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Born with a Silver Spoon:
China, American Silver and Global Markets during the Early Modern Period

Arturo Giraldez

1999

Born with a Silver Spoon

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China, American silver and global markets during the early modern period

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Introduction

This dissertation is a collection of articles written in collaboration with Dennis O. Flynn on the subject of the worldwide trade of precious metals and monetary commodities during the sixteenth and seventeenth centuries. These articles discuss the centrality of monetary history in provoking the birth of global trade, issues concerning the financing of the Spanish Empire, as well as the crucial role of the Philippines within a global network of trade routes. Special attention is afforded the Philippine archipelago because historians in general neglect this pivotal trade route over the Pacific. Yet, the birth of global trade coincides with the foundation of the City of Manila in 1571.

These particular articles were chosen for inclusion in this dissertation because together they form an organic unity. Taken together, the essays establish that the movements of the world's most important monetary substances – silver, gold, copper, and cowries – are best viewed from the perspective of a Classical monetary theory (one compatible with, for example, Ricardian economics). The 'Classical' view advocated in this dissertation disaggregates the modern notion of 'money' – which aggregates individual monies into an abstraction that contains diverse substances -- into individual component monies. The supply of and demand for each monetary substance must be viewed independently, notwithstanding the fact that individual monetary substances (e.g. gold and silver) are sometimes related to one another.

This dissertation devotes disproportionate space to the specific monetary substance, silver, because analysis of the global silver market reveals fundamental trends leading to the birth of global trade, as well as offering hints about the striking consequences of the global linkages that resulted. This dissertation shows how changes in the Chinese monetary system and institutional developments within the Ming Empire – changes leading to the 'silverization' of Chinese society – played a central role in initiating globalization.China and its tributary system were dominant on the demand-side of the world silver market, while the silver producing areas of America and Japan dominated the supply-side of the market during the sixteenth and seventeenth centuries. In this dissertation the Spanish Empire appears as a conglomerate of territories financed by the silver mines of Mexico and Peru, thanks to the high price of silver in China during this period. The Philippines were the only route to offer Spaniards direct access to the

Chinese marketplace, which explains why the Manila galleons were so highly profitable for trade merchants and why the Philippines also contributed mightily to the financial strength of Spain's Imperial enterprise. Examination of the global silver network also provides a useful vantage from which to view complex connections among other important monetary substances during the early modern period (i.e. gold, copper, and cowries). Overall, these articles provide a new theoretical and historical framework for reinterpretation of how monetary and financial structures reverberated widely throughout a unified, global system with tentacles reaching surprisingly deeply into the fabric of societies populating continents (and other landmasses) dispersed throughout the early-modern world.

A. Centrality of American Treasure in Economic History Since the 16th Century

Precious metals history in Europe during the sixteenth- through eighteenth-centuries when American silver was predominant has loomed large in the writings of scholars since the sixteenth century itself. Tens of thousands of tons of the white metal traversed the Atlantic Ocean and entered the European economy throughout those centuries. Numerous European mints transformed this New World silver into coin form, with the world-famous Spanish pieces of eight playing a prominent role. The dramatic augmentation of money supplies throughout Europe beginning in the sixteenth century is a central feature of European historiography. Unprecedented production of precious metals in the New World (mostly silver) is alleged to have bolstered monetary stocks throughout Europe and to have profoundly affected its economies in a number of ways.

Another prominent theme of sixteenth- and early-seventeenth-century European economic history is the widespread experience of more than a century of price inflation, the Price Revolution. Indeed, synchronism between the arrival of New World treasure and escalating European price levels did not escape the notice of sixteenth-century scholars, people who personally observed segments of this dual treasure-influx/price-inflation phenomenon. The first complete statement of the Quantity Theory of Money which hypothesizes that augmented money-supplies cause general price inflation is sometimes attributed to the Frenchman Jean Bodin, who argued in 1568 that American

treasure increased monetary stocks and thus prices in general. (Bodin 1946, pp.23, 27, 28, 31, 32, 68) According to Marjorie Grice-Hutchinson, however, a Spaniard named Martin Azpilcueta de Navarro (1556) preceded Bodin by a dozen years in attributing the prolonged inflation to the influx of American metals.[1] Numerous subsequent thinkers throughout the sixteenth, seventeenth, and eighteenth centuries emphasized the causal connection between the influx of American treasure into Europe and Europe's Price Revolution,[2] including Adam Smith in his Wealth of Nations.[3] Karl Marx (1976, p.34) likewise attributed European price inflation ultimately to the discovery of richer and more easily worked mines in America. A multi-volume series on prices in England (James E. T. Rogers, 1866-1900) propelled this treasure-inflation orthodoxy into the twentieth century.

Based upon years of research in the archives of Seville, Earl J. Hamilton's classic study (1934) yielded a mass of new evidence that testified strongly in favor of the monetary interpretation of the Price Revolution; Hamilton claimed that the influx of silver into Spain matched closely with Spain's inflationary experience. John Maynard Keynes (1930 Vol. 2, pp.152-63) endorsed Hamilton's quantity-theory interpretation of the price rise, while also accepting Hamilton's collateral profit inflation hypothesis for explaining the early development of capitalism in Western Europe.

During the second half of the twentieth century, the orthodox monetary interpretation of the Price Revolution has come under attack. The main criticism is based upon empirical evidence showing that periods of pronounced price inflation within specific European countries fail to correspond chronologically with simultaneous receipts of American treasure by those respective countries. Sometimes price inflation occurred prior to receipt of American treasure. In other instances, substantial treasure imports

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1 See Grice-Hutchison, The School of Salamanca: Readings in Spanish Monetary Theory 1544-1605, Oxford: Clarendon Press, 1952

2 See, for example, Cynthia Taft Morris (1957), p.166; Braudel (1966, Vol. 1), p.521; Cantillon (1931), p.160

3 Adam Smith (1937 (1776), pp.34, 191, 192, 236, 241, 415, 416)

coincided with periods of weakening price inflation. Individual countries receipts of New World treasure simply failed to correspond with bouts of domestic price inflation within specific countries.[4]

Dennis O. Flynn (1978) responded to this chronology-problem criticism by explaining that the physical whereabouts of the American silver is irrelevant to the question of whether the Price Revolution in individual countries was attributable to New World silver. Based upon the Monetary Approach to the Balance of Payments, a theory developed by others (Johnson 1972 and 1976) in the 1970s, Flynn argued that prices are determined internationally and therefore it is erroneous to analyze each country's inflationary experience as if it were independent from international price trends. As long as the silver market explains price inflation internationally, whether or not a particular country contained American silver during its particular inflationary experience is irrelevant. Irrespective of how much silver an individual country contained during a particular time segment, its prices were determined internationally. The relevant question is whether New World treasure caused international prices to rise. The mistake of monetary historians, according to Flynn, was that they viewed national price levels as if each were determined independently of price levels in other countries. Markets were in fact linked over long distances, which implies price linkages that ignored regional and national borders alike. (The extent to which an individual country did or did not contain American treasure depended upon whether it minted non-silver monies that could substitute for silver monies of New World origin. Again, Flynn utilized the Monetary Approach to the Balance of Payments theory to explain why Spain contained little American silver despite being the world's most prodigious source of minted silver; Spain also minted prodigious quantities of copper-based vellon substitute-monies. The absence of silver money in Spain does not alter the fact that the Spanish Price Revolution is attributable to New World mines, however, for the same reasons that reflections of the Price Revolution elsewhere in the world are attributable to American mines.)

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4 See, for example, Cipolla (1955); Blum (1956); Hammerstrom (1957); Brenner (1961), Brenner (1962).

As already stated, attempts to explain the Price Revolution on a country-by-country basis have produced tremendous confusion in the literature. Thus, Flynn insisted that price inflation be viewed as an international phenomenon. Rather than ask what caused the prices of thousands of internationally-traded items to rise over time, however, Flynn followed the lead of pre-twentieth-century Classical economists and instead focused on the question of what caused silver itself to lose purchasing power. The observation that early-modern price levels rose relative to silver monies during the Price Revolution means that more units of silver money were required in order to buy a given basket of goods. Flynn simply reinterpreted these price trends as an observation that silver's value had fallen relative to given baskets of goods. In other words, rather than adopt the view that goods had risen in value relative to a stable silver standard, Flynn argued that it was the silver that had lost value with respect to goods in general. Flynn's view seems unorthodox compared with twentieth-century explanations for the cause of the Price Revolution, but he is actually just restating pre-twentieth-century interpretations offered by Adam Smith, Karl Marx, and other Classical economists who discussed this subject at length.

It is worth emphasizing a fundamental distinction between Flynn's Classical approach versus modern monetary theory. Flynn focused on demand-and-supply forces responsible for depressing silver's international value during the Price Revolution; this approach required him to treat the silver market independently from the markets for other monetized metals (e.g. gold, copper, lead). In contrast, modern monetary theory combines diverse monetary substances into monetary aggregates (such as M1, M2, and so on), which by definition combine individual monies. Specific monies lose their identities as individual items. Flynn ultimately argued that it was the reduced cost of producing silver that led to the fall in silver's value in international markets. Because it sums various substances into monetary aggregates, modern monetary theory cannot address the question of what forces cause an individual monetary substance to have a specific value. What sense would it make to say that the cost of producing money in general is falling, when the cost of producing some components may be falling, while other components costs are rising, and yet others have costs which may remain constant? Flynn's approach

requires a microeconomic not a macroeconomic approach to money because he insists that each monetary substance be analyzed independently.

B. Genesis of the Doherty-Flynn Model

Conventional macroeconomic monetary theory methodologically based upon aggregation of individual monies is, as has already been stated, incompatible with Flynn's claim that study of silver's individual value in world markets is the key to understanding the causes and consequences of the Price Revolution. Silver was only one monetary substance among many monetized items, so why does Flynn insist that silver monies be conceptually separated from non-silver monies? The answer: the extent to which an early-modern economy experienced price inflation depends upon the particular monetary substance in terms of which prices are measured. When prices are measured in terms of silver-content prices (which is standard practice in the Price Revolution literature), for example, an economy's record of price inflation looks very different from when prices are expressed in terms of, say, a gold money. Price trends look much different again when prices are expressed in terms of a copper standard, and the same economy's prices expressed in terms of cowries would look completely different as well. Since each monetary substance embodies a different market value owing to the fact that the supply of and demand for each substance (and its cost of production) is distinct from that of other monetary substances the behavior of a particular price index depends upon which monetary substance is chosen as the unit of account

One cannot think clearly about the demand and supply forces leading to a widespread decline in the market value of silver, in other words, while simultaneously aggregating silver into an abstract unit of analysis which includes various non-silver monies. The fall in silver's value must be studied by focusing on factors that specifically impact the supply of silver and the demand for silver. There must be a disaggregation of silver from the monetary aggregates advocated in modern textbook theories of money. Silver must be treated as an independent unit of analysis. The conceptual combination of silver with other monetary substances has created tremendous confusion in the Price Revolution literature. This confusion has, in turn, precluded understanding of the role of silver in early-modern economic history.

While attempting to model European (silver-content) price inflation at the international level, however, Flynn's (1977) early efforts failed to adequately create a supply-and-demand model for silver at the international level. He unwittingly superimposed a time-dimensioned demand function with a point-in-time inventory supply function. Flynn's early model contained a fundamental contradiction: it attempted to superimpose demand and supply functions that contained incompatible dimensions. The demand function was not defined in the same space as the supply function.

Despite this fundamental technical error in Flynn's analysis, he continued to believe in the necessity of modeling each monetary substance in disaggregated form (i.e. from a microeconomic point of view). In collaboration with Kerry W. Doherty, Flynn developed a new microeconomic theory (Doherty and Flynn, 1989) that eliminated the supply-demand compatibility problems mentioned above. Both the supply of silver function and the demand for silver function were modeled from an inventory-theoretic point of view.

Without wishing to digress to deeply into technical theoretical issues, it is perhaps helpful to briefly explain a key distinction between the Doherty-Flynn model and conventional macroeconomic treatments of money. A good place to start is by recognizing that theories of pre-20th century Classical economists treated each monetary substance separately (as does the Doherty-Flynn model). When the so-called Marginalist Revolution swept the field of economics in the late-19th century, however, its "utility theory" foundation changed the way in which individual products were viewed. An individual's utility (i.e. satisfaction) is maximized subject to an income constraint, according to utility analysis, and it is this time-dimensioned income constraint that requires the quantity axis of microeconomic demand and supply curves to be labeled "units/time period." This requirement of a time dimension on quantity axes for all microeconomic demand and supply analysis eliminated monetary substances from consideration. For example, the relevant supply function for an individual monetary substance (like silver) would include all silver money in existence at a particular moment, not just the silver money produced during a particular time period. But microeconomic supply functions refer only to the current rate of production of a product (the profit-maximizing rate of production). Thus, monies could not be made to fit into the utility-

maximization framework of the turn-of-the-century Marginalist Revolution._Since economists could not very well ignore monetary theory completely, a new branch of economics was created to fill the void – macroeconomics._Within macroeconomic models individual monies had to be aggregated together, however, because the mechanism through which monies were theoretically re-connected to non-monetary substances was through the interest rate._It clearly does not make sense to say that the cost of production of an ounce of silver, or gold, or copper equaled a specific number of 'interest rates'; while it had made sense in the nineteenth century to conceptualize silver's cost of production in terms of, say, units of labor hours required for production._ In short, Doherty and Flynn used a form of dynamics called 'optimal control theory' to form a type of utility-based microeconomic theory capable of handling inventory stocks. Equipped with a theoretical apparatus that could treat monetary substances just like non-monetary substances, it is now possible to analyze the supply of and demand for each monetary substance independently._ The price of each money could be conceptualized like any other price, rather than thinking of the 'price' of money as the interest rate.

Having eliminated the main theoretical stumbling block to microeconomic modeling of silver from an inventory-theoretic point of view, Flynn then applied the Doherty-Flynn model to various aspects of early-modern monetary history. The logic of the Doherty-Flynn model dictated an increasingly global perspective, however, one that forced Flynn to view events from a more global (and less-Eurocentric) viewpoint than he could have envisaged prior to development of the Doherty-Flynn model.

The precious metals literature today is overwhelmingly Eurocentric in focus. In particular, Asian economies are either ignored or their development is considered tangential. While the literature recognizes that precious metals did indeed flow off to Asia during the early-modern period, for example, Europe's exportation of these metals is explained in terms of dynamism emanating from Europe; the Asian side is portrayed in static terms. Specifically, it is argued that there developed a rapidly growing European demand for Asian spices, silks, ceramics, and other products; indeed, such demand explains why European merchants established posts in Asia. There was no comparable surge in Asian demand for European products, however, perhaps because of the inward-looking nature of Asian peoples. The conjunction of huge European imports from Asia

and paltry European exports to Asia therefore implied a massive European trade deficit. According to this view, precious metals flowed off to Asia because of a dynamic surge in European demand. Export activity within Asia was simply a response to dynamism within Europe.

In "The Microeconomics of Silver and East-West Trade in the Early Modern Period", Flynn (1986a) began to argue that the European dynamism story contains mythical elements. First, for an entire century -- from the mid-sixteenth century to the mid-seventeenth century there was indeed a persistent flow of American silver through Europe into China, but China simultaneously exported gold, some of which made its way back to Europe. And late in the seventeenth century, a substantial volume of Japanese copper also flowed into Europe at a time that American silver continued to flow into China. These historical facts spell trouble for the orthodox European-trade-deficit explanation. If money actually had played the role of a passive balancing item as state in the literature with monetary flows simply responding to an imbalance in Europe's trade account with Asia then why were not all types of money flowing into Asia? Specifically, why was it that only silver flowed to China while other non-silver monies simultaneously flowed back into Europe? Standard monetary theory is incompatible with these facts; standard theory is powerless to explain the independent movements of specific monies (which in any case are theoretically aggregated into a single unit of analysis called money).

Second, it is estimated that Japan produced half as much silver as did all of Latin America during the late-sixteenth and early-seventeenth centuries. Japanese silver was also exported to China in exchange for Chinese silk (and to a lesser extent, Chinese gold). This fact also implies that it makes little sense to perceive the global flow of precious metals from an East-West point of view. What does make sense, on the other hand, is to study the demand and supply of each individual monetary substance from a global perspective. Provision of a global perspective is where my collaboration with Dennis O. Flynn came into play.

C. Silver and the Birth of a Global Economy

The first chapter of this dissertation [5] is co-authored with Flynn. Invited for submission by the Editor of the JWH, this essay was specifically written for a general audience, rather than for specialists in monetary history. It was my responsibility to research the secondary literature surrounding Chinese monetary history, in the hope that such a search would reveal why China (more than any other place in the world) became the world's primary end-market for silver for centuries. What I found was a clear statement that permeated the literature on Chinese monetary history: There had been a momentous shift toward the use of silver as money within China over the centuries, a phenomenon Flynn and I subsequently described as the silverization of China.

Silver flowed to China because the market value of silver in Ming territory was twice as high as its value elsewhere. This fact is reflected in the bimetallic ratios reported in Chuan (1969, p.2), for example, who reports late-sixteenth/early-seventeenth century gold-silver exchange rates at 1:5.5 to 1:7 in Canton compared with 1:12.5 to 1:14 in Spain. Such an overvaluation of silver in China should cause imports of silver into China, according both to the Doherty-Flynn model and to a Ricardian explanation by Chaudhuri (1978); similarly, both models predict that China should export gold. This is of course precisely what happened between the mid-sixteenth and mid-seventeenth centuries. Silver flowed into China, not because of dynamic Europe's trade deficit with Asia but because China contained by far the world's most dynamic end-market for silver. A common saying among economists is that the consumer is sovereign ; along with supply-side dynamics in Japan and Spanish America, the end-market in China was sovereign as the motor driving the global trade of silver throughout the early-modern period. There could be no profit involved in selling silver on world markets in the absence of customers willing and able to buy it. But why was the value of silver in China double its value anywhere else in the world? More precisely, how is it that the demand for silver in China was so powerful that it raised silver's price far above its price in the rest of the world?

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5 Flynn and Giráldez, (1995a), "Born with a 'Silver Spoon': The Origin of World Trade in 1571", Journal of World History, vol.6, n.2, pp.201-221

China's metamorphosis from a paper-money system (dating back at least to the 11th century) to a silver-based economy provides the demand-side answer to the question asked immediately above. Overissue of paper money in China had reduced the value of Chinese paper money to virtually zero by the middle of the 15th century (Gernet 1982, p.415). Normal commerce required a monetary standard, of course, and silver evolved as the metal of choice. Ming rulers attempted repeatedly to stop the intrusion of silver throughout the Chinese economy, but to no avail. Finally, in the 1570s the Ming Dynasty acquiesced; the Single-Whip tax reform both consolidated numerous tax payments into one overarching tax and specified that this tax be paid exclusively in silver. Given that China contained approximately one-quarter of the world's population at that time, in a country of large cities like Nanjing and Beijing (containing one million and 660,000 inhabitants respectively in the late Ming period), the silverization of China became a global event of epic proportions. If one includes the economies of Chinese tributary states in the calculation (Hamashita 1988), then perhaps 35% or 40% of the global population was involved in China's demand-side conversion to a silver-based economy.

When viewed from the Sino-centered perspective just outlined, European merchants appear to have played the role of middlemen rather than instigators, intermediaries who facilitated the movement of silver between Japan and China and between America and China. But by no means were Europeans prime movers either on the supply side of the silver equation or on its demand side. Entities most firmly in control of dominant silver mines namely the Tokugawa Shogun and Spanish Crown reaped enormous profits from the silver trade, of course, and these profits were instrumental in explaining the economic bases of these two national powerhouses. But there were also ample profits left over for other traders who participated in innumerable trade segments linked through virtually all the major trade routes throughout the world.

D. Arbitrage, China, and World Trade in the Early Modern Period[6]

Easily the most neglected trade route in the precious metals history literature has been the direct trade of American silver into China via the Pacific Ocean (as opposed to the indirect trade of American silver into China via the Atlantic Ocean; control of an Asian port accessible via the Pacific Ocean was a high priority for the Spanish Crown because the Portuguese and Dutch already controlled trade routes to Asia via the Atlantic Ocean). Manila Bay is said to contain perhaps the best natural harbor in Asian waters and was therefore coveted by Spain. The city of Manila on Luzon was established in 1571 in order to provide Spanish interests with direct access to the lucrative markets of China, and the Acapulco-Manila galleons provided the linkage for which Spain had been searching. And during the late-sixteenth and early-seventeenth centuries enormous volumes of silver were indeed shipped to China over the Pacific via the Manila galleons. One oft-cited source even claims that an astonishing 5 million pesos worth of silver crossed the Pacific in 1602 and that 12,000,000 pesos was shipped in 1597 (Borah 1954, p.123)

Then a strange thing is alleged to have occurred during the first quarter of the seventeenth century: for reasons left unexplained, trade via the Acapulco-Manila galleons is alleged to have largely withered. And one result of this perception of abrupt decline in the importance of Pacific trade has ensued -- a remarkable lack of interest in the Acapulco-Manila-China trade route, accompanied by a lack of interest in the history of the Philippines in general. Who cares about a trade route which was important only for a brief moment in history? It is fair to say that scholars who currently write about the trade history of the world pay little, if any, attention to the role of the Philippine Islands after the first quarter of the seventeenth century.

Responsibility for the dearth of interest in Philippine history as an important component of world history was inadvertent, but resulted largely from research conducted by the highly-regarded French historian, Pierre Chaunu. Chaunu concluded

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6 Flynn and Giráldez, (1995b), "Arbitrage, China, and World Trade in the Early Modern Period", Journal of the Economic and Social History of the Orient, vol.38, n.4, pp. 429-448

that the initial phase of burgeoning trade via the Manila galleons ended in the 1620s, when trade volumes via the Philippines dropped significantly. By the 1630s the fall in Spanish trade across the Pacific was precipitous. The Manila galleons no longer appeared to be a factor worthy of attention in terms of the study of important global trade networks. Chaunu's conclusion that trade via the Pacific declined abruptly stemmed from his research on tax records. Indeed, records for almojarifazgo tax (a trade duty) receipts do show an initial decline in the 1620s, followed by a more dramatic collapse in the 1630s.

Flynn and I were skeptical about Chaunu's conclusion that the Manila galleon trade declined during the seventeenth century. The Doherty-Flynn model predicts increased smuggling of silver during the seventeenth century; eroding silver-industry profits forced traders to either avoid taxes via intensified smuggling activity, or to abandon the silver trade. I began intensive research of primary and secondary sources having to do with the Philippines trade during the seventeenth century.

An important scholar based in Hong Kong, Han-Sheng Chuan (1969) has challenged Chaunu's view of a collapse in the Philippines trade during the seventeenth century. Based upon study of translated documents in the Blair and Robertson (1903-1909) collection, Chuan has concluded that two million pesos worth of silver passed annually via Manila on its voyage to China throughout the entire seventeenth century. In short Chuan claims that Chaunu's trade-collapse orthodoxy is incorrect.

Knowing that the dominant Asia-bound cargo of the Portuguese Estado da India, the Dutch East India Company, and the English East India Company was comprised of American silver, I studied the extensive secondary literature on seventeenth-century trade volumes for these three institutions. To my surprise, a rough compilation of trade figures for these three giant institutions indicates that their combined shipments of silver to Asia totaled approximately 2 million pesos per year throughout the seventeenth century. This is the same amount alleged by Chuan to have crossed the Pacific during that century. If Chuan's revisionist estimates for the Acapulco-Manila galleon trade could be corroborated, this would seem to force fundamental reconsideration of the role of Manila in world trade history.

My research in the archives of Seville has uncovered an abundance of anecdotal evidence that is consistent with Chuan's contention that trade via Manila flourished throughout the seventeenth century, rather than declining as argued by Chaunu. Had the Manila trade collapsed so abruptly and completely as suggested by Chaunu, for example, then why was there no collapse in the population of Manila? The city of Manila served no function other than as an entrepot through which Mexican silver was exchanged for Chinese silk.

E. Silk for Silver: Manila-Macao Trade in the 17th Century[7]

As mentioned previously, the precious metals literature has been couched in East-West terms, a dubious practice when trying to describe trade around a globe. East or West of what? Use of the terms East and West presupposes agreement upon a reference point. The implicit conceptual reference point -- ironically accepted by non-Europeans places Europe at ground zero. More accurately, the conceptual fulcrum is Western and Central Europe. This conceptual framework poses immediate difficulties for those of us who study trans-Pacific trade. First, the Americas are at the eastern edge of the Pacific and Asia -- and its tens of thousands of islands -- define its western edge. Those of us who reside in California therefore find ourselves living in the West while simultaneously residing on the far eastern edge of the Pacific. Similarly, millions of Asian residents live at the far western edge of the Pacific, yet are said to live in the Far East. This nonsensical nomenclature forces Hawaiians, for example, to describe people to their west as Easterners and people to their east as Westerners. While perhaps humorous at some level, this point is not trivial. Interaction within and over the Pacific Ocean has been relegated to a linguistic margin because academics consider trans-Pacific interactions irrelevant. This is an incorrect and dangerous development because it has led to distortions in historians perceptions of interchange across and within the Pacific.

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7 Flynn and Giráldez (1996b), "Silk for Silver: Manila-Macao Trade in the 17th Century", Philippine Studies, vol.44/First Quarter, pp.52-68.

In the previous section -- Arbitrage, China, and World Trade in the Early Modern World -- Dennis O. Flynn and I explained: (a) Why silver was attracted to China from all over the world, and (b) why we endorse Professor Chuan's contention that two million pesos worth of American silver entered China via Manila throughout the seventeenth century. Most of the two million pesos in silver exported via the Pacific during the seventeenth century were smuggled, however, which explains why official quantitative documentation cannot provide direct evidence to support the Chuan allegation to which we adhere. I instead looked for indirect proof by studying the literature on Chinese silk exports into Manila and Mexico.

Rarely does history offer a trade pattern so straightforward as that of the Manila galleons during the seventeenth century, which essentially boiled down to a direct swap of American silver for Chinese silk. We therefore decided to look at the magnitude of the silk-side of the equation to corroborate Chuan's contention. If it could be established that approximately two million pesos worth of Chinese silk annually were shipped to Acapulco via Manila, then it would have to have been true that two million pesos annually in silver were simultaneously shipped to China via the Pacific.

Silk was the main Chinese export exchanged for thousands of tons of imported silver throughout the sixteenth and seventeenth centuries. According to Sousa (1986, p.46), China exported about 800 tons of silk each year in the early seventeenth century. The vast majority of this exported silk went to Japan, Manila, and India, but Portuguese purchases for the Indian market are said to have diminished by the 1630s, so Japan and Manila became the dominant foreign markets for Chinese silk throughout the seventeenth century. Silk comprised approximately 90% of Portuguese exports to Japan in 1637 and the Dutch imported even more Chinese silk into Japan after having replaced the Portuguese.

C.R. Boxer (1948, p.545) labeled official bills of laden for Chinese silk shipments to Manila as an elaborate farce. The statutory limit was 4,000 piezas of silk per galleon, for example, but it is known that the San Jose sank in 1694 with 12,000 piezas aboard. A century earlier in 1587 the Santa Anna, which was plundered and burned off the coast of California, carried 2 million pesos in silk, four times the legal maximum at that time. It is

also know that the Santo Tomas in 1601 carried 2.5 million pesos in cargo, even more than was captured from the Santa Anna fourteen years earlier.

In a sense, Macao and Manila were competitors because the former served as entrepot for China's silk-silver trade with Japan while the latter served as entrepot for China's silk-silver trade with Mexico. Events of the 1630s, however, make it clear that Macao and Manila were also sometimes collaborators in the global marketplace for silk and silver. Boxer (1963, p.141) reports that forty large trading-junks from Macao brought so much silk to Manila that the galleons bound for Mexico in 1634 could not take it all. Schurz (1959, p.135) says that 1.5 million pesos in silks were the usual amount shipped from Macao to Manila around 1633, an amount six times greater than the legal limit Manila could ship off to Mexico. (And we are talking only about trade with Macao!) In short, evidence about silk cargoes from sunken and captured ships corroborates Chuan's claim that 2 million pesos of silver traveled to China; million of pesos worth of silk entered Mexico from China, so at least two million pesos in silver must have traveled in the opposite direction.

Evidence concerning trade between Mexico and Peru also offers indirect support for Chuan's claim. According to Borah (1954, p.123), some 90 percent the manufactured goods imported from Mexico by Peru came from Manila in the 1630s. And Borah (1943, p. 97) states that annual imports of merchandise in the Manila galleons totaled nearer 2,000,000 that 250,000 pesos, the only real limit to the trade being the fact that the ships permitted could not carry any more, and the cheaper Chinese wares were smuggled into Peru in defiance of royal restrictions. As late as 1703, Mexican authorities established a shopping center in Mexico City for the expressed purpose of selling Asian goods from Manila: From these stores, the city government obtained substantial annual income in the form of rentals which the store owners paid to the city treasury (Zaide 1979, p.490)

All of the evidence I could find relative to the volume and value of Chinese silks shipped via Manila to Mexico supports Chuan's claim that 2,000,000 pesos of silver must have traversed the Pacific Ocean annually throughout the seventeenth century. Whether looking at Manila's imports of Chinese silk via Macao, Mexico's re-exports of Chinese silks to Peru, the thriving silk trade within Manila itself, the establishments of markets for Chinese wares in Mexico City, or the population of Manila itself, the impression is

consistent. The Manila galleons trade generally thrived throughout the seventeenth century. The vast majority of goods were smuggled, and approximately 2,000,000 pesos worth of silver per year entered China via the Pacific throughout the seventeenth century nonetheless.

F. China and the Spanish Empire[8]

While there has been a lively, long-standing debate on the issue of decline of the Spanish Empire (Kamen 1978, 1980; Elliott 1961, 1970, 1977), there has been less discussion about how Spain managed to emerge as an Imperial power initially. Elliott (1961, p.62) describes Spain as closer in many ways to that of an Eastern European state like Poland, exporting raw materials and importing luxury products, than to economies of West European States. And Kamen (1978, p.41) labels Spain a backward country with poor resources, dependent on external markets and external supplies. So how did a backward country, which experienced neither an agricultural nor an industrial revolution, become the most powerful country in Europe for a century?

Some have argued that Spain's backwardness implies that the Empire must have been financed from sources external to Spain; thus, Spanish imperialism was financed out of the resources of America and of a Castile which had itself received regular injections of silver from the silver mines of the New World. (Elliott 1977, p.291) Earl J. Hamilton (1934, pp.89-91) reported that, by the time American treasure had reached Seville, the Spanish Crown had collected some 27.5% of silver's total production value in taxes; a more recent estimate by Mark Steele (1986, pp.151-152) places the King's portion of the treasure at 40%. Either way, it is clear that the Crown collected enormous revenues based upon trade with the New World.

It is nonetheless maintained by some that, internal backwardness notwithstanding, internal/domestic forces within Spain must have comprised the main support for the empire because Castilian peasants were the most heavily taxed within Europe (Parker 1979, p.188) and taxes levied within Castile comprised perhaps 70 percent of total crown

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8 Flynn and Giráldez (1996a), "China and the Spanish Empire," Revista de Historia Economica, XIV, n.2, pp.309-338.

revenues. (Elliott 1961) The implication seems to be that since more than two-thirds of Crown taxes were collected within Castile, then domestic resources must have supplied most of the support for Spain's imperial ambitions.

By adopting a global perspective, our article sides with the external-causation camp while claiming that events unfolding within Ming China ultimately determined the financial basis of the Spanish Empire. The key again is to view the silver market as a global phenomenon that must be analyzed independently from the markets of other monetary items; this implies application of reasoning based upon the Doherty-Flynn model. The world over, silver was produced for a profit much like any other commodity. Per-unit profit is defined as price minus average cost; total profit is per-unit profit times quantity produced. It is profit yields which mattered in the world silver industry, not the quantity imported per se.

Scholarship has concentrated excessively on the quantity of silver arrivals to the Iberian Peninsula. But the quantity of silver arriving at a particular location is less important than the purchasing power of each unit of the silver. And it is clear that the purchasing power of silver declined throughout the period we call the Silver Century, the 1540s through 1640. We do not claim to be first in emphasizing the decline of silver's purchasing power; scholars such as Antonio Dominguez Ortiz (1960, p.284) and Mark Steele (1986) have properly emphasized the importance of decline in silver's purchasing power.

The other important aspect to silver's profitability in conjunction with the white metal's purchasing power -- was silver's cost of production. Spain's New World mines are generally regarded to have been among the richest silver mines in world history; richness in this context means that silver's cost of production was extraordinarily low. Thus, it was the relatively high market value of silver, relative to silver's low cost of production, which yielded enormous profits for key participants in the global silver industry. Since the Spanish Crown was successful in capturing the lion's share of the profits coming from New World mines, it became the most powerful and feared military force in Europe, despite anemic economic development domestically.

