commercial operations. They contain the expenses of freight in the galleons (*carga*); the *almojarifazgo* and other export taxes (*derechos del rey*); the container (*caja*) or bale (*fardo*), which included their manufacture, lianas and hessian blankets (*arpillera*) to protect merchandise; the costs of taking the product from Manila to the port of Cavite and the costs of stowage (*arrumaje*) in the galleons; and the sum (*encomienda*) that Mexican wholesalers paid to their commercial agents (*encomendero*) in Manila. Appendix 1 collects the data of 33 of these reports that have been found and processed. In order to gauge whether any fall in transport costs can be detected in the first half of the 17th century, when the Manila Galleon trade expanded, I have collected these reports for two different decades, the 1600s and *c.*1625-1635.

26. Menard (1991), pp. 233-234.
27. Yuste López (2013).

The largest investments made by New Spanish merchants involved in the Manila Galleon trade were those regarding the sea freight (*carga*) of merchandise. Freight costs over merchandise value were on average around 5 to 6 per cent expense. Although, in some cases, the expenses of freight were more than 10 per cent of silk value (see Appendix 1). Differences in the freight payments had to do with the way of calculating them by port appraisers. As in other parts of the Spanish Empire, freight in the Manila galleons were not levied on the merchandise value but on their weight, which often was simply deduced from the volume of the container. It emerges from reports that there were different freight rates according to the container volume loaded on the ship, whether they were big containers (*caxones*) or containers (*caxas*) or bales (*fardos*) or cases (*petacas*). This made fluctuation of freight rates dependent on both economic and not strictly economic factors – the value of merchandise and the size of the container. Chinese silk, thus, was more or less profitable to traders according to cargo value and weight: the more expensive and lighter the merchandise was, the cheaper the sea freight became in relation to the merchandise value.

The same happened with tax burdens. The "outward *almojarifazgo* tax" (*almojarifazgo de salida*), an *ad valorem* tax charged on merchandise that came from Manila to Acapulco at 2 per cent, was collected in Manila without opening containers and bales, but according to merchants' affidavits of the content of containers. The affidavits would have rarely fitted the actual merchandise value, as tax payments of little more than 1 per cent over merchandise value appear to indicate (see column of "taxes-*derechos del rey*" in Appendix 1). Most of the merchant reports typify this *almojarifazgo* tax under the general title of "king's rights" (*derechos del rey*). However, these "king's rights" commonly also included the "3 per cent tax" (*derechos del 3 por ciento*) charged on Asian imports to Manila, which increased the legal 2 per cent – actually little more than 1 per cent – of taxes paid in Manila to 5 per cent.[28] These reports, insofar as they are not official documents but private records sent from one merchant to another, have the virtue of collecting the actual value of exports, including those non-declared, and therefore reflect levels of both legal exports and smuggling, which according to this source doubled and sometimes tripled declared imports.[29]

28. Two merchandise reports explicitly show the "3 per cent tax" within the rest of the "king's rights", that of Benito de Mendiola to Rodrigo de León in 1599 and that of Pedro de Zúñiga to Alonso Rodriguez in 1602 (AGN, Indiferente Virreinal, caja-exp.: 4976-006. Filipinas; AGN, Indiferente Virreinal, caja-exp.: 2111-020. Consulado, pp. 3-4). The *3 por ciento* tax was charged over all imports that came into Manila from Chinese, Japanese, Indian and other Asian ports. In 1606, the "3 per cent tax" was risen up to a *6 por ciento* tax only for the Chinese imports: Yuste López (1984), pp. 16-19.

29. If Louisa S. Hoberman is correct in her estimation of illegal exportation of silver from Acapulco to Manila, which could have exceptionally reached 14 times the amounts de-

Containers and their lading in the galleons were subject to charges that approximately added up to little more than 1 per cent of the total expenses of merchandise reports. These expenses depend on container costs, which ranged from 1 to 7 pesos. These also included the carriage to Manila's port, Cavite, and the costs of stowage in the galleons, which were 12 pesos per ton in the early 17th century.[30]

The last expense detailed in the reports are payments made to the commercial agent in Manila, which was a commission or wage (*encomienda*) that fluctuated from 8 to 10 per cent of the merchandise value. I have identified the *encomienda* in 1627 for the first time in the records, which perhaps reflects a change in the commercial mechanisms of Chinese silk trade across the Pacific. Only after the two first decades of the 17th century, when Mexican merchants clearly monopolised Manila Galleon trade, the system based on *encomiendas* became dominant for Mexican merchants managing their businesses in the Philippines. Nonetheless, before the spread of commercial *encomiendas* in the Philippines and also thereafter, the merchants of Manila received revenue from their own investments in the Manila galleons.[31]

A note must be made on the *encomiendas*. They likely not only reflect the payment received by Mexican merchants' agents who lived in Manila, but might have also included other additional expenses, such as interests paid to Philippine institutions that financed trade. *Encomenderos* and the rest of the Mexican merchants' brokers in Manila not only financed trade with silver coming from American mines across the Pacific, but also from the so-called *Obras Pías*. These were charitable institutions that, besides providing help to people in need and giving alms to the poor and sick, funded Manila merchants with loans of marine risk. The most important *Obra Pía* in Manila was the House of Misericordia, which played an essential role as a financer of Galleon trade. Premiums returned to the Misericordia and other charitable institutions were incorporated in the payment of the *encomienda*.[32]

To sum it up, merchandise reports sent by merchants from Manila to Acapulco show that, depending on the quality and therefore the value of Chinese silk and the size and weight of containers, around 10 to 20 per cent of expenses over merchandise value were incurred to buy and ship silk from Manila to Acapulco (see Figure 1). This is an average level of costs, which according to the sample does not appear to have changed over the period of analysis. If

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clared, the degree of contraband in Chinese imports to New Spain from Manila was substantially lower than contraband of American silver from New Spain to Manila: Hoberman (1991), pp. 218-220.

