Silver and Ottoman Monetary History in Global Perspective[1]

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1. Ottoman Global Linkages during the Early-Modern Period

> International movements of money and precious metals accordingly affected the Ottoman Empire, situated at the meeting place of East-West trade and ruling major centres of commercial exchange between two continents. These effects can be observed at every stage of its history. (Sahillioglu, 1983, p.269)

"Globalization" terminology has become fashionable at the inception of the XXIst century, but the birth of worldwide trade itself dates from the last third of the XVIth century. Global trade "emerged when all important populated continents began to exchange products continuously – both with each other directly and indirectly via other continents – and in values sufficient to generate crucial impacts on all trading partners." (Flynn and Giráldez, 1995, p.201) Five continents were finally linked in a true global economy in 1571, the year the city of Manila was founded as a Spanish entrepôt. Substantial, direct, and

[1] An early version of this essay was presented at a workshop Round Table on "Money and Currencies in the Ottoman Empire" in Istanbul organized by Sevket Pamuk (Bosphorus University) and Daniel Panzac (CNRS, Aix-en-Provence) in November 1997. Workshop participants with serious expertise on Ottoman monetary history, including Professors Pamuk and Panzac, patiently entertained our global interpretation of Ottoman issues, despite our status as obvious non-experts on Ottoman history.

continuous trade between the Americas and Asia first arose when Manila Bay linked the eastern (i.e. American) economies of the Pacific Rim with their western (i.e. Asian) counterparts. Only from that time forward has there been commercial integration of all heavily populated landmasses at a global level.[2]

One contention of this essay is that the original trans-Pacific silk-for-silver exchange of the XVIth century was one of the vectors through which ecological and demographic forces within China were set in motion for centuries; these forces reverberated throughout the world, including Ottoman territories during the XVIIIth century. Before attempting to link XVIIIth-century Ottoman monetary history to Pacific exchanges via the Manila galleons, however, it is necessary to first review demand and supply forces that were instrumental in the creation of a global marketplace during the XVIth century. Domestic events within China played a pivotal role. The first third of this essay reviews events surrounding the birth of global trade in the XVIth century. The remaining two-thirds of this essay then turns to XVIIIth-century Ottoman monetary events. Dividing the task up in this way, we hope both (1) to help locate XVIIIth-century Ottoman monetary events in global space, and (2) to link XVIIIth-century events backward chronologically to global dynamics that emerged in preceding centuries.

2. Chinese Demand-Side Forces from the mid-XVth Century

China's paper-money system functioned reasonably well between the XIth and XVth centuries.[3] Around the middle of the XVth century, however, fiscally strapped Ming rulers resorted to excessive issues of paper money, resulting in a domestic hyperinflation that destroyed the country's paper-money regime. Consequently, China's monetary system slowly evolved toward ever-greater reliance on silver as a

[2] For a recent collection of essays dealing with Spanish presence in the Philippines, see Flynn, Giráldez, and Sobredo (2001).

[3] For a classic treatment of Chinese monetary history between 1000 and 1700, as well as the evolution of Chinese monetary thought, see Von Glahn (1996).

monetary foundation.[4] In time, numerous jurisdictions within China also came to specify tax payments in silver (even for peasants); this practice was later institutionalized throughout Ming China with implementation of the famous 'Single-whip tax reform' of the 1570s. Since China was by far the largest economy in the world at that time, this monetary and fiscal 'silverization' of China sent economic shock waves throughout world markets.

> The entire tribute and interregional trade zone had its own structural rules that exercised a systematic control through silver circulation and with the Chinese tribute trade at the centre. This system, encompassing East and South-East Asia was articulated with neighbouring trade zones such as India, the Islamic region and Europe. (Hamashita, 1994, p.97)

Chinese silver mines had been exhausted during the fifteenth century; thus, domestic demand-side growth required importation of silver from abroad. Market forces guaranteed the importation of foreign silver because the domestic price of silver within China skyrocketed to double its price in the rest of the world. According to Carriere (1975, p.16): "It is a generally received proposition that silver appreciated in value more and more as it moved eastward...This explains the migration of silver. Cantillon very early remarked about this characteristic." Although he sometimes failed to conceptually separate silver flows and gold flows (notwithstanding the fact that these flows were quite distinct!), Braudel (1972, vol.1, p.522) was well aware of the importance of demand-side forces emanating from Asia:

> So, during the sixteenth and seventeenth centuries there circulated throughout the vast Asian continent, source of spices, drugs, and silk, the precious gold and above all silver coins minted at Venice,

[4] Von Glahn (1996)(1998) emphasizes that the 'silverization' of China emanated from the private sector, as opposed to government initiative.

> Genoa, or Florence, and later the famous Spanish pieces of eight. Away to the east flowed these currencies, out of the Mediterranean circuit into which it had often required so much patience to introduce them. The Mediterranean...hoarded them only to lose them all to India, China, and the East Indies. The great discoveries may have revolutionized routes and prices, but they did not alter this fundamental situation, no doubt because it was still a major advantage to westerners to have access to the precious merchandise of the East...; no doubt also because in the sixteenth century, as in the past, the purchasing power of precious metals rose above that of the Christian countries as soon as one crossed the border into the Orient.[5]

Divergent global bimetallic ratios provide clear evidence that the world silver market was in a state of disequilibrium up to the 1640s. Even as late as the 1590s, silver exchanged for gold at a ratio of 5.5:1 or 7:1 in Canton, while in Spain the exchange rate was 12.5:1 or 14:1, "thus indicating that the value of silver was twice as high in China as in Spain" (Chuan, 1969, p.2); the bimetallic ratio at that time was about 10:1 in Japan and 9:1 in Moghul India. (Boxer, 1970, p. 461) Merchants throughout the world immediately recognized that divergent bimetallic ratios signalled the possibility of unprecedented profits via arbitrage, of course, since silver was simply purchased anywhere in the world where it was cheap (i.e. where the bimetallic ratio was high) and transferred to Chinese markets where silver fetched a premium price

[5] As will be shown elsewhere in this essay, it was exclusively silver (not gold) that was exported via Europe toward China between the mid-XVIth and mid-XVIIth centuries; indeed, during this period China exported gold to Europe (as well as to Japan and over the Pacific to Spanish America). For instance, Supple (1964, pp. 163-194) devotes an entire chapter to discussion of whether England's silver exports (1600-1642) were equal in value to its imports of gold, focusing on the question of whether England's money supply may thereby have been stable. In a detailed study of the English East India Company, K.N. Chaudhuri (1965, p. 132) concludes: "The East India Company was aware of the true reason for the export of English silver coins, and the Deputy Governor's reference to the import of gold for East India commodities sold in Europe is another example which bears out Dr. Supple's conclusion that the outflow of silver was matched by an inflow of gold."

