

# CHINA AND THE SPANISH EMPIRE

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## RESUMEN

En este artículo argumentamos que Ming China desempeñó un papel fundamental en el auge y decadencia del Imperio español. La demanda china de plata permitió elevados beneficios hasta 1640. El descenso de estos beneficios llevó a la reducción de la producción y la Monarquía se enfrentó a una grave crisis financiera. La consecuencia fue una presión fiscal creciente con objeto de compensar la pérdida de los ingresos externos procedentes de América.

## ABSTRACT

In this article we argue that Ming China had a fundamental impact on the rise and decline of the Spanish Empire. China's demand for silver was of such magnitude that private mining profits in the Spanish Empire remained high until about 1640. The decline of these profits led to abandon production. Spain faced a deepening financial crisis due to the fall of silver's value. The loss of purchasing power from the Crown's American enterprise was inevitable and the state's relentless pressure for increased taxation within Castile and elsewhere was mandatory in order to compensate for lost external purchasing power.

## I. INTRODUCTION AND OVERVIEW <sup>1</sup>

One cannot help but marvel that a relatively small country such as Spain, with half the population of France, could have risen to become the West's

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<sup>1</sup> This essay benefits from many useful criticisms and suggestions by John M. Headley, Akira Motomura, Mark Steele, Peter Temin and an anonymous referee; the authors are nonetheless

dominant power in the sixteenth century, her ignominious collapse during the first half of the seventeenth century notwithstanding. The decline of the Spanish Empire was certainly visible to all by the Treaty of Westphalia in 1648. No one denies that both the flowering and decay of the Spanish Empire had immense impacts on European history, of course, but the extent to which the foundation of Spain's Empire was rooted in the emergence of powerful global—not just European and American—economic forces has not been fully appreciated.

Scholars have long speculated about how relatively-underdeveloped Spain could have managed to finance such a worldwide commercial and military enterprise for a century. Some have argued—and we agree—that elucidation of the financial basis of Spain's rise might shed light on the Empire's fiscal decline as well. There has been disagreement, however, about which aspects of the Empire's financial foundation warrant what relative emphasis. Elliott (1961), has pointed out that taxes levied within Castile comprised perhaps 70 per cent of total Crown revenues; some interpret this figure to imply that Imperial finances were mostly dependent upon domestic resources. And there is no question that domestic taxation was 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»<sup>2</sup>. Moreover, evidence suggests that *increasingly* onerous taxation plagued Spanish peasants throughout the period of Imperial rise and decline<sup>3</sup>. Thus, some scholars tend to place considerable weight on domestic sources of economic support for the Empire (although admitting that external/foreign factors were also important). Others maintain that external, international factors should receive the heavier weight in terms of financing the Spanish Empire<sup>4</sup>. In other words, there is fundamental disagreement in the literature as to the extent to which domestic or international factors deserve emphasis in explaining the emergence and decline of Imperial Spain.

The attempted contribution of this essay is to add a new wrinkle to the external/international side of the debate: Namely, to suggest that Ming China heavily influenced the direction of Spanish, and indeed world, history. Spain's

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solely responsible for its arguments and remaining errors. A version of this paper was presented at the Fifty-fifth annual meeting of the Economic History Association in Chicago.

<sup>2</sup> Parker (1979), p. 188.

<sup>3</sup> See Yun (1987, pp. 276-280) for a recent example involving Tierra de Campos.

<sup>4</sup> The classic «external» argument is Hamilton (1937), of course, but Flynn (1982), Kamen (1978), and others adopt approaches different from Hamilton.

domestic economy and her Empire were both intimately intertwined, not just with the economies of America and other European nations, but with the emergence of trade at the global level.

[I]t is necessary to continue along the lines that start from supra-regional analytical concepts, such as urban networks, and move out towards the scarcely considered issue of the external connections of the Spanish economy starting from the influence of changes taking place at the global level, a question which has been scarcely looked into <sup>5</sup>.

Specifically, we argue that the emergence of a new monetary and fiscal regime within Ming China was the driving force behind global trade in the early-modern period. Moreover, the rise and fall of the Spanish Empire is best viewed in the context of a Sino-centered world economy <sup>6</sup>.