The story of low mining costs in Spanish America is well known, with the spectacular case of Potosi in Upper Peru no doubt the best-known and most dramatic

example. Not only were the mines of Potosi naturally rich in silver, but a series of cost-reducing technological innovations most famous of which was the mercury amalgam mining process periodically reduced production costs dramatically. Cost-reducing technological innovations were crucial in offsetting at least for a time the steady upward march of production costs due to exhaustion of silver deposits. As miners were forced to dig deeper and deeper, production costs naturally rose. Not only were easily reached deposits depleted, but also deeper mines implied problems with transportation, flooding, availability of air, and various other difficulties. Thus, cost-reducing innovations constantly battled cost-enhancing tendencies attributable to the inevitable exhaustion of mineral deposits in known mines. As long as the purchasing power of silver exceeded the cost of producing silver in New World mines, profitability was assured for the Spanish Crown and key commercial agents participating in the industry.

But why did not the international market value of silver decline more rapidly toward production costs, as rapidly as seems to be normal in other markets? In other words, why did the Spanish Crown enjoy extraordinary silver profits for an entire century, rather than perhaps for a decade or two? Our answer rests with developments on the other side of the world: The previously discussed silverization of China was the key. Representing one-quarter of the world's population, and having gradually converted both its monetary and fiscal systems to a silver basis by the1570s, the market value of silver within China rose to double its value in the rest of the world. As mentioned previously, the resulting arbitrage profits are what motivated merchants from throughout the world to ship silver toward the Chinese marketplace. Silver profits motivated the birth of global trade. The point to emphasize here is the following: In the absence of the immense demand for silver emanating from the Chinese marketplace, the international purchasing power of silver would certainly have fallen to production costs much more quickly than occurred in reality. But had silver's market value fallen more quickly toward silver mine production costs, then per unit profits would have shrunk more quickly in the silver industry. Shrinking silver profits would have had devastating financial consequences for the Spanish Crown. It seems certain that the Spanish Empire could not have become a global political power in the absence of silver profits. Silver profits depended upon a high market value for silver, and silver's high value depended in turn upon demand emanating

from within China. Thus, Chinese demand for silver played a key role in financing the Spanish Empire.

Even the immense demand for silver in the Chinese marketplace could not maintain silver's purchasing power indefinitely. A significant proportion of the tens of thousands of tons of silver produced in Spanish American and Japanese mines made its way into China and the global economy. This production was sufficient to eventually depress silver's market value even down to the cost of producing it in New World mines. World bimetallic ratios offer a perhaps the clearest indicator of this process: By approximately 1640 bimetallic ratios around the world had equalized (Atwell 1982, p.82; Kobata 1965, pp.254-255; Yamamura and Kamiki 1983, p.352). The market value of silver had finally fallen to its cost of production. Even in cases where silver production figures looked impressive by historical standards, high quantity numbers belie financial difficulties in the industry. For it is not the quantity of a product produced per se which matters, but the profit associated with the quantity.

Final collapse of the Spanish Empire occurred under Philip IV (1621-1665) in the context of the Thirty Years War (1618-1648) and the end of the Twelve Years truce with the Dutch. Spain's war with the Dutch was global, involving the Low Countries, the Americas, the Philippines and the Moluccas. Empire bankruptcy could no longer be bailed out by profits from American mines. Spain quickly descended to the level of a third rate power. It is not coincidental that war with France and attacks by the Dutch prompted both the Catalan revolt and Portuguese independence in 1640 (the year by which bimetallic ratios had equalized around the world). Evaporation of silver profits by this time precluded further defense of Spain's extensive global empire. Nonetheless, the rise and fall of the Spanish Empire is one of the most important and interesting developments in early-modern European and world history. The key role played by China in enabling the rise and gradual decline of the Spanish Empire helps us to more accurately locate the role of Imperial Spain in the context of an emerging global, rather than mere European, political and economic marketplace.

G. The Philippines as Imperial Profit Center in the 16th and 17th Centuries[9]

As has been pointed out previously, the Philippines offered Spain direct access to the lucrative Chinese marketplace. The Spanish Crown needed a gateway to China because the Dutch and Portuguese had already gained control of the other European access routes to and within maritime Asia. While Spain had managed to largely control the Atlantic leg of American silver's ultimate journey to China, in other words, control of the subsequent Europe-to-Asia legs of New World silver's global voyage was in the hands of non-Spaniards. Thus, non-Spaniards garnered a substantial share of profits from the global silver trade. But how could Spain circumvent other European middlemen?

Situated on one of the finest natural harbors in the world, Spain founded the city of Manila in 1571, an entrepot which came to serve as an ideal link for the exchange of American silver for Chinese silk. The Philippines facilitated the westward transshipment of more than fifty tons of Spanish-American silver annually throughout the seventeenth century; and two million pesos in Chinese silks simultaneously traveled eastward to the Americas via Manila. Because this direct Pacific route to China allowed Spain to circumvent Dutch and other European middlemen profiteers, Spanish commercial profits were attractive, ranging from 100% to 300% according to Legarda (1955, p.362). It was control of the Philippines that transformed Spain into a truly global geopolitical force. At least, this is the conclusion that follows when the Philippine Islands are viewed from a global perspective

The general historical consensus is that the Philippines were a massive financial drain for Imperial Spain during the 16th and 17th centuries, a view which obviously directly contradicts the conclusions outlined above. Instead, Spain's motivation for maintaining control of the Philippine Islands is almost universally claimed to have been based upon religious considerations:

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9 Flynn and Giráldez (1999), "Spanish Profitablity in the Pacific: the Philippines in the Sixteenth and Seventeenth Centuries" in Dennis O. Flynn, Lionel Frost and A.J.H. Latham, Pacific Centuries, Pacific and Pacific Rim History since the Sixteenth Centuries, London, Routledge, pp.23-37.

It was perhaps because Philip II of Spain was able to rely on a steady source of revenue from the Americas that he was willing to tolerate the losses sustained in the Philippines and magnanimously offer to make it the arsenal and warehouse of the faith. (Andaya 1992, v.1, p.357)

Similar opinions are expressed by historians of the Philippines such as Zaide (1979, p.324), Phelan (1959, pp.93-94), Legarda (1955, p.371), and Bauzon (1970, p.172) who depicts the Philippines as a profitless archipelago. These views are considered bolstered by the fact that it was necessary to send some 250,000 pesos annually from Mexico to the Philippines in the form of the situado, a payment often treated as a painful but required subsidy needed to maintain the Philippines.

Flynn and I argue against the conventional view that the Philippines represented a financial drain for the Spanish Empire. We roughly calculate net profits for the Crown at 218,000 pesos per year during the seventeenth century. Again, our calculations are based upon a global perspective on the silver trade.

One aspect of our argument is that 50% of the situado cannot be considered a subsidy at all because, as Bauzon (1970, p.290) has pointed out, the situado simply meant the income derived from the trading system It was distinctly and unmistakably not intended to be a subsidy, as the word situado came to mean in later years.the situado as income from the galleon trade [later] became half-subsidy and half-commercial income, with the Mexican treasury making up from its own financial resources what the galleon trade could not adequately produce. Thus, only 125,000 pesos of the 250,000 pesos annual situado are candidates for the label subsidy ; the remaining 125,000 pesos/year sent from Mexico to Manila were generated by the Acapulco-Manila trade itself.

But the Philippines islands were not subsidized at all via the Philippines situado. This situado did, however, finance Spain's battles with the Dutch over hegemony in Asian waters: Indeed, Dutch-Spanish friction in the Moluccas continued longer than in any other region of the world. (Israel 1982, p.336) We estimate that only 12.35% of the situado sent to the Philippines was actually used to cover expenses within the Philippines; the remaining 87.65% of the situado financed wars against the Dutch over the Moluccas. In other words, almost ninety percent of situado remittances merely passed through the Philippines. So, thus far we calculate that the Spanish Crown received 125,000 pesos in

annual taxes from the galleon trade itself (almojarifazgo taxes), but spent only 31,585 pesos per year in the Philippines. Without considering other factors, the Philippines already seem to have generated over 90,000 pesos in net annual revenues for the Crown. But there are other factors. .

Even during years of crisis, Lynch (1969, pp.164-65) and Hamilton (1934, p.34) have estimated the surplus generated for the Spanish Crown by America under Philip III and Philip IV remaining Crown revenue, after subtracting American administration and defense costs at roughly 1.15 million pesos per year. Since approximately 14.8 percent of American silver production was shipped to China via the Manila galleons, it is sensible to attribute 14.8% of this 1.15 million pesos per year surplus to the Manila galleon share of the surplus. This means that the Manila leg of the global silver industry generated about 170,000 pesos per year in indirect profits for the Crown; since smuggling may have been more pervasive in the Pacific than elsewhere, indirect profits have been arbitrarily reduced to 125,000 pesos per year.

In sum, the Philippines generated annual direct benefits of 125,000 pesos generated by almojarifazgo taxes on the direct trade itself, plus another 125,000 pesos in indirect benefits to the Crown. Subtracting out the 31,585 pesos that actually supported the Philippines, leaves a net profit of approximately 218,415 pesos annually for the Crown. The Philippines were a major profit center for the Spanish Crown, which explains why Spain continued to fight against the Dutch in Asian waters long after these antagonists had settled differences elsewhere in the world. Spaniards and the Dutch both recognized that a combination of the Spice Islands and Manila Bay would create an economic and political powerhouse. And each successfully denied such a combination to the other: Even during the truce, the cost of the [Dutch East India] Company's forts, garrisons, and battle fleet consumed most of the remittances sent from Holland as well as most of the profits of the Dutch inter Asian trade. (Israel, 1982, p.119) This costly stalemate notwithstanding, the Philippines comprised a tremendous profit center for the Spanish Crown. Economic profit not altruistic religious sentiment was the primary motivation driving Spaniards in the Philippines, just as economic considerations were Spain's prime focus in Mexico and Peru, the production sources of most of the silver that traversed the globe toward China.

H. Monetary Substances in Global Perspective[10]

This particular essay introduces a volume entitled Metals and Monies in an Emerging Global Economy (1997), which reprints sixteen articles on the world's four main monetary substances of the sixteenth through the eighteenth centuries: gold, silver, copper, and cowry shells. In order to encourage global thinking about monetary substances, each article was chosen on the basis of how its subject matter fits into one of the following three categories: (I.) Source areas, (II.) End Markets, or (III.) Intermediary Trade Routes. Once again, proper understanding of these monetary substances requires that each be viewed globally, and with analysis focused on the peculiar demand and supply determinants of individual substances.

Although Kobata (1965, p.248) admits that calculation of actual quantities of gold and silver production in Japan is impossible, he estimates Japanese silver exports at the beginning of the seventeenth century at the equivalent of about 8 million pesos per year. The composition of the Sino-Japanese and the Sino-Mexican trades was similar. Kobata reports that in the 1580s Chinese silk and silk textiles were Japan's most important imports via Macao, followed by gold. During the second half of the seventeenth century copper replaced silver as Japan's preeminent export, and again the most important market for Japanese copper was China.

The history of silver has been thoroughly discussed already, but many subtleties remain unexplored. It has been mentioned above that while silk was China's main export, China also exported substantial quantities of gold to Japan, to Mexico, and to Europe. Indeed, Supple (1964, pp.163-194) and Chaudhuri (1965, p.132) state that England probably imported as much gold between 1640 and 1642 as it exported silver. Still, Africa and America were the sources of most of Europe's gold imports, not Asia. African gold exports to Europe have been estimated at 200,000 pounds sterling annually over the interval 1500 to 1700. How did African gold tie in at the global level? It too was

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10 Flynn and Giráldez (1997) "Monetary Substances in Global Perspective: An Introductory Essay", in D.O.Flynn and A. Giráldez (eds.), Metals and Monies in an Emerging Global Economy. Aldershot: Variorum, pp.i-xl.

exchanged for American silver, in a manner suggested in a passage from Braudel (1972, vol.1, p.499):

> So Italy stood at the crossroads where the south-north axis maintained by Spanish policy and the Genoese asientos met the east-west axis running to the Levant and the Far East, where the golden road from Genoa to Antwerp met the silver road to the east.

The Spanish Crown needed European financiers to transfer gold to soldiers in Flanders, who always demanded at least part of their pay in gold. American silver was therefore exchanged for African gold in Italy, whereupon American silver headed off to China and African gold was forwarded to the Low Countries. African gold was exchanged for American silver. Silver was a crucial commodity connecting various trades because of powerful market forces emanating out of China.

While Africa is often mentioned as a major source of gold flowing northward to Europe, Africans were far more deeply involved in the matrix of global trade than is normally supposed. It is common knowledge that millions of African slaves were shipped across the Atlantic, for example, but few scholars have considered the global backdrop behind the exchange of African slaves for Peruvian silver along South America's Atlantic coast. Without the export of American silver, there would have been no commercial item with which to purchase the slaves. And without considering silver's demand side in China, one cannot make sense out of the massive exports of American silver. Thus, one cannot place the trans-Atlantic slave trade within a global network of trade without recognizing that the silverization of China was a powerful indirect stimulus to the trans-Atlantic slave trade.

Africa was also a huge importer of cowry monies from their primary source area, the Maldivian Islands, which also supplied cowries widely throughout Asia and the Middle East. Cowries were ultimately exchanged for African gold and slaves, but the silver trade played a key role and Europeans were middlemen once again. The Portuguese first brought cowries to Europe as ballast in 1515, whereupon the cowries were re-exported to West Africa. Profits were so great that the Dutch, English, French, and Germans subsequently entered the cowry trade. By 1720, Europeans were importing and re-exporting around a million pounds weight in cowries per year, equal to approximately one-third of the value of the 20,000 African slaves exported annually at that time.

Although the Maldives own cowry currency served as their sole money before and during the fourteenth century, in subsequent centuries cowries came to be supplemented, then supplanted in the domestic economy of the Maldives by the silver larin. One prominent Asian product, cowries, provides a partial answer to the puzzle of exactly what products were exchanged both directly and indirectly for the vast quantity of American silver flowing to China. It is doubtful that domestic Maldivian demand for silver could have matched her immense exports of cowry shells, so evidently the Maldives were caught up in a complex and convoluted trade matrix like in many other parts of the trading world.

So, hundreds of tons of silver flowed annually to the Far East including to the Maldive Islands themselves while hundreds of tons of cowries simultaneously flowed from South Asia. Africa's exports of slaves and gold were connected with imports of cowries and copper. The tie between Africa's slave trade and smuggled silver via the Rio de la Plata is easy to see on the American side; more difficult to detect are the gold-cowry-slave triangular trade connections with silver as the white metal passed through Europe on its voyage to China.

Japan's role as a globally significant silver source through two-thirds of the seventeenth century has already been noted. Japanese copper subsequently became increasingly prominent in intercontinental trade during the early modern period. Sweden was Europe's most important source of copper, but Japanese output was twice as large. (Glamann 1981, p.174) Although most of the Japanese copper remained in Asia, in 1658 some 500 tons of Japanese copper was exported to Holland. Since the seventeenth century is sometimes referred to as Europe's copper century in terms of monetary history, it is perhaps understandable that copper flowed to Europe from Asia. Since copper substituted for silver (e.g. in Europe) while silver was substituting for paper money (e.g. in China), it is not surprising that merchants reacted by shipping both silver to Chinese customers and copper to European buyers. These areas simply furnished the most profitable markets for particular products during specific time intervals.

Considering the prominent role of the Ottoman Empire in transshipping silver to Asia, surprisingly little scholarly attention has been devoted to study of Middle Eastern

trade linkages. It was mainly American silver which was re-exported through the Middle East, of course, as is made clear in this passage from Pamuk (1993, p.73):

The Middle East, however, was often a transit zone for these intercontinental flows. While the Ottoman government welcomed the arrival of large amounts of silver and silver coinage from the West, it could not prevent their outflow towards Iran and India, as the Empire continued to run deficits towards the East.

East of the Ottoman Empire, from Yemen and Persia to the Indonesian archipelago, coinage and media of exchange were silver-based: From the Red Sea to the Pacific whenever the [East India] Company's servants went (with the exception of southern India of course) they met with coins and moneys of account whose value was fixed in silver. (Chaudhuri 1975, p.347)

Some scholars claim that we have over-emphasized China as an end-market for silver, while ignoring the importance of India as a silver sink. And there can be no doubt that conversion of the tax system in the Mughal empire to silver, which spread southward through the seventeenth century, indicates widespread silverization in the Indian economy. Yet there is compelling indirect evidence that a substantial fraction of Indian silver must have continued on to China. During the late sixteenth century, for example, the gold/silver ratio ranged from 1:5.5 to 1:7.5 in Canton while simultaneously standing at 1:9 in India. (Habib 1982, p.367; Von Glahn 1996, pp.127-28) The high value of silver in China relative to India, buttressed by decades of archival research, has led Chaudhuri (1986, p.324) to conclude that: India was the penultimate destination of the American silver. For beyond South Asia there were still vast areas of Imperial China.

I. Future Research Projects

I am currently under contract to co-edit (with Dennis O. Flynn and James Sobredo) a volume tentatively titled European Entry into the Pacific: Spain and the Manila Galleons (Aldershot: Variorum, 2000). This volume will gather previously-published essays on the role played by the Manila galleons as linchpin for trans-Pacific trade from 1571 until 1815. Up to now, the collection of articles by Schurz (1959 p.193) is the only monograph dedicated to this subject. There are numerous studies on the role of Viceregal Mexico and Peru, as well as the economic histories of China, Japan, the

Philippines and Southeast Asia. Yet each tends to study its respective area as a coherent unit of analysis, rather than as parts of a larger trans-Pacific whole. Our goal is to provide a framework that will allow scholars to place their specific contributions within broad global and pan-Pacific perspectives, so as to both help integrate the work of existing scholarship as well as to suggest research questions which might otherwise be overlooked. Dennis O. Flynn and I are currently working on another book manuscript entitled The Silver Century, 1540s to 1640s, the purpose of which is to summarize our work on silver and the birth of global trade.

I am also working independently on a book manuscript titled "The Trade of the Philippines in the Seventeenth Century". The scholar working in this area has the advantage of a rich secondary literature on Philippine history. I will attempt to provide perspective for this literature by placing it within the context of exciting new scholarship emerging on the history of China, Japan, and Spanish America. Primary sources on the Philippines are also abundant and easily accessible. Catalogs and collections of documents related to the Americas and the Philippines published since the nineteenth century are available in specialized libraries. The Archivo de Indias in Seville remains the world's most important repository of documents relating to the history of the Philippines. It is already clear from my research at the Archivo de Indias that many sources relevant to my interests have not been studied in detail. In this regard, I will continue to study Hacienda documents, which allow the historian to trace the ups and downs of the legal trade of the Philippines; these documents formed the basis of the research of Pierre Chaunu, but I believe that a closer look will prove instructive.

Located also at the same archive, the juicios de residencia of the governors of the Islands are also a rich source of information about the economic history of the Philippines, one which has not been carefully studied despite containing useful information on a wide range of matters pertinent to my interest in Philippine trade.

Contrary to popular and scholarly misconceptions that tend to minimize the role of the Philippine Islands, in point of fact, the Philippines formed a crucial linkage in the birth of a global economy in the late sixteenth century. Globalization is distinctively not a twentieth-century phenomenon. I hope that my future research will elucidate a small, but

important segment of the world's five-century evolution toward the complex web of global connections within which we all live today.

A dissertation in History is always the result of a long process of learning. In my personal case the process has taken detours and routes somewhat unusual. I would like to remember the people that along the way have help and encouraged me. Among my professors I would like to thank Prof. Felipe Arias and Prof. Dr. Hermelindo Portela from "Universidad de Santiago de Compostela". In their classes I began to learn what the historian's craft is. At the "Universidad Complutense de Madrid" Prof. Dr. Jose Cepeda Adan, and Prof. Dr. Jose Alcala-Zamora y Queipo de Llano taught me Modern History of Spain and Europe, Dr. J. Urbano Martinez Carreras was the supportive director of my thesis of "Licenciatura" and Prof. Dr. Juan Perez de Tudela taught me Methodology of History and always encouraged my intellectual development with patience and generosity. Professor Dr. Jacobo Munoz in the Philosophy Department shared with me in his classes and conversation his great knowledge of history of philosophy of contemporary Europe. At the University of California at Santa Barbara my doctoral dissertation in Hispanic Languages and Literatures was directed by Professor Dr. Juan Bautista de Avalle Arce. I learned a great deal of literature and cultural history in his seminars and conversations as Dr. Jorge Checa's seminars gave me a deep understanding about the cultural life of the seventeenth century. In more recent times Prof. Dr. Andre Gunder Frank , Prof. Dr. Anton Block and Dr. Fred Spier at the University of Amsterdam have been very encouraging throughout the process of presenting my dissertation t at their University. They are models of intellectual generosity and kindness. Special mention is deserved by Prof. Dr. Leo Noordegraaf, from the beginning he has been the best "promoter:" any doctoral candidate could expect. His suggestions have been always opportune and intelligent. Without him this undertaking would have been impossible. At the University of the Pacific in California the collaboration with my colleague Prof. Dr. Dennis O.Flynn has been a n inspiration and a great support in difficult moments and he has encouraged me to pursue my doctoral studies in history. I owe him a great debt of learning and friendship. This dissertation is a way to say to all of this persons thank you very much for your teaching, support and friendship. Mr. Robert Heggen never taught me

history, however, without his skills with computers and word processing this dissertation was at risk of disappearing in a cybernetic chaos. I am immensely thankful to him.

My wife Susan Giraldez has always given me support and encouragement in my scholarly pursuits. She was very convincing when I was pondering the idea of working in my second doctorate. My wife and my daughters Elvira and Rachel always have great patience with the time that my research requires, without them I doubt very much that I would be at this point in my intellectual life. My mother Manuela Rivero Prieto and my father Arturo Giraldez Alverez gave me the most generous support in my studies since I was a child . To the memory of my father and to my mother, my wife and daughters, Elvira Giraldez and Rachel this dissertation is dedicated.

Chapter 1. Born with a 'Silver Spoon': World Trade's Origin in 1571

A. Introduction: The Birth Of Global Trade

C.R. Boxer (1969, p.17) has described the birth of world trade in the following terms:

> Only after the Portuguese had worked their way down the West African coast, rounded the Cape of Good Hope, crossed the Indian Ocean and established themselves in the Spice Islands of Indonesia and on the shore of the South China Sea; only after the Spaniards had attained the same goal by way of Patagonia, the Pacific Ocean and the Philippines -- then and only then was a regular and lasting maritime connection established between the four great continents.

Although Boxer does not pick a specific date for the birth of global trade, his logic leads us to choose 1571 -- the year the city of Manila was founded. Manila was the crucial entrepot linking substantial, direct, and continuous trade between America and Asia for the first time in history.

For our purposes, 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 the trading partners. It is true that there was an important intercontinental trade before 1571, but there was no direct trade link between America and Asia, so the world market was not yet fully coherent or complete. In order to understand the global significance of the direct Pacific trade between America and Asia -- international trade history's "missing link" -- it is useful to first discuss the underlying economic forces which motivated profitable world trade in the early-modern period. The singular product most responsible for the birth of world trade was silver.

B. The Role Of Silver In Creating A World Market

More than any other commodity, it was the silver market which explains the emergence of world trade. China was the dominant buyer of silver. On the supply side,

Spanish America (Mexico and Peru) erupted with unprecedented production of the white metal.

Conservative, official estimates indicate that Latin America alone produced about 150,000 tons of silver between 1500 and 1800 (Barrett, 1990, p.237), perhaps exceeding 80% of the entire world's production over that time span. (Cross, 1983, p.397) Despite America's dominance in silver production over three centuries, Japan may have been the primary exporter of silver to China in the late-sixteenth and early-seventeenth century period, shipping perhaps 200 tons per year at times, but falling off dramatically in the second half of the seventeenth century. (Innes, 1980, Chapter VI)[11]

> [T]he amount of Japanese silver poured into foreign trade in the heyday of Japan's overseas trade, 1615 to 1625, through Japanese, Chinese, Dutch, Portuguese and other ships, reached tremendous value, roughly estimated at 130,000-160,000 kilograms -- equal to 30 or 40 percent of the total world silver production outside of Japan. This explains why European and Asian merchants were so enthusiastic about developing trade with Japan. (Seiichi, 1976, p.10)

The central point is that all of the great silver mines in both hemispheres sold ultimately to China. Over a period of three centuries, Spanish America dominated on the supply side, but Japan may have been China's primary source of silver in the late-sixteenth and early-seventeenth centuries.

We intentionally emphasize the role of China -- and its tributary system (Hamashita, 1988) -- in the silver trade because the literature in general neglects this pivotal country, certainly in terms of recognizing China as a prime causal actor. The literature on New World treasure is huge and multifaceted -- sometimes focusing on sixteenth-century price inflation (the Price Revolution),[12] and/or the rise and fall of

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11 According to the calculations made by Barrett (1990, p.225), Japan may have produced about 30% of the world's silver in the sixteenth century and around 16% in the seventeenth century.

12 For an overview of the main theoretical arguments of the Price Revolution literature, see Outhwaite (1969), Ramsey (1971), Flynn (1977, Chapter II), Flynn (1984a), and Flynn (1984b).

Spain,[13] and/or the transition from Feudalism to Capitalism,[14] and many other issues -- but the literature is unified in one central respect: It focuses virtually exclusively on Europe as the fulcrum. Europe is considered the epicenter of early-modern commercial activity. The sixteenth-century Price Revolution, for example, is mostly thought of in terms of European price inflation, when in reality it was a global phenomenon. In a remarkably clear summary of China's participation in the global Price Revolution, on the other hand, Geiss (1979,p. 144) provides an exception to the normal Euro-centric focus:

> In the late sixteenth century, however, when silver from Mexico and Japan entered the Ming empire in great quantity, the value of silver began to decline and inflation set in, for as the metal became more abundant its buying power diminished. This inflationary trend affected the values of all commodities; everything had been valued in silver and silver lost its value. Ramifications of this change touched the lives of almost everyone in the empire.

Europe's Dutch and English East India Companies are often viewed as prototypes of modern multinational corporations. The literature recognizes that huge quantities of silver flowed to Asia, of course, but this phenomenon is considered a reflection of Europe's balance-of-trade deficit with the Far East; Europeans developed a far greater taste for Asian finery than the other way around, according to conventional wisdom, so treasure had to flow West-to-East to pay for Europe's trade deficit. In short, all of the key issues are normally framed in terms of European perspectives.

Acceptance of a global perspective, rather than the predominant Euro-centric view outlined above, yields a startlingly different vantage. It becomes clear that Europeans did indeed play an important role in the birth of world trade, but the role was that of middlemen in the vast silver trade; they were neither prime movers on the supply side (except Spain in America) nor on the demand side of silver's worldwide market.

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13 See Hamilton (1937), Elliott (1961), Kamen (1964), Gordon (1975), Kamen (1978), Israel (1981), Kamen (1981), Flynn (1982).

14 Hamilton (1929), Keynes (1930, Vol II), Nef (1936), Hamilton (1952), Felix (1956), Nadal (1959), Wallerstein (1974), Brenner (1977), Hunt (1978), Flynn (1984).

Europeans were intermediaries in the trade between the New World and China. Massive amounts of silver traversed the Atlantic. After it had reached European soil, the Portuguese in the sixteenth century and Dutch in the seventeenth century became dominant distributors of silver via a multitude of routes into Asia. Attman conservatively estimates that 150 tons of silver passed through Europe into Asia on an annual basis.

The country which reigned supreme in arranging solutions for the deficit problems in world trade was Holland, acting mainly on her own behalf in the Baltic area, the Levant and Asia, but also acting for other nations. Even when other countries needed precious metals Holland acted in many cases as a clearing centre and in the final stage as an exporter of precious metals. But the bulk of the precious metals required for the Asian trade came from Europe round the Cape. (Attman, 1986, p.6)

It is worthwhile to reflect momentarily on Attman's estimate of 150 tons of exported silver per year from Europe to Asia. Attman stresses that (1) his estimates include only specie shipments (i.e. bullion is excluded from consideration) and (2) that he has studied only port records (i.e. overland trade is excluded). If Attman were to have included bullion shipments via ports, as well as specie/bullion shipments over land routes, his estimate of West-to-East silver flows would have been far greater. He warned readers of the conservative and partial nature of his estimates, but scholars rarely acknowledge this when citing his figures.

The Pacific leg of the China trade has not received the attention it deserves. Writing of the period 1571-1620, John J. TePaske says that the quantity of silver passing over the Pacific -- especially out of Acapulco and through Manila on its way to China -- was enormous:

> Mexican silver also flowed out to the islands in large sums, far exceeding the 500,000-peso limitation. In fact at the opening of the seventeenth century the drain of pesos from Mexico to the Orient through the Philippines was estimated at 5 million pesos [128 tons] annually, with a reported 12 million pesos [307 tons] being smuggled out in 1597. (TePaske, 1981, p.436)

These are shocking figures because this alleged average of 5 million pesos (128 tons/yr.) over the Pacific, at the turn of the century, is only 15% less than the 150 tons minimum that Attman says Europe shipped to Asia on an annual basis. Moreover, the 12

million pesos [307 tons] in 1597 is more than double Attman's estimate of the entire European leg of silver's journey to China. These may seem like fantastic figures to some, but Barrett (1990, p.236) has pointed out a glaring discrepancy between Spanish American production figures and estimated exports to Europe: Production seems to have exceeded exports to Europe by 5.5 million pesos (135 tons) per year. Barrett reasons that this 5.5 million pesos must have either remained in America or been exported through the Philippines.[15] It will become clear in the next section that exportation of such a vast amount of silver via Manila makes sense in global terms, while its retention in the New World does not.

How has the Philippines trade been perceived by Asian scholars? Using the Blair and Robertson collection of primary sources, Chuan (1969, p.79) estimates that at least 50 tons of silver (2 million pesos) passed over the Pacific annually throughout the seventeenth century; silver shipments did not decline slightly after 1620 and precipitously after 1640, as previously argued by Chaunu (1960, p.250).[16] How significant is 50 tons in relative terms? Fifty tons of silver equals the average annual exports to Asia by Portugal plus the Dutch and English East India Companies combined in the seventeenth century. (Flynn and Giraldez, 1994a) Fifty tons of silver was also the amount that shipped via the entire Baltic trade (the Russian and Polish-Lithuanian markets), according to Attman (1986, p.81). It is interesting to contrast the historiographic notoriety of the Portuguese trade in combination with that of the East India Companies, as opposed to the Manila Galleons on the Pacific side; each may have shipped approximately equal quantities of silver annually, yet the Pacific trade is rarely mentioned.

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

16 Pierre Chaunu's conclusions were based on study of the "almojarifazgo" duties, which covered only the taxed portion of the trade. It is widely known that smuggling ran rampant in the Manila trade, however, and sources from the Asian side of the Pacific provide estimates of silver exports far in excess of Chaunu's numbers. (Flynn and Giraldez, 1994a)

Manila had no purpose other than the silver-silk trade. That city contained 42,000 inhabitants in the middle of the seventeenth century (Wolf, 1982, p.153), approximately the same population as Barcelona, Danzig, and Marseille, and other cities with broader-based economies. (Mols, 1977, pp.42-43)(de Vries, 1984, Appendix 1) Seventy percent of its inhabitants were Chinese (30,000), while Spaniards comprised most of the rest.[17] Silver's Pacific route to China was Spain's only avenue for entry into the lucrative Asian marketplace because the trade out of Europe in the sixteenth and seventeenth centuries was initially controlled by the Portuguese and subsequently by the Dutch. Spain's Manila Galleons initiated the birth of Pacific Rim trade some 420+ years ago.

Euro-centrism predisposes us to imagine that the East India Companies injected dynamism into backward Asian economies in the early-modern period. Recent scholarship (Hamashita, 1988, for example) suggests that the European Companies simply plugged into the pre-existing network of intra-Asian trade. The export of Japanese silver provides a good example of this process. As was the case in the West-to-East trade, first the Portuguese -- in competition with Chinese junks and Japanese red-seal ships -- and then (after 1639) the Dutch played the role of intermediaries in this crucial Sino-Japanese trade. Again within Asia's marketplace, the European role is most accurately portrayed as that of middlemen, not prime movers. Europeans were important, but potentially disposable, intermediaries who could be -- and in the case of the expulsion of the Portuguese from Japan in 1636, were -- replaced at the convenience of Asian trading partners.