30. Yuste López (1984), p. 18.

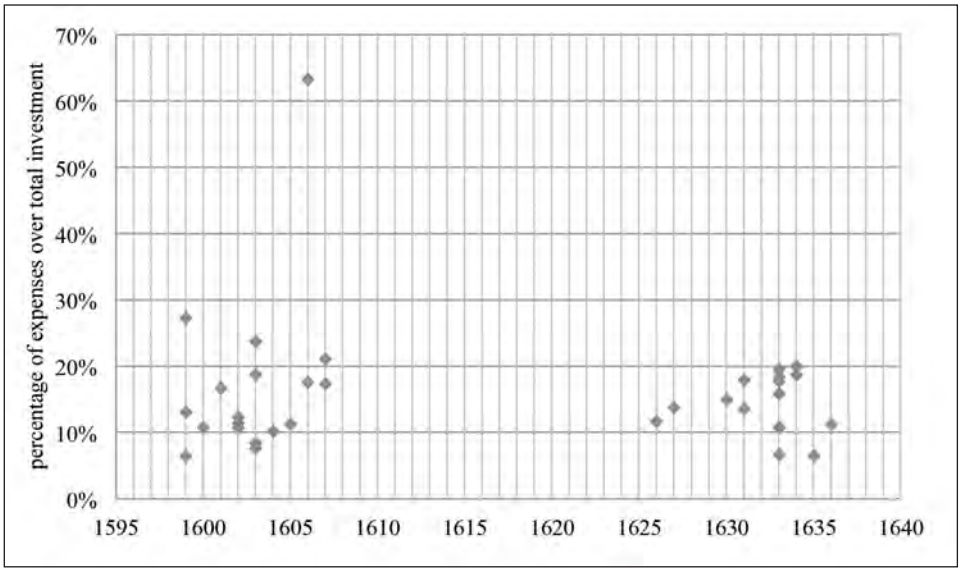
31. For instance, I have found in merchant reports entries of merchandise bought by the merchant in Manila himself, which were then shipped to New Spain on their account.

32. Mesquida (2005); Alonso Álvarez (2005, p. 265); Yuste López (2007, pp. 33, 53); Legarda (1955).

any change can be grasped between the 1610s and *c.*1625-1635, it is that Mexican merchants improved their investment techniques by not making minimally profitable investments, for instance, investments solely in products of little aggregated work such as cotton blankets from the Philippines. Apart from this, there was neither deep changes nor significant drops in transport costs and tax burdens.

Investment in Chinese silk importation by Mexican wholesalers was higher than merchants' reports of merchandise suggests. Chinese silk which arrived in Acapulco was then taken to other cities, mainly to Mexico City, from where goods were re-exported to other American and Iberian markets. To draw a more complete picture about the costs of transport and prices of Chinese silk in New Spain entails referring to the costs of receiving the merchandise and of overland transport to the capital city of New Spain. In addition to the expenses explained above, others must be added, particularly those of import taxes charged in Acapulco, freight costs of transporting the products

FIGURE 1 ▪ *Percentages of sea freight and tax expenses for merchandise values when buying and shipping Chinese silk from Manila to Acapulco, 1599-1636*



Sources: Appendices 1 and 2-A.

Notes: Products sent in the form of gifts to the Church were not charged with freight costs nor with taxes, and therefore were not included in the sample.

The case of the shipment of Lucas de Zariaga to Juan Castillete (1606) seems strange: the former, commercial agent of the latter in Manila, made an investment in which expenses were more than 60 per cent of merchandise value. From the report, it seems that he made a little profit on this business because most of the merchandise were blankets manufactured in the Philippines of little value, which explains the huge expenses on freight in relation to merchandise value (AGN, Indiferente Virreinal, caja-exp.: 6477-019. Consulado, pp. 8-9).

from Acapulco to Mexico City, and payments of *alcabala* taxes in the capital of the viceroyalty.

Chinese silk received in Acapulco was charged with a tax named "*almojarifazgo* tax of 10 per cent on clothes coming from the Philippines" (*almojarifazgo del 10 por ciento de la ropa venida de Filipinas*), which was paid following the system of the *almojarifazgo* tax of Manila, that is to say through merchants' affidavits of containers' content.[33] Nonetheless, the *almojarifazgo* tax was not the only charge over imports from Manila that merchants paid in Acapulco, although it was the most expensive. There were others: a separate charge on sea freight lower than that paid in Manila;[34] *avería* tax, collected at rates of 2 per cent over merchandise value; costs of valuing, weighing and unloading the goods from the galleons, and payments to the commercial agent in Acapulco, whose *encomienda* was much lower than that of the commercial agents in Manila.[35] The following table shows a concrete example of the expenses of receiving a cargo of Chinese silk coming from Manila in Acapulco by a commercial agent (*encomendero*) in Acapulco who traded on behalf of a Mexican merchant.

The cost of transporting Chinese silk from Acapulco to Mexico City across the road that connected the two cities had an impact on the price of

TABLE 5 ▪ *Expenses on receiving in Acapulco a cargo of silk by Domingo de Yraegui in Acapulco on behalf of the wholesaler Alonso de Valderrama of Mexico (1634)*

Value of silk cargo	*Almojarifazgo* tax (at 10 per cent)	Sea freight	*Avería* tax (at 2 per cent)	*Consulado* (?)*	Valuation and unloading	Agency (*encomienda*)	Total expenses
1,130.375 pesos	101.25 pesos (8.96)	7.625 pesos (0.67)	20.25 pesos (1.79)	4 pesos (0.35)	2 pesos (0.18)	6 pesos (0.53)	141.125 pesos (12.48)

Source: AGN, Indiferente Virreinal, caja-exp.: 5845-077. Consulado, p. 8.

Notes: In parentheses, percentage of expenses over merchandise value.

Asterisk (*) indicates an expense, "guild" (*Consulado*), which is not identified. Perhaps this could be any type of payment to the merchant guild of Mexico City.

33. The boxes of the Royal Treasury of Acapulco (*Caja Real de Acapulco*) for the years 1590 to 1650 are in: AGI, Contaduría, 897 to 905A. Unfortunately, the documents outlining the collection of the "*almojarifazgo* tax of 10 percent on cloth coming from the Philippines" are usually mixed up with the maritime freight charges of the Manila galleons, and therefore it is impossible to calculate the exact percentages over which the tax was collected.