## II. GLOBAL SILVER: INDEPENDENT MONEY OR MONETARY-AGGREGATE SUBSET?

Those of us trained first as economists, and secondarily as historians, usually claim that proper application of modern economic theory clarifies important historical issues. Today's best theory is used to interpret past events; that is, the latest theory logically precedes application to a particular historical phenomenon. The very existence of economic history as a field in large part depends upon this canon —theory first, historical application second— a recipe which has indeed led to many advances in historical understanding. But things do not always work out so neatly. A central contention of this essay is that the general methodology of today's *monetary* theory has unintentionally obfuscated the role of precious metals in the early-modern world economy. Because of mainstream monetary theory's incompatibility with events of the sixteenth and seventeenth centuries, we have in fact been forced to devise an alternative theoretical framework <sup>7</sup>.

One of the main sources of confusion in the literature emerges at the level of conventional definitions of the term «money». Monetary theorists today, of

<sup>5</sup> Yun (1994), p. 317.

<sup>6</sup> For a non-technical overview of global trade from the vantage of the world supply of and demand for silver, see Flynn and Giraldez (1995a).

<sup>7</sup> See Doherty and Flynn (1989) for a more complete explanation of the model which underlies this essay (indeed, all of our work).

course, are engaged in a continuing dialogue regarding what is best included/excluded from definitions of particular monetary aggregates. Without entering directly into macroeconomic debates about «monetary aggregates» at this time, we wish to simply point out that virtually all monetary theorists today would probably agree that gold coins, silver coins, and copper coins should be considered components of even the most restrictive definition of the «money supply» in the context of sixteenth- and seventeenth-century commerce. All metal coins are labeled «cash», itself a subset of today's most restrictive definition of money (M1). When confronting the actual historical record of intercontinental trade in the early-modern period, however, even this practice of conceptual aggregation at the sub-level «cash» creates confusion. In particular, application of the abstract concept «money» —as an aggregate— has led to misinterpretation of the cause of treasure flows out of Europe and into Asia.

Convention says that treasure *had to* flow from Europe to Asia as a result of Europe's trade deficit vis a vis Asia<sup>8</sup>. It seems that Europeans became enamored with Asian products —such as silks, spices and ceramics— while Asian demand for European products languished. Dynamic European imports of Asian products, coupled with meager Asian imports of European products, implied an overall European trade deficit with the Far East. Maintenance of Europe's Asian trade deficit required that precious metals flow to Asia from Europe, as a balancing item. Europe's export of precious metals is thus perceived as an effect, an unavoidable response in compensation for Europe's trade deficit (the root cause). In economics terminology, the cause of the imbalance emanated from the «real-sector»; the flow of precious metals from Europe to Asia was a «monetary-sector» effect. 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 adventuresome. Asian proclivities were insular and static. European dynamics caused a trade deficit with Asia. Precious metals flowed eastward in compensating response to Europe's trade deficit with Asia<sup>9</sup>.

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<sup>8</sup> For a more complete treatment of the issues discussed in the next few paragraphs, see Flynn (1986).

<sup>9</sup> Kindleberger (1989, pp. 7, 35, 38, 48, 64, 69, 79) considers the retrograde Asian proclivity «hoarding» (of precious metals) to be a sign of Asian backwardness; he argues that Spanish American treasure ventured to Asia in order to satisfy the Eastern propensity to hoard. A notable advantage of Kindleberger's thesis is that he at least rejects the conventional trade-deficit (specie-flow) hypothesis, but it is not clear that Kindleberger's alternative explanation represents an

A close look at the historical record reveals contradictions within the trade-deficit scenario just outlined. «Precious metals» did not in fact flow from Europe to Asia, although tens of thousands of tons of the specific metal «silver» did flow through Europe and eventually into China. Rarely taken into consideration, however, is the fact that while prodigious quantities of silver flowed eastward out of Europe, between 1550 and 1650 significant quantities of gold were simultaneously shipped from China into Europe (as well as into Japan and America) <sup>10</sup>.

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 <sup>11</sup>.