C. China: The World's Silver Sink

Silver's early-modern production and distribution in the Western Hemisphere has been studied extensively, but the world's biggest end-customer, China, is routinely eliminated from the story. This is peculiar. Nobody would think of analyzing, say, the world oil industry today without paying considerable attention to the major oil-importing

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17 There were thousands of Japanese in Manila too, including Japanese Catholics fleeing persecution at home. Spaniards feared a Japanese "fifth column" within the Philippines, however, and expelled large numbers of Japanese several times. (Innes, 1980, p.59)

industrial regions; China's dominance as a silver-importer was arguably at least as pivotal during the birth of world trade as is the industrial world's dominance as oil-importer in today's global marketplace. Godinho (1963,I,pp.432-465) aptly describes China as a "suction pump" (bomba aspirante), a "vacuum cleaner" which attracted silver globally for centuries. Surprisingly, few scholars have continued to investigate the nature of China's metamorphosis into a seemingly-bottomless silver sink, Atwell (1977) (1982) (1986) (1988) providing perhaps the most consistent exception to this bias.

The market value of silver in Ming territory was double that of elsewhere. This fact is reflected in the bimetallic ratios reported in Chuan (1969, p.2): "From 1592 to the early 17th century gold was exchanged for silver in Canton at the rate of 1:5.5 to 1:7, while in Spain the exchange rate was 1:12.5 to 1:14, thus indicating that the value of silver was twice as high in China as in Spain."

Divergent bimetallic ratios created tremendous prospects for profitable arbitrage trade. Economic theory predicts that gold should have flowed out of China, where it was undervalued relative to the rest of the world, in exchange for Japanese and Western silver, which was relatively overvalued in China compared with the rest of the world. This is precisely what happened from the middle of the fifteenth to the middle of the seventeenth century. (Chaudhuri, 1978; Flynn, 1986). It is crucial to focus on silver in order to understand the underlying motivation of world trade: It was the elevated value of silver inside of China that created the opportunities for profit around the globe. Rather than see the East-to-West flow of silver as a reaction to Europe's trade deficit with the Orient, we contend that the cause of the trade centered in China and its tributary system. Demand-side causation was of Asian origin, to which the rest of the world reacted.

How can we be confident that the arbitrage argument outlined above is superior to the traditional European-trade-deficit hypothesis? The trade-deficit argument says that "money" would have to have been transshipped to Asia in order to cover the trade imbalance. "Money" here refers to all types of high-value coins containing internationally-recognized intrinsic content, such as gold and silver. However, we have already established that gold and silver did not travel jointly into the Asian marketplace as a balancing item called "money." New World silver did indeed travel from Europe to Asia, but it crossed paths with gold coming the opposite direction -- out of Asia and into

the West. Abstract "money" did not balance a trade deficit in the passive way commonly portrayed in the literature; it was a specific commodity -- silver -- which traveled to Asia, not gold. Gold was one of the products for which silver exchanged. The cause of this trade rests with developments endemic to the silver market, not to developments in non-silver markets. Moreover, the exchange of silver for gold was not a Europe-versus-Asia issue in any case. Japanese silver also flowed to China in exchange for Chinese gold which flowed into Japan, for exactly the same reasons that gold flowed to the West. In sum, Europe was not the causal center in early-modern trade; moreover, the East-versus-West "trade imbalance" was not the mechanism driving world trade. There was in fact no "trade imbalance" for which to compensate, so long as we recognize that silver itself was the key commodity distributed globally and that it was exchanged for items -- mostly silk and porcelain, but also gold -- from the Asian mainland. Causation was located in the silver market itself, with America and Japan anchoring the supply side and China dominant on the demand side.

China's metamorphosis from a paper-money system (dating from at least the eleventh century) to a silver-based economy was crucial. Overissue of paper money in China reduced the value of this fiduciary medium to virtually nothing by the middle of the fifteenth century. (Gernet, 1982, p.415) Daily commerce required a medium of exchange to replace the worthless paper money, of course, and it was specifically silver which evolved as the metal of choice. Gold was too valuable for normal-size transactions. Copper coinage was a candidate for monetary preeminence. Geiss (1979, p.155) explains silver's defeat of copper in a passage worth quoting at length:

The value of the coin lay in the metal, not in the mint. In that respect copper coins were hardly different from silver; each was valued as a piece of precious metal. While silver could, if necessary, be assayed for purity, copper coins could not. To assay a copper coin entailed its destruction. The only way to ascertain the copper content was to melt the coin, and this would defeat the purpose of coining money. But with coins of varying weight and metallic content in circulation, setting a price in copper coins became a tricky business. The rice merchant would have to specify what kind of copper coin he had in mind, each had a different value in the marketplace, and the price of the merchant's rice depended on the type of coin offered in payment. How much simpler to set the price

in silver, and that in fact is what happened. Silver came to be the preferred medium of valuation and exchange.

The explanation of Geiss is straight-forward and compelling. Silver's gradual "conquest" of the Chinese economy may seem relatively innocuous to some at first glance -- just another detail in 'area studies' -- but this development in fact altered the fundamental direction of international commerce. It also influenced the structure of power among nations throughout the world.

The Ming tried repeatedly to retard the intrusion of silver into (and from) the coastal centers of merchant power. Silver's penetration was irresistible, however, and local governments in maritime regions began specifying that taxes be paid in silver. Gradually Ming rulers abandoned resistance to silver and implemented the Single-Whip tax system around the 1570s. (Huang, 1974) (Liang, 1970) The Single-Whip system specified two things: First, myriad existing national levies were consolidated into a single tax; second, the "single whip" specified that all tax payments were to be made in the form of silver. Considering that China contained perhaps one fourth of the earth's population by the seventeenth century, with urban centers of up to one million inhabitants (five to seven times greater than the largest cities in Western Europe), the "silverization" of China could not help but have global ramifications.[18] In fact, China's tributary system also converted to silver, so we are talking about far more than one-quarter of the globe's population. Conversion of the world's largest economic entity to silver caused silver's value to skyrocket in China relative to the rest of the world.

The early-modern world silver trade involved structural transformations which penetrated much deeper than the mere movement of a couple hundred thousand tons of the white metal to its most lucrative market. The process yielded prodigious profits for key individuals and institutions. From mines in the Andes and Japan to the streets of China, the motive force at each stage of the trade was, of course, profit. European middlemen profited mightily from intercontinental trade and perhaps even more from the

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18 Demand for silver along China's coastal region alone must have been significant considering that Nanking contained over one million inhabitants and Peking around 660,000 in the late Ming period. (Rodzinski, 1979, p.201)

inter-Asian trade linkages, but the truly grand profiteers in the silver saga were those entities which controlled the centers of its production, namely Imperial Spain and the Tokugawa Shogunate. Conversely and ironically, the silver trade may have contributed indirectly to the overthrow of the Ming Dynasty.

D. Silver And The Power Bases Of Imperial Spain, The Tokugawa Shogunate, And Ming China

The richest silver mine in the history of the world was discovered at over 15,000 feet in the Andes in Potosi (present-day Bolivia), a one-way journey of two and one half months via pack animal from Lima. Nothing grew at that altitude, so there was no population at the time of silver's discovery in 1545. During the ensuing sixty years, Potosi's population swelled to 160,000, equal (or nearly equal) to that of London or Paris (Western Europe's largest cities).[19] This would be the modern-day equivalent of, say, 20 million people moving to a spot on Alaska's North Slope. Evidently something unusual was going on in Potosi.

Potosi's cerro rico ("rich mountain") may have produced 60% of all the silver mined in the world in the second half of the sixteenth century.[20] Its veins were incredibly rich. In addition to naturally bountiful deposits, a series of new production technologies -- the most famous being the mercury amalgam "patio process" -- combined to render Spanish American mines the world's lowest-cost sources of silver. (Jara, 1966) In sum, the lowest-cost argentiferous mines in history were discovered and developed in Spanish America during the second half of the sixteenth century. This supply-side phenomenon was particularly fortuitous because it coincided chronologically with the extraordinary elevation in silver's value caused by the Chinese demand-side forces culminating in the Single-Whip tax reform discussed above. The combination of (1) low supply-side

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19 See deVries (1984, Appendix 1).

20 Cross (1983, p.404) states that "(d)espite the decline of Potosi, beginning in the 1640's, the viceroyalty of Peru accounted for 60 percent of the world's silver production in the 16th and 17th centuries."

production costs in the West and (2) (Chinese-led) demand-side elevation in silver's value in the East, generated probably the most spectacular mining boom in human history. It was solely this enormous profit per unit of silver (PR*) at the cerro rico which induced 160,000 people to migrate to such an inhospitable location at three miles altitude in the Andes.

No entity reaped greater rewards from the silver industry than the Spanish Crown, which wisely allowed favored "private sector" entrepreneurs to operate New World mines, rather than attempting to do so itself.[21] Instead, the Crown took a substantial fraction of mining profits via taxes. The most famous tax was the quinto, a twenty percent severance tax on gross value, but there were many indirect taxes as well.[22] According to Hamilton (1934, p.34), 27.5% of total registered precious metals entering Seville between 1566 and 1645 belonged to the Crown of Castile.[23] Revenues from overseas mines provided the fiscal foundation for the Spanish Empire.

Spain was a small country of perhaps seven and a half million inhabitants by the middle of the sixteenth century, half the size of France. (Elliott, 1961, p.57) Elliott (1961, p.62) has described Castile of 1600 as "an economy closer in many ways to that of an East European state like Poland, exporting basic raw materials and importing luxury products, than to the economies of West European states." Other historians classify Spain as backward domestically, substantiating the observation that the financial foundation of

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21 The Crown did directly control the famous mercury mines near Huancavelica on the Peruvian coast. Potosi's resurgence after 1573 was attributable to the reforms enacted by Toledo, which included successful adoption of the mercury-amalgam mining process. (Cross, 1983, p.402)

22 For discussion of the quinto, which frequently amounted to far less than 20 percent in reality, see Brading and Cross (1972).

23 Note that the 27.5% of shipments belonged to the Crown represents far more than 27.5% of the total profit. Much of the Crown's revenues could be considered "profit," while huge costs had to be subtracted from private receipts before arriving at private net profit.

the Spanish Empire was based on resources outside of the Iberian Peninsula.[24] Mine profits were enormous and there was no comparable profit center elsewhere, so we conclude that the New World mines supported the Spanish Empire. (Flynn, 1982)

This view of Spain leads to surprising, but inevitable conclusions. We have already established that domestic developments inside of China elevated the value of silver in world markets far beyond what it could have been otherwise. The largest beneficiary of silver's high value must have been the Spanish Crown, the institution which reaped enormous profits via its control and taxation of the low-cost New World centers of production. The silver-industry profits which financed the Spanish Empire were huge because China had become the world's dominant silver customer. This implies that ultimately China was responsible for a power shift within early-modern Europe. In the absence of the silverization of China, it is hard to imagine how Castile could have financed simultaneous wars for generations against: (1) The Ottomans in the Mediterranean, (2) Protestant England and Holland, and the French in Europe, the New World, and Asia, and (3) confrontations with indigenous peoples in the Philippines. China unintentionally financed the Spanish Empire by creating profits for Spain's silver industry.

Even giant China could not prop up Spain indefinitely. As tens of thousands of tons of silver accumulated on the Asian mainland, its value gradually fell there (as it had already been doing in the West and Japan) toward its cost of production. Imports would eventually glut even China's vast silver market. Figure 2 depicts the gradual decline in silver's value on the Asian mainland. We know that this portrayal of silver's loss of value is accurate because by about 1635 it took about 13 ounces of silver to buy and ounce of gold in China, while a half century earlier 6 ounces of silver would do the job. (Geiss, 1979, p.165) Silver also fell relative to other things (not just gold), which is to say that price inflation occurred:

In the late sixteenth century,...when silver from Mexico and Japan entered

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24 Scholars such as Elliott (1961) and Lynch (1984, II, p.i) have long emphasized both external and domestic foundations of the Spanish Empire. For a more complete discussion of why we believe that the foundation of Empire was external, not domestic, see (Flynn and Giraldez, 1995b).

> the Ming empire in great quantity, the value of silver began to decline and inflation set in, for as the metal became more abundant its buying power diminished. This inflationary trend affected the value of all commodities; everything had been valued in silver and silver lost its value. Ramifications of this change touched the lives of almost everyone in the empire. (Geiss, 1979, p.144)

As silver lost value, it makes sense that more silver money was required to purchase items that had maintained their value. Price inflation is defined as the surrender of more pieces of money for a given set of items, so the descent of silver to its cost of production is what ultimately caused prices to inflate in China to about the same extent as in Europe and elsewhere. (Cartier, 1981, p.464; Geiss, 1979, pp.159-64, 198; Goldstone, 1991, p.360)

Silver's unavoidable fall in value is a crucial issue because each year that it descended closer to its cost of production in America, profit per unit of silver also shrank. Declining profits were not due to inefficient operations; rather, they were the inevitable result of the laws of demand and supply.(Doherty and Flynn, 1989) The existence of arbitrage profits motivated the trade, and the trade itself, in turn, led to the elimination of such profits. Faced with declining profits from its silver industry, Castile simply could no longer afford its vast empire. China contributed mightily to the duration of the Spanish Empire, but even China's prodigious demand for silver could not prevent the eventual erosion of mine profits and therefore the decline of Spain. Spanish American silver production may have peaked in the 1590s, but large production coupled with vanishing profits per ounce of silver still implied a vanishing overall profit level by this time. (Flynn, 1982, p.142)

Historians tend to focus too much attention on the quantity of silver shipments, while the participants themselves only cared about the profits associated with the trade. A standard business joke today poses the declaration of a boss: "Since we are losing money on each item sold, we simply must make up for it in volume!" Spain experienced multiple bankruptcies in the late 16th and early 17th centuries, during a time of record silver production, because the value of each unit of silver continued to decline. When profit per unit of a product declines to zero, multiplication of zero per-unit profit times any quantity of output must yield zero total profit; Spanish-American mines were not yet yielding zero profits per unit of product, but the trend was clearly in that direction. Silver's declining

value impacted the Crown so profoundly that interest payments on Castile's federal debt alone -- "the equivalent of at least 10 years' revenue" by 1623 (Parker, 1979, p.188) -- eventually exceeded total Crown receipts. Spain vanished as a serious Western power as its silver basis eroded, but the Iberian surge to power had been lengthy and impressive. We simply wish to point out that Spain's Empire owed its financial foundation to distant Ming China, where internal forces generated a silver monetary system and the Single-Whip tax reform. Much of what passes for local history in the early-modern period can only be understood in terms of world history.

Since China's hunger for silver altered the balance of power in the West by transferring huge profits to the Spanish Crown, it is logical to suspect an Asian power shift as a result of the inter-Asian trade in silver. The laws of supply and demand apply on all continents. Mention has already been made that China's primary source of silver in the late-sixteenth and early-seventeenth centuries was Japan, which shipped as much as 200 tons per year at times. (Innes, 1980, especially Chapter VI; Tashiro, 1986, p.2) Contrast this figure to the conservative average estimated by Attman (1986, p.78) of 150 tons of silver flowing annually through Europe and into Asia in the seventeenth century. Who captured the Japanese mine profits and what became of them?

The Tokugawa Shogunate provides an interesting example of East-West comparative history because, like the Spanish Crown in America, it gained control over Japanese silver mines (Tashiro, 1986, p.3) and sold to China. Flynn (1991) has argued that profits from silver mines financed the defeat of hundreds of rival feudal lords (daimyos), thereby permitting the consolidation of Japan. The Shogun was forced to align himself with the merchant class, creating an indigenous market-based economy with Asian (not Western) roots. Unlike Spain, the Tokugawas invested heavily in agricultural and urban infrastructure. Japan not only succeeded in withdrawing from the Chinese tributary system, but even sent hundreds of thousands of troops in an unsuccessful attempt to conquer China.

Europeans were important middlemen in the Sino-Japanese silver trade, with Japan as the dominant supplier and China the end-customer. It is ironic that China's demand for Japanese silver generated the profits used by the latter to withdraw from China's tributary system. With the help of profits from her silver mines, Japan established

commercial capitalism in Asia at roughly the same time that capitalism was taking root in Northwest Europe. Capitalism's Japanese track evolved independently from, and almost simultaneously with, the track evolving in Northwest Europe. Japan used mining profits to establish commercial capitalism in Asia. In contrast, Spain used mining profits to attack the emerging capitalist powers of Northwest Europe. It is difficult to imagine how either one of these developments could have occurred in the absence of Chinese demand for silver.

What about the impact of silver on China itself? Atwell (1977) (1982) (1986) (1988) has long argued that American silver played a critical role in the commercial and political evolution of domestic China. Basing his argument on Geiss (1979), Goldstone (1991, p.371) has challenged Atwell's emphasis on forces external to Asia (i.e. American treasure), insisting instead that inter-Asian factors explain structural changes within Ming/Qing China. Goldstone says that domestic price inflation in late-sixteenth and early-seventeenth century China destroyed the financial basis of the Ming Dynasty. Taxes formerly paid in rice had been converted to payments in terms of a fixed quantity of silver. But over a period of a century, silver itself had lost two-thirds of its value. Even if the quantity of silver collected were to have increased during the late-Ming period, the purchasing power of silver taxes definitely declined. The fiscal foundation of the Ming Dynasty eroded because China's tax revenues declined continuously in terms of purchasing power. Institutionalization of fixed silver taxes during an era of global price inflation (in terms of silver) may have created a fiscal crisis on the Asian mainland which led inexorably to overthrow of the Ming (accomplished by the Manchus in 1644).

According to the view of this essay, the core arguments of Atwell and Goldstone are not incompatible. Along with its Japanese counterpart, American silver contributed mightily to developments inside of China. On the positive side, America and Japan were instrumental in the victory of a rising merchant class which succeeded in converting China to a silver zone. Unhappily for the Ming Dynasty, however, fixing taxes in terms of silver may have created a fiscal crisis which led to the emergence of the Qing Dynasty.

E. Summary And Conclusions

Truly global trade dates from the founding of the city of Manila in 1571, which formed the first direct and permanent trade link between America and Asia. From this date forward, all heavily populated continents traded with each other directly and indirectly in substantial volumes. Silver was the sine qua non of this global trade. Spanish America was the source of an estimated 150,000 tons of silver between 1500 and 1800, comprising perhaps 80% of world production. The second-leading source of silver was Japan, responsible for around 30% of world output in the sixteenth century and perhaps 16% in the seventeenth century. Not coincidentally, entrepot Nagasaki was founded at virtually the same time as was entrepot Manila. Silver was shipped to China, the world's dominant end-customer, regardless of whether it was produced in Asia or in the West. Much American silver traversed the Atlantic Ocean, passing through Europe on its journey to Asia. Europe exported at least 150 tons of silver annually to Asia, a significant portions of which passed through Amsterdam. Attman has been most vocal in calling attention to the Baltic route, which carried Eastward at least 50 tons per year. Traditional Mediterranean/Levantine trade routes carried vast quantities of silver too, but the Cape route was biggest of the three. Direct trade out of Acapulco, through Manila, and on to China has been mostly ignored in the literature, despite evidence that 128 tons annually may have shipped via Manila in the late sixteenth and early-seventeenth centuries (and 307 tons in 1597, according to one solitary source). Recent research seems to indicate that the Manila trade did not drop off after the 1620s or the 1640s, Pierre Chaunu's (1960) claims notwithstanding. The tremendous volume of unofficial trade (smuggling) rendered official figures misleading. Chuan (1969) indicates that the Pacific leg of silver's journey carried over 50 tons of silver per year throughout the seventeenth century, equal to the combined European shipments of Portugal and the Dutch/English East Indies Companies.

The conventional explanation of this West-to-East flow of "money" is that Europe had to send treasure to Asia because the West had to settle its trade deficit with the East. Europeans liked Asian silks, spices, and porcelain, but Easterners had not yet developed an appreciation for European wares. This conventional view is flawed for at least three reasons. First, it was not "money" nor "treasure" which flowed out of Europe. It was silver, not gold, which was attracted to Asia; Asian gold and sometimes copper (both

"money" substances) flowed the opposite direction into Europe. It is best to look at factors affecting the supply and demand for silver in its own right, rather than confusing the issue by aggregating this unique substance with other metals as "money," which is alleged to have played a passive, reactive role. The second flaw has to do with the role of Japan. Japan was the Asian counterpart to America (site of production) and Spain (country controlling production) combined. We prefer to focus on the supply-side and the demand-side of the silver industry (irrespective of which hemisphere contained centers of production), rather than to visualize global trade as an abstract East-West issue. A third flaw has to do with a basic anomaly in the conventional view's treatment of America. Since treasure is alleged to have flowed from Europe to Asia because of a European trade deficit, then why has the Pacific trade not been explained in the same terms? We know of no one who argues that the Manila Galleons carried huge quantities of treasure to Asia because of America's insatiable appetite for Asian goods, which in turn caused an American trade deficit with Asia. Why not frame the American side of the issue in the same terms as the European situation? The point is that depicting precious metals as passive "money" which adapts to trade imbalances diverts attention from the central issues. Silver was produced for profit. It migrated from points of production (Japan and America) to end-customers (mostly in China). Developments within China have mostly been ignored in the diverse literatures dealing with global precious metals flows and early-modern price inflation, yet China was the pivotal country. International business entities would not have shipped tens of thousands of tons of silver to China unless significant profits induced that activity. Profits from the silver trade were immense for two reasons. First, on the demand side, China's monetary and fiscal systems had substantially converted from a paper-money system to silver by the time of the Single-Whip tax reform of the 1570s. Conversion of well over one-quarter of the world's population (and its government) to silver customers contributed to the elevation of silver's price in China. Second, on the supply side, extraordinarily rich silver mines were discovered in Japan and Spanish America and many new technologies reduced production costs. Supply and demand forces created disequilibrium: Silver's value in China was double that of the rest of the world. This is what drove the silver trade -- the birth of world trade -- not some abstract notion of trade deficits.

Both the Spanish Empire and Tokugawa Shogunate captured a substantial portion of silver profits from mines they controlled. Spain's mines financed a century of multifaceted war and empire. The Shogun (and his immediate predecessors) used mine profits to finance consolidation of Japan and withdrawal from the economic domination of China. Spain nearly crushed the emerging capitalistic powers of Northwest Europe, while a market-oriented economy was established within Japan. The laws of supply and demand guaranteed that silver's price would slowly decline to its cost of production, which is what happened. A direct affect of this process is that profit per ounce of silver was steadily squeezed out. This caused the decline of Spain. Japanese silver mine profits plummeted too, but gold and copper production soared in Japan in the second half of the seventeenth century. The Shogun had also invested heavily in improvements in infrastructure, so there was no decline of Japan in the seventeenth century.

The worldwide decline in silver's value in the early-modern period translates into global price inflation in a very direct way. When money declines in value vis-a-vis goods, the result is called price inflation. Geiss (1979, p.158) explains this process clearly for late-Ming China:

> Such massive infusions of silver diminished the purchasing power of the metal. Silver, like any commodity, lost its high value when supply exceeded the usual demand. This in turn affected the prices of almost everything in the empire, for the structure of prices was tied to the value of silver.

All regions of the world on a silver-money standard experienced price inflation in the early-modern period. This experience was universal because transportation technology permitted connection of silver markets throughout the world. The interconnection of world markets guaranteed that the fall in silver's value was global, which in turn implies that price inflation was a global phenomenon in all areas on a silver standard.

We have consciously neglected attempting to tie the African continent into the global trade of silver. Doing so meaningfully would require a research effort beyond the scope of this essay. Nonetheless, the Portuguese seem to have swapped huge numbers of (mostly smuggled) African slaves directly for (mostly smuggled) New World silver via the Rio Plata in Brazil:

> During the decade 1616-1625, recorded imports for Buenos Aires (the sum of legal and confiscated goods) were 7,957,579 pesos, while exports for the same period amounted to only 360,904 pesos. The annual trade deficit, which was met with smuggled silver from Upper Peru, amounted to at least three-quarters of a million pesos per year. Between 1619 and 1623, port officials seized a total of 3,656 slaves from illegally landing vessels; their market value in Lima would have approached two million pesos. These numbers do not include those slaves legally imported and those which evaded port officials. The size of these figures clearly indicates a flourishing and considerable illicit trade up the Rio Plata from the 1580s until probably the 1640s. During its most successful years, no less than 1-2 million pesos (roughly 25,000 to 50,000 kg) flowed illegally from the mines of Peru out through the port of Buenos Aires. These totals equalled from 15 percent to 30 percent of the silver output of Potosi. (Cross, 1983, p.414)

Not all of the slaves remained in Brazil, nor were all plantation laborers. At the recent World History Association meeting in Honolulu, Colin Palmer (1993) provided demographic information which suggests that somewhere between 10,000 and 20,000 Africans were domestic slaves in Mexico City in the early seventeenth century. Since it is argued in this paper that the Spanish enterprise in America was financed by the world silver market (as were the activities of the Portuguese traders), and that China was the dominant factor in the global silver market, then it stands to reason that the trans-Atlantic slave trade was heavily, albeit indirectly, influenced by monetary/fiscal developments inside Ming China. In other words, end-customer China created profitable trade in the New World, and profitable trade in America created the demand for African slaves. The point is, a global view of early-modern trade suggests many research topics which might otherwise be overlooked.

Scholars have long been interested in the impact of Europeans on Asia (and the rest of the world). The focus has shifted in recent years, however, especially among Asian scholars who increasingly stress the dominant historical role of the intra-Asian marketplace. These revisionists view Europeans as having participated in a vast and sophisticated existing Asian commercial network, rather than view Europeans as having introduced modernization to backward Asia. This essay is in the revisionist camp; it even suggests a reversal of causality. The economic impact of China on the West was far greater than any European influence on Asia in the early-modern period. We agree with the sentiments of Moloughney and Weizhong (1989, p.68), who protest that "[l]ate Ming

China was not an outpost of a Seville-centred world economy."[25] Perhaps a reversal of this logic would be more accurate: It was Seville which was an outpost of a world economy which had, not one center, but three -- Peking (on the demand side) and America and Japan (on the supply side).

The physical presence of Europeans in Asia in early-modern times -- and the simultaneous physical absence of Asians in the West -- has understandably led scholars to mostly pay attention to the West's impact on the East. Superior naval firepower may explain the presence of Europeans in Asia, but the most powerful economic undercurrents ran the opposite direction, according to the global view offered in this essay. Without the Chinese demand for silver, there would have been no finance mechanism for the Spanish Empire. Without China, there would have been no century-long Price Revolution. Without China, the birth of world trade would have been delayed to some unknowable extent. But China did convert, both monetarily and fiscally, to silver. This fact reverberated across all continents and gave birth to world trade in 1571, providing a powerful force in shaping the modern world.

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25 Moloughney and Weizhong's (1989, pp.67-68) have criticized Atwell for insisting on the importance of American silver in early-modern Chinese history. The basis of the Moloughney-Weizhong counter-argument is empirical: The influx of American silver peaked during, rather than prior to, the decline of the Ming in the 1640s. This essay is consistent with both sides of this debate. American silver may have been crucial in the decline of the Ming Dynasty, not because of its scarcity, but precisely because its abundant accumulation depressed silver's value. Views which are contradictory from the perspective of conventional macroeconomic logic, become compatible in terms of our cost-of-production model.

Chapter 2: Arbitrage, China, And World Trade In The Early Modern Period

A. Introduction

Beginning in the 1570s, silver initiated significant and continuous trade at the global level. Conservative, official estimates indicate that Latin America alone produced about 150,000 tons of silver between 1500 and 1800 (Barrett 1990, p.237), perhaps exceeding 80% of the entire world's production over that time span and virtually all of this silver engaged in intercontinental trade. (Cross 1983, p.397) Explanation for the spectacular dominance of silver in the early-modern world economy requires analysis of both the demand and the supply sides of that industry. On the demand side, China was by far the most significant end-market customer. China's paper-money system suffered a crisis in the fourteenth century and had virtually collapsed by the middle of the fifteenth century and silver imports provided a stable substitute for fiduciary money. (Yang 1952, p.67) Thus, a partial explanation for significant demand for silver in China dates to the fifteenth century when silver helped satisfy the void created by worthless paper money. China's multi-century appetite for silver did not stem, however, solely from the monetary sector; rather, it grew from a mix of fiscal (government revenues and taxation), monetary (medium of exchange), and private-sector developments. The private sector favored silver and, increasingly, taxes became payable in that medium. This trend spread to the government sector, culminating with the Ming Dynasty's 'single lash-of-the-whip' tax system, which consolidated numerous Chinese taxes and specified payment in silver in the middle of the sixteenth century.[26]

On the supply side of the equation, silver originated mostly from Peru and Mexico in the West and Japan (especially in the late 16th and early 17th centuries) in the East. Supplies were controlled by the Spanish Emperor and the Shogun. Both Japanese and Western producers indirectly sold to China. Political hostilities precluded direct official

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26 See Liang (1970). A more detailed account can be found in Huang (1974).

trade of Japanese silver into the Chinese market by merchants of either country, although private Chinese merchants did call on Nagasaki.[27] That role fell to European and other Asian intermediaries in the Sino-Japanese silver trade.

Europeans were also middlemen in the silver trade between Spanish America and China. New World silver traversed the Atlantic and passed through Europe -- following countless trade routes via the Baltic, the Levant, and the Cape -- and eventually on to a Chinese destination. Attman's 'minimum estimates' of bullion flows through Europe and on to Asia are 2-3 million rix-dollars in 1550, 4.4 millions in 1600, 6 millions around 1650, and 8.5 millions by 1700 [one rix-dollar = approximately one peso]. (Attman 1986, p.78). The Pacific Ocean furnished an alternative, the direct trade route from America to China. Silver-laden Manila Galleons sailed out of Acapulco to the Philippines, where the cargo was transferred to junks for shipment to China.

The contention of this essay is twofold. First, the amount of silver flowing to China via the Manila Galleons was far larger than is generally recognized; at times it may have equalled the volume of silver passing to China via Europe. Looking at the seventeenth century as a whole, these Acapulco-Manila galleons seem to have carried as much silver to Asia as the Portuguese Estado do India and the Dutch and English East India Companies combined. Second, the demand for silver in China implies immense repercussions in terms of Western history: there would not have been a Spanish Empire[28] in the absence of the transformation of Chinese society to a silver base, nor would there have been the same sort of 'Price Revolution' (i.e. inflation) around the globe in the early modern period.[29]

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27 Tashiro (1982,pp.288-292) explains that Chinese and Dutch merchants dealt directly with the Bakufu in the seventeenth century, rather than through normal foreign relations: From "the Chinese point of view, the Nagasaki trade was an exercise in smuggling." (p.288)

28 See Flynn (1982) and Flynn (1984)

29 Kellenbenz (1981, p.325) and others have claimed that China did not experience a Europe-style Price Revolution in the early modern period. Cartier (1981) and Goldstone (1991, pp.359-360) show that Chinese prices did, in fact, exhibit an inflationary trend like Europe and the rest of the world, once Chinese rice prices are converted to "silver-content prices" (as in Europe and

The use of paper money was widespread in China dating from at least the eleventh century. The state sought to fix the value of paper money to coins, but such efforts were futile because the paper was inconvertible. As a result, a promissory note with a nominal value of one liang of silver in 1375 (= one thousand copper coins) fell to less than one-thousandth of a liang (= less than one copper coin) by the year 1445: "Instead of paper currency, silver had become the major medium of exchange. The note practically ceased in circulation from the sixteenth century." (Yang 1952, p.67) Atwell has correctly pointed to China's transition to silver-based money as a significant source of demand for silver. (Atwell, 1977, p.4; Atwell, 1982, pp.79, 83).

It is noteworthy that the Ming never did mint silver coins in any serious way after the collapse of their paper money system. (Yang, 1952, Ch.VI) Copper cash was used for normal day-to-day purchases. Increased use of silver ingots for larger transactions evolved in the merchant community early in the fifteenth century, especially in commercial regions like Kwangtung and the Lower Yangtse. Demand in these regions alone must have been significant considering that Nanking contained over one million inhabitants and Peking around 660,000 in the late Ming period.(Rodzinski 1979, p.201). Payments in silver emerged in a somewhat disorderly way,[30] but the trend toward silver gained momentum in the second half of the fifteenth century. The emergence of local silver production within China and the clandestine trade with Japan (the main source of the white metal) resulted from this conversion to silver in the private sector, which ultimately had a profound effect on the Ming fiscal structure.

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elsewhere). Wilkinson (1980, p.27) is careful to distinguish between "cash" (copper) prices and "tael" (silver) prices in Suchow prefecture between 1628 and 1690.

30 Fairbank (1992, p.135) provides the following description: "In the clumsy circulation of pure lump silver, the unit ofaccount (the ounce or tael) varied from place to place and also as between trades and between agencies of government. Twenty different silver tael units of account might be in common use in one city at one time, requiring a different 'currency' for each commodity, like salt or cotton cloth, and for payments going to certain other places. Each ingot had to be weighed and also assayed for its purity."