34. According to the documents of the Accounts Office of the Royal Treasury of Acapulco, sea freight charged to the merchants of Acapulco when taking the merchandise from the galleons was 32 *ducados* (= 44.125 pesos) per ton, and every ton was considered equivalent to 6 boxes (*cajones*) or 8 bales (*fardos*): AGI, Contaduría, 901.

35. In order to facilitate the collecting of taxes by the royal accountants, over time the "*almojarifazgo* tax of 10 per cent" would have included other tax charges made in Acapulco, such as the *avería* tax, so that the *almojarifazgo* was transformed into a generic label under which collecting all the taxes and charges of Acapulco: Yuste López (1984), pp. 18.

silk too. Land transport was managed by cart drivers, who received emoluments according to the weight of the load and distance to be covered. Among the documents of the merchant guild of Mexico, there are details on such expenses. As in the case of maritime freight, expenses on land freight with respect to the merchandise value also depended upon the relationship between quantity, weight and value of the cargo. According to the "Accounts Office of the Treasury of Acapulco" (*Contaduría de la Caja de Acapulco*), every ton was considered equivalent to 6 big containers (*cajones*) or 8 bales (*fardos*).[36] Cost of transporting merchandise from Acapulco to Mexico was around 10 to 90 pesos per large container (*caxon*) and around 10 pesos per bale (*fardo*) or case (*petaca*) in the mid-1630s (Table 6), depending on the relationship between value and weight of the cargo. However, weight mattered little if the value of the merchandise was great. According to merchants' reports sent from Manila to Mexico City, a large container (*caxon*) contained merchandise worth from 800 to 1,400 pesos in Manila, and a small container (*caxa*), bale (*fardo*) or case (*petaca*) merchandise valued in Manila at 70 to 500 pesos.[37] By putting all these ranges into the same calculation, it is possible to deduce that land freight ranged from 0.3 to around 14 per cent of merchandise value (see Table 5). Such land freight from Acapulco to Mexico City shows the extent to which and why overland transport costs were lower than those paid for marine transportation in the Manila galleons. Sea freight in the Manila galleons, which entailed compensation paid to the Crown and sailors concerned with the safety of silk shipped across the long journey from Manila to Acapulco, represented the lion's share of costs for transporting Chinese silk from the Philippines to Mexico City. In terms of merchandise value, maritime freight costs from Manila to Acapulco ranged around 10 to 20 per cent, against the 0.3 to 14 per cent in the case of the route Acapulco-Mexico. The margin is ample because freightage was paid by unit weight instead of by unit price, although these maximums and minimums help to situate land and maritime freight within a range.

Finally, the circulation of Chinese silk would have been charged with another burden in Mexico City. If Asian goods were bought or sold in Mexico, they would have been charged with the *alcabala* tax, like all exchanged commodities (Table 7). *Alcabala* was an *ad valorem* sale and turnover tax payable on goods and chattels with every change of ownership, which included all the purchases and sales made in Mexico City and its district as well as in public auctions. Despite the initial royal promise to keep the Americas free from sales taxes, the *alcabala* tax was introduced in New Spain by Philip II in 1575. Initially, the *alcabala* tax was managed by the royal administration, but in

36. AGI, Contaduría, 901.
37. Data on sources of appendix 1-A.

TABLE 6 ▪ *Freight expenses on transport of Chinese silk from Acapulco to Mexico City, c.1630*

Year	Merchants	Cargo weight	Approximate cargo value (*)	Freight cost	Range of freight cost over merchandise value (in %)
1628	Álvaro Martínez de Sande (Ac) to Roberto Malcot (Me)	5 large containers (54.2 *arrobas*)	4,000-7,000 pesos	11.5 pesos	0.3-0.2
1633	Pablo de Carrascosa (Ac) to Santi Federighi (Me)	21 large containers, 27 bales, 64 cases, and 3 small containers (698.8 *arrobas*)	23,380-76,400 pesos	1,464.5 pesos	6.2-1.9
1634	Domingo de Yraegui (Ac) to Lorenzo de Aguirre (Me)	1 large container (14 *arrobas*)	800-1,400 pesos	63 pesos	7.9-4.5
1634	Domingo de Yraegui (Ac) to Lorenzo de Aguirre (Me)	2 large containers (26 *arrobas*)	1,600-28,000 pesos	91 pesos	5.7-0.3
1634	Pablo de Carrascosa (Ac) to Lorenzo de Aguirre (Me)	11 bales and 1 case (60 *arrobas*)	840-6,000 pesos	90 pesos	10.7-1.5
1634	Pablo de Carrascosa (Ac) to Lorenzo de Aguirre (Me)	1 case (5 *arrobas*)	70-500 pesos	10 pesos	14.3-2
1635	Pablo de Carrascosa (Ac) to Lorenzo de Aguirre (Me)	1 large container (14 *arrobas*)	800-1,400 pesos	56 pesos	7-4

In Castile, 1 *arroba* was 25 *libras* (pounds). 1 *libra* is equivalent to 460.09 grams.

Sources: AGN, Indiferente Virreinal, caja-exp.: 1359-008. Consulado; AGN, Indiferente Virreinal, caja-exp.: 5887-014, Industria y Comercio, pp. 9-11; AGN, Indiferente Virreinal, caja-exp.: 2427-031. Consulado, pp. 3-9; AGN, Indiferente Virreinal, caja-exp.: 2427-029. Consulado; AGN, Indiferente Virreinal, caja-exp.: 2427-032.

Notes: (*) Unit cargo value has been estimated by supposing that each large container carried merchandise valued between 800 and 1,400 pesos in Manila, and that each small container, bale or case carried merchandise valued between 70 and 500 pesos in Manila. These are the ranges that appeared in the merchant reports sent to Mexico City by Manila commercial agents (appendices 1-A).

Ac: Acapulco.