(i.e. where the bimetallic ratio was low).[6] According to Boxer, (1970, p. 461) this "was the basic reason why China remained for so long the suction pump (*bomba-aspirante*) which absorbed silver from all over the world."

No longer able to produce silver domestically, powerful demand-side growth within China's domestic economy simply necessitated that China import silver from abroad. Importation of vast quantities of silver required that China produce an enormous volume of exports, on the other hand, with which to purchase foreign silver. China therefore became the world's primary exporter of silk products during the XVIth and XVIIth centuries; that is, the exportation of silk was the primary vehicle through which foreign silver was imported. There were exports besides silk, of course, but silk remained China's main export up to the XVIIIth century.[7]

3. World Silver Production and its Shipment to China

A cursory reading of the literature on XVth-century silver production in Central Europe leads us to suspect that a significant portion of Central European mine production probably made its way toward China.[8] If so, the profitability of selling silver toward China helps to explain persistent Ottoman efforts to control the rich silver

[6] It is worth calling attention to the fact that K.N. Chaudhuri's classic *The Trading World of Asia* (1978: for example, see p. 156) long ago recognized the necessity of conceptual separation of intercontinental movements of gold from intercontinental movements of silver. Chaudhuri is the only twentieth-century scholar we have found to consistently apply the classical bimetallic-flows arguments of David Ricardo to independent, intercontinental movements of monetary substances like gold and silver. All of our work is based on a model developed in Doherty and Flynn (1989), which follows in this classical tradition and was in good measure inspired by Chaudhuri's pioneering work.

[7] For an argument that its multi-century importation of silver drained China of tremendous wealth, see (Flynn and Giráldez, 2000b).

[8] The value of silver in China was even higher in the XIVth century than in the XVIth century (relative to its value in Europe). According to Von Glahn (1996, p. 127-128): "The gold/silver ratio in China had drifted slightly downward from its historic peak of 1:4-5, achieved in the late fourteenth century, to 1:6 by the early sixteenth century...In contrast, the gold/silver ratio hovered around 1:12 in Europe, 1:10 in Persia, and 1:8 in India. Rials-of-eight struck in Europe with New World silver steadily migrated eastward, to the Levant, India, and Malacca, before being 'sucked in' to China."

mines of Serbia and Bosnia: "In establishing the empire, Mehmet the Conqueror needed the cash from these mines and concentrated his efforts during the first years of his reign, from 1454 to 1464, on controlling these regions." (Inalcik, 1995, p. 58)

Japan's silver discoveries in the 1530s were intimately connected to demand-side forces emanating from within China. During the late-XVIth and early-XVIIth centuries Japanese silver production may have equaled half or more of total American silver output during the same time period. (Attman, 1986, p. 78; Yamamura and Kamiki, 1983, p. 351) Virtually all of Japan's silver production was exported to China, mainly in exchange for silk. The European role in the lucrative intra-Asian trade during this period can therefore be accurately characterized as that of middlemen. Europeans were neither producers nor end-buyers of Chinese silks or Japanese silver. From an Asian point of view, Europeans were convenient intermediaries who could be – and occasionally were – replaced by rivals when deemed convenient by powerful Asian interests.[9]

In the decade after Japanese silver discoveries, unprecedented silver deposits were discovered in Spanish America. American mines have figured prominently in general histories of the early modern era, of course, but the literature has been cast in excessively Eurocentric terms. As a rule, the existing literature ignores the centrality of Chinese market influences on commercial activities throughout Europe and the rest of the world. A global perspective, however, permits us to conceptualize American silver mines more clearly as important components within a pre-existing trade continuum. Like its Japanese and (probably) Central European predecessors, American silver flowed mainly to lucrative markets in China, and Europeans played the middleman role.

Prolific American mine output caused a predictable fall in silver's price in world markets, which in turn prompted closure of some Central European mines (and curtailment of others) during the XVIth

[9] For recent discussions of the primacy of Asian economies, both before and after the arrival of Europeans in Asian waters, see Frank (1998), Marks (1997), Pomeranz (2000), and Wong (1997).

century. This development damaged Ottoman mining interests in the Balkans, but New World trade simultaneously created widespread opportunities throughout the vast Ottoman trade network. As was the case for non-American silver in earlier years, this time cheap American silver flowed inexorably toward high-priced silver markets in China. The unusually high price of silver in China – relative to elsewhere – implied tremendous opportunities for those in control of (or with access to) trade routes that connected silver mines with the Chinese marketplace. Immense volumes of silver flowed over the Atlantic and into Europe. Silver's low value in Europe – relative to China – assured swift transshipment of the white metal from Europe toward China.

> The avidity of the Chinese for silver established a commercial epoch for the international economy. Without this avidity, wrote [the Florentine merchant Filippo Sassetti] on January 20, 1586, 'the [Spanish] reals would not have risen so much in value as they now are. The Chinese, among all the peoples of Asia, are wild about silver as everywhere men are about gold.' From Goa in 1588, the Portuguese Duarte Gomez also reported that China kept silver 'at a higher price than all of the powers of the world'. (Spooner, 1972, p.77)

The profit motive induced silver's migration through multiple intermediary markets along the way. Profit potential stimulated trade around the Cape of Good Hope. (de Vries, forthcoming 2002) Profit motivated the transshipment of an estimated 2 million pesos (and more) of silver annually via the Baltic. (Attman, 1981; 1983; 1986) Baltic silver passed through Poland into Ottoman hands (Kołodziejczyk, 1996) as well, but there were many alternate routes through the Baltic trade network. And profit also motivated the Eurasian caravan trade, which played such a significant role in the maintenance and expansion of the Ottoman Empire:

> Our historical sources, whether we look at them in Seville, Mexico City, Vera Cruz, in London, Amsterdam or Istanbul, or in Mocha, Surat, and Canton, speak with the same voice of the power of Spanish-

> American treasure and the peso of 8 reales to penetrate the commercial economies of the leading trading nations in the world to destabilise their national monetary systems. ...From the Isthmus of Panama to the straits of Bab al-Mandeb and Hormuz, no government was able to declare monetary independence from the piece of eight. (Chaudhuri, 1986, p.73)

Overviews of Ottoman history offer interesting clues about Ottoman trade linkages to the global-trade scheme outlined above. Inalcik (1995) paints a picture of considerable state intervention in the domestic economy of Anatolia, for example, but he also insists that state policy was extremely liberal with respect to long-distance trade. Tax rates on transshipped commodities were among the lowest in the world, caravansaries were established to facilitate trade, religious toleration was the rule, and monies from any state or jurisdiction were normally permitted to exchange at market-determined rates within Ottoman jurisdictions. Pamuk (2000, p. 11) fortifies the conclusions of Inalcik:

> With the territorial expansion of the Empire and the incorporation of Syria and Egypt during the sixteenth century, long distance trade and the control of the intercontinental trade routes became increasingly important and even critical for these needs. Ottoman encouragement of European merchants and the granting of various privileges, concessions and capitulations as early as the sixteenth century can be best understood in this context.