The Ming tax structure may be characterized as 'decentralized'. Taxes themselves came to be collected in silver, not because it was "planned but merely resorted to out of necessity in the failure of all other currencies." (Fairbank, 1992, p.135) Taxation in silver grew in popularity in the second half of the fifteenth century. This evolution of the fiscal structure continued into the sixteenth century and was systematized in the 1570s under the name of the 'Single-Whip Reform', "the most significant innovation in fiscal policy during the entire Ming and Qing periods." (Moloughney and Weizhong, 1989, p.55) The Single Whip unified numerous taxes and specified that virtually all duties and taxes were to be paid in a specific medium: silver! It took a long time to fully implement the single-whip tax reform, however, as Ming treasury income rose from 2.3 million taels of silver in 1570, to 4.4 million taels in 1577, to 6 million taels in 1618, about 9 million in 1630, 12.2 million in 1631, 20 million in 1639, and 23 million in 1642: "This continual increase is in part a reflection of the shift from a grain tax to a silver tax with the gradual implementation of the Single Whip Reforms." (Moloughney and Weizhong, 1989, p.67) It was necessary to collect taxes in silver; for one thing, salaries had to be paid in this medium (Geiss, 1979, p.156):

> The Ming government began to pay official salaries in silver during the 1450's. At that time the treasuries held insufficient amounts of paper notes to meet payment deadlines, so the Peking military officials received silver bullion in lieu of paper notes. At the beginning of the sixteenth century the practice had become institutionalized; official salaries were paid in a mixture of silver and copper coin with ten per cent paid in copper and the remainder in silver. For the rest of the century silver dominated the marketplace. Copper coins were used for small transactions, although in some places everything, even the smallest purchase was paid for with silver.

Tribute payments were also converted to silver. As the center of Asian civilization, the Chinese monarchy collected tribute from neighboring vassal states. Tribute missions to China were irregular and not designed as sources of revenues (those bearing gifts often received more than they gave). What is crucial for our purposes is to recognize that the system came to be based on payments in silver:

> To sum up, the entire tribute and interregional trade zone had its own structural rules which exercised a systematic control through silver circulation and with the Chinese tribute at the center. This system,

encompassing East and Southeast Asia was articulated with neighboring trade zones like those of India, the Islamic region and Europe. (Hamashita, 1988, p.18)

The payment of tribute in silver implied that the major trading routes of Asia were heavily impacted by the flow of bullion toward Peking. In the case of Korean tribute, for example, Tashiro has shown that Japanese silver exports via Tsushima and Korea matched chronologically with the schedule of tribute payments from Korea to imperial China.[31]

To reiterate the main points, the gradual conversion of imperial China to a "silver zone" was initiated by merchants in south-east China -- the center of foreign trade -- when the fiduciary money system collapsed. Local and regional taxes came to be paid in silver:

The commutation of land tax and labor service payments to silver was an adaption on the part of the state to the expanding market economy and, in turn, promoted the further commercialization of the economy.... Not only merchants and landowners but also poor peasants were involved in the empirewide commercial network partly because of the tax system, which demanded payment in silver. (Kishimoto-Nakayama, 1984, p.244)

Imperial tribute became payable in silver too, but not necessarily by Ming design. On the contrary, the dynasty at times attempted to thwart the pro-trade and pro-silver forces of trade and industry.[32] Regulation of the tribute-trade system did indeed stifle

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31 Tashiro (1989). We do not dispute the claim of scholars that even the regular tribute payments of Koreans -- in silver -- may have been more than offset by reciprocal Ming gifts. In other words, we do not claim "net gains" on the part of the Ming. We simply point out that China absorbed massive amounts of silver, irrespective of whether the Ming were net financial winners or losers in particular tribute relationships.

32 The Ming may have had good reason to resist the country's conversion to a silver-based economy, according to Goldstone, because land taxes were 'fossilized' (i.e. fixed) in terms of payments in silver, while imperial expenses (in terms of silver) mushroomed. Inflation-adjusted taxes fell at the central-government level, in other words, leading ultimately to the overthrow of the Ming in 1644: "The outcome was a political crisis rooted in fiscal bankruptcy. The crisis was not due to over-taxation relative to the available resources of the society. In fact, the government's share of

private trade, but this policy alienated merchants who sided with the Manchus in overthrowing the Ming Dynasty in the mid-1600s. According to Hamashita, it was the private-sector challenge to the traditional tribute-trade monopoly which nudged a reluctant China into the silver camp. The Ch'ing Dynasty, successor to the Ming, also had to accommodate the rise of the merchant class:

> 'Modernization' in Asia was generated as a negative reaction to the all-inclusive superior-subordinate relations of the traditional tribute system. Mercantilist control over tribute by the Ch'ing dynasty led overseas Chinese merchants to oppose the trade policy and expand their own private trade. As a result, the Ch'ing dynasty was in turn compelled to shift from the role of monopolistic trader-merchant to that of tax collector [in silver]. (Hamashita, 1988, p.23)

According to this interpretation, China began to modernize when the central government was forced to reduce its role as imperial trader in favor of collecting taxes from the private sector.

The important point for our purposes is to establish that China's demand for silver was vast and growing over time. China contained over a quarter of the world's population

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national wealth diminished. Rather, the crisis was due to an overall under-taxation as inflexible land-tax systems failed to capture growing output and tax evasion became increasingly common among influential elites." (Goldstone 1991, pp.374-375)Goldstone's claim of Ming fiscal bankruptcy is not contradicted by trends reported in Moloughney and Weizhong (1989, p. 68) to the effect that silver income of the Ming administration by 1642 was "a five-fold increase from 1570... The state certainly did not suffer a decline in its silver income in the late Ming years." These seemingly-contradictory positions are, in fact, compatible since the purchasing power of silver was declining at the very time that Ming revenues were increasingly converted to payment in this medium. According to our reading, Moloughney and Weizhong do not argue that total taxes rose as a percentage of national output; they say that a larger proportion of taxes were paid in the form of silver. Yet it was specifically silver which was losing value. Again, it is crucial to think in terms of silver's value versus the value of total tax revenues, rather than focus solely on quantities of silver receipts.

late in the Ming period[33] and it was the center of the largest tribute/trade system in the world: "Even in late Ming times the Chinese economy was huge, and... silver use was expanding at this time..." (Moloughney and Weizhong, 1989, p.68) When such a large percentage of the world economy is committed to purchase of a specific commodity that is high in value and transportable among continents, the impact on that industry is bound to be global. The early-modern silver industry was no exception.

It was the conversion of China's economic structure to silver that caused its value to soar above that of any other location in the world. Relative bimetallic ratios are perhaps the clearest indicator of silver's high valuation in China.

From 1592 to the early 17th century gold was exchanged for silver in Canton at the rate of 1:5.5 to 1:7, while in Spain the exchange rate was 1:12.5 to 1:14, thus indicating that the value of silver was twice as high in China as in Spain. (Chuan, 1969, p.2)

Divergent bimetallic ratios imply that one could theoretically use an ounce of gold to buy, say, eleven ounces of silver in Amsterdam, transport the silver to China and exchange the eleven ounces there for about two ounces of gold. The two ounces of gold could be brought back to Europe and exchanged for twenty two ounces of silver, which could again be transported back to China where its value was double again. This process of "arbitrage" would continue until China's silver stock rose sufficiently to lower its value there to the value prevailing in the rest of the world. What we are describing here is a Ricardian-type mechanism for the transfer of silver, previously explained in detail in Chaudhuri's (1978) classic account.[34] By the same process, sufficient gold was

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33 Fairbank (1992, p.128) estimates Chinese population at 160 million by 1644. Moloughney and Weizhong (1989, p.69) claim that China's population declined between 1600 and 1650 from 160 million to 123 million; China's 'silverization' continued despite significant alleged depopulation and "the late Ming years saw an unprecedented volume of foreign silver flood into China, and these were years of dynastic decline." (p.68)

34 See Flynn (1986) for an unconventional microeconomic theory in support of Chaudhuri's (1986, pp.77-78) argument against Kristof Glamann.For discussion of David Ricardo's specie-flow argument, see Chaudhuri (1978, pp.156-157); Ricardo essentially argued that each precious metal

simultaneously exported to Europe and America to lower its value there to that of the rest of the world. The same arbitrage mechanism which attracted silver from the West, of course, attracted silver from other Asian countries. In the 1590s the bimetallic ratio was about 10:1 in Japan and 9:1 in Moghul India, significantly higher than in China, which Boxer says "was the basic reason why China remained for so long the suction-pump (bomba-aspirante) which absorbed silver from all over the world..." (Boxer, 1970, p.461)

The arbitrage mechanism for attracting silver to the Chinese "suction pump" explains part of the story. What we are suggesting is that institutional changes in the private sector within China, along with fiscal and monetary developments, are what created the arbitrage potential itself.

Did reality conform to the arbitrage-theory prediction that the profit motive would eventually integrate world markets in terms of price? The answer is yes. By 1640 bimetallic ratios around the world had converged.[35] Silver's high valuation in China caused the white metal influx from production sources around the world (mostly Spanish America and Japan) because it was profitable to satisfy China's vast demand. The relocation of the product from low-value to high-value areas roughly equalized its price everywhere; silver became more abundant in the scarce area and more scarce in the

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must be analyzed independently, focusing on the cost of producing each metal and the price of each one separately. When one of the metals -- say, silver -- experienced a drastic drop in production costs, its price would gradually fall in the region surrounding production. The resulting low price of silver (in the West and Japan, during our period) relative to its price elsewhere (China) would lead to opportunities for profit from arbitrage; this was a driving force behind intercontinental trade. This type of Ricardian logic has guided Chaudhuri (1978)(1986) and Flynn (1986), both of whom view disequilibrium in the silver market as a primary cause -- rather than effect -- of East-West trade in the early-modern period. Conventional macroeconomic approaches talk about trade imbalances; gold and silver are combined as 'money' in macroeconomics, which automatically precludes the kind of cost-of-production analysis we advocate.

35 See, for example, Yamamura and Kamiki (1983, p.352). Atwell (1982, p.82) shows clearly that bimetallic ratios in China, Japan, and Spain had converged by 1644.

abundant areas. The arbitrage-dominated phase of the silver trade had ended around the middle of the seventeenth century.

If simple arbitrage explains the flow of silver to China up to about 1640, then what mechanism explains the continued flow of thousands of tons of silver to China after that date, when arbitrage profits had diminished? The answer is that arbitrage represents only one avenue of business profit. Normal, non-arbitrage profits are commonplace today and always have been. Products are often sent to expanding market areas, not because they offer higher prices, but because they offer more buyers at the same price. Products have always gravitated to growing areas, places where imported items share roughly the same prices they command in low-growth areas. Businesses often extend into new markets, in other words, even though per-unit profit may be normal. Turning back to early-modern China, there is evidence of an expanding market in the later Ming period.[36] Silver continued to gravitate to the Chinese market in the second half of the seventeenth century, therefore, not because silver was more valuable there than elsewhere, but because there was a huge number of buyers at a relatively stable world price.[37] There was a general recovery of economic productivity during the early Qing period and silver imports again surged after the (1660s) coastal trade ban was lifted in 1684-1685. (Wakeman, 1986, pp.18-19)

In sum, it seems clear to us that one cannot understand the global nature of the silver trade in early modern times -- that is to say, the birth of the world economy -- without reserving a central place for China. Silver simply flowed to the area offering the best price. When its price there subsided to the world price, extensive and growing

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36 Within China, large-scale production of ceramics, silk, and cotton cloth accompanied the spread of trade in salt and cereals, the growth of cities, and of a more affluent merchant class engaged in interregional trade. The flow of silver into China was only one factor in this growth. A number of historians point to late Ming achievements in literature, art, and urban life as harbingers of a dynamic renewal in society and culture as well as in the economy. (Fairbank, 1992, pp.141-142)

37 In terms of theory, Flynn (1986) explains the arbitrage portion of the West-to-East flow of silver via demand and supply analysis. For a more complete discussion of "non-arbitrage world trade" in silver, including a graphical depiction of the process, see Flynn (1991, pp.343-347).

demand assured the continued importation of silver into China; there just were no longer such unusual profits per unit of product.

B. The Manila Galleons

On the production side, Peru and Japan dominated the silver market in the late sixteenth and early seventeenth centuries. Japanese production fell off after the 1630s, although the drop may have been less pronounced than once thought.[38] Peruvian output fell in the second half of the seventeenth century too, but the decline was gradual and the combination of Peruvian and Mexican output was larger in the seventeenth century than it had been in the sixteenth. (Barrett, 1990, pp.242-243) The preponderance of scholarship has focused on the Atlantic/European leg of American silver's journey to the Far East. Little attention has been paid to the Pacific route to China via the Manila Galleons.

The American side of the Pacific experienced a momentous innovation in the 1570s. The previously-booming mines of Potosi were experiencing financial crisis by this time, when implementation of the mercury-amalgam method for extracting silver reduced production costs suddenly and dramatically.[39] Thereafter Potosi became the most prolific silver producer the world has ever known. Despite an altitude of nearly three miles (over 15,000 feet) and transportation of two-and-a-half months by pack animal from Lima, the population of Potosi surged to nearly equal that of London or Paris by the early seventeenth century. It may have been world history's most spectacular boom town. Profits were gigantic because the cost of producing silver had fallen suddenly, while its

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38 Goldstone (1991, p.373). Also see Moloughney and Weizhong (1989, p.61), who summarize Japanese silver exports and conclude that "the late Ming years saw...(imports of Japanese silver to China) reach its zenith."

39 According to Cross (1983,p.402), registered output in Potosi fell from 68,759 kg of silver in 1565 to 28,633 in 1572. There was a radical transformation of the area in 1573 with implementation of the mercury amalgam process.

world price declined only gradually.[40] In other words, at the same time that the complex of forces culminating in the 'single whip' caused silver's value to rise on the Asian mainland, the cost of producing it in the New World fell dramatically. Extensive demand explains the high value of silver in China, while low-cost supply explains its low value in America. The potential for extended arbitrage profits had never been greater.

Spain was arguably the most powerful force in Europe at the beginning of the seventeenth century. And it was a Spanish product that was sent from Europe to Asia -- American silver -- but ironically the Portuguese, the Dutch, and the English controlled the Europe-Asian trade. Spaniards were excluded. Spain was also excluded from the lucrative inter-Asian trade, at times an even greater source of enrichment for European rivals. The only avenue available for Spanish participation in Asian trade was via Mexico, over the Pacific Ocean.

The most important product imported into Mexico from the Philippines was silk, a portion of which was re-exported to Europe. Mexican merchants preferred direct trade with Asian silk suppliers rather than operating through Spanish intermediaries; transportation was cheaper, they could avoid taxes, and the Crown could not confiscate Pacific silver, as was done inside Spain. (Yuste Lopez, 1984, p.41) During the initial years of commercial relations between America and Manila there was no official control. A highly profitable business was organized amongst Manila, Mexico and Peru, taking advantage of cheap luxury prices for Chinese goods (from the American perspective) and cheap New World silver (from the Chinese perspective).

In 1571 something dramatic clearly happened, as a huge increase is registered in the Ming central government's silver revenues. This occurred, it should be noted, four years after the Ming government had relaxed its restrictions on maritime trade, one year after Sino-Japanese trade was boosted by the founding of Nagasaki, and the same year in which Sino-Spanish trade began in earnest with the establishment of Manila as the Spanish capital of the Philippines. (Atwell, 1982, p.81)

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40 See Doherty and Flynn (1989) for explanation of the cause of this gradual decline in the value of silver.

Fleets of Peruvian ships, the "peruleros," joined the Mexican galleons in search of oriental products. A letter from a Spanish official in Lima to Philip II in 1594 explains the motivation for this frenzied activity: "A man can clothe his wife in Chinese silks for two hundred reales, whereas he could not provide her clothing of Spanish silks with two hundred pesos." (Quoted in Borah,1954, p.122) An eight-to-one price differential is no doubt an exaggeration (a ratio of three-to-one is more common in the literature), but any sizeable price disparity was not about to go unnoticed; the Pacific commercial network seriously disrupted the Atlantic monopoly of the Casa de Contratacion because silk was supplied much cheaper.

By the mid-1570s, silver which had been mined in New Spain and Upper Peru was circulating in Amsterdam and Peking, while silk and other textiles from Chiang-nan and Andalusia were competing side by side in the markets of Lima, Mexico City, and even Seville. (Atwell,1988, p.318

Merchant complaints in Seville persuaded Philip II to issue a series of decrees to control the Pacific trade. In 1591 commercial relations between Peru, Guatemala, Panama and the Philippines were forbidden. In 1593 a limit of 300,000 pesos on merchandise from Manila and 600,000 pesos from Acapulco was imposed. The trade between Peru and Mexico was interrupted by a 1631 order; the order was repeated in 1634. Profits were formidable, however, and illicit relations between the two viceroyalties continued with the port of Realejo serving as the trading port. (Yuste Lopez, 1984, p.30) The Pacific trade provided such lucrative profits that every conceivable means of corruption and smuggling was invoked to evade Crown control.

The Crown also attempted to interdict the silk-silver trade in Asia. In 1633, after the King had issued a decree forbidding trade between Macao and Manila, Spanish galleons used any pretext to visit Macao to buy silks and "a single galleon usually brought about half a million silver dollars for this contraband." (Boxer, 1968, p.136) This amount of silver in a single ship -- equal to conservative estimates of an entire year's exports out of Acapulco (to be discussed in the next section) -- hints at a vigorous commercial relationship between merchants in Mexico and Manila. The secretary of Portuguese India observed in 1634-1635 that the trade between Macao and Manila was permanent. (Magalhaes Godinho, 1984, Vol. 1, p.133)

Entrepreneurs overlooked no avenue by which to profit in transporting silver to China, including via the direct Pacific route. Spain maintained legal control over the best ports on either side of the Pacific: "Manila had probably the best harbor in the Far East, as excellent a western terminus of the navigation as Acapulco was the eastern." (Shurz, 1959, p.29) The problem was that great distance precluded actual Crown control over the Pacific trade. Smuggling and corruption ran rampant.[41] Spanish merchants had trouble competing in the Atlantic, but attempts at prohibiting competition in the Pacific were futile and prodigious quantities of silk flowed eastward out of Manila. In exchange, thousands of tons of silver shipped westward out of Acapulco and into the Asian marketplace in the seventeenth century.

C. Quantities Of Silver

Atlantic trade has been studied extensively, yet controversy persists concerning estimates of the amount of silver flowing to (and through) Europe during the early-modern period. The Pacific trade has mostly been ignored by historians, on the other hand, so it is not surprising that reliable estimates of quantities of silver flowing to (and through) the Philippines during the sixteenth and seventeenth centuries do not exist. Many authors recognize that the Manila trade was significant, especially in the late sixteenth and early seventeenth centuries. A large portion of the trade was contraband, however, which explains the problem of measurement. John J. TePaske has surveyed this

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41 Atwell (1977, p.10) cites the Ecclesiastical Cabildo of Manila in 1632 to the effect that "Spanish officials in Mexico were permitting between four and five times the legal amount of silver to be shipped from Acapulco to Manila, and this at a time when bullion remittances from the New World to Spain were in sharp decline." See also Boxer (1970, p.474-475), who cites Antonio Dominguez Ortiz (1958). In their studies of production in Mexico and Peru, Brading and Cross (1972, p.574) likewise find evidence of smuggling in the seventeenth century: "During the desperate years of 1630-45 when the Spanish monarchy lurched from one financial expedient to another, Peru consumed more mercury than ever before. It follows therefore that Hamilton's import figures simply reflect official inefficiency and corruption; they bore little relation to the realities of silver production."

literature and concludes that the contraband trade was substantial: "That the Philippines siphoned off large sums of silver from the New World cannot be denied, but measuring that flow is virtually impossible." (TePaske, 1983, p.437) Official records by definition exclude contraband, so how is one to estimate the size of the overall Philippines trade?

TePaske's figures, taken from Earl J. Hamilton's work, are divided into two categories. First is the "situado," a subsidy sent in silver by Mexican authorities to support the Manila administration. Situado payments averaged 200,000 pesos annually overall, although in the first half of the seventeenth century the Philippines received a quarter of all bullion shipped out of New Spain "and during the 1640s, perhaps in response to the Dutch threat in the islands, over 40% of Mexican surplus income" flowed to Manila as situado payments. (TePaske, 1983, p.434) Also based on Hamilton's work, TePaske estimates private remittances alone to the Philippines at 316,693 pesos annually (8,095 kilograms) between 1591 and 1660. In a recent survey of the literature, Ward Barrett uses TePaske's tables and figures from Humboldt's Political Essays to generate a higher estimate of private remittances to Manila, 463,281 pesos (11.86 tons) annually between 1581 and 1700. (Barrett, 1990, p.249) Basically, TePaske estimates overall (both the situado and private) remittances at about 517,000 pesos per year while Barrett elevates the total to about 660,000 pesos per year. Barrett does point out a glaring discrepancy, however, between production figures in Spanish America (based on figures from Humboldt, Soetbeer, Merril and Ridgeway) and Morineau's upwardly revised shipments to Europe.[42] Production exceeded exports over the Atlantic by 40,000 tons, which converts to 5.5 million pesos (135 tons) per year. Barrett reasons that the 5.5 millions must have either remained in America or gone to the Philippines. (Barrett, 1990, p.236) We have previously discussed the powerful institutional magnet in Asia, attracting silver from all parts of the globe. No comparable silver magnet existed in America, on the other hand, so China-via-Manila is the likely candidate for receipt of millions of pesos

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42 That is, even if we accept Morineau's larger figures for silver exports via the Atlantic and Europe, there is still a substantial amount of silver output left over. The question is: Where did this extra silver go? We claim that its ultimate destination was China (as was the case of the silver passing through Europe) and that much of it passed over the Pacific via Manila.

annually. One should keep in mind that 5.5 million pesos per year to Manila is roughly ten times greater than the conservative estimates of TePaske and Barrett.

Is it possible that over 5 million pesos per year traversed the Pacific? Supporting evidence does exist for such lofty figures around the turn of the century. In 1602 the Cabildo of Mexico City claimed that 5,000,000 pesos (127.8 tons) annually went to Manila and that an astonishing 12,000,000 pesos (306.7 tons) was shipped in the single year of 1597. (Borah, 1954, p.123) It is important to remember that these figures have not been confirmed by other sources and that the Cabildo of Mexico City may have exaggerated for his own political reasons. In any case, most authors seem to have accepted as fact that the large shipments of the early period declined dramatically as the seventeenth century progressed. This assumption appeared plausible for a couple of reasons: First, people used to think that New World production declined dramatically during the seventeenth century and, second, the Pacific trade suffered disruptions because of war with the Dutch.[43] This line of thought seemed to be confirmed by Pierre Chaunu, based on his study of the "almojarifazgo" taxes, who identified three phases in the Manila trade: (1) Continuous increase until 1616-1620, (2) a high plateau with slight decline after 1620, and (3) a precipitous fall after 1640. (Chaunu, 1960, p.250) His estimates were consistent with the old idea that there was a general decline in the production of silver mines in Peru and Mexico. (Chaunu, 1951, p.460)

American production did not of course decline throughout the 1600s. It mostly grew; and when decline did come late in the seventeenth century, it was far more gradual than had been customarily reported in the literature. The work of Morineau and others has taught us that silver flows over the Atlantic grew over the seventeenth century (taken as a whole). It seems logical to consider the possibility that the Pacific trade may have grown as well -- rather than shrinking -- during the seventeenth century. Not all Western scholars accept the conservative TePaske/Barrett estimates of 515,000 to 600,000 pesos per annum. According to Cross, an average of 2-3 million pesos (53,000 kg to 79,000 kg pure silver) was sent with official sanction from Peru to Mexico between 1580 and 1610.

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43 The argument that war with the Dutch disrupted trade in Asia cannot be applied after 1647; Spain settled with the Dutch then and silver shipments resumed. (Glamann, 1981,p.52)

(Cross, 1983, p.412) According to Borah, inclusion of the contraband trade at that time raises the total to more than 100,000 kg annually (i.e. more than 4 million pesos). (Borah, 1954, pp.88, 123) There was no reason to ship silver from Peru to Mexico, other than to forward it on to Asia via the Manila galleons, so there seems to be indirect evidence of millions of pesos in silver annually over the Pacific in the seventeenth century.

Research from the Asian side of the Pacific support the contention that the Manila trade may not have declined over the seventeenth century. Chuan Han-sheng, using documents collected by Blair and Robertson (1903-1909), provides figures which indicate that the quantities of silver crossing the Pacific did not decline. Chuan quotes letters and reports sent by friars and Spanish officers to the central government in Madrid. He offers the following estimates: (Chuan, 1969, p.79)

Silver Exported to Philippines		
YEAR	AMOUNT IN PESOS	AMOUNT IN METRIC TONS
1598	1,000,000 pe	25.56 tons
1601	2,000,000 "	51.12 "
1602	2,000,000 "	51.12 "
1604	2,500,000 "	63.90 "
1620	3,000,000 "	76.68 "
1633	2,000,000 "	51.12 "
1688	2,000,000 "	51.12 "
1698	2,000,000 "	51.12 "
1699	2,070,000 "	52.50 "

Chuan's figures are somewhat higher than those of Schurz, who stated: "There can also be little doubt that the average for the more prosperous periods was about 2,000,000 pesos or even more were quite possible, though not common." Schurz recognized that

during the war with the Dutch, and when there were other adverse circumstances, the silver cargo could have fallen under 1,000,000 pesos. (Schurz, 1959, p.190) Chuan's numbers do not indicate a secular decline in shipments of silver to the Philippines; rather, there is a steady yearly average of around 2,000,000 pesos throughout the century. The absence of a downturn in Chuan's work is consistent with other trends and indicators of the Manila trade.

The city of Manila was an entrepot with no purpose other than the silver-silk trade. If the trade experienced secular decline, then why did the city contain 42,000 inhabitants in the middle of the seventeenth century, (Wolf, 1982, p.153) approximately the same population as Barcelona, Valladolid, Danzig, Vienna, Marseille, and other major trading centers with broader-based economies? (Mols, 1977, pp.42-43) Of Manila's 42,000 people, around 30,000 were Chinese and 12,000 Spaniards. (Schurz, 1959, p.81) The trade must have been huge because there were only 6,000 Portuguese male nationals who went out to the Estado da India, by comparison, and only 10,000 Portuguese male nationals overseas in the entire world. (Boxer, 1969, pp.19-20) No doubt more than half of the Spaniards in Manila were males, so they must have at least equaled their Portuguese counterparts in Asia in the seventeenth century. But the Spaniards were concentrated in Manila and there were two and a half times as many Chinese in Manila as Spaniards! Considering the strict dependence between the galleons and the prosperity of the city, it had to have been the periodic arrival of silver during the seventeenth century that sustained the community, partly supplied by Philippine natives but mainly by Chinese merchants. Fernand Braudel situates the Philippines in a global perspective: "The centre of gravity of this huge super-world-economy became stabilized in the East Indies, with their busy ports of Bantam, Atjeh, Malacca and -- much later -- Batavia and Manila." And he continues: "We are gradually becoming more and more clearly aware of 'a network of maritime traffic comparable in volume and variety to that of the Mediterranean or of the northern and Atlantic coast of Europe." (Braudel, 1986, Vol.3, pp.486-487)

Chuan's claim that an annual flow of 2+ million pesos in silver persisted through the seventeenth century seems reasonable. If anything, future research will render these numbers overly conservative. Nor do we take issue with scholars providing evidence of

declining overall Chinese silver imports in the second half of the seventeenth century.[44] Japan was China's dominant Asian supplier and we know that Japanese silver production fell substantially late in the century. This reduction of supplies from Japan would have stimulated trade via Manila, where merchants must have been pleased to be rid of such formidable supply-side competition. In other words, robust trade via Manila is consistent with reduced overall silver imports into China during the second half of the seventeenth century.

It may be helpful to digress momentarily to gain perspective by comparing the magnitude of the annual Pacific trade (i.e. +51.12 tons of silver) with that flowing simultaneously to Asia out of Europe at that time. According the Steensgaard, Portuguese exports "for the projected pepper purchase at the end of the 16th century lay at 150-200,000 cruzados," which converts to a maximum of 8.47 metric tons of silver per year. (Steensgaard, 1973, p.87) According to Gaastra, (Gaastra, 1983, p.451) during the second half of the seventeenth century the Dutch East India Company sent 1.6 million florins to the Orient; Morineau's calculation is 50% higher, at 2.4 million florins, which is equivalent to 24.93 tons of silver. (Morineau, 1974, p.773) The English East India Company sent a total of 702,852 kgs. of silver to Asia between 1660 and 1700, an average of 17.57 tons per year. (Chaudhuri, 1978, p.177) If we sum the figures for Portugal in the early period with those reported for the Dutch and British East India Companies combined for the later period, the total is just over 50 tons of silver per year. This is approximately the same as the amount Chuan estimates for the Manila trade throughout the seventeenth century (2,000,000 pesos or 51.12 tons). While the average quantity of silver passing onto Asia via all of Europe was probably at least triple this Manila estimate, (Attman, 1986, p.78) the Pacific trade may have been equal to the Europe-Asia trade of the Portuguese and English and Dutch East India Companies combined.

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44 See, for example, Atwell (1988), Moloughney and Weizhong (1989), and Wakeman (1986).

D. Summary And Conclusions

Silver's migration in the early modern period constituted the genesis of intercontinental trade at the global level. The cause of this phenomenon on the supply-side is obvious: Extraordinarily rich mines were discovered in Japan and Spanish America and new technologies for extraction of the metal were implemented. Production costs dropped and a boom surged. There would be no boom without customers, however, and the biggest collective buyer of all was giant China, whose paper money system was no longer in operation since the fifteenth century.

What should be emphasized is the fact that by 1500 the population of the Ming empire probably exceeded 100,000,000 and the Ming economy was once again beginning to expand with some vigor. With domestic production of bullion clearly insufficient to meet that economy's monetary needs, it is hardly surprising that foreign traders found the Chinese demand for silver almost insatiable when they appeared off the country's south-eastern coast during the sixteenth century. Fortunately for the Chinese, of course, foreign demand for Chinese goods was equally intense and an extraordinary expansion in commercial activity ensued. (Atwell, 1982, p.79)

First the Chinese merchant sector converted to silver, followed by local tax jurisdictions. Eventually, the Ming government faced up to the importance of silver by incorporating the Single-Whip tax system in the second half of the sixteenth century.

[The Single Whip method of taxation] essentially meant that most land taxes, labor service obligations, and extra levies were commuted into silver payments. Given the depressed state of Chinese domestic bullion production at the time, it seems reasonable to assume that commutations on this scale would only have been possible with regular and substantial imports of foreign silver. (Atwell, 1982, p.84)

The white metal had 'conquered' the world's largest economy.

China's shift to a silver base affected, not just domestic affairs, but its entire Asian tributary economy, one which coexisted symbiotically with commercial trade relations. Private trade and tribute activity were so intertwined, in fact, that it was sometimes difficult to distinguish between them. For our purposes, the important point is that the entire Chinese tribute/trade system evolved into the silver camp:

> ...the tribute trade zone [of East and Southeast Asia] formed an integrated "silver zone" in which silver was used as the medium of trade settlement. The key to the functioning of the tribute trade as a system was the huge 'demand' for commodities outside of China and the difference between prices inside and outside of China....On the whole, this tribute trade system took on the attributes of a silver circulating zone with multilateral channels of trade settlement in which silver was used as medium. (Hamashita, 1988, p.17)

So, Asian demand for silver encompassed more than China's quarter of the world; perhaps one-third or one-half of the world's economy had converted to a silver system. Perhaps most important of all, the conversion of China's fiscal system to silver continued through the seventeenth century, even during times of economic crisis. Small wonder that silver migrated to East Asia in such massive quantities!

Silver poured into the mainland through all important trade routes. China's primary source in the late sixteenth and early seventeenth centuries was Japan, which shipped as much as 200 tons per year at times, but fell off in the second half of the seventeenth century.[45] Attman's conservative figures indicate that the flow of silver through Europe into Asia averaged at least 150 tons annually in the seventeenth century. Chuan says that an average of over 50 tons per year traversed the Pacific via the Manila galleons; and his numbers may be low.

The economic and political impact of this silver trade around the globe was immense. The worldwide 'Price Revolution' would not have occurred in the absence of the Chinese factor.[46] Silver affected all corners of the globe, but none like Japan or Spain, the two countries controlling silver-mine production. Under the circumstances outlined above -- high initial value relative to low production costs -- the mines produced prodigious profits. American profits financed the Spanish Empire; when the inevitable evaporation of mining profits occurred, Spain faded as the dominant power in

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45 See Innes (1980), especially Chapter VI.

46 See Doherty and Flynn (1989) for explanation of the production-point-of-view interpretation of the price revolution. Without Chinese demand for silver, its value would have fallen much faster to cost of production; that is, the rate of price inflation would have been higher, but of far shorter duration.