Me: Mexico City

1602 the Crown and the municipal council (*Cabildo*) of Mexico City, backed by the merchant guild, agreed on a contract (*asiento*) to farm the sales taxes, which since then were managed by the city council and the merchant guild.[38] Until 1632, the rate of the *alcabala* tax was 2 per cent of the value of each commercial transaction, and it naturally included purchases and sales of imports such as Chinese silk. Between 1632 and 1638 the tax amounted to 4 per cent, and from 1639 to 1744 to 6 per cent. Although levels of tax evasion of this, as with other taxes, were high, since the collection system was based on a vendor's or buyer's affidavit to the transaction value, it must have added some charge, thus some cost when the product was commercialised, to the price of Chinese silk.

Ultimately, all costs derived from tax charges and logistics costs in Manila, sea freight from Manila to Acapulco, expenses paid in Acapulco, overland transport costs from Acapulco to Mexico City and some other likely additional costs such as *alcabala* taxes, generated transport expenses to Mexican merchants of at least 30 to 50 per cent over the value of Chinese silk in Manila. It must be noted that other expenses might vary from year to year, as the Manila Galleon trade depended upon a large number of circumstances, from the stock of Chinese silk in the marketplace in Manila and the demand for silk in New Spain, which might rise or lower prices, to the risk of war, which increased costs of marine insurance. The risks inherent in sea voyages were constant not only because of war, but also because the Manila galleons sailed along an unsafe route. Shipwrecks in the late 16th and the early 17th century occurred more regularly than Mexican investors might expect.[39]

The last point to be taken into account when addressing differences of Chinese silk prices from the Philippines to New Spain is the performance of arbitrage, upon which all the business around the Manila galleons lay. The conversion of China's economic structure to silver, and it had the largest population in the world in the 15th century, triggered constant growth of the silver value in China. Relative bimetallic ratios showed the extent to which silver became higher valued in China than in the rest of the world. Whereas gold was exchanged for silver in Canton at the rate of 1:5.5 to 1.7 around 1600, in Castile the exchange rate was about 1:13.[40] Production of silver in New Spain was expensive, as was the transport of such a heavy product from the mines to Southeast Asia. Silver was transported from the mines of Zacatecas and Aguascalientes to Mexico City via the Royal Road of the Interior Land (*Cami-*

38. The political struggles around, conditions and changes to the farm contracts of sales taxes between the Crown and the Mexican institutions during the early modern era can be seen in Smith (1948), pp. 2-37. A historiographical summary on the uses of *alcabala* taxes documents in the economic history of New Spain can be seen in Grosso (1990), pp. 7-11.

39. Yuste López (2007), pp. 30-31.

40. Flynn and Giráldez (1995), pp. 431.

TABLE 7 ▪ *Alcabala tax over transactions of Chinese silk according to Alcabalas del Viento Book, 1603 and 1604*

Vendor	Buyer	Merchandise	Merchandise value	*Alcabala* tax
Gregorio de Velasco	Unknown	Thrown silk and taffetas and *gorgoranes*	100 pesos	2 pesos
Lucas del Carpio	Espinosa	50 doublets of Chinese *holandilla*	100 pesos	2 pesos
Diego Maldonado	Unknown	2 bales of blankets from the Philippines	1644.5 pesos	33 pesos
Sancho de Ovilla	Juan de Rozas	A cargo of merchandise from China	1500 pesos	30 pesos
Lic. Juan Rodriguerz Zambrano	Unknown	Cloth from China	2902 pesos	58.25 pesos
Hernando de Abriego, silk craftsman	Juan de Castañeda, weaver	A container of silk from China	592.5 pesos	11.875 pesos
Pedro de Arcoyo	Unknown	Merchandise from China	800 pesos	16 pesos
Gabriel Pérez	Francisco de León	Merchandise from Castile and China	2750 pesos	55 pesos
Alonso de Santillán, scribe	Unknown	Small container of cloth from China	400 pesos	8 pesos
Baltasar Núñez de Valdés	Bartolomé Rubio	Velvets from China	1000 pesos	20 pesos

Source: AGN, Indiferente Virreinal, caja-exp.: 5861-003. Alcabalas, pp. 11, 16, 18, 26, 33 (back), 42, 55, 65 (back), 70 (back), 79.

Notes: "Branch of the Wind *Alcabala* Tax" (*Ramo de la Alcabala del Viento*) included *alcabala* taxes charged on the non-residents in Mexico City as well as on those vendors not associated with guilds. *Alcabala del Viento* Book is the only document that lists the *alcabala* tax that has survived (or has been catalogued) in the *Archivo General de la Nación* of Mexico for the 17th century.

no Real de Tierra Adentro), and then to Acapulco.[41] This long and hard journey entailed land freight for carrying silver, and payments for *alcabala* taxes, which were also paid for exchanges of silver in Mexico City and Acapulco. Later, export and import taxes and sea freight were also paid both in Acapulco and Manila for the consignment and reception of silver, respectively. In Acapulco, the tax paid on silver and cash exported to Manila was so-called "taxes of 5 sixths over 2 per cent" (*derechos de los 5 sesmos sobre el 2 por ciento*), a baroque de-

41. The *Camino Real de Tierra Adentro* connected the present-day United States with Mexico City: Jiménez Gómez (2009), pp. 264-270.