Ottoman rulers recognized that long-distance trade via the Levant offered positive economic dynamics; they were essentially 'free traders' on the international front.

> In the early period, silver and silver coins were the most important items of trade with the west. To encourage its free import, the Ottomans removed all customs duties on silver, and from the 1580s, the cheap European silver ...flooded the Levantine market... (Inalcik, 1995, p. 139)

It is probable that profits lost through closure and curtailment of Ottoman silver mines due to the XVIth-century arrival of New World silver (Pamuk, 2000, p. 139) were more than offset by profits gained through Ottoman participation in overland and marine trade routes that were tied to the transshipment of American silver toward China.

In many ways, however, the Middle East was only a transit zone for the inter-continental bullion flows. With the arrival of large amounts of silver from the Americas, its price relative to gold declined in Europe. As the relative price of silver remained higher in Asia, European trade deficits towards the East continued to be paid in silver. (Pamuk, 1995, p.959)

Outlets for the exportation of Persian silk to Europe were in Ottoman hands early in the sixteenth century; and importation of silk from Persia, Europe's main source (Chaudhuri, 1965, 203-06; Glamann, 1981, Ch.6; Steensgaard, 1974, Ch.9), required the simultaneous export of silver: "The level of demand on the part of the Iranian merchants coming to Aleppo in 1576 was extremely high. They collected all the gurus they could find at a rate 6-7 *akce* higher than the going rate and smuggled them in large quantities out of the country to Iran." (Sahillioglu, 1983, p. 283) Persian exports of silk to Europe were crucial, "for whilst Persia had an unfavourable balance of trade with the east, it was favourable with the west... the balance was made up in money... As the...XVIth century progressed and the volume of silver arriving in Europe from South America increased...so did...the Persian need for silver grow" (Ferrier, 1986, p. 442). According to an English merchant in Persia during the second decade of the XVIIth century, imported Chinese goods included "all sorts of China ware [which] are heere in great esteeme and use which being sorted of all sizes, pryces, and fashions will vend heere at least 100 tons per annum" (including ginger, campor and China roots). (Ferrier, 1986, p.449) According to Israel (2000, p.16), the "essential feature of Dutch commercial strategy in the Ottoman empire during their earlier period of success, during the Truce [1609-21], was their concentration on silks and cottons, often in exchange for silver." The point is that expansion of the Ottoman administrative structure throughout Eurasia created economies of scale,

which facilitated trade and reduced transportation and transactions costs for merchants crossing vast distances. In turn, flourishing trade generated tax revenues, which financed the maintenance and expansion of the Ottoman Empire. Yet a fact that cannot be overemphasized is that Ottoman trade was intimately connected with an intercontinental trade matrix linked with the Chinese marketplace, a matrix that literally enveloped the globe. Slot (2000, pp.118, 122) concludes that "much of the commerce in the Persian Gulf was directly related to the Levant trade" and that "low grade Ottoman or Persian [silver] money was being sent subsequently to India to be melted down and converted into better coinage."

4. Demography and 'Silverization' Momentum into the XVIIIth Century

Throughout the XVIIth century, two million pesos per year were shipped annually to China via Acapulco/Manila. This approximately equalled the value of Atlantic silver transshipped to Asia by Portugal's *Estado da India*, and the East India Companies of England and Holland combined during the XVIIth century.[10] The official *almojarifazgo* tax records reported by Chaunu (1951, pp.460-61; 1960, p.250) seriously under-represent the magnitude of the Manila galleon trade because rampant smuggling – the purpose of which was specifically to avoid official taxes – came to increasingly dominate the Pacific trade throughout the XVIIth century. Records of silk shipments from China, through Manila and onto Mexico support Chuan's long-standing contention (in direct contradiction to Chaunu) that 2 million pesos annually crossed the Pacific throughout the XVIIth century. (Chuan, 1969; 1975) Since the Manila trade essentially involved a straight swap of silk for silver, the two million pesos worth of Chinese silk that passed

[10] We wish to make clear that we are *not* saying that silver shipments over the Pacific Ocean equalled quantities shipped over the Atlantic Ocean; the fact is that much more silver traversed the Atlantic. What we *are* saying is that the Manila galleons carried as much silver as these three specific enterprises combined during the XVIIth century.

eastward through Manila to Mexico necessarily implies a Mexican export volume of two million pesos westward via Manila in return. (Flynn and Giráldez, 1996a)

In this section, we focus on newly introduced American agricultural products that migrated (along with silver) to China, especially sweet potatoes, the peanut, and maize.[11] No imported substances had a more profound impact on China than New World crops, the introduction of which Sinologists say contributed to an XVIIIth-century population surge in China. (Naquin and Rawski, 1987, p.16) (Spence, 1990, p.93) Spence (1990, p.94) estimates Chinese population to have been 100,000,000 in 1685 and at 301,487,000 by 1790. Dry, cold, rocky, hilly areas in Northern China had previously been insufficiently fertile to sustain large populations, but American crops altered this pattern permanently:

> The foundation in new households was made possible by the doubling between 1650 and 1800 of China's cultivated acreage (yield increase came later) by the opening up of new hillside fields, first for maize and sweet potatoes, then after terracing for rice....it was this material factor, the American food plants, which was the primary factor behind the invasion of China by the Chinese. (Adshead, 1988, p.255)

Government policy also encouraged the settlement of previously uninhabited areas: "Revitalization of crop production began with relocating wandering households and encouraging settlement of empty land through tax exemptions and grants of aid – oxen, tools, seeds, or simply money." (Naquin and Rawski, 1987, p.22) Public works projects proliferated, particularly in the area of the large-scale improvement and maintenance of canals and irrigation systems. (Naquin and Rawski, 1987, p.24) Eighteenth-century China also experienced a generally warm climate, double cropping, peace and

[11] For a more complete exposition of the argument of this section, see Flynn and Giráldez (forthcoming 2002).

prosperity, and unprecedented commercialization.[12] (Wang, 1992, pp.56,65) All of these factors contributed to an agricultural/demographic revolution in China that was bound to profoundly influence global trade patterns.