Europe.(Flynn, 1982) Japanese mining profits helped finance consolidation of that country under the Tokugawa Shogunate. This was instrumental in Japan's withdrawal from China's tributary system; market-oriented reforms were implemented, followed by centuries of Pax Tokugawa.(Flynn, 1991) Imperial Spain used mining profits to attack the emerging capitalistic powers in Northwest Europe. Tokugawa Japan used her mining profits to establish capitalism in Asia. It is hard to see how either of these developments could have occurred in the absence of Chinese demand for silver. Elimination of the world's largest customer would have devastated profits at points of production.

William Atwell has for years emphasized the importance of New World silver on commercial/political developments inside of China.[47] Moloughney and Weizhong have challenged what they characterize as Atwell's "Seville-centred world economy" view, pointing to evidence of relatively large Chinese imports of silver during the late Ming crisis, in contrast with relatively small silver imports during the following Qing consolidation. (Moloughney and Weizhong, 1989, pp.67-68) These authors feel that such evidence is inconsistent with Atwell's linkage of silver imports with Ming decline. Goldstone also challenges portions of Atwell's interpretation, insisting that domestic and inter-Asian influences -- rather than those from the West -- explain structural changes inside of Ming/Qing China. Specifically, Goldstone argues that Chinese population growth caused domestic price inflation; since Ming expenditures were forced up along with the inflation rate, while taxes were fixed in terms of certain quantities of silver, a fiscal crisis emerged which ultimately led to overthrow of the Ming dynasty. (Goldstone, 1991, p.371) In sum, (1) Atwell roots Ming crisis in American conjuncture, (2) Moloughney and Weizhong say that silver imports subsided only after the Ming overthrow in 1644, and (3) Goldstone argues that domestic inflation (not international trade) undermined the fiscal foundation of the empire. Is our cost-of-production view compatible with the main arguments of these diverse and seemingly contradictory views? We think the answer is yes.

Granted that it took a long time to fully integrate the world silver market via arbitrage trade, silver's value in China was eventually the same as in the rest of the world

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47 See Atwell (1977; 1982; 1986; 1988).

(and regional markets were linked throughout the period under discussion). Since Latin America is said to have produced perhaps 80% of the world's silver between 1500 and 1800, (Barrett , 990, p.237) we cannot fault Atwell's insistence that Ming fortunes were linked to American silver. Since Japanese mine output constituted a major supply-side challenge on world markets as well (particularly in the late-sixteenth and early-seventeenth centuries), however, we should avoid conceptualizing the problem in "Western-versus-Asian" terms. Atwell has long emphasized the importance of Japanese silver exports to China, yet he is justified in insisting that events in Ming China were intimately linked with Spanish America. Saudi Arabian oil production today impacts oil prices worldwide, irrespective of whether a particular area purchases any Saudi oil. So too with early-modern silver: Spanish American production played a critical role in driving down the value of silver throughout the world. The value of silver in China was heavily influenced by American production, irrespective of the fact that Japanese mines furnished more silver to China during particular periods. There was a world silver market and America was the biggest supplier.

Moloughney and Weizhong point out that silver imports were huge during late Ming times, rather than having fallen off; decline in silver imports occurred only later, when the Manchus were consolidating and restoring China's economic stability. The crucial issue has to do with silver's value, however, not with quantities imported per se. It was the accumulation of many generations of silver imports that drove the value of silver down in China. It was the relentless imports of silver which reduced its value. This decline in value, in turn, created fiscal problems for the Ming, so large imports of silver during the latter years of the Ming empire are compatible with our argument that silver was linked to that decline.

We disagree with Goldstone's contention that population pressure caused price inflation in Ming China.[48] Our model is consistent with the reasoning of James Geiss, who believes that early-modern price inflation is rooted in the silver market:[49]

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48 Flynn (1984b) shows that the "population thesis" explanation for Europe's price revolution is consistent with neither the empirical evidence nor with economic theory.

> Such massive infusions of silver diminished the purchasing power of the metal. Silver, like any commodity, lost its high value when supply exceeded the usual demand. This in turn affected the prices of almost everything in the empire, for the structure of prices was tied to the value of silver.

Ignoring the issue of the cause of price inflation in China for the moment, let's analyze the remainder of Goldstone's argument (from the inflation component onward). He says that many tax payments were fixed in terms of the quantity of silver paid.[50] Since the value of silver declined up to around 1640 (i.e. there was price inflation), fixed quantities of silver taxes implies that the purchasing power of government tax revenues must have fallen. In modern terminology, Ming taxes were not indexed for inflation; collecting constant (or slowly increasing) revenues in terms of a money which itself suffered significant decrease in value was bound to spell fiscal trouble. It was in this way that price inflation produced fiscal crisis, according to Goldstone; the Qing attained supremacy over a Ming dynasty which could no longer finance its defence. We simply add that reduced cost of producing silver in Japan and distant America was the base cause of silver's worldwide loss in value.

We believe that our argument complements the main themes of Atwell, Goldstone, and Moloughney and Weizhong. During silver's era of global center-stage, developments inside Asia impacted the West even more profoundly than any reciprocal Western influence on Asia. Just as both blades of a scissors are required for cutting,

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49 Geiss (1979, p.158). Goldstone's (1991,p.) criticism of monetary explanations for price inflation in China is twofold: (1) Western silver comprised an insignificant fraction of China's silver stock, and (2) there was a 'chronology problem', in that periods of silver imports did not match at all with Chinese price trends. For discussion of why such silver-and-price trends are consistent with our (unconventional) microeconomic view of silver, see Doherty and Flynn (1989), Flynn (1986), and Flynn (1991).

50 According to Liang (1970, p.22): "Moreover, once the commutation price of silver was fixed by law there were few changes over a long period. After a sufficient length of time had passed, both the government and the taxpayers logically and easily forgot the original meaning of the commutation of taxes, and payment was effected entirely in terms of silver, at fixed rates."

silver's demand side (China) and its supply side (New World and Japan) require a global perspective in order to view the interface. Trade in silver affected the entire world. Scholars should continue to debate the impact of the West on Asia, but it is also time to consider the profound impact of China on the West.

Wallerstein[51] and other advocates of 'world systems' thinking would have us believe that the early modern economy was not yet global. There are purported to have been several 'world systems', connected only superficially via inconsequential 'luxury' trade. Our analysis contrasts sharply with this image. Integration of the world economy embraced all continents for the first time beginning with global silver trade in the sixteenth century. This trade played an integral role in worldwide price inflation, the rise and fall of Spain, the emergence of Japan as an independent political power, the birth of the Pacific Rim Economy, and a host of other structural developments.

That intercontinental trade mainly involved luxury goods is a truism. Given the state of transportation technology, how else could expensive voyages be financed but by shipping high-value, non-perishable goods?[52] The same principle holds for long-distance trade today; falling transportation costs keep bringing ever lower-priced goods into the fold. In general, trade from the late sixteenth century to today is best viewed as a technological and economic continuum. Early modern silver trade around the globe represented the birth of the "world economy." Much of what passes for isolated, local history was in fact determined by forces which can only be understood in the context of world history.

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51 Wallerstein (1974). For criticism of Wallerstein's treatment of Imperial Spain and the origins of Capitalism in Europe, see Flynn (1984a).

52 While it is generally true that long-distance trade involved high-value goods, lower-value goods were sometimes shipped great distances too. Japanese copper, for example, competed with Swedish copper in seventeenth-century Europe. (Glamann, 1981, p.174).

Chapter 3: Silk for Silver: Trade via Macao and Manila in the 17th Century

A. Introduction

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

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

It is clear in the historical literature that gold and silver were traded on a global scale as commodities. Silver and gold are neither more nor less "real" than any other commodity, irrespective of whether they were used for monetary purposes.[53] Turning back to the issue of East-West commerce, trade was always "in balance." No one

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53 All mainstream macroeconomics books make a fundamental distinction between the "real" versus the "monetary" sectors of the economy. Our analysis is based upon the model of Doherty and Flynn (1991), a microeconomics-based theory which rejects as artificial the "real" versus "monetary" dichotomy.

voluntarily surrendered products without receiving equivalent value in return; therefore, no outside balancing agent (monetary or otherwise) was necessary.

Using an unconventional, non-macroeconomics model, Flynn and Giraldez (1994a; 1994b) have pointed out why tens of thousands of tons of the particular metal, silver, flowed to China during the early-modern period. Silver was anything but a passive, balancing item.[54] Ming China had gradually converted both its monetary and its fiscal (i.e. tax) structure to a silver standard by the second half of the sixteenth century.[55] If we extend consideration to China's entire tributary system, probably over a third of the world's people were involved in the conversion to a silver standard. This momentous event created a huge demand-side surge in the marketplace which, in turn, prompted a doubling of silver's value within China relative to the rest of the world. (Geiss, 1979, p.165) High silver prices in China created prodigious profit opportunities for all entrepreneurs participating in the East-West trade. Europeans were middlemen in the movement of silver from America (and Japan) into China; they were neither producers nor end-buyers in the global silver market, however, so it is a mistake to place Europe at the causal center of this commerce. America and Japan dominated on the production side; China dominated on the demand side.

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

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54 Atwell (1977; 1982; 1986; 1988) has for years stressed the importance of silver imports in Chinese economic history. Also, see Chuan (1969).

55 The basis of the monetary system was silver, despite the fact that the Ming government did not mint silver coins. Bullion (sometimes cast in the shape of a shoe) and foreign silver coins performed the functions of money.

European leg of the silver trade; Europe's main source of silk was Persia (Chaudhuri, 1965, pp.203-206) (Glamann, 1981, Ch.6) (Steensgaard, 1974, Ch.9), not China, so Sino-European trade lies outside the scope of this study. Silk dominated Chinese exports via two routes: (1) the trade with Japan and (2) the direct route to America over the Pacific. The two most important entrepots in the silk-for-silver trade were respectively Macao, transshipment center for the Nagasaki trade, and Manila, linchpin of the Acapulco trade.

The remainder of this paper is organized as follows. Section II contains brief comments about silk production within China. Silk's journey via Macao into Japan is discussed in Section III, while Section IV has to do with shipment of silk through Manila and into the Pacific. A summary and a conclusion comprise the final section.

B. Silk Production In China

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

The Ming government established a few very large Imperial silkworks, operations which the Ch'ing expanded after their defeat of the Ming in 1644. According to Shih Min-hsiung (1976, p.40-41), the Soochow Imperial Silkworks more than quadrupled in scale, from 173 looms and 504 artisans under the Ming, to 800 looms and 2,330 artisans under the Ch'ing by 1685. The three Imperial silkworks collectively -- in Hangchow, Nanking, and Soochow -- contained 1,863 looms and nearly 7,000 artisans in 1685. Over

600 looms and more than 2,000 artisans per location constitutes large-scale production indeed, but these factories were not always profitable. Well-to-do households had been assigned as government weavers in the Imperial silkworks and they were obliged to sell to the government at low official prices. Bankruptcy resulted for many. Technical considerations confined traditional silk production to small-scale, peasant households. Silk production -- from planting and maintaining the mulberry trees, to the raising of silkworms, and on through the formation of cocoons -- was exceedingly labor intensive. Supervision of such labor-intensive processes would have been too expensive in large-scale factories, so decentralized production evolved as the cost-effective choice. Availability of inexpensive hand-reeling machines also provided a complementary reason for the growth of silk reeling as a household-based industry; little capital was required. Decentralization characterized the weaving stage was as well.

Despite the fact that silk production was based on a decentralized, peasant-household foundation throughout the early-modern period, the government had always been "noted for its assiduous promotion of sericulture." (Shih Min-hsiung, 1976, p.2) China's tax structure deliberately encouraged domestic silk production, both through positive and negative inducements. On the carrot side, silk production was singled out for exemption from taxation. On the stick side, inordinately high general tax quotas are said to have indirectly forced citizens into silk production. General taxes were onerous and payable exclusively in silver. Since silk exports constituted the primary avenue through which to obtain foreign-produced silver, Chinese citizens were forced to export massive amounts of silk in order to obtain the silver required for general tax obligations. Shih's argument is intriguing in that it suggests a rather direct link between silk and silver. By commuting tax payments exclusively to payment in silver, the Ming 'Single Whip' tax reform indirectly mandated the production of export items which were acceptable in exchange for silver in international markets. Among all potential export products, the demand side of the silk market was exceptionally robust in both hemispheres. Thus, although silk production appears on the surface to have been the epitome of (decentralized and untaxed) privatization, government fiscal policy provided a powerful driving force in the background. The 'Single Whip' fiscal reform played a crucial role in stimulating silk production because this industry provided a product readily exchangeable

in world markets. Silk provided the primary vehicle through which silver could be attracted from its production centers in Japan and America.

C. Macao, Gateway To Japan

Conservative, official estimates indicate that Latin America alone produced about 150,000 tons of silver between 1500 and 1800 (Barrett, 1990, p.237), perhaps exceeding 80% of the entire world's production over that time span. (Cross, 1983, p.397) Despite America's dominance in silver production over those three centuries, Japan seems to have been the primary exporter of silver to China in the late-sixteenth and early-seventeenth century period, shipping perhaps 200 tons per year at times , but falling off dramatically in the second half of the seventeenth century. (Kobata,1965)(Iwao, 1976)(Innes, 1980, Chapter VI)(Souza, 1986,pp.57-58)(Tashiro, 1986, p.2) In round numbers, about 10,000 tons of silver was exported out of Japan and into China in the late sixteenth and early seventeenth centuries (Yamamura and Kamiki, 1983, p.351), leading Cartier (1969, p.461) to conclude that Asia's role in precious metals history has been under-represented:

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

Since Japan was not on friendly terms with China, it was necessary to find intermediaries to carry Japanese silver exports. Europeans were convenient middlemen.

An accidental landing by a few Portuguese at Tanegashima in the mid-1540s, aboard a Chinese junk, spawned European commerce in Japan. The subsequent establishment of the Portuguese at Macao in 1555 provided secure access to the major market of Canton. Control of Nagasaki was handed over to the Jesuits in 1571, providing the necessary terminus for Portugal's annual Nao ships from Macao. The Portuguese carracks were only 400 to 600 tons at first, but by the end of the sixteenth century there were behemoths of 2,000 tons, "the largest vessels in the world at that time, rivalled in size only by the Great Manila galleons."[56] (Boxer, 1963, p.13) Later on, the Portuguese

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56 According to Boxer (1963, p.13), a shipping ton at that time referred to a space available for cargo of some 60 cubic feet, which means that the large Naos held some 120,000 cubic feet of cargo.

reduced risk by employing more numerous, but smaller, "galliots" in the Japan trade. (Boxer, 1963, pp.13-14)

Silver was obviously the dominant Japanese export in the first half of the seventeenth century. The main export from China to Japan was silk: "For the prosperity, if not the very existence, of Macao largely depended on the silk trade with Japan." (Cooper, 1972, p.424) Japan was a silk-producing country itself, but Chinese silk was of superior quality and therefore in heavy demand. By order of the Bakufu in 1604, Japan's silk import trade had become monopolized by a merchant group called the "ring" (representing the five shogunal cities of Edo, Kyoto, Osaka, Sakai, and Nagasaki), designed to keep purchase prices lower than would have prevailed under a competitive regime: "By purchasing at this depressed price, the government controlled a significant portion of the market. With such control over the distribution and sale of raw silk, the Bakufu earned sizeable revenues." (Souza, 1986, p.59) The Portuguese referred to this system of wholesale buying as the "pancada."[57] It should be pointed out that, behind the scenes, powerful Indian and Chinese merchants frequently used Portuguese as 'fronts' in this trade; likewise, Jesuits and Macao factors were agents of Japanese merchant families, daimyos, and even the military dictators Hideoshi and Ieyasu. (Boxer, 1963, p.13) Europeans were not so dominant in the inter-Asian trade as was once thought; sometimes they were not even the most crucial middlemen in the silk-silver trade.

It is clear that the lion's share of Chinese silk exports via Macao was destined for Japan. By the 1630s groups of galliots leaving Nagasaki for Macao carried an average of 450 to 600 chests of silver per vessel. (Boxer, 1963, pp.138-147) In addition to the Portuguese, 60 to 80 Chinese junks (the larger ones averaging about 600 tons) visited Japan annually between 1613 and 1640, and by the beginning of the seventeenth century Japanese "red seal" ships also offered competition. (Boxer, 1963, p.4) Portuguese silk exports to Japan reached nearly 3,000 picols around 1610, representing about 30 percent of this market. Imports of raw silk alone fluctuated between 2,500 and 4,000 picols annually during the 1620s and 1630s. (Souza, 1986, p.53) After the Portuguese were

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57 Spaniards implemented a similar system in Manila, but widespread corruption led to its replacement by more decentralized fairs early in the seventeenth century.

expelled from Japan in 1639, the Dutch enthusiastically took their place: "The VOC became a regular supplier and competitor during these decades [after 1640] and the market demonstrated oversupply conditions with the importation of over 4,000 picols of raw silk per year." (Souza, 1986. p.53) Japanese silver exports waned during the second half of the seventeenth century, but gold production surged and Japan became the largest copper producer in the world (much larger than Sweden).(Glamann, 1981, p.174) By 1689 Chinese ships were exporting three times more copper from Japan than were the Dutch (Iwao, 1976, p.16); copper exports peaked at 5,000 tons annually around 1697-98. (Kobata, 1984, pp.437-38) The famous "closure" of Japan during this period refers to restrictions placed on the movement of people. International trade continued and China was the key market.

D. Manila And The Pacific Route

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

The problem with Chaunu's argument is that precious metals history has been revised since his studies a generation ago. American silver production did decline, but

only later in the century and even then far less dramatically than scholars once supposed. (Brading and Cross, 1972)(Cross, 1983)(Barrett, 1990) (Morineau, 1985) More to the point, mounting evidence indicates that there was no secular decline of silver exports over the Pacific route during the seventeenth century. This should not surprise us because China's main source of silver -- Japanese mines -- definitely declined in the second half of the seventeenth century. It is to be expected that exhaustion of Japanese mines stimulated demand for New World silver in the second half of the seventeenth century; Spanish America was the sole alternative source. The best evidence today indicates that at least two million pesos of silver per year traversed the Pacific via the Manila galleons throughout the seventeenth century.(Chuan, 1969, p.79) In short, there was no secular decline in the Pacific leg of the silk-silver trade.

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

Heavy loses by merchants from Seville and Cadiz made them acutely aware of competition from the Manila traders. They pressured the King to issue trade prohibitions in 1587, 1591, 1593, and 1636. Again, these enactments were always doomed because authorities in both Manila and Acapulco cooperated in systematic deception of the home

country: "Virtually all Manilenos attempted to circumvent the law, and Mexican officials generally aided them by tolerance or outright cooperation." (Reed, 1967, p.129) No one disputes that the Manila trade around the turn of the century was substantial. For example, cargo captured from the Santa Anna, which was plundered and burned off the California coast in 1587, was valued at 2 million pesos; Cavendish sailed triumphantly up the Thames "with his sails of Chinese damask and his riggings of twisted Oriental silk." (Perez Gilbert, 1956, p.44) The permiso of 1593 (reaffirmed in 1604 and 1619) prescribed a maximum (mostly silk) cargo value of 250,000 pesos (out of Manila) and 500,000 pesos (upon arrival in Acapulco). That is, the legal limit was set at one quarter of the value carried aboard the Santa Anna. The literature is full of instances, however, which reveal that these permisos were utterly ineffective: "In fact at the opening of the seventeenth century the drain of pesos from Mexico to the Orient through the Philippines was estimated at 5 million pesos annually, with a reported 12 million pesos being smuggled out in 1597." (TePaske, 1981, p.436) The Santo Tomas in 1601 carried five times (2,500,000 pesos) the legal limit, half a million pesos more than was captured from the Santa Anna fourteen years earlier and five times the legal limit. Reports from 1688 in Manila indicate that 2,000,000 pesos in Acapulco was the normal cargo. In 1698 the San Francisco Xavier is reported to have brought cargo valued at 2,070,000 pesos; a volume repeated in 1699. (Legarda, 1955, p.361) Looking at the entire seventeenth century, Chuan (1969, p.79) estimates that silver exports via Acapulco and Manila maintained a pretty consistent level of about 2 million pesos throughout. Most of the actual trade was simply not reflected in official tax records:

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

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

Division of this essay into separate sections -- one on the Macao trade and the other on the Manila trade -- is artificial. Events of the 1630s make it clear that Macao and

Manila were competitors, and sometimes collaborators, in the global marketplace for silk and silver. In describing the ineffectiveness of the 1633 royal prohibition of the Macao-Manila trade, Boxer (1963, p.141) says that "40 large trading-junks brought so much silk to Manila that the galleons bound for Mexico in 1634 could not take it all." Schurz (1959, p.135) calmly states that the "usual value of the annual imports from Macao to Manila at this period [around 1633] was reliably estimated at about a million and a half pesos" in the period 1632-1636; remember that this is six times greater than the legal limit, and we are talking about trade via Macao! Upon arriving at Manila in June 1635, the new Governor of the Philippines forbade departure of Acapulco-bound galleons, "on the plea that the Mexican port was overstocked with Chinese goods." (Boxer, 1963, p.155) In 1635 the King also named Pedro Quiroga to investigate. By enforcing existing levies, Quiroga's inspector in Acapulco exacted such heavy duties from the next shipment that, by merely enforcing existing levies, "these two galleons allegedly yielded more money to the Crown than the sum total which had been collected from all the previous galleons... with the result that the Manilenos defaulted on their debts to their Chinese and Macaonese creditors, who returned home bankrupt in 1637-1638." (Boxer, 1963, p.155) Merchants in Manila reacted by refusing to freight another galleon until the old order of things was reestablished. From 1636 to 1637, the only vessel that sailed for Mexico was a patache "with a cargo worth 150,000 pesos consigned to the account of the all-powerful... Olivares, chief advisor of the king." (Zaide, 1979, p.509) The king was forced to retreat from enforcement of existing tax laws; otherwise, the trade would have been extinguished altogether. In 1640 a second visitador was appointed, "Juan Palafox y Mendoza, more tactful and reasonable than his predecessor, assumed a conciliatory policy." (Zaide, 1979, p.510) In other words, Palafox looked the other way as smuggling resumed its domination of the Pacific trade.

It should surprise no one that this mid-30s trade blockage in Manila created tremendous commercial opportunities for participants in the Macao-Nagasaki leg of silver's journey. Portuguese exports alone from Nagasaki in November 1637 were valued at 6.1 million guilders [about 2.4 million pesos] (Boxer, 1963, p.147); if this is an accurate number, then more than 5 million pesos (128 tons) of silver must have been exported from Japan then because the Portuguese accounted for less than 50% of Japan's

export trade (Souza, 1986, p.58). The Quiroga catastrophe led to the bankruptcy of particular merchants and financiers in Macao and China, but other participants in the Japanese leg of the trade enjoyed wonderful opportunities.

The silk-silver industry was a dual-engine craft capable of flying on a single engine. When silk failed to exchange for silver via Manila, Nagasaki-Macao picked up the slack. Later in the seventeenth century, Japanese silver supplies became exhausted faster than their American counterparts.[58] Therefore, Acapulco-Manila became was the primary engine fueling the silk-silver trade in the second half of the seventeenth century. In other words, Chinese silver imports may have declined later in the seventeenth century, but the decline was attributable to lower Japanese silver exports. The Manila galleons continued to bring 2 million pesos of silver per year.

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

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

Nor does Gemelli Careri's description of his late-seventeenth century visit to the Philippines elicit visions of commercial collapse on the other side of the Pacific trade: "The author of nature placed Manila so equally between the wealthy kingdoms of the East and of the West that it may be accounted one of the greatest places of trade in the world." (quoted in Zaide, 1979, p.505)

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58 Kishimoto-Nakayama (1984, p.233) states that Japanese silver exports to China increased after the 1656 ban on coastal trade by the Ch'ing, peaked at 2,600,000 taels (= 3.25 million pesos) in 1661, and only then faded into insignificance.

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

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

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

A welcome addition to New Spanish yields, Chinese silks enabled the guilds to vary their fabrics, for the Oriental yarn was more suitable for smooth thin weaves than the heavier, better-wearing Mixtecan product. With the expansion that resulted from this new supply, silk manufacturers in Mexico City, Puebla, and Oaxaca gave work to more than 14,000 people. (Borah, 1943, p.90)

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

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

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

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

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

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

E. Summary And Conclusions

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

It is a mistake to conceptually combine silver and gold into categories such as "precious metals" or "money." Doing so led to the conventional conclusion that "precious metals" flowed from the West to the East in order to compensate for a European trade

deficit. Europe's 'real'-sector imbalance necessitated compensatory 'monetary'-sector flows of precious metals to Asia; European real-sector demand was the center of the action. This scenario distorts reality. The fact is that a particular metal, silver, flowed into China and another particular metal, gold, flowed out of China. Combination of these two metals into a singular category is a bad habit, one which precludes understanding of the causes of global trade in the early-modern period. Proper interpretation of early-modern trade requires (microeconomic) analysis of each product independently.

Silk was China's dominant export. This essay attempts to place China's silk industry in the context of its global exchange for silver. Although silk production in China was decentralized, based on a peasant-household foundation throughout the early-modern period, China's government encouraged its domestic silk industry via a unique tax structure. First, silk production was normally exempt from direct taxation, which encouraged silk's supply side. Second, the Ming Dynasty had consolidated numerous tax levies via its famous 'Single Whip' tax reform, which stipulated that taxes had to be paid exclusively in silver. This tax reform led to a doubling of silver's value in China relative to the rest of the world, which in turn gave merchants around the world ample incentive to ship silver to China on a unprecedented scale. But silver had to be traded for something produced in China. Silk turned out to be the Chinese product in heaviest demand in both hemispheres. Chinese people swapped their silk for foreign silver because they needed silver to satisfy general tax obligations. Silk and silver shared a unique, symbiotic trade relationship. Japan and Spanish America were the primary markets for Chinese silk exports. Japan was China's main source of silver in the late-sixteenth and early-seventeenth centuries, so it is not surprising that Japan was also a major importer of Chinese silk. Chinese and Japanese merchants were important participants in the silk-for-silver trade via Macao, as were the Portuguese and (later) the Dutch. The other major entrepot in the silk-silver trade was Manila, center of Chinese silk's exchange for Spanish American silver. In the 1630s Macao became a dominant factor in the Manila leg of world trade in silk and silver, aside from its crucial role in the Japan trade. It is important to keep in mind that the silk-silver trade provided a fundamental underlying structure which connected the economies of China, Japan, Macao, Manila, Taiwan, Southeast Asia, Spanish America, Europe, and many other parts

of the world.[59] It was not unlike today's oil market; squeeze one source of supply or demand and everyone is affected.

Conventional wisdom, based on Pierre Chaunu's study of tax records, holds that the Acapulco-Manila trade was vigorous up to the 1630s, after which it declined (along with the production of New World silver). Since Chaunu's work a generation ago, research demonstrates that American silver production did not fall off rapidly as previously indicated; it was larger in the seventeenth than in the sixteenth century. In addition, conservative estimates now maintain that about 2 million pesos of silver annually passed via Manila into China throughout the seventeenth century. The robust trade after the 1630s was not detected by Chaunu because he analyzed only official tax records, while smuggling was pervasive:

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

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

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

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59 Even though it was Persian (rather than Chinese) silk that Europe imported, Europe was deeply entangled in the global silk-silver web.

Chapter 4: China and the Spanish Empire

A. Introduction and Overview

One cannot help but marvel that a small country such as Spain, with half the population of France, could have risen to become the Western Hemisphere's dominant power in the sixteenth century, only to suffer a precipitous and ignominious collapse during the first half of the seventeenth century. Certainly after the Treaty of Westphalia in 1648, the decline of Spain was clearly visible to all. While it is unclear whether Spain's rise was more spectacular than her decline, or vice versa, all agree that both the flowering and decay of the Spanish Empire had immense impacts on European history. What is generally not fully appreciated, however, is the depth to which the Spanish Empire was rooted in global -- not just European and American -- affairs.

One responsibility of economic history is to explain how a worldwide enterprise such as the Spanish Empire was financed. Elucidation of the financial basis of Spain's rise might lead to a more complete understanding of Imperial decline as well, particularly if a direct linkage were established between erosion of the Empire's fiscal foundation and Castile's inability to sustain Imperial ambitions. Historians disagree, of course, about the financial basis of Imperial Spain's impressive rise. Some argue that Imperial finance was based on domestic resources. Taxes levied within Castile comprised perhaps 70% of Crown revenues (Elliott,) and were certainly onerous for the average Spaniard: The "population of Castile was taxed more heavily than any other people in Europe...by 1590 one-third of the average peasant's income in a good year was consumed in tax" (Parker, 1979, p.188); in particular, it is known that increasingly onerous taxation plagued Spanish peasants during both the Empire's rise and its fall. Despite the fact that taxation within Castile was heavy, others nontheless insist that the Spanish Empire was propelled by international factors.[60] In short, there is fundamental disagreement in the literature as

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60 The classic "external" argument is Hamilton (1937), of course, but Flynn (1982), Kamen (1978), and others adopt approaches different from Hamilton.

to whether domestic or international factors were most responsible for the emergence of Imperial Spain.

This essay attempts to take the debate one step further. Spain's domestic economy was intimately intertwined, not just with the economies of other European nations and America, but with the emergence of trade at the global level. In other words, both Spain's domestic economy and her worldwide Empire must be viewed from the perspective of a global economy. More specifically, the emergence of a new monetary and fiscal regime within Ming China was the driving force behind global trade in the early-modern period. It is the contention of this essay that the rise and fall of the Spanish Empire must be viewed in the context of a Sino-centered world economy.

In Section II, we discuss the external, international basis for the rise and decline of Spain. Our argument is twofold. First, Castile's Empire was financed overwhelmingly out of profits from Mexican and Peruvian silver mines; much of the economic activity subject to taxation within Spain was either a directly or indirectly generated by the American trade.[61] In other words, a non-European product -- American silver -- was a driving dynamic at the foundation of the Spanish economy. The fact that the primary point of tax collection was within Spain -- rather than at alternative points of taxation in the New World, elsewhere in Europe, or in the Philippines -- is entirely consistent with the statement that Mexican and Peruvian silver production dominated the Spanish economy. The central point is that Castile's ultimate source of profit was American silver production, irrespective of whether that industry's activities were taxed within Spain or at points somewhere else in the Spanish Empire.

The second part of Section II's argument adds a new element to the debate, one which requires reinterpretation of cause-and-effect with respect to Europe's general trade with Asia in the early-modern period. We maintain that the motivation for East-West trade depended upon momentous events originating within Ming China, as opposed to the conventional emphasis upon dynamics emerging from within Europe. This reinterpretation of East-West trade's cause leads to a corrolary conclusion: The magnitude

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61 This portion of the argument summarizes a more complete statement already made by Flynn (1982).

and duration of Spanish America's silver-mining boom -- and thus the Spanish Empire itself -- depended upon changes originating within Ming China.

Events which unfolded around and during the reign of King Philip IV (16..- 16..) are reviewed in Section III. The decline of Spain is viewed as an unavoidable consequence of the interplay of global economic forces in the silver market. Castile's decline cannot be properly blamed on Philip IV, or any other individual or group. Kingdoms, merchants and producers all danced to a new and unintentional tune. Directed by an impersonal global marketplace in which China played a crucial role, the logic of this new music yielded outcomes unique to this historical period -- for example, the rise and fall of Spain.

In Section IV, domestic-based arguments for the decline of Spain are reviewed from the China-centered vantage suggested in this essay. Where others have perceived domestic causation for the rise and decline of Spain, we instead perceive domestic reaction to unyielding global market forces which guaranteed decline.

The significance of the city of Manila -- an entrepot whose founding in 1571 represented the birth of both Pacific Rim trade and world trade -- is discussed in Section V's conclusion. Crown finances were bolstered, not drained, as a result of Spain's direct trade access to the Chinese market via the "Spanish Lake," the Pacific Ocean. (Spate, 1979) Spain's reign as an early-modern superpower depended upon the sale of silver, and the Acapulco-Manila galleons represented Spain's only direct access to the world's dominant end-customer, giant China.

B. The 'Single Whip Tax Reform' and East-West Trade

The standard textbook explanation for the drain of precious metals from Europe to Asia in the early-modern period has mostly gone unchallenged: Europe's trade deficit with Asia is said to have led to Europe's loss of treasure. It seems Europeans became enamored with Asian products -- such as silks, spices, and porcelain -- while Asian demand for European products remained comparatively weak. Large European imports of Asian products, coupled with meager Asian imports from Europe, implied an overall European trade deficit with the Far East. Maintenance of Europe's Asian trade deficit required that precious metals flow from Europe into Asia. Europe's export of precious

metals is perceived as an effect, an unavoidable response which compensated for the root cause -- Europe's trade imbalance. In the jargon of economics, the cause of the imbalance emanated from the "real-sector"; the effect was a "monetary-sector" flow of precious metals from Europe to Asia. Note that dynamism in this picture emanates from demand-side forces within Europe; Europeans were the ones who were receptive to wares from strange lands. Europeans were open and adventurous. Asian attitudes were insular and static. European dynamics caused a trade deficit with Asia. Precious metals flowed eastward in response.