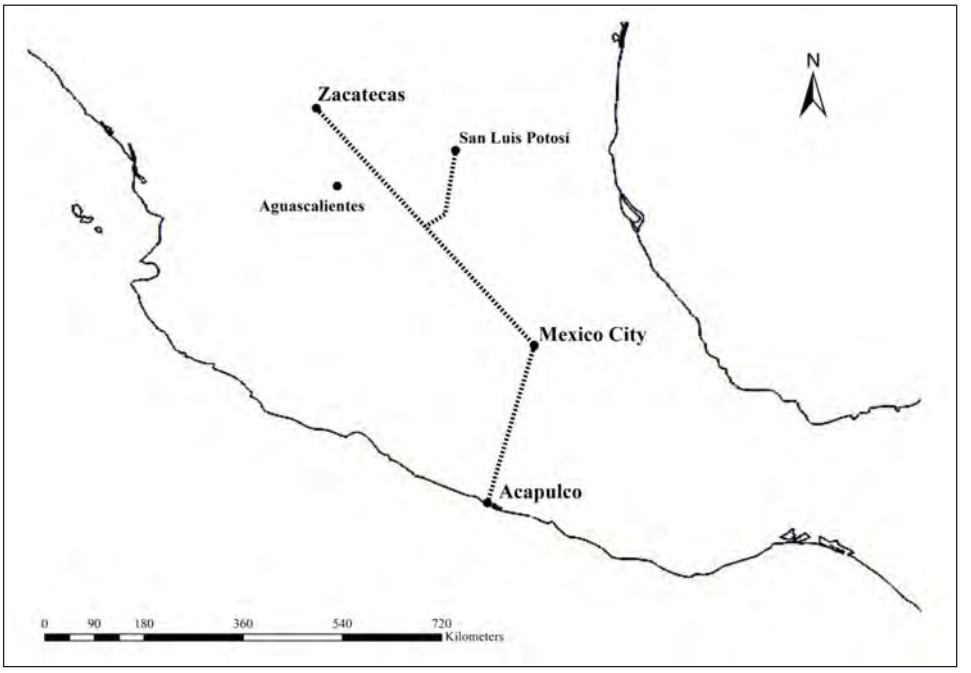
scriptor of a tax which was slightly under 2 per cent.[42] In Manila, an import tax of 5 per cent was charged with silver coming into the Philippines – the so-called "inward *almojarifazgo* tax" (*almojarifazgo de entrada*).[43] These expenses notwithstanding, the exportation of silver to be exchanged for Chinese silk remained profitable thanks to the workings of arbitrage. It is worth noting that the core of arbitrage was not in the exchanges across the Manila galleons, but between the Philippines and China, where silver value was low in comparison with the rest of the world. By analysing the cargo of a Portuguese ship that sailed from China to Manila in 1600, Picazo Muntaner (2003, pp. 232-233) has demonstrated that merchants who shipped merchandise from China to Manila had mark-ups of at least 100 per cent over the value of goods. Chuang (1975, pp. 105-107) calculated that merchants from Huchou, Chekiang, Kiangsu and Anhwei, among other areas of south-eastern China, often made a profit of more than 100 per cent by shipping silk to Luzon in exchange for silver. It shows the extent to which arbitrage put in the hands of European, American and Chinese merchants a profitable business, and decisively counted on the high prices of Chinese silk in New Spain with respect to China.

The arbitrage mechanism that attracted silver to the Chinese economy and determined the value of silver for the purchase of Chinese silk in New Spain and higher levels of profit for New Spanish wholesalers, remained stable until the 1640s. In the 1640s exchange rates of silver in China and New Spain got closer, as a result of the fall of silver prices after two centuries of growing demand in China, and the increase in the value of silver in areas where silver was extracted. In New Spain and also in Peru, production of silver slightly fell from the 1630s to the 1650s,[44] which increased its value in the Americas. These changes in international trade caused the first convergence of bimetallic ratios around the world, as silver became cheaper in the scarce area (China) and more expensive in the production area (Latin America). Spectacular profits based on price premiums disappeared. Silk-for-silver exchanges between Asia and New Spain continued after the 1640s, but with lower mark-ups for New Spanish merchants, at least until the early 18th century, when a new divergence in silver value between China and the rest of the world took place driven by an impressive demographic expansion in China.[45]

Arbitrage was the main mechanism by which Mexican merchants obtained mark-ups in their exchanges with Asia, but it does not mean that market was inefficient. There were other reasons beyond benefits obtained from arbitrage that accounted for the gap between transport costs and prices of

42. AGN, Contaduría, 897 to 905A.
43. Yuste López (1984), pp. 16-17.
44. Atwell (2010), pp. 112-113.
45. Flynn and Giráldez (1995), pp. 430-432; Flynn and Giráldez (2002), pp. 405-411.

MAP 1 ▪ *Royal Road of the Interior Land from Zacatecas to Mexico, and Road from Mexico to Acapulco*



Source: Own elaboration from Jiménez Gómez (2009), p. 270.

silk. As has been shown, costs such as the interest on capital for silk purchase and the payments for loans of marine risk, were also behind the increase in prices from market to market. Furthermore, there is a further reason to be taken into account. Not all types of silk cost the same. There were quality differences. Manila merchants bought fine and coarse silk of different colours. For instance, raw silk and taffeta were much cheaper types of silk than satin or velvet, as the latter necessitated much aggregated work to be finished.[46] This might also explain why in some cases, those in which the type of silk recorded was more elaborate and expensive, price differentials were high.

Conclusions

The fact that only a reduced elite had access to products that were relatively new or extremely scant in New Spain and the Atlantic World before the 18th century, such as Chinese silk, was due to many reasons. Their prohibi-

46. Chuang (1975), pp. 106-107. For details on different types of textiles imported in New Spain from Manila, see Yuste López (1984), p. 25.

tive price for most consumers was a principal factor. This paper has attempted to address the main causes for Chinese silk being so expensive in the Spanish Empire, particularly in New Spain, before transport costs fell and the first signs of international convergence of markets can be detected in history.

Data from different sources on prices of Chinese silk in the three continental areas of the Spanish Empire has allowed, in this paper, more precise analysis than previous works on price dispersion of Chinese silk in the Hispanic markets, which was the most important Asian cargo laden in the Manila galleons. This analysis demonstrates that the relative price of Chinese silk in the Spanish Empire rose by at least a factor of 2, and in some cases 4, from market to market when silk circulated across maritime routes. The performance of arbitrage in world trade, which guaranteed high benefits in the exchange of Chinese silk for American silver, and the high risks for climatic reasons and the permanent danger of war in Asian seas, which shot up the costs of marine insurance, explained a part of the high price of Chinese silk in the Spanish Empire. Gaps in some years notwithstanding, if we focus on the Manila Galleon route, this vast price increase from place to place was also due, first and foremost, to the high customs taxation on Asian imports and sea freight in the journey from Manila to Acapulco (up to 20 per cent), sea tax burdens on silver (according to law, around 7 per cent of export and import taxes in Acapulco and Manila respectively), freight charges incurred in transporting silk from Acapulco to Mexico (up to 30 per cent of silver value), and *encomienda* paid by Mexican merchants to their commercial agents in Manila and Acapulco (8 to 10 per cent to the merchants of Manila and around 2 per cent of the agents of Acapulco). Other minor expenses, for instance on containers, stowage in the galleons and taxes such as *alcabala*, also increased the price of goods. The high differentials of Chinese silk prices across the Spanish Empire was explained by high expense on transport and taxes, and also by the high profits gained by merchants from the performance of an arbitrage system in which the price of silver was much cheaper in China than anywhere else.