Having already established that China's economy had become 'silverized' prior to the XVIIIth century, it stands to reason that a more than doubling of XVIIIth-century Chinese population must have implied an almost doubling of Chinese demand for silver.[13] For one thing, silverization of China's tax system intensified during the XVIIIth century. Naquin and Rawski (1987, p.105) report that by 1711 the "ding (corvee) and land taxes were merged into a single tax that was collected in silver and thus easier to assess and administer; this reform promoted the general transition from payment in kind typical of the Ming, to payment in money." The same authors later state that in "the early Qing, tax reform continued the trend toward conversions of payments in silver that had been initiated in the late Ming. Except for tribute grain, which seems to have been collected largely in kind throughout the dynasty, Qing fiscal affairs were progressively monetized." (Naquin and Rawski, 1987, p.221) To give an idea of the magnitude of demand-side forces emanating from China, consider that the central budget of China totalled some 35 million taels in 1723, over 80 per cent of which was collected in the form of a 'land and head' tax. (Spence, 1990, p.786) Thirty five million taels in annual taxes (at the central government level alone) converts to more than one thousand three hundred metric tons of silver, or roughly 50 million Mexican

[12] Some argue that domestic influences on agriculture were even more important than imported crops from America: "Less dramatic and equally pragmatic changes in cropping patterns were probably even more important than the American foods plants in raising agricultural production. The southward migration of northern dryland crops such as wheat, the extension of rice cultivation to newly irrigated lands, the gradual increase in double cropping of rice in the south, and particularly the double cropping of winter wheat or barley with summer millet or rice all slowly but significantly increased output." (Naquin and Rawski, 1987, p.23).

[13] Von Glahn (1996)(1998) states that some regions of China reverted away from silver money and back toward reliance upon a bronze-money system during the XVIIIth century. Thus, we are not willing to assert that growth in silver demand was proportionate to Chinese population growth. Still, silver demand grew enormously in XVIIIth-century China.

pesos.[14] And Von Glahn (1996, p.10) insists that the silverization of China emanated from a lively private sector, not from the government sector. Our point is that, in conjunction with implementation of new mining technologies in Spanish America (Brading, 1971, pp.303-319), intensified 'silverization' (in some parts of China) and population growth raised the demand for silver in China. And this rise in Chinese silver demand was a pre-condition for the spectacular resurgence of American silver production during the XVIIIth century. In quantitative terms, XVIIIth-century American mine production exceeded that of the XVIth and XVIIth centuries combined.[15] Once again, the production of about 150,000 tons of silver – 3 billion pesos worth (Garner, 1988, pp.898, 900) – makes no sense in the absence of an end-market for silver.

Our hypothesis is that the resurgent migration of silver toward China during the XVIIIth century – itself a response to a demographic revolution partly attributable to earlier transmission of new American crops into China – reinvigorated trade routes around the world. We know that silver shipments via the Manila galleons surged during the XVIIIth century (well above the 2 million pesos shipped annually throughout the XVIIth century). And of course silver exports over the Atlantic rose dramatically in the XVIIIth century compared with the two preceding centuries. Thus, a global perspective suggests that a significant fraction of the trans-Atlantic silver again traversed Ottoman lands on its rejuvenated journey toward end-market China (and to a lesser extent, end-market India).

> Silver coinage made up the difference, for which the Ottoman appetite was augmented by that of the lands further east, where the same coins

[14] While 50 million pesos in tax collections by a single institution at one time is indeed an enormous sum, estimates of Spanish American mine production of around 3 billion pesos from the middle of the XVIth century through the XVIIIth century provide perspective. (Garner, 1988, p.900)

[15] Spanish American silver production rates tripled during the second half of the XVIth century, dropped by a third during the XVIIth century, and then tripled again during the XVIIIth century. (Garner, 1988, p.901). Mexican silver production far exceeded that of Peru during the XVIIIth century, reaching an annual average of 21 to 24 million pesos by the end of the XVIIIth century. (Coatsworth, 1986, p.266)

> bought more than in the lands of their origin. Thus the Levant trade fed coins to all of south Asia, which needed specie. (McGowan, 1994, p. 727)

While silk was the dominant Chinese export during the XVIth and XVIIth centuries, tea emerged as China's export giant during the XVIIIth century: "Between 1719 and 1833, the tonnage of foreign ships trading at Canton increased more than thirteenfold. The lure was Chinese tea." (Naquin and Rawski, 1987, p.22) And of course Chinese tea was exchanged for imported silver:

> ... perhaps 10 million Silver dollars a year were flowing into the coastal ports of Fujian in the early Qing. In the XVIIIth century Spanish silver dollars became a common unit of account, first in Canton and thence in ports of the Southeast Coast and Lower Yangtze. By the 1780s prices of commodities in Suzhou were frequently expressed in silver dollars instead of the domestic unit of account, taels (ounces) of silver. (Naquin and Rawski, 1987, p.105)

The same pattern of exchange held for the export of silk, rhubarb, porcelain, and other Chinese products entering international circuits: "Foreign ships had to bring silver bullion to purchase Chinese products; at times the cargo of the East India Company's ships from London consisted of 90 percent of bullion." (Hsu, 1983, p. 150)[16] This pattern of exchange applied to all European companies trading with China:

> ... each company relied primarily on the shipment of bullion and specie, especially silver specie, to the Far East in order to effect payment for the Asian products it brought back to Europe. It appears from the stock market data that whichever company had the best access to sources of silver specie in a particular period also enjoyed at that time the greatest returns on its investment in Europe. (Neal, 1990, p.138)

[16] Dermigny (1964, Tome II, p.688) paints the same picture: "Among the British, the composition of cargo was commonly 90% silver and 10% merchandise during the first half of the XVIIIth century, while during the years 1775-1795 silver comprised 65% while the remaining 35% was merchandise."