The orthodox interpretation outlined above is simply wrong. First, it was a specific metal -- silver -- which flowed from America, through Europe (not from Europe), and on to the East. This point about a specific metal raises questions about fundamental categories within monetary theory itself. The propiety of aggregating silver and gold into a category called "precious metals" is not challenged by monetary historians, yet this practice is responsible for tremendous confusion in the early-modern literature. While it is true that prodigious quantities of silver flowed eastward out of Europe between 1550 and 1650, for example, it is also true that gold was shipped from China into Europe simultaneously.[62] Moreover, Europe imported substantial quantities of Japanese copper later in the seventeenth century -- much of which European mints monetized -- at a time when Europe continued to export silver eastward. In other words, one specific type of monetary substance (silver) flowed Eastward in exchange for two other money substances (gold, then copper) which flowed in the opposite direction (into Europe). What sense does it make to aggregate items into a single category -- labeled "money" or "precious metals" -- when we know that prodigious quantities of the individual components comprising this category were bartered against each other for more than a century? The answer is that conceptual combination of gold, silver, and copper obfuscates their individual movements. Furthermore, the practice of aggregating metals with such dissimilar histories has unintentionally precluded discovery of the true basis for East-West trade in the sixteenth and seventeenth centuries.

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62 See, e.g. Flynn (1986)

Understanding intercontinental trade during this period requires a microeconomic (as opposed to macroeconomic) approach to precious metals history. Each metal must be analyzed in terms of its own demand and supply conditions; which is to say, microeconomic analysis is required.[63] The central demand-side question is why the specific commodity silver, out of thousands of potentially exportable products, dominated the eastward leg of Western trade with Asia in the early-modern period? Economic histories of Ming China have contained the answer for quite some time. The trick is simply to place China's silver history in a global context.

A global perspective quickly reveals two dominant regions of silver production, Spanish America and Japan. Conservative, official estimates indicate that Spanish America (Mexico and Peru) alone produced about 150,000 tons of silver between 1500 and 1800 (Barrett, 1990, p.237), perhaps exceeding 80% of the entire world's production over that time span. (Cross, 1983, p.397) Despite America's dominance in silver production over three centuries, Japan may have been the primary exporter of silver to China in the late-sixteenth and early-seventeenth century period, shipping perhaps 200 tons per year at times, but falling off dramatically in the second half of the seventeenth century. (Innes, 1980, Chapter VI)[64] Since all of the great silver mines in both hemispheres ultimately sold to the Chinese marketplace, it is natural to ask how China could have persistently absorbed tens of thousands of tons of silver from throughout the world over the entire early-modern period?

There is no motivation to produce a commodity, of course, in the absence of customers willing to buy it. By far the world's dominant end-buyer of silver was China. An extensive paper-money system existed in China by the 11th century, half a millennium ahead of similar developments in Europe. As has happened so many times throughout history since, Ming rulers succumbed to the temptation to finance government projects via excess issuance of paper monies. Military expenses constituted perhaps the

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63 See Doherty and Flynn (1991).

64 According to the calculations of Barrett (1990, p.225), Japan may have produced about 30% of the world's silver in the sixteenth century and around 16% in the seventeenth century.

most persistent drain on Ming revenues, but projects such as the movement of the capital to Beijing and geographical expeditions were also horrendously expensive. What cheaper short-run solution than to simply print money?

Unchecked issuance of paper money led to more and more price inflation, of course, until the value of Chinese paper money fell (predictably) toward its cost of production; in other words, it became worthless. Business communities cannot function efficiently without a relatively stable monetary standard, of course, and Chinese merchants came to choose silver as the de facto monetary standard. "Silverization" of the monetary system gradually spread from the vibrant coastal trading areas of South China to the rest of the Ming Empire. Over time, the bulk of the merchant-sector portion of China's monetary system converted to a silver standard. Copper-based monies continued in use for everyday purchases by the common people, but business transactions ineluctably converted to payment in silver.

It is of major significance that, concurrent with the silverization of it's monetary system, China's fiscal system also gradually converted to a silver standard. At first local, then regional government entities began demanding that taxes be paid specifically in silver. The Ming Dynasty initially resisted both the monetary and the fiscal "silverization" of China, but as it became increasingly clear that the silver movement could not be stopped, the Ming themselves abandonned resistence. Over time, more and more Ming taxes commuted to payment in silver. Silverization of the Ming fiscal system culminated in the so-called "Single-Whip Tax Reform" of the 1570s. The Single Whip consolidated scores of previously independent taxes into a single tax; moreover, it was mandated that this single tax be paid exclusively in silver, even for the peasant. Since China contained an estimated one-quarter of the world's population -- well over one hundred million people -- conversion of its monetary and fiscal system to a silver standard was bound to have a global impact of truly historic proportions. When we include China's numerous tributary states in the silver movement, perhaps one-third or even 40 percent of the world's populace had converted to a silver monetary-and-fiscal foundation.

Not surprisingly, such a massive shift in the demand for silver caused its value to soar. Using bimetallic ratios as an indicator, silver's value within China jumped to about

double the levels prevalent in America, Japan, Europe, and much of the rest of the world. Since silver was durable and relatively high in value, the divergent value of silver in China vis-a-vis the rest of the world created enormous opportunities for profitable trade. Here was a classic case of arbitrage opportunity: One need merely purchase in markets where silver was cheap and sell it in markets offering a higher price. Since China offered double the rest-of-the-world price for silver, the white metal gravitated ineluctably to that region of the globe. China was such a giant "vacuum cleaner" or "suction pump" for silver (bomba aspirante), in Godinho's (1963, I, pp.432-465) colorful terms , that it took the importation of tens of thousands of tons of Japanese and American silver into China for about a century in order to finally eliminate silver-gold arbitrage profits. It seems that the main arbitrage phase of the silver trade ended around 1640, by which time bimetallic ratios around the world had converged.[65] The Chinese economy continued to attract significant (but reduced) quantities of silver during the second half of the seventeenth century, during what might be characterize as the "non-arbitrage phase" of this silver trade.[66] China remained a major player in world trade during the later, non-arbitrage phase, but the global impact of China during the non-arbitrage phase was not as dominant as it had been during the arbitrage phase prior to 1640.

If forced to choose a watershed for the seventeenth-century global economy, we would pick the years around 1640. Japan had escaped -- or, according to some, had been expelled from -- China's tributary system. The collapsing Ming were being supplanted by Manchus from the north, the Qing. The Price Revolution had ended because silver's value had fallen to its cost of production. Portugal seceded from Spain in 1640 and the Treaty of Westphalia (1648), representing a new order in Europe, rendered Spain's decline

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65 See, for example, Atwell (1982, p.82) and Yamamura and Kamiki (1983, p.352).

66 The non-arbitrage phase of the East-West silver trade is discussed in Flynn (1991) and in Chapter....below. It should be pointed out that an episode of arbitrage arose once again in the late seventeenth century, when disruptions of the coastal trade by the Qing caused over-valuation of silver once again (as demonstrated in divergent bimetallic ratios). (von Glahn, forthcoming) Even though episodes of divergent bimetallic ratios like this do occur after 1640, we find it convenient to think of the post-1640 portion of the seventeenth century as a "non-arbitrage" phase overall.

clearly visible to all. We contend that a common thread connected all of these seemingly unrelated events around the world -- silver.

C. Culmination of Spain's Decline under Philip IV

The Ming Empire's conversion to a silver standard -- in terms of both its monetary and fiscal systems -- unintentionally provided the fiscal foundation for the Spanish Empire.[67] Since Iberian power was based upon monopoly of its American silver mines (the richest the world had ever seen), and China predominated as silver's end-market, it stands to reason that Hapsburg Spain could not have risen in the absence of the silverization of China.

Too much attention has been paid to the quantity of silver entering Spain. The important thing was not just the quantity of silver secured by the Crown, but its purchasing power. If we compare Crown silver imports during the interval 1591-1595 with imports during the subsequent interval 1596-1600, for example, E.J. Hamilton reported a 9.5% increase in Crown imports of silver, from 10.023 million pesos to 10.974 million pesos. Spanish prices (in silver-content terms) rose 12.85% between these two periods, however, so the Crown's inflation-adjusted receipts fell by over 3%. The logic is simply this: The Crown received roughly 10% more silver, but each piece of silver money had lost 13% of its purchasing power. Put another way, although the Crown collected almost a million more pesos in nominal terms during the 1596-1600 interval, the purchasing power of that greater quantity of silver fell by more than a quarter of a million pesos (Flynn, 1982, p.142). The Crown's direct silver imports rose in terms of quantity while falling in terms of purchasing power.

The secular decline in the purchasing power of Crown silver worsened in the first half of the seventeenth century and this was devastating in terms of fiscal viability of the Empire. Antonio Domínguez Ortiz considers the decline in the purchasing power of silver arriving to Seville (due to the actions of Dutch and British) as a permanent economic trend which eroded the Royal Treasury:

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67 See Flynn (1982)

> Mencionadas las causas violentas de la disminución en el arribo de caudales, debemos referirnos a otras menos aparentes pero más eficaes, por ser continuas y profundas. Una que no suele mencionarse, aunque cuenta entre las primeras, es la baja en el poder adquisitivo de la plata; las masas enormes que de este metal habían arribado a Europa habían saciado, en cierta medida, la tremenda escasez que a principios de la Edad Moderna se había dejado sentir de especies metálicas (1960, 284).
>
> [Having mentioned the violent causes for the decrease in the arrival of precious metals, we should make reference to other causes which are less apparent but more important because they are continuous and profound. One which is not usually mentioned, although it is among the most important, is the decline in buying power; the enormous amounts of this metal that had arrived in Europe had satiated, to some extent, the tremendous scarcity that at the beginning of the Modern Age had been felt in precious metals] (1960, 284)

The decline in the purchase power of silver was related, as previously discussed, to changes in an international silver market centered far from Europe. The declining price of silver and the higher costs of production should be considered the main variables in the troubled financial situation of the Spanish kings during the seventeenth century.

Crown debt had already been extraordinary during the second half of the sixteenth century; there were state bankruptcies in 1557, 1560, 1575, 1596. Braudel (1972, vol.1, p.53) reported Spanish revenue of 13 million ducats in 1577 versus 80 million ducats total debt in 1581. Koenigsberger (1958, p. 312) estimated Castilian debt at 20, then 50 and 100 million ducats in 1556, 1573, and 1598 respectively; two-thirds of the 1598 debt was for interest payments. Castillo (1963, p.52) put the consolidated debt at around 85 million ducats in 1598, as opposed to 9.7 million ducats total revenue. At the apex of the influx of American treasure (the 1590s), according to Vilar (1974, p.203) Crown expenditures exceeded not only the Crown's portion of the American treasure imported, but the total influx (both public and private). By 1623 Castile's debt had risen to 112 million ducats, "the equivalent of at least 10 years' revenue," and by 1667 reached the staggering sum of 180 million ducats (Parker, 1979, p.188). Charles Wilson (1977, p.29) concluded that "in plain words, politically and militarily, Spain had bitten off more than she could chew."

While it is true that Spanish fiscal policy was irresponsible in the context of Crown resources, the problem rested on the expenditure side. Government officials

cannot be blamed for shortfalls on the revenue side. Unprecedented production of New World and Japanese silver mines systematically (and inevitably) raised the world's silver stock (i.e. its supply). High levels of production were rational because it was required in order to collect silver-industry profits. No one can be blamed for the fact that the world silver supply grew faster than world demand; the gradual descent of silver's value to its cost of production was unavoidable. The fall in silver's value toward its production costs -- and therefore the erosion of profits for silver mines -- was so slow (a little over one percent per year) because of the dramatic demand-side growth in Ming China. The volume of Crown profits was largely beyond the control of the Spanish government; they controlled neither demand-augmenting events in China nor the laws of supply and demand which guaranteed eventual elimination of her New World profits. It can be argued that Spain's profits could have been used to build infrastructure -- as was done so wisely by the Shogun in Tokugawa Japan -- rather than wage expensive, multiple wars (Flynn 1991), but the withering of the profits themselves was unavoidable.

According to Domínguez Ortiz the hegemony of Spain in Europe lasted until 1618 and the Spanish Habsburgs were an important force during the Thirty Years War (1618-1648). Thus the few decades as an hegemonic power were followed by a longer period of time during which the king of Madrid mustered enough resources to be considered an enemy by the Dutch, French and English. The crucial reign of that period was that of Philip IV (1621-1665). His accession to power coincide with the renewal of the war with the Dutch in 1621 and the war with France in 1635 both entangled with the confrontations of the Thirty Years War (1618-1648). The financial pressures of the external war were accompanied by an array of costly conflicts and rebellions in the Empire's territories: The Catalan revolt in 1640 and the independence of Portugal were followed in 1641 by the conspiracy of the Duke of Medina Sidonia and the Marquis of Ayamonte to separate Andalusia from the Crown. Numerous popular uprisings prompted by rising prices for foodstuffs and higher taxes occurred in Vizcaya (1632), Evora (1637), Naples and Sicilia in 1647. External conflict and internal disintegration caused the dramatic twilight of the Empire: "From the end of 1640 Spain and Spain's international power were visibly crumbling" (Elliott 1970, 470). The territorial arrangements that followed the Thirty Years War recognized the defeat of Imperial Spain. In the treaty of

Munster in 1648 the King of Spain accepted the Netherlands' independence. The commercial preeminence of Amsterdam caused the ruin of Antwerp in the Spanish Flanders. The Peace of Westphalia sealed the defeat of the Habsburgs of Vienna and Madrid and a new European map was drawn based on independent states. "Until the days of the French Revolution, the Peace of Westphalia was considered to be the basis of the European state system" (Beller, 358). In addition to the losses in the Low Countries, in the Treaty of the Pyrenees with France in 1659 Spain ceded Artois, Roussillon and part of Cerdagne. Finally the treaty of Lisbon in 1668, during the minority of Charles II, acknowledged the independence of Portugal. The debacle of the Empire had begun in 1621 with the expiration of the Twelve Years Truce. The relentless fiscal pressure to finance the war ruined the Castilian economy and was a powerful cause of political turmoil throughout the Empire.

The army of Flanders had an annual expenditure of 1,500,000 ducats yearly, that rose to 3,500,000 ducats at the beginning of the hostilities: "Bringing the total expenditure for the year to well over 8,000,000 ducats" (Elliott 1970, 459). These costs on Spain's financial situation was disastrous. The expenditure for 1622 was evaluated in 9,161,845 ducats, but putting together all the possible sources of revenue, the Council of Finance came up with the figure of 2,296,500 ducats until 1626 without counting the silver from America belonging to the merchants and bankers and the famous "millones" already assigned to a particular expenditures (Dominguez Ortiz 1960, 16). Confronting the dismaying situation Olivares wrote a memorandum to the king in which he outlined a plan to unify the different territories of the Spanish monarchy in a single administrative unit. That was the famous "Union de Armas" promulgated as a decree in 1626. Behind such administrative reform was the pressing need to collect higher taxes from the different territories of the Empire in order to finance the war in Europe. Aragon and Valencia reluctantly accepted the requirements. The Catalans refused to increase their contributions. The meeting of the 1626 Cortes was a failure and the assembly was adjourned in 1632 without any success for the Central government. The disorders caused by the war with France prompted the rebellion in Barcelona supported by Cardinal Richelieu. The fiscal pressure exercised by the Crown on Portugal and the Dutch attacks on the Portuguese Empire were the causes of Portugal's drive for independence, which

was immediately supported by French and English. The Portuguese desire to maintain their empire in Brazil and Africa was behind the peace treaty signed with the Dutch in 1641.

The confrontation with the Dutch was a global phenomenon and vast sums of American silver were sent to fortresses and outposts in the Caribbean and more so to the Philippines and the Moluccas. According to a Dutch source in 1630 the costs of Spanish defence in the Indies were the equivalent of 5,000,000 guilder (Israel, 295). Obviously these expenditures for fortresses and fleets contributed to the decline in the remittances of silver to the Crown. The heavy taxation in Spanish America was accompanied by an increasing fiscal pressure in Flanders, Portugal and Spanish Italy. Aragon and Valencia also sent subsidies to the war in the Netherlands. According to Geoffrey Parker, "the new resources of Spanish Italy [9.2 million of ducats between 1631 and 1643] could not compensate for the fall in the financial power of Castile" (157). However, in spite of partial success in spreading taxes in a more uniform way throughout the Empire, the main burden was carried by Castile. The war with France in 1635 and the conflicts in Portugal and Catalonia made the situation critical. The solution to this predicament was an increase in direct taxes. The Cortes were pressured to vote bigger quantities of money and increased duties on foodstuffs, the famous "millones", were raised. Also new fiscal devices were implemented. A tax on salt, the "media anata" implied that the Crown retained half of the new appointees' income during the first year, and there was a tax on the sale of paper. The nobility and the clergy gave loans and gifts "donativos", under relentless compulsion. The "hidalgos" were supposed to serve in the army at their own expense and the high nobility were expected to maintain infantry companies. Offices of the crown, rents, titles and villages were sold and royal pardons were granted to criminals after proper payment. In 1635 the Crown "confiscated half the yield of all juros held by natives, and the entire yield of those belonging to foreigners -- a device imitated in whole or in part almost every year thereafter" (Elliott 1970, 465). To increase the revenues the Crown began the manipulation of the "vellon", the copper coins issued since 1603 by Philip III. The coinage and recoinage of copper was a desperate measure by the monarchy. According to Domínguez Ortiz, coining in the first six years yielded a benefit of 13,152,000 ducats; the recoinage of 1636 4,700,000 ducats; in 1641 benefits were

10,000,000 ducats; in 1643 6,000,000 ducats; in 1651 11,000,000 ducats. For the years 1654 and 1658 there are no reliable data. In 1660 the war in Portugal prompt the minting of a coin with a certain amount of silver to finance the campaign. The benefits from four years minting were only 3,000,000 ducats (Domínguez Ortiz 1960, 272-273).

The bankers who facilitated finance of the war, the famous "asientistas", were heavily affected by the scarcity of resources and many fortunes were lost. The silver carried by the fleets from 1638 through 1639 was not enough to pay the lenders, "the asientistas", and in 1640, "el más fatal de la Monarquia hispánica"["the gravest for the Hispanic Monarchy"], the "asientistas" provided only 6,361 escudos. Contrast this with requirements for payment of required 300,000 escudos per month for the troops in the Netherlands alone (Domínguez Ortiz 1977, 386). In 1642 the inflation was so high that the premium bankers commanded for payment in the medium of exchange (compared with silver) was 180 per cent during the first three months of the year (Domínguez Ortiz 1960, 59). As a consequence, there were State bankruptcies in 1627, 1647, 1656 and 1664. The inflation produced by minting great quantities of copper coins had several deleterious consequences: All kinds of merchandise became more expensive, salaries paid by the Royal Treasury increased, and silver rose relative to copper money by 300%. At the end of the seventeenth century 1 real of silver equalled 2 reales of vellon (Domínguez Ortiz 1977, 352). Sometimes, as in 1642 and 1651, there were attempts to implement deflationary measures, but with little effect. "De 1665 a 1680, la inflación adquirió caracteres fabulosos. El abuso de las acuñaciones de baja ley y la introducción de moneda fruaudulenta hicieron que el premio de la plata alcanzara la cota del 275%" (Reglá 403). ["from 1665 to 1680, inflation acquired fantastic characteristics. The abuse of coinage with low quantities of silver and the introduction of fraudulent coins caused the value of silver to rise by 275%"]. The problem was that any short-term benefits to the Crown from recoinages were rapidly offset by the need to pay the "asientistas" in silver (which went for a premium): "como los impuestos se recaudaban casi únicamente en vellón, al trocarlo por plata para los asientos destinados al exterior se experimentaban enormes pérdidas" ["Since taxes were collected almost exclusively in "vellon", upon exchanging it for silver for the "asientos" destined for the exterior, enormous losses were experienced"] (Domínguez Ortiz 1960, 273). In the pressing situation of the Monarchy,

the silver coming from America had tremendous import. According to Domínguez Ortiz, however, the average arrival to Seville consigned to the King during the reign of Philip IV was only around 1,000,000 ducats (Domínguez Ortiz 1960). The decrease in arrivals paralleled the decline in the trade between Seville and America. (Lynch vol.2, 193). Illegal trade between the colonies and contraband with other nations all contributed to the breaking of the Imperial tax system.

The forced contributions of the Sevillian merchants and the confiscations of the silver consigned to particulars speeded the decline of the Casa de Contratación (whose business was taken over by Cadiz) and fueled fraud at great scale. Domínguez Ortiz commenting on the estimates made by Hamilton wrote: "Existen datos que hacen pensar si, al menos desde que la presión fiscal se hizo más dura, en forma de Averías, confiscaciones de plata, trueque forzoso por vellón, etc., no se rebasó ampliamente el 10 y hasta quizá el 50 por 100 algunos años" ["Data exists that makes one think that as fiscal pressure became stronger in the form of "Averias", confiscations of silver, forced exchange, contraband surpassed 10% and perhaps involved 50% of the silver declared some years"](Domínguez Ortiz 1969, 562). After the Munster treaty of 1648, war with Britain followed and the Dutch came to control the Spanish foreign trade. "During the Anglo-Spanish war of 1665-60, when English ships were excluded from Spanish ports, the Dutch ascendancy became almost total" (Israel 420). This commercial relationship provided the Republic with larger quantities of silver to finance the trade with the Baltic, the Mediterranean, Russia, and the Far East.

It is a known fact that silver production did not decline during the seventeenth century but the economics of silver trade affected all the corners of the world. Rising costs of production and the decline of silver's price made this commodity less valuable and less profitable to produce. Philip IV needed larger quantities of silver to make up for decreased purchase power. What he got instead was a lower quantity of silver along with a lower value of silver to boot. This development increased the fiscal pressure to be able to withstand the expenditures of warfare that embraced all continents. The pressure of increased taxation efforts generated a tremendous increase in fraud on the fleets and in the commercial networks of the Empire; this increase in smuggling, in turn, reduced the portion of commercial activity which could be taxed. The Crown was caught in a vicious

cycle: The more onerous taxes, the more smuggling, but the more smuggling, the greater the pressure to tax. Silver revenues were also diverted to meet the enemy challenges in America and Asia. But each military challenge in America and Asia had to be financed via bankers, but they only accepted silver. It is not a coincidence that during the ominous decade of 1640s the value of silver became uniform throughout the world. Silver's value had finally descended to its cost of production, which means that excess profits had been totally squeezed out. The Spanish Empire had been financed out of these profits and they simply did not exist anymore. Spain quickly degenerated into a third rate power, which is all that could be afforded when reduced to reliance on domestic resources alone. Spain was domestically a poor country at the beginning of her rise to power. She could afford an Empire only because of her American silver mines, and because China cooperated by converting one third of the world's population to silver. It was a remarkable, global ride for a small underdeveloped country which temporarily became the dominant power in the Western world. Without internal development, however, it could not have lasted.

Chapter 5: The Philippines as an Imperial Profit Center in the Sixteenth and Seventeenth Centuries

A. Introduction

Historical consensus claims that the Philippines were a financial drain for Imperial Spain during the sixteenth and seventeenth centuries. Costs to mother-country Spain are alleged to have far outweighed Imperial benefits.[68] Religious and political goals must therefore have superseded financial considerations; otherwise, why would Spain have continued to subsidize these islands for centuries?

The Philippines never provided Spain with the fabulous riches which it received from the gold and silver mines in America. But it was perhaps because Philip II of Spain was able to rely on a steady source of revenue from the Americas that he was willing to tolerate the losses sustained in the Philippines and magnanimously offer to make it 'the arsenal and warehouse of the faith'. (Andaya, 1992, v.1, p.357)

This essay challenges the conventional depiction of the Philippines as a 'profitless archipelago' (Bauzon, 1970, p.172) during the 16th and 17th centuries.[69] Instead, we contend that the Spanish state enjoyed substantial net financial benefits from the Philippines. We estimate the Spanish Crown's net Philippine profit at some 218,415 pesos/yr throughout the 17th century. Around 125,000 pesos (57.2%) in Philippine profit was collected inside of America prior to the loading of silver onto Manila galleons in Acapulco. We term this 125,000 pesos/year "indirect profit."

The methodology used to generate estimated yearly profits is explained in Section II. It should be emphasized at the outset, however, that our 125,000 pesos/yr Philippine 'indirect profit' is described as American mining profit in the mainstream literature. At

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68 See, for example, Zaide (1979, pp.264, 324), Phelan (1959, pp.93-94), and Legarda (1955, p.371)

69 We focus only on Crown profitability in the 16th and 17th centuries. The 18th and 19th centuries deserve independent analysis. We also avoid discussion of private profitability (e.g. merchants, the church, bureaucrats, "obras pias" etc.).

issue is whose methodology is most appropriate for allocation of overall Crown profit to specific geographical locations within Spain's global silver-trade network. Rather than attributing high profits solely to Spanish American mines, we contend that a significant fraction of the profit normally attributed to Spanish American mining should be viewed as 'indirect profit' stemming from the Philippine trade. We feel that the silver-economy dichotomy between (1) silver mining, and (2) shipment of the white metal through Manila, is misleading. Mine activity and trade across the Pacific comprised aspects of a multi-faceted global marketplace. American mine profits were impossible without silver's dominant end-market customers in China.[70] Manila was the Pacific's linchpin, connecting silver's American supply-side (and silk's demand-side) with silver's dominant Chinese demand-side (and silk's supply-side). Therefore, assessment of the magnitude of Philippine profitability for the Spanish Crown requires a global perspective.

B. Profit From A Global Perspective

Debate over the rise and decline of the Spanish Empire has traditionally been restricted to "Western" (Spanish American, European, Spanish) issues. By contrast, we contend that Imperial Spain can be fully understood only within the context of an emerging, silver-centered global economy. (Flynn and Giráldez, 1996) Spanish American and Japanese silver mines dominated on the supply side; China contained by far the most important customers on the demand side. The sixteenth-century value of silver in China was double that of the rest of the world because China's enormous monetary and fiscal systems had gradually become 'silverized'. (von Glahn, 1996) High silver prices in China, in conjunction with low production costs in Japan and Spanish America, created enormous merchant profits throughout the world. And no entity profited more from the silver industry than did the Spanish Crown, which received up to 40% of the non-smuggled treasure shipped into Spain.[71] But we argue that, in the absence of Chinese

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70 See Flynn and Giráldez (1995b) for citations of the literature in this field.

71 In summarizing sixteenth-century Spanish finances, Steele (1986, pp.151-152) puts the King's portion of treasure landing in Seville at 40%, compared with Hamilton's (1934, pp.89-91) 27.5%.

demand for silver, there would have been no Spanish Empire; profit for every entity along silver's global mercantile chain -- including Spain's central government -- depended upon high silver prices offered by end-customers in China. (Flynn and Giráldez, 1996a)

C. The Pacific Leg of the Global Silver Trade

More than any other entity, the Spanish Crown controlled the Atlantic leg of silver's journey,[72] but Spain did not control subsequent legs of the continuum -- vast networks of trade connecting European entrepots with silver-hungry marketplaces in Asia, especially China. The earliest Europeans to establish maritime-merchant empires in Asia were the Portuguese and Dutch; Spain was thereby blocked from the lucrative intra-Asian and Asia-Europe trade vectors. Thus, silver's Pacific route to China via Manila was Spain's only direct access to Asian marketplaces. Spaniards circumvented competing European middlemen by trading directly with (mostly) Asian merchants through Manila; the core Philippines trade bartered American silver for Chinese silks. Relatively direct access to the Chinese marketplace explains rates of Acapulco-Manila-China commercial profit which "probably ranged from one hundred to three hundred percent."[73] (Legarda, 1955, p.362), The goal of this essay is to assess Crown profits, however, not private profits. Analysis of Crown profits from the Philippines trade requires two steps: (1) establishment of a realistic estimate of the magnitude of trade passing through the Philippines, and (2) provision of a global perspective on Crown benefits and Crown costs stemming from trade via the Philippines.

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72 For discussion of massive silver smuggling via America's "Back Door" to the Atlantic, however, see Moutoukias (1991).

73 Also see Zaide (1979,p.514), Legarda (1955,pp.352), Borah (1954, p.122), Boxer (1963, p.170), Jara (1979, p.67).

D. The Volume of Pacific Trade

Most historians seem to accept, as if facts, Chaunu's (1960, p.250) three-phased Manila trade: (1) continual increase until about 1620, (2) high plateau and slight decline after 1620, and

(3) precipitous fall after 1640. Chaunu's estimates were based upon almojarifazgo records, an ad valorem tax on legal imports/exports. Unfortunately, Chaunu's numbers misrepresent Philippine trade volumes. We know that an ever larger share of the merchandise traversing the Pacific was contraband over time; smuggled goods were not recorded in almojarifazgo tax documents, of course, so reliance upon almojarifazgo records led to seriously underestimation of commodity values aboard the Manila galleons. Eschewing details of this debate (Flynn and Giráldez, 1994; Flynn and Giráldez, 1995b), suffice to say that Chaunu's estimates seriously understate the vitality of the Philippines trade. We find plausible, on the other hand, Chuan's (1969, p.79) estimate of a two-million pesos annual Philippine trade throughout the 17th century.[74] The Manila trade essentially boiled down to a barter of American silver for Chinese silks, so Flynn and Giráldez (1996b) investigated Mexican-bound Chinese silk exports via Manila and Macao; the silk-trade literature buttresses Chuan's contention that the annual Manila trade equalled at least 2 million pesos.[75] The trade did not drop off after 1620, nor precipitously after 1640, as mistakenly reported by Chaunu.

E. Conceptualizing Crown Benefits from the Manila Trade

Based upon sustained silver imports into China via Manila at 2 million pesos/year throughout the 17th century, estimation of Spanish Crown benefits from this trade can be

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74 See Reed (1967) for data on galleon passages and shipwrecks.

75 Caution is warranted in interpreting this figure of two million pesos/yr. First, each million pesos of Chinese merchandise departing Manila became two million pesos of merchandise upon arrival in Acapulco (e.g. Zaide, p.514), so the port of measurement must be specified. Second, the value of the silver peso declined steadily between the founding of Manila in 1571 and 1640; two million pesos in trade in 1571 was greater than in 1640.

attempted. Most silver passing through Acapulco was contraband and therefore not fully taxed, however, so estimation of the Crown's percentage share of silver exported via the Pacific is bound to be tentative.

Rampant smuggling is a widely-acknowledged characteristic of the Pacific trade. (Schurz, 1959; TePaske, 1983, p.437) Smuggling avoided payment of the almojarifazgo, a 15%-17.5% customs duty on merchandise at Acapulco (Lynch, 1969, p.163), and circumvented quotas protecting Atlantic-trade interests from Chinese products offering intense competition through Manila.[76]

While Pacific smuggling permitted circumvention of almojarifazgo taxes, other Crown taxes collected in Spanish America prior to silver's export via Acapulco were more difficult to avoid. There were severance taxes on mined silver, sometimes a quinto (20%), sometimes a diezmo (10%). There were profits from mercury mining (a Crown monopoly). There were also Indian tributes (6 pesos per capita), the cruzada, the alcabala (a sales tax raised to 4% in 1627), donativos ('gifts' to the Crown which were really payments in exchange for favors), sales of offices, 'extraordinary taxes' like the 600,000 ducat annual assessment imposed on Peru and Mexico for 15 years by the Union of Arms in 1627, and so on. During truly desperate times, the Crown outright confiscated millions of ducats of private treasure on the Atlantic side. (e.g. Lynch, 1969, p.165) The threat of confiscation, of course, provided additional motivation to smuggle.

Even during years of crisis, Lynch (1969, pp.164-65) and Hamilton (1934, p.34) have estimated the 'surplus' generated for the Spanish Crown by America under Philip III and Philip IV -- remaining Crown revenue, after subtracting American administration and defense costs -- at roughly 1.15 million pesos per year. Since total annual American silver production has been estimated at 13.5 million pesos per year during the seventeenth century,[77] and since the Manila galleons trade carried an estimated 2 million pesos of this

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76 Spanish silks in Peru were reportedly eight times more expensive than Chinese silks (Borah, 1954, p.122).