These were the transport and institutional conditions that determined that only the very wealthy of New Spain could purchase Chinese silk to dress their bodies and decorate their homes. In this economic and institutional context, the only possibility for prices of Chinese silk to fall was the expansion of export supply of the product without a corresponding parallel increase in import demand for it. This actually had an effect on the fall in prices of Chinese silk in New Spain in the 1610s, which was not accompanied by a structural reduction in transport costs and insecurity in sea travel, and also was limited in time. Chinese silk remained a luxury for more than a century until the mid-18th century because, among other reasons, merchants had to pay significant costs on insurance, freight of silk across sea and land, and import and export taxes in Manila and Acapulco.

APPENDIX 1 ▪ *Freight and other mercantile expenses of chinese silk imports into Acapulco from Manila (in pesos of 8 pieces and, in parentheses, percentage of expenses over merchandise value, c.1600-1640*

Year	Merchants' names	Sea freight	Taxes (*derechos del rey*)	Packaging and lading	Agency (*encomienda*)	Others	Expenses	Merchandise value	Total
1599	Benito de Mendiola to Rodrigo de León	90 pesos (3.16)	49.3 pesos (1.73)[a]	43.6 pesos (1.53)[a]			182.9 pesos (6.42)	2850.275 pesos	3033.175 pesos
1599	Alonso Rodriguez de León to Alonso Rodriguez de Luado	253.5 pesos (10.20)	41.375 pesos (1.67)	30.375 pesos (1.22)			325.25 pesos (13.09)	2484.625 pesos	2809.875 pesos
1599	Tomás Montero to Mateo Santana	170 pesos (24.69)	11.9 pesos (1.73)[a]	6 pesos (0.87)			187.9 pesos (27.29)	688.5 pesos	876.4 pesos
1600	Alonso Rodriguez de León to Alonso Rodriguez de Luado	299.25 pesos (8.35)	46 pesos (1.28)	41.5 pesos (1.16)			386.75 pesos (10.79)	3584.75 pesos	3971.5 pesos
1601	Alonso Rodriguez de León to Alonso Rodriguez de Luado	664.75 pesos (13.31)	130.375 pesos (2.61)	36.125 pesos (0.72)			831.25 pesos (16.64)	4994.125 pesos	5825.375 pesos
1602	Pedro de Zúñiga to Alonso Rodriguez	549 pesos (9.70)	87.5 pesos (1.55)	63.5 pesos (1.12)			700 pesos (12.37)	5658.875pesos	6358.875 pesos
1602	Simón García to Mateo Santana	150 pesos (8.18)	40 pesos (2.18)	19 pesos (1.04)			209 pesos (11.40)	1833.25 pesos	2042.25 pesos
1602	Alonso Rodriguez de León to Alonso Rodriguez de Luado	406.25 pesos (8.13)	70 pesos (1.40)	62.75 pesos (1.26)			539 pesos (10.78)	4998.5 pesos	5537.5 pesos
1603	Jacome Pelegrin to Galiote de Novoli	40.8 pesos (8.80) [a]	30 pesos (7.33)	5.875 pesos (1.44)			76.675 pesos (18.74)	409.25 pesos	485.925 pesos

(Continued on next page)

Year	Merchants' names	Sea freight	Taxes (*derechos del rey*)	Packaging and lading	Agency (*encomienda*)	Others	Expenses	Merchandise value	Total
1603	Alonso Rodriguez de León to Alonso Rodriguez de Luado	258.75 pesos (4.53)	94.5 pesos (1.65)	83 pesos (1.45)			436.25 pesos (7.64)	5713.5 pesos	6149.75 pesos
1603	Juan de Artoga to Martín de Ynarra	n.a.	n.a.	n.a.		1400 pesos (23.71)[b]	1400 pesos (23.71)	5904.5 pesos	7304.5 pesos
1603	Sebastián de Barreda to Martín de Ynarra	255 pesos (5.04)	151.875 pesos (3)	20.25 pesos (0.40)			427.125 pesos (8.43)	5064.25 pesos	5491.375 pesos
1604	Alonso Rodriguez de León to Alonso Rodriguez de Luado	110 pesos (7.24)	24 pesos (1.58)	21.5 pesos (1.42)			155.5 pesos (10.24)	1518.625 pesos	1674.125 pesos
1605	Alonso Rodriguez de León to Alonso Rodriguez de Luado	150 pesos (8.22)	30 pesos (1.64)	26.25 pesos (1.44)			206.25 pesos (11.31)	1824.25 pesos	2030.5 pesos
1606	Alonso Rodriguez de León to Alonso Rodriguez de Luado	440 pesos (14.90)	32.625 pesos (1.10)	47.25 pesos (1.60)			519.875 pesos (17.60)	2954 pesos	3473.875 pesos
1606	Lucas de Zariaga to Juan Castillete	281 pesos (55.48)	6.25 pesos (1.23)	33.25 pesos (6.56)			320.5 pesos (63.28)	506.5 pesos	827 pesos
1607	Alonso Rodriguez de León to Alonso Rodriguez de Luado	525 pesos (17.82)	47.25 pesos (1.60)	37 pesos (1.26)		12.5 pesos (0.42)	621.75 pesos (21.10)	2946.375 pesos	3568.025 pesos

(Continued on next page)