After the lifting of the Qing imperial ban on maritime trade in 1684, European traders gravitated to Canton, a port to which they were finally confined by imperial edict in 1759. (Naquin and Rawski, 1987, p.102) Thus evolved the 'Canton system' of trade (lasting until 1842), whereby Europeans were forced to trade through the Co-hong, a group of Chinese firms granted an imperial trade monopoly. While it is true that silver poured into China via countless trade vectors other than Canton, European companies in Canton alone imported impressive quantities of silver:

> However, it is evident that the European trade itself was responsible...because it could not pay anything but silver for the major part of the merchandise which it bought, the consequence of which was a massive injection of around 1,260,000 kg. of the white metal between 1719 and 1760, perhaps 20 times the weight of the gold exported by China during that same period. (Dermigny, 1964, Tome I, p.432)

XVIIIth-century China's simultaneous importation of silver and exportation of gold are reminiscent of our previous discussion of divergent bimetallic ratios between the mid-XVIth and the mid-XVIIth centuries. We label the earlier (1540s-1640) century an 'arbitrage period' because the value of silver in China was much higher (double, at first) silver's value in the rest of the world. Silver poured into China as a result, of course, which eventually drove the Chinese value of silver down to that observed in the rest of the world. By around 1640 the accumulation of silver within China was sufficient to have reduced its value there to the level prevailing in the rest of the world. Convergence of (gold:silver) bimetallic ratios globally offers the clearest evidence of global equilibration in the silver market by 1640. Furthermore, bimetallic ratios remained relatively stable during the second half of the XVIIth century, which indicates that premium prices for silver were less frequently offered on the Chinese marketplace after 1640. Then the situation changes again. The early-XVIIIth century agricultural and demographic revolution in China greatly expanded

Chinese demand for silver, as discussed previously, which in turn caused the Chinese marketplace to again offer premium prices for the white metal. Chinese markets offered a 50% price premium by the early XVIIIth century, as opposed to China's 100% price premium of the XVIth century: "For Westerners, profitable speculation consisted of simply carrying to Canton the white metal which exchanged there for gold at a rate of 10:1, compared with the European rate of 15:1...the profit rate...varying by year between 25% and 50%, but most often between 30% and 40%." (Dermigny, 1964, Tome I, pp.422-23). The differential between Chinese bimetallic ratios and bimetallic ratios in the rest of the world was not as great in the XVIIIth century – compared with the XVIth-century differential – but China's XVIIIth century premium for silver was nevertheless sufficient to induce immense importation of Mexican silver. This time, the Chinese price of silver subsided to the world silver price in only a half century (rather than the century-long adjustment required between the 1540s and 1640):

> The [Chinese] gold-silver ratio...was 1 to 9.5 or 1 to 10 during the years 1700-1720, then changed to 1 to 11.83 around 1740.. and to 1 to 14.15 in 1750, and to 1 to 15.20 in 1775...which signifies that the Chinese ratio more and more approached parity with the European ratio and eventually finally surpassed it. (Dermigny, 1964, Tome I, p.432)

Thus, the second arbitrage phase only lasted through the first half of the XVIIIth century. Mexican silver continued to pour into China during the second half of the XVIIIth century, of course, but profits during this 'non-arbitrage phase' were of a more pedestrian nature. As had been true during the second half of the XVIIth century (world silver's previous non-arbitrage phase), the white metal remained a significant trade product. It simply no longer dominated the attention of world merchants to the extent it had during the two arbitrage phases of 1540s-1640 and 1700-1750.

While we have emphasized repeatedly that Chinese exports cannot be properly understood without simultaneously considering demand-side forces at work within China's domestic silver market, analysis of China's

importation of silver also requires consideration of the complex evolution of Chinese exports (the vehicles through which silver was imported). Especially when it comes to bimetallic ratios, the exportation of gold from China merits brief comment. From whence came Chinese gold exports during the XVIIIth-century arbitrage phase discussed above? Although China was not a land of great gold deposits, substantial imperial trade networks provided access to foreign gold (from within Asia):

> However, in addition to indigenous [gold] production, there is a new element perhaps as important during the XVIIIth century, after the recovery of maritime trade since the 1680s, when contributions from tributary neighbors, particularly Korea, Annam, the Malaysian archipelago, and Summatra provided much gold powder. (Dermigny, 1964, Tome I, pp.418-419)

Elsewhere, Dermigny (1964, Tome I, p.432) emphasizes that twenty times more silver was imported into China than gold exports from China (in terms of weight) between 1719 and 1760, and therefore: "The gold of China isn't any more than a souvenir, while the only thing that counts is silver that, in the east-west axis, remains the motor of commerce." We should keep in mind the fact that an ounce of gold was 10 times more valuable than an ounce of silver around 1719, however, and nearly 15 times more valuable in 1760; thus, concentration on quantities alone – without considering the values those quantities represented – can be misleading. There are times when certain regions of China exported significant amounts of gold in exchange for silver. Chinese gold exports deserve more than the perfunctory attention currently paid to them in the literature. Demand and supply factors for each monetized substance – including gold – require detailed, independent analysis.

5. The Mexico-Barcelona-Marseille-Ottoman Route

> If silver from Mexico and Potosí is one of the principle motors of commerce in the world, it is also vital for the economy of France...And

> no less when considering foreign relations...and commerce with the Levant...considering that remittances of specie through Marseille continued perhaps at a rate of a million livres per year, and sometimes much more. (Dermigny, 1954, pp.239-240)

While the French-Ottoman connection represented but one leg of a multi-faceted America-to-China global silver trade, its influence on maritime trade throughout the Mediterranean was significant. Smuggled silver entered the Marseille-Ottoman trade circuit via multiple routes. (Dermigny, 1954, pp. 241-242) Prior to silver's entry into Europe, clandestine activity was ubiquitous along the Rio de la Plata (South America's 'back door' route down the Andes to the Atlantic), as well as throughout the Caribbean and the Canary Islands. It was common for galleon captains to officially declare half or less of the silver actually on board. Once in Europe, "the greatest demand by foreign merchants centered on Mexican silver" (Maixé-Altés, 1994, p.150), and fractional Spanish coins flooded into Ottoman ports via Barcelona and Marseille. (Maixé-Altés, 1994, p.139)

> Until the last third of the [XVIIIth] century, at which time Spain initiated direct traffic with Ottoman and Barbary ports, Marseille was [Barcelona's] principal access point for obtaining Levantine, North African, and French colonial products. (Maixé-Altés, 1994, p.264)

Just as Seville was the centre of the silver trade during the XVIth century, Barcelona became a centre for distributing Mexican silver in exchange for European exports to America during the XVIIIth century. (Vilar, 1962, p.564) Sometimes the Mediterranean branch of the silver trade involved detours of rather lengthy duration, but such departures did not alter the fact that distant China remained the white metal's primary end market.