A Spanish official who served for three decades in the East Indies, Pedro de Baeza, actively promoted the trade of Chinese gold for silver from New Spain or Castile, writing in a treatise published in 1609 that «a profit of 75 or 89 per cent would be made» by concentrating on gold purchases. It is ironic that a huge volume of Asian copper flowed through Amsterdam to some of Europe's biggest customers —European mints— on some of the same ships that carried Spanish American silver to the East. During the peak years 1672-75, Dutch imports of Japanese copper equalled perhaps half of the calculated Swedish exports at that time <sup>12</sup>. In summary, 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 combina-

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overall improvement. See Flynn (1990, pp. 721-724) for criticism of Kindleberger's pejorative usage of the notion «hoarding».

<sup>10</sup> Contemporaries were completely aware of the swap of silver for Chinese gold, an example of which is contained in the following citation by von Glahn (forthcoming, Chapter 4, p. 217): «According to the testimony of a Japanese envoy at Macao, recorded in a Jesuit work published there in 1590, great quantities of gold flowed out of China to Japan and other overseas markets». Flynn (1986, pp. 39-42) discusses the exchange of European silver for Chinese gold between 1550 and 1650 in an article which offers theoretical support for the Ricardo-style argument of Chaudhuri (1978, pp. 156-177; 1986), who used divergent bimetallic ratios to explain the international flows of specific metals.

<sup>11</sup> Brandel (1972), p. 499.

<sup>12</sup> Glamann (1981), p. 174.

tion of gold, silver, and copper obfuscates the rationale behind the export/import of individual metals. In addition, the practice of aggregating metals with such dissimilar histories has unintentionally precluded discovery of the underlying basis for East-West trade in the sixteenth and seventeenth centuries.

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 specific demand and supply conditions; which is to say, microeconomic analysis is required <sup>13</sup>. The central demand-side question is: Why did the specific commodity, silver, out of a multitude of potentially exportable products, dominate the eastward leg of Western trade with Asia during the early-modern period? The answer has been accessible in the literature on the monetary and fiscal history of Ming China <sup>14</sup>, but recognition of demand-side dynamics requires re-conceptualization of China's silver history in the context of global economic developments.

A global perspective 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 <sup>15</sup>, perhaps exceeding 80 per cent of the entire world's production over that time span <sup>16</sup>. Despite America's dominance in silver production over three centuries, Japan may have been the primary exporter of silver to China during 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 <sup>17</sup>. Since all of the great silver mines in both hemispheres ultimately sold to the Chinese marketplace, it is natural to ask why China persistently absorbed tens of thousands of tons of silver from throughout the world over the entire early-modern period?

<sup>13</sup> It is not possible to apply standard microeconomic demand-supply analysis to our problem, however, because «inventory supply» and «inventory demand» are required in this case (rather than «production supply» and «consumption demand»). For mathematical derivation of the inventory demand function underlying the graphical presentation of this essay, see the appendix in Doherty and Flynn (1989).

<sup>14</sup> Discussion of the conversion of Chinese monetary and fiscal systems to silver can be found in Atwell (1977, p. 4; 1982, pp. 79, 83), Boxer (1970, p. 461), Chuan (1969, p. 2), Fairbank (1992, p. 135), Gernet (1982, p. 415), Hamashita (1988, pp. 18, 23). For an outstanding account of Chinese monetary history (including a hundred pages on the history of monetary thought in China), see von Glahn (forthcoming).

<sup>15</sup> Barrett (1990), p. 237.

<sup>16</sup> Cross (1983), p. 397.

<sup>17</sup> 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; also Innes (1980), chapter VI.

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-customer for silver was China, yet the almost total neglect of China's pivotal role on the demand side of the world silver market is perhaps the most striking feature of the literature<sup>18</sup>. 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 Chinese history<sup>19</sup> and elsewhere, Ming rulers succumbed to the temptation to finance government projects via excess issuance of paper monies: As a result, a promissory note with a nominal value of one *liang* (one thousand copper coins) fell to less than one-thousandth of a *liang* (less than one copper coin) by the year 1445<sup>20</sup>. Military expenses constituted perhaps the most persistent drain on Ming revenues, but projects such as the movement of the capital to Beijing and geographical expeditions were also expensive. What cheaper short-run solution than to simply print paper money?