Year	Merchants' names	Sea freight	Taxes (*derechos del rey*)	Packaging and lading	Agency (*encomienda*)	Others	Expenses	Merchandise value	Total
1607	Lucas de Zariaga to Juan Castillete	170 pesos (14.60)	13.5 pesos (1.16)	18.75 pesos (1.61)			202.25 pesos (17.37)	1164.25 pesos	1366.5 pesos
1626	Unknown to Juan Setin	160 pesos (2.50)	110.8 pesos (1.73)[a]	475.25 pesos (7.42)			746.05 pesos (11.65)	6405.875 pesos	7151.925 pesos
1627	Ascanio Guazzoni to Juan Setin	40 pesos (1.06)	36 pesos (0.96)	40 pesos (1.06)	402 pesos (10.70)		518 pesos (13.78)	3758.5 pesos	4276.5 pesos
1630	Ascanio Guazzoni to Santi Federighi	26 pesos (1.62)	27.75 pesos (1.73)[a]	40 pesos (2.49)	146 pesos (9.10)		239.75 pesos (14.94)	1605 pesos	1844.75 pesos
1631	Ascanio Guazzoni to Santi Federighi	117 pesos (8.16)	24.8 pesos (1.73)[a]	15 pesos (1.05)	100 pesos (6.97)		256.8 pesos (17.90)	1434.5 pesos	1691.3 pesos
1631	Ascanio Guazzoni to Santi Federighi	510 pesos (4.13)	66 pesos (0.53)	108 pesos (0.87)	991 pesos (8.03)		1675 pesos (13.56)	12348.5 pesos	14023.5 pesos
1633	Ascanio Guazzoni to Santi Federighi	100 pesos (4.41)	39.2 pesos (1.73)[a]	36 pesos (1.59)	228 pesos (10.06)		403.2 pesos (17.78)	2267.375 pesos	2670.575 pesos
1633	Juan de Estrada's brother to Juan de Estrada	n.a.	n.a.	n.a.		146 pesos (10.81)[b]	146 pesos (10.80)	1350 pesos	1496 pesos
1633	Ascanio Guazzoni to Juan Setin	282 pesos (5.93)	97 pesos (2.04)[c]	72.75 pesos (1.53)[a]	479 pesos (10.07)		930.75 pesos (19.58)	4754.75 pesos	5685.5 pesos
1633	Alonso Ortiz Ríos to Juan Muñoz	50 pesos (5.46)	8 pesos (0.87)	10.625 pesos (1.16)	100 pesos (10.91)		168.625 pesos (18.40)	916.25 pesos	1084.875 pesos
1633	Juan de Olaiz to Iván Rodriguez Barrientos	318 pesos (5.14)	42 pesos (0.68)	52.5 pesos (0.85)			412.5 pesos (6.67)	6184.5 pesos	6597 pesos

(Continued on next page)

Year	Merchants' names	Sea freight	Taxes (*derechos del rey*)	Packaging and lading	Agency (*encomienda*)	Others	Expenses	Merchandise value	Total
1633	Ascanio Guazzoni to Santi Federighi	825 pesos (7.46)	222 pesos (2.01)	36 pesos (0.33)	674 pesos (6.10)		1757 pesos (15.89)	11055.25 pesos	12812.25 pesos
1634	Ascanio Guazzoni to Santi Federighi	n.a.	n.a.	n.a.	337 pesos (9.99)	337 pesos (9.99)[b]	674 pesos (19.98)	3373 pesos	4047 pesos
1634	Ascanio Guazzoni to Santi Federighi	n.a.	n.a.	n.a.	447 pesos (9.37)	447 pesos (9.37)[b]	894 pesos (18.74)	4769.75 pesos	5663.75 pesos
1635	Unknown	n.a.	n.a.	n.a.		710 pesos (6.50)[b]	710 pesos (6.50)	10930.5 pesos	11640.5 pesos
1636	Unknown to Lorenzo de Aguirre	n.a.	n.a.	n.a.		220.75 pesos (11.23)[b]	220.75 pesos (11.23)	1964.875 pesos	2185.625 pesos
TOTAL		7241.3 pesos (5.65)	1580 pesos (1.23)	1482.1 pesos (1.16)	3904 pesos (3.04)	3273.3 pesos (2.55)	17480.65 pesos (13.63)	128217.025 pesos	145697.675 pesos

In parentheses, percentage of expenses over the merchandise value.

Sources: Private reports of merchandise received by Mexican merchants from their commercial agents in Manila (see appendix 2-A).

Notes: Data with (a) are originally missing and have been estimated from the average percentage value of data in the same column.
Data with (b) indicates sea freight along with the rest of expenses and taxes (save agency expenses), which appear all together in the document.
Data with (c) indicates "taxes" and "packaging and lading expenses" together.
Gaps in the column of "Agency (*encomienda*)" are not estimated because agency payments were not always made (in such cases the commercial agents got cash from their own investments in shipping goods to New Spain).
The products sent in the form of gifts for the Church were charged neither with freight costs nor taxes, and therefore they have not been included in the sample.
Containers of the column "expenses" (in capitals) chart the sum of all expenses of each column (sea freight, taxes, packaging and lading, agency and others).
Containers of the row "total" (in bold) chart the sum of data of each column, i.e. containers of the row "total" counts data of the entire sample as one unit.

APPENDIX 2 ▪ *Sources of chinese silk prices*

The lists of prices contained in the documents whose signatures are indicated below have been the empirical base of tables 1, 2 and 3. The silks are grouped by the types mentioned in the tables. The raw silk prices from the documents have been collected in *maravedís* per 1 *libra* (pound). Originally the documents give data of prices in different weight and length units, which have been converted into *libras* (1 *pico* = 137.5 *libras*; 1 *arroba* = 25 *libras*; 1 *cate* = 1.375 *libras*). The prices of silk fabrics (*chaúles*, damasks, *gorgoranes* and taffetas) have been collected in *maravedís* per 1 piece (*pieza*). Unfortunately, not all the consulted documents give the precise measure of the pieces of woven silk. The most common measure of length for textiles in the Spanish Empire was the *vara*, equivalent to 835.9 millimetres. When possible, i.e. when the documents give the precise number of *varas* of a woven piece, I have expressed the price of the piece of manufactured silk in the standardised number of 12 *varas* (10.03 metres) calculated according to the price of 1 *vara* given by the document. I have chosen 12 *varas* because, when documents give the length of a woven textile it is usually around 10/16 *varas*, with 12 *varas* by far the most common cut.