> The classic circuit of silver from west to east is known. In our case, one can say that there was a small hiatus in this circuit; silver interrupted

> its west-to-east march, to traverse the western Mediterranean in a north-to-south direction, detouring through Algeria for a few years, before resuming its march to the orient, no longer in the form of specie but in the form of ingots that the Sultan in Constantinople conveys to the mint for stamping into his coins. (Rebuffat, 1975, p.32)

Copious quantities of Maria-Theresa dollars also flowed into the Levant via other routes (Dermigny, 1954, p. 273) since there were no restrictions on the use of foreign monies in Ottoman lands: "in most parts of the empire, foreign coins circulated extensively and without any form of government intervention." (Pamuk, 1995, p.957) The main Ottoman demand for silver dollars came, not from Turkey itself, but rather from desert countries adjacent to the Red Sea (Tripoli, Egypt, Southern Syria, Hedjaz, and Yemen). The silver flowing into the Red Sea region then rejoined the grand current of piasters and ingots making their way to India and China. (Dermigny, 1954, p. 277)[18] While marine trade routes were no doubt crucial, we should be careful not to neglect the importance of time-tested Ottoman land routes, which also carried massive amounts of silver toward China:

> The greatest part of Persian silk exports passed through Turkey, where...Armenians were the main intermediaries in this trade... In general the pattern of the routes did not change significantly in Safavid times. The means of transportation remained the camel, the horse, and the mule... Political troubles might deflect the routes temporarily. Trade might, where practical, be moved by sea rather than land, but in the main geographical conditions determined the choice of routes. In the same way the seasonal changes of the monsoons affected sailings. (Ferrier, 1986, pp.472,476)

Frangakis-Syrett (2000, p.156) paints a clear picture of the role of Izmir as a key entrepôt in the global circulation of silver:

[17] Anatolia also received silver from many other locations around the Mediterranean, of course, such as Livorno in Italy, Algiers in Northern Africa, and other locations that paid tribute in silver to Istanbul.

> Both the British and the Dutch...imported western currencies to Izmir not only to trade with them but also in order to sell them as a commodity on the local market... For a number of reasons, at the height of the trade in money in the empire in the late eighteenth century, Izmir became the port of entry for it par excellence, attracting even more foreign specie than Istanbul.

6. A Sino-centered World View versus Conventional Views: Theory and History

The argument of this essay differs from traditional explanations in two central respects. First, silver monies are disaggregated from non-silver monies; indeed, each specific type of silver money must be viewed independently.[19] Second, the transshipment of silver through the Ottoman Empire is located in the context of global trade. This global and disaggregated view is mandated by the structure of the economic model that underlies it, a model that requires that each monetized substance be treated independently.[20] What this means in practical terms is that each monetized substance – for example, specific gold, silver, copper, and cowry monies – must undergo independent supply-and-demand analysis (which is the conventional practice for microeconomic treatments of non-monetary goods and services, but is certainly not conventional for monetary substances).[21] Our

[18] Essentially the same point is made by Carriere (1975, p.13): "Silver's movement toward the east is too banal to insist upon, since it is the grand migration to China of silver, its burial ground that she receives but never returns. It is the long march of the piastres, the abouquels, the dollars following the familiar routes: through the caravans and the Red Sea ships toward Yemen and Hedjaz to assure payment for coffee and products coming from India."

[19] For discussion of the importance of Chinese demand for specific Mexican pesos, see Flynn and Giráldez (2000a).

[20] See Doherty and Flynn (1989) for discussion of this microeconomic model of money.

[21] Mainstream monetary theory is couched in macroeconomic (not microeconomic) terms, which involves the conceptual congealing of individual monies into monetary aggregates. Unfortunately, this practice encourages mischievous commingling of monetary "apples and oranges," which in turn precludes the kind of global demand/supply analysis of individual monies which we feel is crucial.

microeconomic approach to money forces analytical concentration (1) on areas of production, (2) on end-market areas, and (3) on intermediary trade routes that connected production centres with primary end-markets – irrespective of where they were located in the world – for each specific monetized substance. It makes no sense to treat gold and silver as a unified product under the rubric 'precious metals' in the face of incontrovertible evidence that these products were traded for each other in massive quantities, at times travelling around the globe in opposite directions for many generations. A global perspective reveals that each of these monetized products was subject to unique and identifiable demand and supply forces.

The distinction between microeconomic and macroeconomic approaches to money becomes clearer when our view of trans-Ottoman flows of silver is contrasted with the conventional explanation for the flow of New World treasure to Asia. Tradition says that precious metals flowed to Asia because Europe ran an Asian trade deficit; European imports from Asia were large relative to European exports to Asia. Precious metals had to flow eastward in order to finance Europe's trade deficit with Asia. According to this scenario, it was the non-monetary markets that were in a state of disequilibrium, which forced an adjustment burden onto the monetary sector; causation arises in the so-called 'real sector', and the 'monetary sector' is required to passively respond to disequilibrium in the 'real sector'. In other words, demand-side dynamism emanated from European goods markets (in the face of anemic Asian demand for European goods), such that precious metals were *forced* to flow toward non-dynamic Asia in order to balance the books.[22]

This traditional interpretation confuses several issues. First, if the trade-deficit scenario were true, then all types of monies should have

[22] While we argue against use of "balance-of-trade-deficit reasoning," it is understandable that historians use this logic, since the economics profession endorses it. Comments about XVIIIth century Ottoman trade with Asia by Panzac (1992, p. 191) fall into this category: "If India held this important position in the Ottoman Empire – or at least in the capital, the important entry for its products – the reverse was not true. Reciprocation in trade practically did not exist. The result of this trade imbalance was a wave of currency sent from the Ottoman Empire to India and Asia."