Unchecked issuance of paper money led to hyper-inflation and the value of Chinese paper money fell (predictably) toward its cost of production; in other words, it became nearly worthless. China's paper-money system had collapsed totally by the middle of the fifteenth century<sup>21</sup>. 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 slowly 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 common people, but business transactions evolved toward payment in silver. It is of major significance that, concurrent with the silverization of its monetary system, China's fiscal system also gradually converted to a silver standard. At first local, then regional government entities began specifying that taxes be paid in silver. The Ming Dynasty initially resisted both the monetary and the fiscal «silverization» of China, but as it be-

<sup>18</sup> Atwell (1977; 1982; 1986; 1988) has long emphasized the substantial effect of American silver on the Chinese economy. Flynn and Giraldez (1994; 1995a) offer the complementary argument that Chinese demand for silver caused the birth of both Pacific Rim trade and world trade in 1571.

<sup>19</sup> «Confronted with the exorbitant costs of maintaining huge standing armies, the [twelfth-century] Southern Song government turned to paper currency as an expedient alternative to coinage.» (von Glahn, 1996, forthcoming, p. 80).

<sup>20</sup> Gernet (1982), p. 415.

<sup>21</sup> Yang (1952), p. 67.

came increasingly clear that the silver movement could not be stopped, resistance by the central authority waned. Over time, more and more Ming taxes were commuted to silver payments. Silverization of the Ming fiscal system culminated in the so-called «Single-Whip Tax Reform» dating from the 1570s, «the most significant innovation in fiscal policy during the entire Ming and Qing periods»<sup>22</sup>. The Single-Whip consolidated scores of previously independent taxes into a single levy; moreover, this single tax was payable exclusively in silver, even for peasants. Since China contained an estimated one-quarter of world population (well over 100 million people), conversion of its monetary and fiscal system to a silver standard was bound to have a global impact of historic proportions. If we combine China with numerous tributary states participating in this silver movement, perhaps one-third or even 40 per cent of the world's populace had converted to a silver monetary-and-fiscal foundation<sup>23</sup>:

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.

The payment of tribute in silver implied that the major trading routes of Asia were heavily impacted by the flow of bullion toward Beijing. In the case of Korean tribute, for example, Japanese silver exports via Tsushima and Korea matched chronologically with the schedule of tribute payments from Korea to imperial China<sup>24</sup>.

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<sup>25</sup>:

<sup>22</sup> Moloughney and Xia (1989), p. 55; for the Single Whip, see Liang (1970); Huang (1974), provides a more detailed account. It took a long time to fully implement the single-whip tax reform. 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 Xia (1989), p. 67.)

<sup>23</sup> Hamashita (1988), p. 18.

<sup>24</sup> Tashiro (1989), *passim*.

<sup>25</sup> Chuan (1969, p. 2) offers a direct comparison between China and Spain: «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



The gold/silver ratio in China had drifted slightly downward from its historical peak of 1:4.5, achieved in the late 14th century, to 1:6 by the early sixteenth century...In contrast, the gold/silver ratio hovered around 1:11-12 in Europe, 1:10 in Persia, and 1:8 in India. (von Glahn, forthcoming, Chapter 4, p. 214.)

Since silver was durable and had a relatively high value-to-weight ratio, 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 had merely to purchase in markets where silver was cheap (e.g. Mexico City, Amsterdam, Nagasaki) 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. Figure 1 depicts silver's divergent value in China compared with the rest of the world.

China was such a giant «vacuum cleaner» or «suction pump» for silver (*bomba aspirante*), in Godinho's colorful terms, that it took the importation of many tens of thousands of tons of Japanese and American silver into China for about a century in order to finally depress silver's market value in China down to the level prevalent in the rest of the world (thereby also eliminating 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 <sup>26</sup>. Figure 2 represents the augmented silver stocks of China and the rest of the world around 1640. The Chinese economy continued to attract significant (but reduced) quantities of silver during the second half of the seventeenth century, during what might be characterized the «non-arbitrage phase» of this silver trade <sup>27</sup>. China remained a major player in world trade during the later, non-arbitrage phase, but its global impact during the post-1640 phase was not as dominant as it had been during the pre-1640 arbitrage phase.