77 Barrett (1990, p.225) estimates overall Spanish American silver production at 34,000 metric tons for the entire seventeenth century. Three hundred forty metric tons per year equals approximately 13.5 million pesos in annual silver production.

total, approximately 14.8% (a little over one-seventh) of estimated Spanish American silver production passed through Manila. Since 14.8% of American silver production traversed the Pacific, perhaps we can assume that the Manila galleons were also responsible for 14.8% of the 1.15 million pesos annual Crown surplus estimated by Lynch and Hamilton. This would mean that the Manila galleons were responsible for 14.8% (170,200 pesos) of the 1.15 million annual Crown surplus from America. Since tax-avoiding smuggling was probably more pervasive in the Pacific than in the Atlantic, and since we wish to estimate only taxes collected prior to the exportation of silver from Acapulco, we arbitrarily reduce our estimate of the Manila-portion of Crown surplus from 170,200 pesos per year to 125,000 pesos per year. This 125,000 pesos annual Crown surplus from the Manila leg of the global silver trade implies an effective tax rate of 6.25% collected on the 2 million pesos Pacific commerce prior to silver's exportation via Acapulco.

Without claiming accounting accuracy, we simply wish to emphasize that any credible cost-benefit analysis must acknowledge indirect (i.e. not counting taxes collected at ports around the Pacific) Crown benefits from the Manila trade. Admitting that 125,000 pesos/year provides only a rough (but perhaps conservative) estimate of indirect Crown benefit from the Pacific trade-leg, we next suggest that direct costs of, and direct benefits for, the Acapulco-Manila trade-leg must also be re-conceptualized.

F. Attribution of Costs to the Manila Trade

The Philippines were administratively subordinate to the viceroyalty of New Spain. As a result, the Spanish accounting system categorized revenues and costs in a way which misleads modern historians. The Philippine situado -- monies sent from Mexico to Manila to defray costs of administration in the Philippines and elsewhere in Asia -- is a case in point. The situado is often portrayed as if it were a "subsidy," a drain upon the Mexican viceroyalty.[78] But the Philippine situado was at first only the returns

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78 The Philippine situado was not unique in any case: "Peru was responsible for defense in the mar del Sur, and also subsidized Chile, Panama, and distant Cumana. New Spain provided the situados for the coasts and islands in the Caribbean from Florida to Paria, and also for the Philippines. In

from the almojarifazgo duties collected at Acapulco.... In this context, the situado simply meant the income derived from the trading system... It was distinctly and unmistakably not intended to be a subsidy, as the word situado came to mean in later years.... the situado as income from the galleon trade [later] became half-subsidy and half-commercial income, with the Mexican treasury making up from its own financial resources what the galleon trade could not adequately produce.(Bauzon, 1970, p.129)

Regarding the 50% of the situado which Bauzon calls "commercial income," it does not matter conceptually whether almojarifazgo taxes were (1) collected in Mexico and then sent back to Manila, or (2) collected and retained in Manila. Case #1 involves a situado, however, and hypothetical Case #2 does not. Both have exactly the same effect: receipts from tariffs on galleon commerce cover a portion of operating and administrative expenses. In no sense should these tax receipts be considered "subsidies"; rather, they involve partial self-financing of the galleon trade. Irrespective of whether the particular point of tax collection happened to have been in Mexico, half of the situado involved no subsidy. Collecting almojarifazgo taxes at the Acapulco end of the commercial exchange -- prior to recycling back to Manila -- did not alter the fact that the 'commercial' half of the situado involved a net cost to neither the Crown, nor to New Spain.[79]

G. A Distinction between 'Philippine Expenses' and 'Non-Philippine Expenses'

The remaining half of the Philippine situado -- the portion not generated directly via galleon trade -- might properly be classified as a 'subsidy'. But the Philippines were

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1664, for example, Lima was instructed to provide 105,150 pesos a year for the military defences of Panama; in 1673 this was raised to 275,314 pesos. A subsidy of 212,000 ducats a year for the army in Chile was also charged on the viceroyalty." (Lynch, 1969, pp. 199-200)

79 Collection of taxes at the Mexican end of the trade may have been a matter of practicality. First, the value of Chinese merchandise in Acapulco was double the value of the same merchandise in Manila; therefore it was advantageous for the government to levy the ad-valorem almojarifazgo in Mexico. Second, if smuggling Chinese products into Mexico was more difficult than exporting contraband silver, this offers yet another incentive for authorities to tax imports at the Mexican end of the voyage.

not subsidized via the 'Philippines' situado. This situado financed Spain's battles with the Dutch over hegemony in Asian waters.[80] What made the Philippines "more insolvent than ever" over time was the "ambitious enterprise undertaken by Spain, with the Philippines as the fitting-out point to gain mastery over the remunerative spiceries of the Moluccas, a concomitant of which was the prolonged Hispano-Dutch war..." (Bauzon, 1970, p.129) The so-called Philippine situado financed war in the Moluccas; thus it should not be considered a 'Philippine subsidy':

> In the Moluccas, while the Dutch continued to hem in the Spanish forts on Ternate and Tidore and virtually monopolized the lucrative spice trade, little or no progress was made towards eliminating the unwelcome Spanish presence. Indeed, Dutch-Spanish friction in the Moluccas continued longer than in any other region of the world. (Israel, 1982, p.336)

In 1621, according to Hernando de los Rios Coronel (former procurator-general) receipts at Manila's real hacienda totaled 255,541 pesos, compared with expenditures for the Moluccas of 218,372 pesos. (Bauzon, 1970, p.158) In 1640, according to Grau y Monfalcon, procurator-general of the colony, total revenue was 256,000 pesos, while expenses for the Moluccas reached 230,000 pesos; thus, "only 26,000 pesos remained for the Philippines." (Bauzon, 1970, p.159) Receipts in these two years equalled 511,541 pesos combined, in other words, while 448,372 pesos were expenses for the Moluccas; this means that only 12.35% of receipts (a mere 31,585 pesos per year) was available for application to Philippine expenses in those two isolated years.

A rough sketch of Crown costs and benefits can now be attempted. We argued earlier that the Crown may have gained 125,000 pesos (6.25%) via taxes within America on the 2,000,000 pesos of mined silver before it entered the Pacific trade route. In addition, 50% (some 125,000 pesos/year) of the situado comprised taxes generated by the galleon trade itself; thus, this commercial-half of the situado should be viewed as a financial benefit from the government's point of view. While around 250,000 pesos per year were sent to Manila in the form of a situado, only about 31,000 pesos remained in

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80 Also, "the Dutch wooed the support of the Muslim Malays of Mindanao and the Sulu Archipelago" (Abella, 1974, p.11) in an attack on Manila in 1616.

the Philippines;[81] the rest financed operations in the Moluccas. A rough tally of the costs and benefits of the Manila trade indicates that the Philippines were a major profit center for the Spanish Crown.

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81 In a sense, the paltry 31,000 pesos/year may not even have 'remained' in the Philippines, a colony which itself helped finance war against the Dutch. Forced "polo" Filipino laborers had to be subsidized by village treasuries; even their token wages were seldom paid. There was also compulsory sale of products to the government under the "vandala": "Between 1610 and 1616 the treasury owed Filipinos some 300,000 pesos. By 1619 the sum had climbed to 1,000,000 pesos. These sums include both labor services and enforced sale of goods." (Phelan, 1959, p.100)

Phillipine Costs vs Benefits for the Spanish Empire	
Benefits	
Indirect Crown Benefits	+125,000 pesos
Direct Benefits (Almojarifazgo)	+125,000 pesos
Costs	
Portion Of Receipts Retained In The Philippines (Remaining 224,186 pesos passed through to moluccas)	-31,585 pesos
Profit From Philippines	
Benefits Minus Costs=	+218,415 pesos/yea

While this Crown profit estimate is a crude approximation at best, it contrasts sharply with conventional views of a Philippine financial nightmare for the Spanish Crown; moreover, our position seems consistent with a contemporary 17th-century view:

Another reasoned defense of the Philippine Islands was offered in 1637 by the procurator-general of the colony, Grau y Monfalcon, who showed that if it were not for the Spanish desire to own the Moluccas, the [Philippine] islands actually contributed more than they cost, since, in reality what they were producing was being spent in Spain's behalf in the Moluccas and not for the development of the Philippines...(Bauzon, 1970, p. 159)

But given the tentative nature of our estimates, does it seem reasonable that the Crown could have secured 218,415 pesos in net profit per year (in the form of various taxes) on the basis of the production and export of 2,000,000 pesos in silver annually across the Pacific? It seems plausible to us that the Crown may have earned a 10.9% net profit rate, based upon all aspects of the silver business from below ground in America through the port of Manila. But even if the readers prefers a more conservative calculation, we cannot imagine a global interpretation capable of causing a

metamorphosis of our 'cash cow' Philippines back into the 'financial alligator' portrayed in the current literature.

H. Summary and Conclusions

The early-modern Philippines must be pictured against a backdrop of the Spanish Empire's global struggle for economic and political hegemony against the Dutch -- in Europe, Angola, Brazil, the Caribbean, Manila, the Moluccas, Taiwan, and the American Pacific. Spain's eighty-year war in the Low Countries was no doubt her greatest financial drain, but struggles against Dutch forces in America and Asia were also fierce and expensive. Battles in Asian waters siphoned off most of the so-called Philippines situado; costs on the Dutch side were no less daunting:

> Even during the truce, the cost of the [Dutch East India] Company's forts, garrisons, and battle fleet consumed most of the remittances sent from Holland as well as most of the profits of the Dutch inter-Asian trade. With the big offensive, the Company's costs inevitably had soared, rising in the three years 1620-2 to nearly 5 million guilders. (Israel, 1982, p.119)

The Dutch were perfectly aware that the exceptional harbors of Acapulco and Manila served as Spain's only direct gateways to China's lucrative, silver-hungry markets (and Spanish America's lucrative, silk-hungry markets). Why did the Dutch invest such prodigious sums to wrestle control of Manila -- linchpin of the trans-Pacific economy -- from Spain, if not for the prospect of immense trade profits? What motivated the Dutch to finance the attempted 1624 seizure of Acapulco itself? (Israel, 1990, pp.293-94) Scholars will continue to argue endlessly over the primacy of religious versus economic motives under colonialism, but we can think of no reason to consider Spaniards less interested in galleon-trade profits than were the Dutch, Portuguese, or others.

Chapter 6: Monetary Substances in Global Perspective

A. Organizational Comments

Both the selection of articles for this volume, as well as the scheme for organizing them, are unconventional. First, most monetary histories of the early-modern period focus excessively on Europe. This volume aspires to offer a more even geographical balance, one which we hope encourages others to view monetary events from a global perspective. Europeans played a significant role in the movement of monies around the world, to be sure, but they were not necessarily prime movers. In many important respects, European merchants played the role of middlemen.

Second, articles chosen for inclusion tend to focus on demand and supply forces affecting the specific markets for gold, silver, copper, and cowries during particular time intervals. It is essential to keep in mind that the history of the supply of and demand for each of these substances is unique (interrelationships among unique markets notwithstanding). Since Europe, Spanish America, and Japan were the world's major supply-side producers of silver during our period, for example, we have grouped together articles which discuss these silver suppliers under "Source Areas" (in Section I) along with essays on gold and copper suppliers. This scheme facilitates a view of globally-integrating market forces, in contrast to the market-shrouding alternative of fragmenting integrated markets into their "Asian," "American," "African," "European," and "Middle Eastern" components. Monies and metals impacted all of these geographical areas simultaneously; it is essential that we break the habit of thinking in "regional-history" terms when discussing globally-traded monies and metals. Early-modern monetary history tends to focus too heavily upon European issues, but we feel that this characteristic has less to do with chauvinistic attitudes than with distinctions imbedded within modern monetary theory itself. Specifically, macroeconomic monetary theory instructs that various coined substances should be added up to help form a unit-of-analysis, "money." This convention of aggregating diverse monetary items into an abstract category "money" has led to confusion in the literature on the early-modern

period. Dispute over the cause of Euro-Asian trade in the sixteenth and seventeenth centuries illustrates the nature of this confusion about how to best conceptualize monies. At issue is whether it is best to perceive precious metals as cause or as effect.

The great French historian Fernand Braudel maintained that it "was the economic development of Europe and the demand thus created which stimulated and dictated the labor of the gold panners and the Indians in the silver mines..."; that is, European demand can be considered cause, while mine activity in America was an effect (responding to European demand). (Braudel, 1972, vol.I, p.522) We will take issue with Braudel's conclusion regarding end-market demand in a moment, but his underlying intuition points to a key question: Why would entrepreneurs bother to produce any item in the absence of purchasers on the demand-side of the market? It makes no sense to produce a commercial item, whether it is stamped into money later or not, unless there are plenty of customers willing to purchase it at a price which yields profit. Elsewhere in the same volume, Braudel portrays a more complex picture, one which acknowledges that Spanish-American silver merely passed through -- not to -- Europe on its mercantile voyage to 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, 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...horded 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 Christian countries as soon as one crossed the border into the Orient. (Braudel, 1972, vol.I, p.464)

Let us take a closer look at the European-demand explanation for precious metal flows to Asia, one reiterated repeatedly in textbooks on the subject. According to this line of reasoning, an enormous European demand for spices, silks, porcelains, and other Asian

products is juxtaposed with a meager Asian demand for European products. For some reason, Asian people -- often depicted as traditional, inward-looking, or insular in character -- had not yet developed an appreciation for European products and therefore purchased few of them. Thus, huge European imports from Asia, in conjunction with meager European exports to Asia, created a European balance-of-trade deficit with the East. Precious metals flowed to Asia, according to this scenario, as balancing items. Demand-led dynamism within Europe caused treasure to migrate to Asia.

The problem is, this European balance-of-trade hypothesis contradicts the historical record. "Precious metals" did not flow Eastward between 1550 and 1650 -- silver did. Moreover, one of the products flowing in the opposite direction was gold:[82] "[In the sixteenth century, the] balance of payments was definitely favorable to Portugal. In Goa, commodities were partly paid for in bills of exchange, and partly in gold sent to Lisbon. This gold might in turn go to Hamburg, to be exchanged for copper and silver." (Vilar, 1976, p.100) Supple 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.[83] In a detailed study of the English East India Company, K.N. Chaudhuri 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. (Chaudhuri, 1965, p.132)

Furthermore, this century-long silver-drain should not be viewed in East-West terms. American silver was not exported to abstract "Asia"; its predominant destination was China, a country simultaneously exporting significant amounts of gold. Japan was the world's second largest producer of silver during this period, again exporting its silver to China in exchange for silk, gold, and other items. Once more, if precious metals were

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82 Our analysis follows in the tradition of Chaudhuri, whose work is based on the reasoning of Classical economics, especially that of David Ricardo. (Chaudhuri, 1978, p.156)

83 See Supple (1964, pp.163-194).

exported by Europeans to Asia for the purpose of balancing a European trade deficit, then why did silver dominate the flow to China, while gold sometimes flowed the opposite direction into Europe? Both were monetized metals, but each flowed independently in response to its own specific market conditions.

Throughout the seventeenth century, Pacific galleons carried two million pesos in silver annually (i.e. more than 50 tons) from Acapulco to Manila, where it was quickly transshipped by merchants to China.[84] Why has no one argued that the flow of American treasure to China was the result of Mexico's balance-of-trade deficit with China? That is, why does no one maintain that this drain of silver was caused by dynamic Mexican demand for Asian products (in the face of stagnant Asian demand for Spanish-American output)? There is no theoretical justification for treatment of Latin America differently than Europe, yet their exports of silver are not portrayed similarly in the literature.

During the second half of the seventeenth century, the historical record also contradicts the balance-of-payments hypothesis. Japan became the world's largest copper producer (and a significant source of gold as well) after Japanese silver production declined later in the seventeenth century. This time, it was copper which was shipped to Europe from Asia in exchange for both silver and gold in a counter-flow out of Europe:

> The importance of Europe as a buyer of copper in the 1650's and 1670's was considerably greater than in later years. As will be mentioned in another connection, there is reason to assume that the great European demand from the middle of the 1650's gave an impetus to the [Dutch East India] company's copper exports from Japan. (Glamann, 1953, p. 61)

But this sea change in metals trade means that two monetized metals (gold and silver) were now exported out of Europe, in exchange for one monetized metal (copper) imported to Europe from Japan. Again, the practice of aggregating these three metals, each with a unique history, into a unit of analysis called "money" distracts attention from the underlying forces driving these events.

In sum, prodigious quantities of silver flowed to China from America and Japan between 1550-1650 while China exported substantial quantities of gold to Japan; lesser amounts of Asian gold were shipped to Europe because Africa and America were

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84 Chuan, Hang-sheng, (1969, p.79); Flynn and Giráldez, (1994, p.82).

Europe's main sources of gold. During the second half of the 17th century, Japan exported copper and gold to China (as well as elsewhere in Asia) and copper to Europe, while gold and silver flowed out of Europe into Asian marketplaces. The "dynamic-European-trade-deficit" hypothesis conflicts with all of these historical trends (as would a "dynamic-Mexican-trade-deficit" argument, if anyone were to offer a parallel argument). If the trade-deficit argument were true, then various types of monies would be expected to have gravitated toward Asia in the early-modern period. This is not what happened. The specific metal, silver, headed to China from all corners of the earth. Discovery of why China was such a giant vacuum cleaner for silver -- bomba aspirante (suction pump) in Vitorino Magalhaes Godinho's colorful terms -- requires conceptual disaggregation of silver from other monetized substances.[85] Aggregation of all of these items into a unit of analysis called "money" precludes proper understanding of the economic forces driving intercontinental trade. Each substance must be subjected to individual supply and demand analysis in its own right. Section I: Source Areas supports this disaggregation scheme by offering essays which sketch most of the important areas of gold, silver, and copper production.

Section 2: End Markets contains articles which focus primarily on the demand side for particular monies, and Section 3: Intermediary Trade Routes deals with avenues of trade which connected source areas with end markets. As Braudel's citation above suggests, it does not make sense to produce commercial products unless there are end-market customers. The purpose of Section 2 is to identify market forces on the demand-side for the four monetary substances discussed in this volume: Gold, silver, copper, and cowries. Each one of these money substances will be discussed further in a moment, but we should first complete the story of the silverization of China, perhaps one the most important and neglected aspect of the "Age of Expansion."

Our "Born with a Silver Spoon: The Origin of World Trade in 1571" offers an overview of the "silverization" of China and its impact on world trade patterns. China's paper money system had fallen apart and merchants, especially in maritime regions of

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85 See Magalhaes Godinho(1984, vol.IV, pp. 432-465).

China, converted to the use of silver as a monetary base.[86] As this trend toward conversion to silver money expanded, local and regional government entities increasingly converted tax payments to silver as well. Although the Ming Dynasty had long opposed the silverization movement which had emerged "from the bottom up," Ming acquiescence to this irresistible trend was eventually institutionalized in the form of the "Single-Whip Tax Reform" in the 1570s; a multitude of taxes were consolidated into a single empire-wide tax, payable exclusively in silver (even by peasants). Since China contained a quarter of the world's population and huge cities (e.g. 1 million in Nanjing and 660,000 in Beijing), the conversion of China's monetary and fiscal systems to a silver base was of enormous importance. Moreover, because of China's extensive tributary system, domestic silverization created a ripple effect reaching far beyond Chinese borders. Takeshi Hamashita summarizes this relationship:

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

The Chinese economy was so enormous that its conversion to silver caused the market value of the white metal to soar far higher in China than in America, Japan, Europe, and elsewhere in the world. Regionally-divergent bimetallic ratios provide a clear indicator of the elevated value of silver in China vis-a-vis the rest of the world. In the early sixteenth century, the gold/silver ratio in China stood at 1:6, while in "contrast the gold/silver ratio hovered around 1:11-12 in Europe, 1:10 in Persia, and 1:8 in India." (Von Glahn, 1996, p127). No wonder that the specific metal, silver, flooded into China for centuries; the Chinese simply offered the best price for this product. Rather than depicting the flow of silver to China as a passive effect of disequilibrium in non-monetary trade, therefore, it is better to recognize that disequilibrium within the silver market itself was an active cause of global trade. The worldwide silver trade is best

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86 For a long-term monetary history of China, see Richard von Glahn's landmark treatise. Von Glahn, Richard (1996), Fountain of Fortune: Money and Monetary Policy in China, 1000-1700. Berkeley: University of California Press.

understood in the context of domestic developments within China (in conjunction with cost-reducing factors in silver mines in Europe, America, and Japan). There is no doubt that Europeans played an important role as intermediaries, facilitating the movement of tens of thousands of tons of silver around the globe, but the most critical element of dynamism in this case should be attributed to end-customer China.

Each essay included in this volume was selected on the basis of its contribution to a global perspective on where, when, how, and why the monetary substances -- gold, silver, copper, and cowries -- were respectively produced and traded. Space restrictions preclude reproduction of many relevant and important selections we would like to have included. Many landmark articles and books are merely suggested for further reading because they are already well known and easily accessible. We decided to avoid altogether the important literature on price history, especially the Price Revolution, for fear that its size and complexity would (1) render it unwieldy, and would (2) potentially distract attention away from underlying supply-and-demand factors which accounted for the production and intercontinental migrations of specific metals and monetary substances. (Carande, Ramon, 1990, p.238)

B. Production And Exports Of Metals And Monies

John Nef's "Silver Production in Central Europe, 1450-1618" documents an important mid-fifteenth century surge in Central European silver production, one propelled by investments in new technology.

> The year following... 1451, marked the Duke of Saxony's grant of the right to use a new invention for separating silver from rich argentiferous copper ores with the help of lead. More than any other invention, this accounts for the great prosperity of mining and metallurgy during the century which followed. (Nef, John U., 1941, p. 576)

Central European silver production may seem modest in retrospect (peaking at 100 tons of silver mined during the decade 1526-35, equal to about 4 million pesos), compared with the spectacular American mine output of the sixteenth and seventeenth centuries, but two aspects of Central European silver production deserve mention here. (Nef, 1941, p.585) First, some have argued that the Price Revolution began in the second half of the fifteenth century, prior to the arrival of metals from America. (e.g. Braudel, F.

and F. Spooner,1967, pp. 401-402) But this is consistent with surging silver production in Central Europe. One would not be surprised to learn that a rise in European production may have reduced silver's value toward its new, lower European cost of production; price inflation (in silver-content terms) would result.[87] Second, Nef reported that although Central European mine production peaked in the 1530s -- at a rate of output not reattained until the eighteenth century -- it was the flood of silver from America which caused European production to fall off drastically soon thereafter. (Nef, 1941, p.589) The cost of producing silver in America was much lower, of course, so the gradual decline in silver's market value caused the closure of less-efficient European mines first. Because of the continued decline in silver's market value, however, even the world's most prolific silver mines at Potosí, fifteen thousand feet into the Andes and source of an estimated 60% of total world silver output, were themselves facing a profit squeeze a few decades later. (Cross, Harry E., 1983, p.403) Potosí's subsequent mining boom was a consequence of reforms introduced by the Viceroy Francisco de Toledo after 1570, including the mercury-amalgamation process, construction of water mills, and creation of the mita, an indigenous system of forced labor: "Supplemented with gold from Colombia, the mines of Mexico and Peru yielded quantities of bullion greater than the world had ever seen." (Cross, 1983, p.401) Thus, Central European and American silver producers can be viewed as competitors in an emerging world economy; both struggled with steadily declining silver prices, although the tremendous surge in demand emanating from China certainly slowed the rate at which silver lost value. More than anywhere else, customers in China were responsible for the demand-side impetus for the silver booms in Europe, Japan, and America.

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87 Van der Wee provides a telling example of a surge in silver mintage in the Low Countries as a result of enhanced German silver production. (Van der Wee, Herman (1993), The Low Countries in the Early Modern Period. Aldershot: Variorum, pp. 179-180) When American silver later flooded into Europe, maintenance of a bimetallic system became impossible and "the silver standard remained characteristic for the monetary system of Brabant and the surrounding area until the end of the Ancien Regime." (Van der Wee, 1993, p. 182)

Since Peter Bakewell's Mines of Silver and Gold, a 1996 volume in this Expanding World series, already summarizes the state of knowledge on Spanish American mining, no essays dealing directly with American mine production are included here. Useful for our purposes, however, is an attempt to outline the trade routes of American metals after their production. Zacarias Moutoukias' work (Essay #2; 1991) on American contraband trade is enlightening on this score. There has long been vigorous debate, of course, over the fraction of overall silver trade comprised by smuggling activity. Moutoukias' study suggests that contraband trade was far more significant than is normally acknowledged.

Anecdotal evidence about illegal practices is abundant. In the case of a shipwreck between Cádiz and Gibraltar in 1555, for example, 150,000 pesos in treasure was officially registered, but the quantities actually recuperated from the shipwreck proved that unregistered treasure was double the declared amount. Spanish authorities were well aware of this situation, as attested in a letter from Emperor Charles V to his daughter Juana in March of 1557, where he complained about a ship carrying a large amount of undeclared treasure with the cooperation of officials at the Casa de Contratación. Prior to arrival in Seville or Cádiz, fleets or single ships could and did stop over in the Azorean islands or Portuguese ports under some pretext to drop off quantities of silver. (Carande, Ramon, 1990, p238) The Canary Islands were likewise involved in illegal trade. Nearly a century later, in 1650 Alonso Merlo de la Fuente complained that "all the silver and gold that comes unregistered, usually eight times the registered... goes from the merchant ships to the foreign ships that are waiting for them in the ports of Cádiz and Sanlucar... without paying any taxes"; this observation is consistent with Van Dillen's remarks about Dutch prominence in Cádiz. (Quoted by Boxer, Charles R., 1970, p.470: Van Dillen, J.G. (1926? 1927?), pp.196-198) According to Moutoukias, undeclared precious metals between 1630-1640 were double the amount legally registered; smuggled treasure represented between 40 and 90 per cent of total treasure transported between 1650-1659; and, pertaining to the Rio de la Plata, the Navios de Registro indicate that skippers declared only 10% to 20% of the precious metals they transported to Spain. (Moutakias, Zacarias, 1991, p.339) The two Spanish fleets which annually plied the Atlantic were the main carriers of silver in the sixteenth and seventeenth century, but American silver also

found outlets outside the galleons of the Spanish crown. European powers were engaged in active contraband trade with Spanish America during the seventeenth century, all of which implied flows of silver. One of the most important routes of illegal trade was the commercial axis between the Spanish enclave of Rio de la Plata, the Portuguese colony of Sacramento (across the same river), and the viceroyalty of Peru. Trade between Potosí and Buenos Aires began almost immediately upon the arrival of Spaniards. Local products -- sugar from Brazil, European manufactures, and slaves introduced by the Portuguese since 1595 -- were all exchanged for Peruvian silver.[88] This was the so-called "Back Door" for the viceroyalty of Peru, one of the routes through which enormous quantities of silver escaped the control of Spanish kings: "During its most successful years, no less than 1-2 million pesos (roughly 25,000 to 50,000 kg) flowed illegally from the mines of Peru out through the port of Buenos Aires. These totals equalled from 15 percent to 30 percent of the silver output of Potosí." (Cross, 1983, p.414) According to Moutoukias, several European powers participated actively along the Rio de la Plata:

> From 1648 to 1702, about 200 ships entered the Plata River without permits -- of which, 129 could be verified -- amounting to more than two-thirds of total Atlantic traffic (with and without authorization). Fifty percent of them were Dutch; in order of importance, the rest were Portuguese, English, and French. (Moutakias, 1991, p.341)

Fraud was also customary within Peru. Maria Helmer mentions the practice of transporting silver to poor districts offering lower taxes; also, contraband in mercury from Huancavelica was very active. Helmer concludes that, due to tax-avoidance behavior, official mercury figures cannot be used to accurately estimate mine production: "There is no way of determining the silver production that was spread over the world during the great days of Potosí." (Helmer, 1953, pp.204-205) In addition, production of silver was sometimes stopped at an intermediate stage (piña) so as to avoid paying the quinto tax, but piñas nonetheless circulated as currency within the viceroyalty.

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88 Four thousand cows and sixty thousand mules were exported from Tucuman, Argentina to Peru in 1610; such figures were common in prosperous years. (Helmer, Maria 1953, p.206) Thirty thousand slaves were shipped to the Rio de la Plata during the first half of the seventeenth century. (Moutoukias, 1991, p.353)

Fraud along the Pacific side of the silver trade was rampant. To discourage contraband via the Acapulco-Manila galleon route, Philip IV sent a visitador in 1635, Pedro de Quiroga, to put teeth into regulations applicable to the trade. For two years, merchants in Manila refused to send any more merchandise until customary practices were resumed (i.e. officials looked the other way). Evidently, partial tax payments were judged superior to none at all, since the Crown yielded to pressure and removed Quiroga, so that business could resume on a normal basis. Solid evidence of fraud has been documented in the case of the galleon San Francisco Javier, sunk in the vicinity of Manila bay in 1654. This ship was found to have carried 1,180,865 pesos, 228,000 belonging to the situado, and 11,049 to help with construction of a cathedral; only 418,323 pesos were registered, however, so nearly two-thirds (64.58%) of the treasure was unregistered. (Prieto Lucena, Ana M., 1984, p.50)

Official estimates of overall trade activity via the Pacific are unreliable because of the prevalence of contraband: "That the Philippines siphoned off large sums of silver from the New World cannot be denied, but measuring that flow is virtually impossible." (TePaske, John, 1983, p.437) Admittedly-conservative estimates for annual silver exports from Acapulco vary from about 1/2 million pesos to 2/3 million pesos. (TePaske, 1983, p.437; Barrett, Ward, 1990, p.236-249) Based mainly on Pierre Chaunu's study of almojarifazgo tax receipts, the conventional belief is that Acapulco silver exports were very large in the early-seventeenth century, followed by a slight decline after 1620, and a dramatic drop off after 1640. (Chaunu, Pierre, 1960, p.250) Not all scholars are willing to accept Chaunu's pessimistic conclusions, however, because his tax receipts pertained only to non-smuggled silver. Cross estimates that an average of 2 to 3 million pesos (53,000 kg to 79,000 kg) in silver were sent annually from Peru to Mexico between 1580 and 1610; according to Borah, inclusion of the contraband trade raises this total to 4 million pesos (100,000+ kg). (Cross, 1983, p.412; Borah, W. 1954, pp. 88, 123) But there was no reason to send silver from Peru to Mexico except to purchase Asian products, so how could 2-4 million pesos have been shipped up Mexico's Pacific Coast yearly, while fewer than one million pesos are said to have been forwarded annually to China (via Acapulco and Manila)? If South Americans alone were exporting 2-4 million pesos of silver in exchange for Asian products -- and we have not yet mentioned Mexican silver

production, which surged in the seventeenth century -- then the amount of silver exported from Acapulco must have been in the millions of pesos per year.

Chuan has provided figures indicating that 2 million pesos annually crossed the Pacific via the Manila Galleons throughout the entire seventeenth century. (Chuan, 1969, p.79) Chuan's numbers are consistent with other indicators. Manila was an entrepot with no economic purpose other than the swap of American silver for Chinese silk. In the middle of the seventeenth century the city contained 42,000 inhabitants, approximately the same population as Barcelona, Valladolid, Danzig, Vienna, Marseille, and other major European trading centers.[89] If there were a seventeenth-century collapse in trade via Manila, as suggested by Chaunu's official almojarifazgo tax receipts, then why did this city maintain vitality through the century? Its survival depended entirely upon the silk-for-silver trade, so evidence of a powerful and vital city seems inconsistent with the contention that the silver trade shriveled.

Since most of the seventeenth-century silver exported from Acapulco to China (via Manila) was smuggled, it is obviously difficult to document the value of the Acapulco-Manila trade. Flynn and Giraldez approach this problem indirectly by noting that 2,000,000 pesos in Chinese silk crossed the Pacific annually via Manila; again, all available evidence suggests that the silk trade flourished throughout the seventeenth century. (Flynn, D.O. and Arturo Giraldez, 1996, pp.52-68) Since the Acapulco-Manila trade involved a straightforward silk-for-silver swap, the high and sustained value of silk imports into Acapulco provide strong evidence in favor of an equal value of silver exports from Mexico. This view is also consistent with conclusions reached by Cross:

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

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89 See Wolf, 1982, p.153.; De Vries, 1984, Appendix 1; Mols, Roger, 1977, "Population in Europe 1500-1700," in C.M. Cipolla (ed.), The Fontana Economic History of Europe, vol.2: The Sixteenth and Seventeenth Centuries. Glasgow: William Collins Sons & Co. Ltd., pp.42-43.

Barrett points to a glaring discrepancy between Spanish American production figures and estimated exports to Europe -- 5.5 million pesos per year. (Barrett, 1990, p.236) There is no compelling reason to suspect that the relatively small, depopulated American economy could have retained such vast amounts of silver in the face of demand-side competition from the world's largest economies.