flowed from Europe, through the Levant, and on to Asia in order to balance the books. The fact of the matter is that when American silver flowed to China (and *not* to abstract "Asia" as the literature suggests) by way of Europe between the mid-XVIth and mid-XVIIth centuries, gold simultaneously flowed out of China and into silver-exporting areas (Japan, America, and Europe). (Flynn, 1986; Dermigny, 1964, pp.432-433) Moreover, Japanese copper also flowed westward into Europe in exchange for silver from Europe late in the XVIIth century. (Glamann, 1953) Trade-deficit arguments are incapable of explaining why particular metals and monies – silver, gold, copper, and cowries – flowed to specific markets during specific time periods.[23] Macroeconomic theory asserts that monetary aggregates (including gold coins + silver coins + copper coins + ...) constitute proper units of analysis, but this type of aggregation in fact precludes understanding of why it was that a specific monetary substance – silver – flowed in prodigious quantities to particular markets in China (or why gold, copper, or cowry monies flowed to their prime markets). As was stated above, silver most assuredly did *not* flow to China due to China's failure to offer market opportunities for European exporters. On the contrary, silver was sold to China precisely because China contained the world's most dynamic and profitable end-market for silver. Silver was a prime mover on the global market stage (and *not* a passive balancing item as trade-deficit reasoning suggests):

> In the cargoes, therefore, of the greater part of European ships which sail to India, silver has generally been one of the most valuable articles. It is the most valuable article in the Acapulco ships which sail to Manila. The silver of the new continent seems in this manner to be one of the principal commodities by which the commerce between the two extremities of the old one are carried on, and it is by means of it, in a great measure, that those distant parts of the world are connected with one another. (Smith, 1937 [1776], p.207)

[23] See Flynn and Giráldez, eds. (1997) for discussion of global flows of gold, silver, cowries and copper.

Treatment of world silver as a 'residual that responds to trade imbalances' precludes understanding of the dynamic forces that drove trade at the global level throughout the early-modern period.

The trade-deficit orthodoxy runs into another problem when confronting precious metals flows across the Pacific Ocean. Why has no one proposed trade-deficit reasoning for this leg of silver's global history? Why not argue that dynamic Peruvian and Mexican demand for Asian products, in conjunction with sluggish Asian demand for American products, *caused* precious metals to flow westward to Asia across the Pacific? The facts of the case parallel those of the European scenario in several important ways. For one thing, the Acapulco-Manila galleons also exported silver to China (and not gold). Indeed, China simultaneously exported gold eastward across the Pacific to the New World at the same time that it was exporting gold to Japan and to Europe. Trade-deficit arguments are powerless to confront such historical realities. It makes much more sense for us to follow the logic of classical economists since (and before) Adam Smith; these classical economists correctly observed that silver flowed to China simply because China furnished the world's most robust end-market for this particular white metal. Discussion of 'money' – in an abstract and aggregated form – simply distracts attention from key market issues. It is unfortunate that historians have been led astray by mainstream economic theory's insistence upon conceptual aggregation of distinct monies.

7. Decline of the Ottoman Empire

A few remarks should be made concerning the overall impact of world silver on the economic development of the Ottoman Empire. Our discussion above suggests that there must have been substantial benefits in controlling crucial trade routes connecting Europe and Asia (deleterious effects on Ottoman silver-mining interests in the Balkans notwithstanding). Ottoman officials recognized the benefits of pro-external-trade policies, otherwise they would not have gone to the

trouble to implement them. Yet some notable scholars insist that vast imports of silver into the Ottoman Empire contributed to a protracted Ottoman decline beginning in the late-XVIth century. Which is it: did the silver trade stimulate the Ottoman economy, or did silver contribute to Ottoman decline? It is possible to interpret such seemingly divergent views – suggesting simultaneous benefits *and* hazards associated with silver flows via the vast Ottoman Empire – as compatible. But one must be very careful to disentangle issues that are frequently commingled and confused.

Barkan (1974), Liang (1970, p.22), Goldstone (1991, Chapter 4), and Pamuk (1995, p.960) contend that silver-content price inflation contributed to a weakening of Ottoman power in the late-XVIth and early-XVIIth centuries. Tax payments had ossified in the sense that fixed quantities of silver were collected. Ottoman expenses rose along with general price inflation, on the other hand, which implies that maintenance of a given state enterprise would have required receipt of ever-larger quantities of silver monies over time. It stands to reason that fiscal problems would arise for any organization trying to purchase items of steadily-rising cost (in terms of quantities of silver), while finding itself simultaneously stuck with fixed receipts (in terms of quantities of silver). To the extent that silver-content price inflation resulted from the unprecedented worldwide eruption of silver production in America and Japan – and we believe that was the case – then it is indeed reasonable to argue that prodigious production of silver was linked to the decline of the Ottoman Empire via price inflation. Ottoman silver-based tax problems, however, stemmed from XVIth-century bureaucratic decisions to lock in tax collections in terms of fixed quantities of silver. Collecting fixed tax revenues without adjusting for a fall in the value of the monetary unit (i.e. price inflation) is nowadays referred to as a 'failure to index' to compensate for price inflation; the impact on revenue-collecting entities from a 'failure to index' is known to be potentially devastating in inflationary environments. The important thing to note here is that the failure by Ottoman authorities to index – a mistake made simultaneously by Hapsburg Spain (Flynn, 1982, p.142) and Ming China (Goldstone, 1991, Chapter 4) – is a matter quite

distinct from the issue of transshipment of silver through Ottoman borders. That is, a government's failure to index taxes (to rise with general prices) wreaks havoc during inflationary periods, irrespective of the extent to which the country may or may not happen to participate in the global trade of precious metals. It was not the transshipment of silver *per se* that caused the fiscal problem. Ottoman policy makers could have chosen to encourage the silver trade while simultaneously indexing taxes fully; they chose otherwise. The point is that the source of this particular fiscal problem was a failure to index taxes during a period when the value of silver fell on global markets. No entity could stop the price of silver from descending to its cost of production. At issue is how to respond to this inevitable decline in market price in terms of tax policy. Ottoman authorities chose an unfortunate long-term approach, but they were not unique in this regard.

Setting aside the tax-index problem for a moment, the silver industry posed other economic problems that no one could escape. Industry profits eroded globally. Because of the accumulation of tens of thousands of tons of silver production worldwide, silver's price on global markets declined up to about 1640. That year roughly marks the date when silver's value had descended to its cost of production even in American mines.

> Between 1630 and 1640, or about 1636, the effect of the discovery of the mines of America in reducing the value of silver, appears to have been completed... It is accounted for accordingly in the same manner by every body; and there has never been any dispute either about the fact, or about the cause of it. (Smith, 1937 [1776], pp.192,191)

In other words, this era of global price inflation – the Price Revolution – had ended by 1640. The price of silver was not about to fall below its cost of production, so the value of silver monies stabilized.[24] Pedestrian profits could still be earned in the silver

[24] That is, assuming no debasement. In cases where the silver content of a coin was reduced, such debased coins would naturally lose value vis-à-vis goods in general (i.e. price inflation would result).

industry, of course, but the days of extraordinary silver profits had ended. We have argued elsewhere (Flynn and Giráldez, 1996b) that American mine profits eventually shrank as the white metal's price continued to decline, and that this drop in mine profits thereby contributed to the decline of Imperial Spain. Just as oil producers suffer from unfavourable oil prices in late 2001, so too early-modern silver producers suffered from unfavourable silver prices (especially after 1640 and again after 1750).