2-A. Prices of chinese silk in Manila (c.1600-1640)

The prices in Manila have been picked up from private merchant reports of merchandise received by the Mexican merchants from their commercial agents in Manila:

Archivo General de la Nación (henceforth AGN), Indiferente Virreinal, Consulado, caja-exp.: 2111-020, pp. 3-4; 2926-008, p. 5; 3465-012, pp. 1-4; 6477-019, p. 7; 6477-019, pp. 8-9; 3338-002; 5511-001; 5078-011. Consulado, pp. 4-5; 5078-011; 5078-011, p. 14; 1388-033; 1388-034;: 4779-088; 4829-041; 6179-032; 4004-028; 6449-046; and 4829-042.

AGN, Indiferente Virreinal, Filipinas, caja-exp.: 0535-014, pp. 20-21; 4259-026. Filipinas, p. 5; 0535-014, pp. 28-23; 0535-014, pp. 32-39; caja-exp.: 4976-006; 0535-014, pp. 40-43: 4259-012; 0535-014, pp. 44-48; 0535-014, pp. 49-59, and 5710-034.

AGN, Indiferente Virreinal, Industria y Comercio, caja-exp.: 5922-069, and 6590-004.

2-B. Prices of chinese silk in Mexico City (1600-1640)

The prices in Mexico City have been taken from notarial documents kept in the *Archivo de las Notarías de México DF* (henceforth ANotDF). Most of the analysed documents are payment reports of sales (*cartas de pago*) and mercantile company agreements (*protocolo de formación de compañía*):

ANotDF, Notary Andrés Moreno, 374, Vol. 2466, pp. 91-93; Vol. 2466, pp. 188-189; 374, Vol. 2474, pp. 228-232,374, Vol. 2476, pp. 179-190;

ANotDF, Notary: Juan Pérez de Rivera, 2263, libro 6, pp. 18-19; 497, Vol. 3360, pp. 141-146; 2757, libro 8, pp. 49-51; 2883, libro 8, pp. 429; 2928, libro 8, p. 489; 497, Vol. 3362, p. 157; 497, Vol. 3362, pp. 260-262; 497, Vol. 3362, pp. 262-264; 3266, libro 10, pp. 264-266; 497, Num. Reg. 3543, libro 11, p. 141. Records of the notary Juan Pérez de Rivera have been looked up in the digital format edited in MIJARES, Ivonne, ed. (2005): *Catálogo de protocolos del Archivo General de Notarías de la Ciudad de México. Volumen II, UNAM, México.*

Data on 1607 and 1612 have been taken from the wholesale cargos contained in the probates of the Mexicans Claudio de Pontanaris and Bartolomé Rodriguez: Archivo General de Indias (AGI), Contratación, 503B, N.13, p. 37; and 515, N.1, R.1.

2-C. Prices of chinese silk in Veracruz (1600-1640)

The prices in Veracruz have been taken from two sources: firstly, the "inward registers of merchandise from New Spain to Seville" (*registros de venida de la Nueva España*): Archivo General de la Nación (henceforth AGI), Contratación, 1802 to 1929B; and secondly, the "Accounts of the *avería* tax" (*Cuentas de la avería*) of the ships going from New Spain to Seville: AGI, Contratación, 4409-4224.

1-D. Prices of chinese silk in Seville (c. 1600-1640)

Most prices in Seville have been taken from the "Management Books of the Factory of the Cathedral of Seville" (*Libros de Mayordomía de la Fábrica de la Catedral de Sevilla*) and notarial documents:

Archivo de la Catedral de Sevilla (henceforth ACS), Fábrica, Adventicios, libro 305 (9645), p. 8; libro 305 (9645), p. 9; libro 307 (9647A), p. 108; libro 308 (9647B), no page; libro 310 (9649), p. 23; libro 310 (9649), p. 30; libro 310 (9649), p. 56; libro 311 (9650), p. 16; libro 311 (9650), p. 21, and libro 311 (9650), p. 68.

ACS, Fábrica, Mayordomía, libro 124 (sig. 9458), p. 8; and libro 136 (sig. 9470), p. 9.

Data on 1629 have been taken from the cargos contained in the probate inventory of the Sevillian merchant Pedro de Valencia: Archivo Histórico Provincial (AHPS), Protocolos, leg. 7473, pp. 547-609.

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■

Transport costs and price of Chinese silk in the Spanish Empire. The case of New Spain, c. 1571-1650

Abstract

In New Spain and the rest of the Spanish Empire, only a privileged elite could access Chinese silk, which began to be traded in the Empire after the opening of the Manila Galleon route in 1571. The high price of Chinese silk partly explained such elitist consumption of the Asian textile. Using sources only recently made available to the public, this paper analyses the degree of price dispersion of Chinese silk across the Spanish Empire and, taking the Manila Galleon route as a reference, some of the main elements that determined the high transport cost and price of Chinese silk in the Empire before the 18th century, which is to say before long-distance transport costs fell and the first signs of market convergence manifested in the world.

Keywords: Transport Costs, Chinese Silk, Manila Galleons, Globalisation

JEL codes: F69, N73, N76, D49, E39

■

Costes de transporte y precio de la seda china en el imperio español. El caso de Nueva España, c. 1571-1650

Resumen

En Nueva España y en el resto de impero español solo una reducida élite tuvo acceso a la seda china, que empezó a ser comercializada en el imperio cuando la ruta del Galeón de Manila fue abierta en 1571. El alto precio de la seda china explica en gran medida ese carácter elitista del consumo de este textil asiático. A partir de fuentes recientemente descatalogadas, este artículo analiza el grado de dispersión de precios de la seda china a lo largo del imperio español y, tomando como referencia la ruta comercial de los Galeones de Manila, algunos de los elementos que determinaron los altos costes de transporte y precios de la seda china en el imperio antes de que los costes de transporte a larga distancia se redujeran y de que los primeros signos de convergencia de mercados a nivel internacional se manifestaran, cosa que ocurrió a partir del siglo xviii.

Palabras clave: Costes de transporte, seda china, galeones de Manila, globalización

Códigos JEL: F69, N73, N76, D49, E39