Kobata's work on Japanese silver, gold and copper production supports this volume's theme that these metals must be viewed from a global perspective:

> Japan's production of precious metals is therefore closelyrelated with the history of colonization and the Far Eastern trade of Europeans. It is probable that the bringing of huge amounts of silver from Mexico for the China trade, the similar import into China of silver from India, and the carrying of gold from South-East Asia to Europe were also basic factors in the development of relationships between the values of precious metals in the sphere of Far Eastern trade. (Kobata, A., 1965, p.247)

Although Kobata admits that calculation of actual quantities of gold and silver production in Japan is impossible, he offers "a bold conjecture that the export of Japanese silver at the beginning of the seventeenth century would very likely have amounted to 200,000 kg. annually." (Kobata, 1965, p.248) Roughly equivalent to 8 million pesos per year, Japan would thereby clearly have been a major supply-side competitor for Spanish American mines during the "Silver Century" (mid-16th to mid-17th century). Once again, the composition of the Sino-Japanese and the Sino-Mexican trades were similar. Kobata reports that in the 1580's Chinese silk and silk textiles were Japan's most important imports via Macao, followed by gold: "In 1590... 2,000 pieces of gold bullion...were exported from China to Japan." (Kobata, 1965, p.248.) During the second half of the seventeenth century copper replaced silver as Japan's prominent export, as mentioned earlier, and again the most important market for Japanese copper exports was China.

Tashiro's work on Japanese silver complements that of Kobata by tracing silver's precise trade routes through Tsushima and Korea, and on to China. The Tsushima-Korea trade, unaffected by the so-called 'closure' of Japanese trade in the late 1630s, was five times larger than the Nagasaki trade by 1686. It took two forms: (1) Official trade stipulated by diplomatic provisions, and (2) private merchant trade, held six times per month and subject to no restrictions. (Tashiro, Kazui, 1989, pp.101-102) Not surprisingly, silver was smuggled along the Sino-Korean border, as was the case

elsewhere throughout the world. The Korean government dispatched 3 or 4 official missions per year during the seventeenth century, thereby affording Tashiro the opportunity to document monthly shipments of silver as they were required by the rhythms of the tribute-trade system focused on China.

Although silk was by far China's dominant export to Japan and Mexico, there is also clear evidence of significant exports of gold during the 'Silver Century'. The Chinese-European trade picture is extremely convoluted by comparison. Europe's primary supplier of silk during this period was Persia, not China. (Chaudhuri, 1965, pp. 203-206; Steensgaard, Niels, 1974, Ch.9; Glamann, Kristof, 1981, Ch. 6) Moreover, while there is evidence of Asian exports of gold to Europe (already cited), nobody argues that Chinese gold flowed to Europe on the scale that it flowed to Japan. It seems that Africa and America were the sources of most of Europe's gold imports, not Asia. Although only able to offer an "educated guess" about African gold exports during the early-modern period, Bean surmises that 200,000 pounds sterling is a reasonable estimate for annual gold exports to Europe over the interval 1500 to 1700. (Bean, Richard, 1974, p.353) Comparing this figure with slave exports from the Gold Coast, Bean concludes that "it was only for a ten-year span in the 18th century that slaves clearly earned more foreign exchange annually for the Gold Coast than gold exports had earned per year in the 17th century." (Bean, 1974, p.355) Nigeria and Angola produced no gold at all while exporting many slaves, on the other hand, so this does not mean that the value gold exports were greater than the value of slave exports overall. Bean's point is simply that African exports of gold to Europe were extremely significant to both source and recipient areas.

We would like to suggest that both gold and slave exports from Africa were tied to the dominant global silver trade outlined above. In discussing the Rio de la Plata trade, mention has already been made of the fact that Portuguese slaves were essentially bartered in exchange for Peruvian silver via America's "Back Door." Imagine if this silver would have been exported directly to West Africa -- which it was not -- rather than to Europe. Under this counter-factual scenario, West Africa would then have re-exported the silver, we contend, and this silver would have joined with other silver flows eventually winding up in China. What happened instead was that silver passed through

Europe on its way to China; European cities may have simply been more convenient transshipment centers. Nonetheless, African slaves were bartered for American silver and this slave-silver barter activity depended upon the silverization of China.

How did African gold tie in at the global level? It too exchanged for American silver, in a manner suggested in a passage from Braudel:

> So Italy stood at the crossroads where the south-north axis maintained by Spanish policy and the Genoese asientos met the east-west axis running to the Levant and the Far East, where the golden road from Genoa to Antwerp met the silver road to the east. (Braudel, 1972, p.499)

The Spanish Crown needed European financiers to transfer gold to soldiers in Flanders, who always demanded at least part of their pay in gold. (Braudel and Spooner, 1967, p.385) American silver was therefore exchanged for African gold in Italy, whereupon American silver headed off to China and African gold was forwarded to the Low Counties. African gold and slaves were both exchanged for American silver. Silver was a crucial commodity connecting various trades because of powerful market forces emanating out of China.

Cowrie shells were among the most significant products imported into West Africa, where they had been used as currency since at least the eleventh century. (Johnson, Marion, 1970, p.33) According to Hogendorn and Johnson, in the 1350's Ibn Battuta observed enormous profits in this cowrie trade: "The figures he [Battuta] quotes show at the very least a West African cowrie price about 350 times greater than the going price in the Maldives." (Hogendorn Jan and Marion Johnson, 1986, p.25) Although the Maldives' own cowrie currency served as their sole money in Ibn Battuta's time, in subsequent centuries it came to be supplemented, then supplanted by the silver larin. (Hogendorn and Johnson, 1986, p.26) Strong external demand for cowries, in conjunction with importation of silver from abroad, caused Maldivian cowrie prices to rise during the seventeenth century, "perhaps as much as four to seven times according to Heimann's calculations, which include some depreciation of silver during that century." (Hogendorn and Johnsonk, 1986, p.40) This situation is somewhat reminiscent of early seventeenth-century Spain -- a country on a copper-money standard while simultaneously producing prodigious quantities of silver money for use in the rest of the world -- as the Maldives

harvested enormous volumes of cowrie shells, but ceased using them domestically because of conversion to a silver standard.

Cowries from the Maldive Islands have been used as money for at least 1,000 years and continue in limited use in West Africa and Bengal even in recent times. (Johnson, 1970, p.18) They circulated widely in Asia, the Middle East, and Europe. Cowries were never used as currency in Europe, however, as they were reexported from Europe to Africa. The King of Portugal licensed a Portuguese merchant to bring cowries as ballast in 1515, without charge for freight, whereupon the shells were reexported to Guinea, Benin, and the Congo. (Johnson, 1970, p.19) After the Dutch took over Ceylon from the Portuguese (1658), cowries began showing up in Rotterdam, where they were packed in barrels for the Guinea trade. English, French and Germans were also active in the cowrie trade. By 1720, Europeans were importing and reexporting around a million pounds weight in cowries per year, equal to approximately one-third of the value of the 20,000 African slaves exported annually at that time. (Johnson, 1970, p.21) By the end of the eighteenth century, the English alone were shipping some 100 tons of cowries per year to Africa. The cowrie trade experienced crisis when the slave trade was abolished in 1806; within five or ten years, European shipments dropped to about 6 tons per year. (Johnson, 1970, p.22) Cowries were also imported in exchange for African gold. Indeed, cowries originally served as fractional change for gold currency in the Niger Bend country. Johnson speculates that one would expect that the "large imports of cowries in the sixteenth century would tend to lead to a depreciation of cowries (as is known to have happened in the Congo)" -- relative to gold -- if a system of pegging cowries to gold were to have broken down. She says that cowries did in fact go off the 'gold standard' in the second half of the eighteenth century, which would make it "interesting to see if there is evidence of such a breakdown in the sixteenth or early seventeenth centuries." (Johnson, 1970, vol.XI, n.3, p.33) In any case, one prominent Asian product, cowries, provides a partial answer to the puzzle of exactly what products exchanged -- both directly and indirectly -- for the vast quantity of American silver flowing to China. Another important African import was copper, used as a medium of exchange from at least the eleventh century: "[T]here can be little doubt that the bulk of West Africa's copper has come from

beyond her borders: from northwest Mauritania, southern Morocco, the Byzantine Empire (Malfante's 'Romania') and Central Europe." (Herbert, Eugenia W., 1973, p.180)

So, hundreds of tons of silver flowed annually to the Far East -- including to the Maldivian Islands themselves -- while hundreds of tons of cowries simultaneously flowed from South Asia. Africa's exports of slaves and gold were connected with imports of cowries and copper. The tie between Africa's slave trade and smuggled silver via the Rio de la Plata is easy to see on the American side; more difficult to detect are the gold-cowrie-slave triangular trade connections with silver as the white metal passed through Europe on its voyage to China.

Japan's role as a huge silver source through two-thirds of the seventeenth century has already been noted, as has the less-dramatic role of Japanese gold exports. Japanese copper became increasingly prominent in intercontinental trade during the early-modern period, sometimes for use as 'petty monies' (with a role similar to that of cowries) and sometimes as plate. Sweden was Europe's most important source of copper, but Japanese output was twice as large. (Glamann, 1981, p.174) Although "the principal part of the Japanese copper remained in the East", it offered serious competition in Europe as well. Exported as early as the 1620s, Japanese copper "in 1656 was stimulated by vigorous demand from Europe...Accordingly 39,140 lbs. were sent to Holland in 1657 and in 1658 the vast quantity of 1,007,160 lbs." (Glamann, Kristof, 1953, pp. 47,56) Since the seventeenth century is sometimes referred to as Europe's "copper century" in terms of monetary history, it is perhaps understandable that copper flowed to Europe from Asia. In monetary terms, the 'silverization' of China occurred against a backdrop of a 'de-silverization' of Europe through much of the early-modern period. Citing Spooner (1972), Pamuk summarizes the trend toward copper in Europe:

> By the middle of the [17th] century, copper coinage was being used heavily in parts of Europe. In Spain, Sweden, and Russia, the great majority of transactions were being undertaken with copper coinage(Pamuk, Sevket, 1993, p.73, who cites Spooner, Frank, 1972)

The point is that particular metals flowed globally in response to changes in their respective stock demands and costs of production. Since copper substituted for silver (e.g. in Europe) while silver was substituting for paper money (e.g. in China), it is not surprising that merchants reacted by shipping both silver to Chinese customers and

copper to European buyers. These areas simply furnished the most profitable markets for particular products during specific time intervals. This is the way markets function, irrespective of whether the items traded had been monetized or not.

Strong demand for copper within Europe notwithstanding, by the late 1670's and early 1680's no copper was carried to Europe, even though Japanese copper exports peaked during these years. According to Directors of the Dutch Company in 1640, "the Japanese and Chinese trade [w]as the principal trade in the entire Indies," however, the export of Japanese copper by Chinese (nearly equal to those of the Dutch by 1679) was "partly carried to Taiwan, partly to Siam, where it was sold to the English, the Danes and others, and carried on to Coromandel and Bengal...; the Chinese -- who exported not only copper bars but also scrap copper and copper plates -- seem to have taken the lead, superseding the Dutch, at the close of the 1680's." (Glamann, 1953, pp.45, 77-88) The Dutch Company retaliated by trying to corner the Japanese copper market in 1683-84, but they were unable to establish control.

Glamann's emphasis on the cost of transporting copper, a relatively bulky item, is noteworthy. Copper was shipped to Europe as ballast (like cowries), which explains why the market for this relatively-bulky item was linked over such vast distances.[90] Saltpetre was usually the dominant Dutch ballast commodity for shipments to Europe, so "it is remarkable that the company's importation of copper was large exactly in those years when the prices of saltpetre in Europe showed a falling tendency." (Glamann, 1953, p.62) It is clear that monetized commodities were locked in vigorous global competition with (1) other monetized commodities, as well as (2) non-monetized items in geographically-dispersed markets throughout the early-modern period.

C. Trans-shipment Of Metals And Monies

Considering the prominent role of the Ottoman Empire in transshipping silver to Asia, surprisingly little scholarly attention has been devoted to study of Middle Eastern

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90 Porcelain was an extremely important ballast item in Chinese shipping. Souza lists three main Chinese export items: (1) gold, (2) silk and cotton, and (3) "ballast" items (including porcelain). (Souza, 1986, p.5)

trade linkages.[91] It was mainly American silver which was reexported through the Middle East, of course, as is made clear in this passage from Pamuk:

> The Middle East, however, was often a transit zone for these intercontinental flows. While the Ottoman government welcomed the arrival of large amounts of silver and silver coinage from the West, it could not prevent their outflow towards Iran and India, as the Empire continued to run deficits towards the East. (Pamuk, 1993, p.73)

'Pragmatism' is the term used by Pamuk to describe Ottoman monetary policy. Policy was pragmatic in the sense that Ottomans did not insist upon monopolization of domestic money supplies, an important issue because "contrary to the prevailing view, the use of money was not limited to segments of the urban population but was quite widely spread during the sixteenth century." (Pamuk, 1993, p.70) Foreign coins were allowed to circulate freely throughout the region under Ottoman control:

> Foreign coins in fact became the leading forms of actual money in the akce region, from the Balkans and Istanbul to Anatolia and Syria.... the Dutch thaler.... Even more important were the Spanish 'pieces of eight'... The Ottoman government did not attempt to restrict the circulation of these coins. In fact, the government regularly accepted, and sometimes even demanded, payment in European coinage. (Pamuk, 1993, p.75)

This Ottoman pragmatism is seen as both a healthy trend (a pro-market philosophy) as well as negative, in the sense that it provided "strong evidence regarding the limitations of its [the Empire's] power." (Pamuk, 1993, p.76) Below, we will briefly revisit this issue of the role of silver in the decline of Ottoman (and Ming) financial power.

East of the Ottoman Empire, from the Yemen and Persia to the Indonesian archipelago, coinage and media of exchange were silver-based: "From the Red Sea to the Pacific wherever the Company's servants went (with the exception of southern India of course) they met with coins and moneys of account whose value was fixed in silver." (Chaudhuri, K.N., 1975, p.348) In Mughal India the silver rupee was used widely for trade and tax purposes; the gold coins, 'muhr' or 'ashrafi', enjoyed limited circulation, and

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91 While not focusing on precious metals flows per se, an interesting account of the importance of Islamic trading networks can be found in Dale, (1994).

copper coinage, based on the 'dam', was employed for small transactions. (Habib, Irfan, 1982, p.360) Chaudhuri states that "the currency standard in areas of Mughal rule can be said to have been unambiguously based on silver." (Chaudhuri, 1975, p.347) In contrast, the gold 'pagoda' prevailed along the Malabar coast and in southern India.[92]

No one disputes the fact that India was one of the big poles attracting silver during the sixteenth and seventeenth centuries. Conversion of the tax system in the Mughal empire to silver, which spread southward through the seventeenth century, indicates widespread silverization in the Indian economy. (Chaudhuri, 1986, p.74; also see Perlin, 1993, p.154) Substantial imports of silver into India have led many historians to claim that perhaps India absorbed the white metal nearly to the extent of China: "India, which heavily imported silver and hardly sent any out, must have had its supply of silver augmented to a much greater degree than other areas of the world." (Habib, 1982, p.368-369) While India no doubt absorbed silver, what is doubtful is the contention that India "hardly sent any [silver] out." There is evidence of trading of Indian rupees in Tibet; mints were established in Katmandu and in Cooch Bahar already by the 1560s. Indian silver was carried to Lhasa during the 1680s, and from there to Xining. Silver also could have left India via routes linking Yunnan Province with the Bay of Bengal and Burma, "though most likely not in significant quantities." (Moloughney and Weizhong, 1989, p.65-66)

Perhaps the most compelling indirect evidence that a substantial fraction of Indian silver must have continued on to China rests on the observed divergence of India's bimetallic ratio from that of China. During the late sixteenth century, for example, the gold/silver ratio ranged from 5.5 to 1:7.5 in Canton while simultaneously standing at 1:9 in India. (Habib, 1982, p.367; Von Glahn, 1996) Since the high value of silver in China is what prompted entrepreneurs to mine and ship silver from all corners of the earth for centuries, it only stands to reason that this mechanism had to have been in operation for two enormous neighboring economies. Basing his conclusion upon both archival and

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92 The division of India into gold and silver zones is an interesting phenomenon, but not unique. Japan was also divided into gold and silver zones (east-west). As we have seen, China experienced no such dichotomy, having emerged as a united silver zone.

theoretical considerations, Chaudhuri is emphatic that "India was the penultimate destination of the American silver. For beyond South Asia there were still the vast areas of Imperial China..." (Chaudhuri, 1986, p.324) India certainly absorbed significant amounts of silver, but both direct and indirect evidence supports Chaudhuri's contention that China was most dominant on the demand side of the silver equation.

Perlin's review essay constitutes a call for more balanced and thoughtful treatments of Third World histories in general and of India in particular. He justifiably criticizes Vilar [1976] for 'Eurocentric bias', while acknowledging Vilar's sound analysis in other respects:

> Precisely as a zone of attraction, Asia may, ironically, have had a far from passive role in Europe's growth.... It can hardly be disputed that trade in precious metals was a fundamental lever of European trading ventures in Asia, and that the rapid growth in the organization of overseas trade thereby depended on the zones of reception provided by Asia's economies for coinable metals. (Perlin, 1980, p.239)

But Vilar's shortcomings in emphasis are misdemeanors compared with the position advanced in Spenders and Hoarders, where Kindleberger [1989] attributes Asia's importation of precious metals to a fundamental psychological flaw, namely that Asians are notorious 'hoarders' (a term which he never defines). For Kindleberger, hoarding of precious metals is a pejorative term correlating with backwardness.[93] But the studies collected in this volume make it clear that monies of various types simply migrated around the world in search of their best market. Chinese did not hoard silver, any more than Europeans hoarded copper and bills of exchange, Africans hoarded cowries and copper, Japanese and Indians hoarded gold and silver, or Maldivians hoarded silver larins. There is no logical a priori reason to associate economic advance or decline with any particular medium of exchange. Each situation must be evaluated according to its particular historical circumstances.

Perlin prefers the terminology "monetary media" over "precious metals" because all monies -- not just gold and silver -- were interrelated. 'Lesser' monies were extremely

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93 For criticism of the hoarding thesis, see Chaudhuri, (1986); Flynn, (1990); Perlin, (1980); Prakash, (1986).

important and were structurally linked with the circulation of silver and gold; since Indian "imports of copper and cowries were complementary with importation with the precious metals, their study then must assume major significance." (Perlin, 1993, p.137) Perlin's argument is buttressed by Marion Johnson similar rejection of what she considers 'patronizing' characterizations of 'primitive monies':

> West African cowrie currencies, though they have some unusual qualities, are in no sense a 'primitive' money, but a sophisticated form of currency capable of adaptation to the particular needs of West African trade. The currency is naturally best remembered in its latest and most debased stage...but it had behind it centuries of useful existence before its breakdown. (Johnson, 1970, p.17)

We should keep an open mind regarding the roles of monetary substances, including everyday monies, if we hope to more fully comprehend the nature of global trade linkages during early-modern times.

D. Monies, Power And Empires

Probably no one would dispute that the emergence of intercontinental trade in the early-modern period implied prodigious profits for successful participants. Production of key products yielded profit, as did processing, shipping, wholesale and retail sale. Governments profited directly through ownership/control and indirectly through taxation (including seigniorage) of products connected with long-distance trade. While we do not possess the knowledge required to assess the causes of the rise and decline of myriad entities discussed throughout this volume, we can offer a brief review of arguments concerning the role of silver (our specialty) in the rise and decline of empires around the world. It is possible that these arguments could be of use to scholars specializing in the study of other commodities or different time periods.

Over the past two decades, the most persistent proponent for a strong connection between silver imports and the economy of China is unquestionably William Atwell: "Japanese and Spanish-American silver may well have been the most significant factor in the vigorous economic expansion which occurred in China during the period in

question."[94] Based on a variety of sources which seemed at the time to indicate that Chinese imports of silver declined in the late Ming period (the Qing overthrow occurred in 1644), Atwell reasoned that declining silver imports created a crisis which ultimately led to the decline of the Ming Empire. Keeping in mind that exports from China's huge silk industry depended largely upon the ability to swap silk for foreign silver, this did not seem like an unreasonable argument. Moloughney and Xia, Goldstone, and von Glahn, however, have subsequently attacked Atwell's argument on empirical grounds.[95] Recent information seems to indicate that Chinese silver imports peaked, rather than collapsed, precisely during the late Ming period.

While serious differences remain, we contend that these authors' core arguments are compatible. (Flynn and Giraldez, 1994, pp. 437-440; 1995, pp.213-214) The key is to view silver as a commodity produced for profit, as would be the case for a normal, non-monetary item. The continued accumulation of silver stocks within China is what caused its market value to decline there. In this context, Ming policy of fixing tax payments in terms of certain quantities of silver payments turned out to be a fatal mistake. In modern terminology, the Ming did not "index" their tax (e.g. a tax of US$20 fifty years ago was certainly more beneficial to a government agency than would be a US$20 tax today). Collection of a fixed quantity of anything results in a loss of purchasing power for the taxing authority, when the value of the item collected steadily erodes in value. Based on Geiss, Goldstone therefore argues that it was an inflation-based fiscal crisis which led to decline in Ming power; we simply fortify this argument by pointing out that it was the abundance of silver within China which led to a loss in its purchasing power.[96] The same explanation can be extended to declining revenues in the Ottoman Empire, another jurisdiction which made the mistake of fixing taxes in terms of specific quantities.

This argument fits into the global pattern of silver trade outlined earlier. High demand for silver, in conjunction with low costs of production in Japan and America,

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94 See Atwell, (1977; 1986; 1988; 1982).

95 See Moloughney, Brian and Xia Weizhong, (1989); Von Glahn (1996); Goldstone, (1991, p.371).

96 See Geiss, (1979) and Goldstone, (1996).

created unusual profits for entities controlling the mines. Conspicuous in this regard were the Spanish Crown and the Tokugawa Shogunate, both of which were financed by profits from silver mines. When the market value of silver finally fell to its cost of production, super-normal mine profits eroded; the fiscal foundation of both the Spanish Empire and the Shogun was undermined. (Flynn, 1982, pp.139-147; 1991)

If asked to choose a critical period for the world silver trade, we would choose the years around 1640, by which time bimetallic ratios had converged globally. After a century-long boom, the price of silver had finally fallen to its American and Japanese costs of production. Spain had lost European hegemony; its bankruptcy destroyed powerful financiers throughout Europe. The Ottomans had been experiencing silver-related crisis from the late sixteenth century into the seventeenth century. (Goldstone, 1991, p.367) The Ming were overthrown by the Qing in 1644. The end of the Price Revolution coincided with the close of an era which might be described as the "Silver Century."

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Samenvatting

Deze dissertatie bestaat uit zes essays, die een coherent beeld geven van de centrale rol van China bij het ontstaan van de wereldhandel. Verantwoordelijk voor het ontstaan van handel op wereldschaal was in het bijzonder zilver. Vandaar dat de eerste vijf essays in deze bundel vooral gaan over vraag en aanbod met betrekking tot de wereldmarkt voor zilver.

Het eerste artikel "Born with a 'Silver Spoon': The Origin of World Trade in 1571", geeft een algemeen overzicht van de rol van zilver bij het ontstaan van de wereldhandel. De essays twee tot en met vijf gaan over specifieke vragen en gebieden: de omvang van de zilverhandel via de Pacific, de mate waarin mijnopbrengsten voor financiering van het Spaanse Rijk zorgden en de mate waarin handel via de Filippijnen winsten voor de Spaanse Kroon opleverde. Het zesde en laatste essay, "Introduction: Monetary Substances in Global Perspective", voert de lezer terug naar een algemene beschouwing over de zilverhandel in wereldhistorisch perspectief langs lijnen zoals verwoord in het inleidende essay. In het laatste essay worden de vroegmoderne handelsbewegingen van het zilver geplaatst in de context van de lange afstandshandel van de andere drie belangrijkste monetaire middelen van dat moment: goud, koper en kaurischelpen.

Het 'Silver Spoon' essay dicht China, 's werelds belangrijkste eindbestemming voor zilver, een centrale rol toe bij het ontstaan van de wereldhandel. De gebruikelijke verklaring voor de toevoer van edelmetaal naar 'Azië' gedurende de vroegmoderne periode luidt als volgt: de Europese behoefte aan Aziatische producten was immens, terwijl de Aziatische behoefte aan Europese producten gering was; dit veroorzaakte een 'tekort op de Europese handelsbalans' (dat wil zeggen grote Europese importen deden kleine Europese exporten teniet), waardoor Europa geweldige hoeveelheden edelmetaal naar Azië moest zenden. De Europese markt was zeer dynamisch. 'Silver Spoon' verklaart waarom deze conventionele verklaring geen hout snijdt. Wat er in werkelijkheid gebeurde was dat enorme hoeveelheden zilver door China (niet het abstracte 'Azië') werden aangetrokken, terwijl dit land van het midden van de zestiende tot het midden van de zeventiende eeuw aanzienlijke hoeveelheden goud uitvoerde (naar Europa, Japan en beide Amerika's).
Bovendien moet over deze zaak niet in termen van Oost-West gesproken worden, omdat ook

Japan grote hoeveelheden zilver naar China exporteerde. Door de 'verzilvering' van de Chinese markt op de lange termijn werd het zilver in China twee keer zoveel waard als in de rest van de wereld. Verre van het gegeven van de 'passieve balans', zoals beschreven in conventionele historische studies, was de hoge marktwaarde van zilver in China – samen met de dynamiek van de aanbodzijde in mijnstreken in Japan en de beide Amerika's – de drijvende kracht achter het ontstaan van een echte wereldhandel. Europeanen fungeerden als tussenpersonen.

Het tweede essay, "Arbitrage, China, and World Trade in the Early Modern Period", vestigt de aandacht op de handel via de galjoenen op de lijn Acapulco – Manilla, Spanje's enige directe handelsroute naar China. Historici hebben Pierre Chaunu's conclusie (gebaseerd op officiële belastingcohieren) overgenomen, dat de handel op Manilla vanaf het tweede kwart van de zeventiende eeuw aan betekenis verloor. Maar Chaunu's pessimistische kijk op de handel via de Filippijnen wordt door een grote hoeveelheid indirect bewijsmateriaal tegengesproken. Al het indirecte bewijs dat we konden vinden ondersteunt de afwijkende mening van de hoogleraar Chuan (Hong Kong), die beweert dat de galjoenen uit Manilla gedurende de hele zeventiende eeuw jaarlijks ongeveer twee miljoen pesos in Amerikaans zilver naar China vervoerden. Twee miljoen pesos (ongeveer 50 ton) zilver is ruwweg gelijk aan alle zilverexporten naar 'Azië' van de Nederlandse Oost-Indische Compagnie, de Engelse East India Company en de Portugese Estado da India samen.

Het derde essay, "Silk for Silver: Manila-Macao Trade in de 17th Century", ondersteunt de conclusie dat de galjoenen uit Manilla gedurende de hele zeventiende eeuw jaarlijks 50 ton zilver naar China vervoerden. Het 'Silk for Silver'essay benadert het probleem via bewijsmateriaal betreffende de waarde van de Chinese zijde die oostwaarts van Manilla naar Acapulco werd vervoerd. Dit bewijsmateriaal komt wederom overeen met Chuan's bewering dat gedurende de hele zeventiende eeuw zilver ter waarde van twee miljoen pesos over de Pacific werd vervoerd, aangezien Chinese zijde ter waarde van tenminste twee miljoen pesos via de galjoenen in tegenovergestelde richting van die van het Amerikaanse zilver werd gebracht.

Het vierde essay, "China and the Spanish Empire", betoogt dat de 'verzilvering' van China verantwoordelijk was voor de opkomst van het Spaanse Rijk. Opbrengsten van Spaans-Amerikaanse mijnen financierden de vele oorlogen over de hele wereld van Spanje gedurende zijn 'gouden eeuw'. De Spaanse hegemonie moet wel gefinancierd zijn door mijnopbrengsten,

omdat Spanje een klein land was, dat zowel op agrarisch als industrieel gebied was achter gebleven gedurende zijn expansie. Een machtig Spaans Rijk is moeilijk voorstelbaar zonder de opbrengsten van zijn Amerikaanse zilvermijnen; en zulke opbrengsten zijn even moeilijk voorstelbaar zonder de enorme vraag naar zilver vanuit China.

Het vijfde essay, "The Philippines as Imperial Profit Center in the 16th and 17th Centuries", richt zich op de vraag of eeuwen Spaanse overheersing van de Filippijnen door commerciële of religieuze belangen werden gemotiveerd. Dit omdat over het algemeen wordt aangenomen dat de Filippijnen de schatkist van het Spaanse Rijk constant hebben leeggemaakt. Naar wordt beweerd zou elk jaar ongeveer 250.000 pesos van Mexico naar Manilla gezonden zijn in de vorm van de *situado*, dikwijls beschreven als een 'subsidie' om de Filippijnen te behouden. Ten eerste was de helft van de *situado* afkomstig van belastingen door de handel zelf opgebracht, dus 125.000 pesos per jaar kunnen helemaal niet als subsidie worden beschouwd. Ten tweede werden de overige 125.000 pesos per jaar bijna geheel gebruikt voor de oorlogen tegen de Nederlanders op de Molukken (dat wil zeggen dat dit geld de Filippijnen slechts passeerde). Ten derde moet een deel van de opbrengsten van de Spaans-Amerikaanse zilvermijnen eigenlijk op het conto worden geschreven van het Aziatische gedeelte van de zilverhandel. Wanneer deze zaken binnen de context van een wereldmarkt worden geplaatst, wordt duidelijk dat de Filippijnen eigenlijk een belangrijk wingewest voor de Spaanse Kroon waren.

Het laatste essay, "Introduction: Monetary Substance in Global Perspective", poogt de wereldmarkt voor zilver te verbinden met de wereldmarkt voor de drie belangrijke monetaire middelen van die periode: goud, koper en kaurischelpen. China was een belangrijke exporteur van goud. Hetzelfde kan gezegd worden van Japan gedurende de tweede helft van de zeventiende eeuw. De Filippijnen beschikten ook over belangrijke goudmijnen, evenals natuurlijk de beide Amerika's. Veel is er uiteraard geschreven over de goudproductie in Afrika ten zuiden van de Sahara, welk goud noordwaarts naar Europa werd gebracht, waar het het West-Oost pad van het zilver op weg naar China kruiste.

De verspreiding van kopergeld over heel Europa is uiterst belangrijk voor inzicht in de wereldhandel van zilver. De reden: kopergeld verving zilvergeld in Europa, waardoor de vraag naar zilver in Europa verminderde juist op het moment dat de vraag naar zilver in China toenam. Japan was de grootste producent van koper in de wereld tegen het einde van de zeventiende eeuw (twee maal zo groot als Zweden). Japans belangrijkste klant voor koper was

China, maar er werd ook koper naar Europa gezonden. Nogmaals, deze belangrijke trends kunnen alleen onderscheiden worden als vraag- en aanbodfactoren voor elk geldmiddel apart worden bekeken. Dit mag echter ons de ogen niet doen sluiten voor de relaties tussen de geldstromen op wereldschaal.

Kaurischelpen kwamen hoofdzakelijk van de Maldiven en de Indische Oceaan. Europeanen speelden weer de rol van tussenpersonen. Kaurischelpen waren, evenals koper, ballastgoederen, zodat handel hierin bij tijden enorme winsten opleverde. Op het hoogtepunt van de Afrikaanse slavenhandel was de waarde van de kaurischelpen die op de Afrikaanse markt kwamen, ongeveer gelijk aan een derde van de waarde van de Afrikaanse slavenexport. Evenzo werden Afrikaanse slaven die naar Brazilië werden geëxporteerd, geruild voor Peruviaans zilver, dat werd gesmokkeld via 'handel aan de achterdeur' aan de Atlantische zijde, waar hoofdzakelijk de Portugezen bij betrokken waren. Men kan een duidelijker inzicht in de slavenhandel van Afrika krijgen door te kijken naar de Chinese markt. Welke producten konden, als er geen zilverexporten vanuit Spaans Amerika geweest zouden zijn gedurende de vroegmoderne tijd, geruild worden tegen Afrikaanse slaven? Wat zou, zonder de Chinese markt voor zilver, de prikkel geweest zijn om zo fanatiek mijnen aan te leggen in de beide Amerika's? Kaurischelpen uit de Indische Oceaan speelden duidelijker een rol met betrekking tot de slavenhandel.

Samen bieden de zes essays, waaruit deze dissertatie bestaat, een betrekkelijk samenhangend overzicht van de wereldhandel. De centrale rol van China wordt vastgesteld, evenals de rol die China speelde als steunpilaar van het Spaanse Rijk. De handelsroute via de Pacific wordt beschouwd als één van de belangrijkste, doch verwaarloosde aspecten van de wereldhandelsgeschiedenis. De Filippijnen vormden een cruciaal handelscentrum, waarover Spanje en de Hollanders in de Aziatische wateren eindeloos streden. De term 'globalisering' is weliswaar pas aan het einde van de twintigste eeuw gemunt, maar de geschiedenis ervan is al enkele eeuwen oud. Deze dissertatie tracht te laten zien welke geldmechanismen daaraan ten grondslag liggen.