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.» Richard von Glahn (forthcoming, Chapter 4, p. 218) cites Pedro de Baeza's contemporary observations: «Describing the market at Canton in the 1590s, he stated that gold commonly traded in China at a ratio of 1:5.5 with silver, and even when gold was most dear the gold/silver ratio did not surpass 1:7.5, in contrast to the prevailing ratio of 1:12.5 in Spain.»

<sup>26</sup> For global convergence of bimetallic ratios see, for example, Atwell (1982, p. 82), Kobata (1965, pp. 254-55), Yamamura and Kamiki (1983, p. 352).

<sup>27</sup> The post-1640 non-arbitrage phase of the East-West silver trade is discussed in Flynn (1991). 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 reflected by 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.

FIGURE 1  
*Silver's price in China and elsewhere*

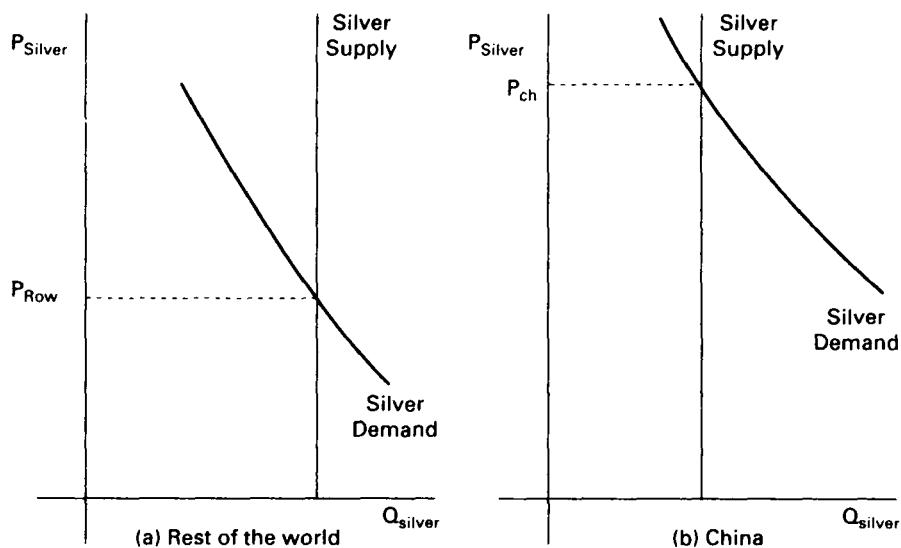
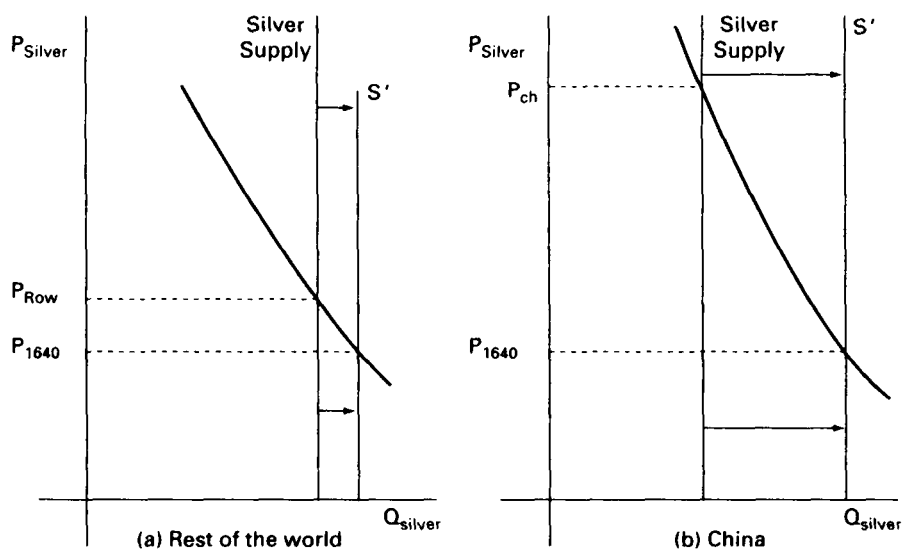