When we speak of the 'silver industry' we are thinking of business interests that extend far beyond silver mines themselves. Mines are included, but so is end-market China, and innumerable intermediary people and institutions that eventually connected mines and end-markets. Myriad public and private entities the world over had been competing for a vast pool of above-normal profits during a 'silver century' that lasted from the 1540s to 1640.[25] When sufficient quantities of silver had been amassed globally, the white metal's price was forced down to its American cost of production by 1640, signalling a new era for all entities involved. For most of the second half of the XVIIth century, there were no super-profits available for parceling out in this worldwide industry. Opportunities in other industries emerged around the world, of course, but areas and entities tied tightly to the global silver trade generally declined relative to areas and entities less dependent upon silver. All entities economically dependent upon the silver industry were caught in the profit squeeze, including the Ottoman Empire and the various Eurasian market linkages they had so painstakingly nurtured. Ailing industries were simply incapable of generating much financial support for governments, since private-sector parties struggled themselves to survive. Better times would arrive with the next silver boom during the first half of the XVIIIth century, but half a century is a long wait. Ottomans suffered in the interim, but

[25] We cannot remember who borrowed the 'silver century' terminology from whom, but our usage of the phrase exactly parallels the time frame and reasoning in a section of Von Glahn (1996, pp.125-133) — titled "The Circulation of Specie in East Asia during the 'Silver Century'" — where Von Glahn offers several interesting examples (from the Chinese literature) of the fixation on the purchase of silver inside China.

we should not forget that Imperial Spain also declined, the Ming gave way to the Qing in China in 1644, and the existence of a XVIIth-century crisis is debated for many regions of the world.[26] For diverse areas connected closely with the world silver market, perceptions of crises were no doubt based upon real developments.

8. Conclusion

At the dawn of the XXIst century today, discussions about 'globalization' are often vague and ambiguous because of a lack of criteria for determining when globalization began. We contend that globalization dates back to the founding of the city of Manila as a Spanish entrepôt in 1571. For the first time in human history, all heavily populated continents traded both directly and indirectly in ways that critically impacted each other for centuries henceforth. Moreover, silver was a key product that linked economies throughout the world during the XVIth through XVIIIth centuries. Most of the silver (some 150,000 tons) came from Spanish America, but Japanese silver was also exceedingly important up to the last third of the XVIIth century. China was by far the main end-market for silver.

Although it is common knowledge that the vast Ottoman Empire was deeply involved in long-distance land and marine trade for centuries, few seem to conceptualize the Ottoman Empire as a crucial conduit through which silver (mainly from America) flowed toward China. A global viewpoint provides a straightforward explanation: China afforded silver's most robust end-market. Up to 1640, the price of silver in China exceeded that in the rest of the world (by double) during silver's first 'arbitrage phase' (1540s-1640). A portion of the huge 'arbitrage phase' profit pie was available to the Ottomans as middlemen; they adopted free-trade policies in terms of long-distance trade and profited thereby. When above-normal profits were squeezed

[9] See Reid (1993) for analysis of silver and the impact of the XVIIth century crisis in Southeast Asia.

out by 1640, the Ottoman Empire suffered financially (as did countless entities connected to the silver trade).

It would be a mistake to draw too rigid a line between the relatively liberal posture of Ottoman policy regarding long-distance trade versus more restrictive commercial practices domestically. Local markets were often linked closely to global trade circuits:

> It has already been pointed out that the XVIth century was a period of population growth, urbanization, growing economic linkages between rural and urban areas, commercialization, and monetization in the Ottoman Empire. The spread of local and regional markets and fairs in the Balkans and Anatolia provides strong evidence for the spread of commercialization and the money economy during this period. During the XVIth century, a significant increase occurred in the use of money, both because of the increased availability of specie and the growing economic linkages between the rural and the urban areas. Large sectors of the rural population came to use coinage, especially the small denominations, through their participation in markets and because of state taxation of a wide range of economic activities. In addition, small scale but intensive networks of credit relations developed in and around the urban centres in the Balkans and Anatolia. (Pamuk, 2001, pp. 82-83)

Unfortunately, much of the trade in China-bound silver is difficult to document in official sources because only a fraction of actual trade was recorded in official documents. In discussing Spain's general embargo on Dutch trade in the Mediterranean (1621-1647), for example, Murphey (2000, pp. 31-32, 43) notes:

> In a localized Mediterranean context such official bans provided if anything a stimulus to trade between the eastern (Ottoman) and western (Spanish) halves of the Mediterranean. Such trade was conducted either indirectly through neutrals and intermediaries such as Venice and Ragusa or directly by blockade runners in the guise of multinational partnerships...contraband trade in essential supplies

> (especially grain) to declared enemies of the state was often the quickest and surest route to commercial reward... The flow of commodities between Spain, Italy and Ottoman territories followed strictly economic imperatives whose control and restraint was beyond the power of any state.

China's XVIIIth-century demographic revolution (partly due to introduction of American crops) set the stage for yet another surge in the price of silver within China. At the beginning of the XVIIIth century, Chinese markets paid a premium of 50% (relative to the rest of the world) for silver. This time the silver came overwhelmingly from Mexico, in quantities so immense that it took only a half-century (rather than the full century before 1640) to drive the price of silver in China down to silver's price in the rest of the world by 1750. In the meantime, enormous quantities of silver flowed through the world's trade routes. Marseille became a major European distribution centre for silver. And its Ottoman connection flourished. By the middle of the XVIIIth century, the price of silver in China had sunk to that of the rest of the world. World silver's second 'arbitrage phase' (1700-1750) was over. Silver continued to flow into China during the remainder of the XVIIIth century (indeed, into the XXth century), but this 'non-arbitrage phase' was not nearly as lucrative for intermediaries such as the Ottomans. Ebbs and flows in crucial markets have presented opportunities and challenges throughout history, of course, but truly global forces have emerged only since the sixteenth century. The richness of Ottoman monetary history – and Ottoman economic history generally – comes into clearer focus when conceptually integrated with world history.

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