FIGURE 2  
*Augmented silver stocks by 1640*



Note the ironic cause-effect switch resulting from adoption of a micro-economic approach to an individual money. Disequilibrium in the silver market becomes the *cause* of global trade. Precious metals flows are no longer perceived in terms of the passive, reactive role attributed by the traditional European trade-deficit interpretation. Moreover, the misleading practice of couching monetary flows in East-West terms is laid bare, unless someone is prepared to assert that silver-producing Japan was already «westernized» prior to the beginning of the Tokugawa period (1600)! The traditional view places European spending habits at the causal forefront —since excess European imports are supposed to have provoked the trade deficit— while our interpretation relegates Europeans to the role of middlemen. The supply side of the world silver market was dominated by Spanish America and Japan. China dominated on the demand side. It is true that Europeans played an important role as mediators between the supply-sides (Japan and Spanish America) and China's end-market on the demand side, but this does not justify elevation of Europeans to the status of prime movers <sup>28</sup>.

The Pacific leg of silver's journey to China —via the Acapulco-Manila Galleons— is also at odds with the traditional trade-deficit interpretation of world monetary flows. At least 50 metric tons of silver passed via Manila to China annually throughout the seventeenth century —approximately the same tonnage of silver shipped annually out of Europe by the Portuguese *Estado do India*, the English East India Company, and the Dutch East India Company combined <sup>29</sup>— yet as far as we know nobody is willing to argue that America's voracious appetite for Asian products precipitated an American trade deficit with Asia, which in turn necessitated a massive drain of American treasure over the Pacific. Why would trade-deficit logic be applicable to the European leg of East-West trade, but not to the Pacific leg? Our utility-based micro-economic argument, on the other hand, applies equally to all regions and parties participating in the global trading system, a system itself driven by dise-

<sup>28</sup> Some claim that we over-emphasize Chinese demand for silver at the expense of silver demand within India. Reform of Mughal India's tax system in the late 16th century also involved the «substitution of silver as the basic unit of demand and account» (Perlin, 1993, p. 154), a system which spread southward through India during the seventeenth century; Chaudhuri (1986, p. 74) also discusses the silverization of tax systems in India as well as China. The bimetallic ratios cited above (von Glahn, forthcoming, Ch. 4, p. 214) indicate that silver's market value in China was high relative to its value in India, however, a trend which supports Chaudhuri's (1978, p. 181) contention that India was a net exporter of silver to China. On the other hand, our intent is not to deny that India may have been a major end-market for silver between 1550 and 1650. However, the evidence seems to indicate that Chinese demand for silver was more significant than that of India; otherwise, why was silver more valuable in China?

<sup>29</sup> Flynn and Giraldez (1994), p. 83.

equilibrium in the world silver market. Far from the passive-reactive role attributed by the traditional trade-deficit argument, we view silver as a crucial driving force underlying the emergence of global trade <sup>30</sup>.

Unlike conventional microeconomic demand and supply functions, the utility-based demand function in Figures 1 and 2 refer to inventory stocks, the quantities of silver people desire to hold at every price; vertical «stock supply» in the market represents the existing inventory stock of silver at a point in time. The reason it took so many generations for the value of silver to approach equilibrium globally (up to around 1640) is that the mass of inventory stocks itself continued to grow. The filling of a swimming pool provides a useful analogy: When the pool is nearly empty, the volume of water in the pool (the stock) can be doubled in minutes; when the pool is already half full, however, it may take hours (or even days at maximum flow) to double water storage. In other words, the percentage impact of a given rate of water intake, other things equal, depends upon the initial volume of water storage. In the case of the silverization of China, tons of silver were imported on a continuing basis, yet the ever-growing silver stock was so large that these imports, although large in absolute terms, comprised a decreasing percentage addition to existing stocks. China's silver stocks grew only gradually (in percentage terms) despite historic inflows of silver from both hemispheres.

It is not widely recognized in the Western literature that China experienced price inflation more or less comparable with the Price Revolution of Europe and the rest of the world, particularly after 1571 when massive volumes of silver began to pour into China via Manila and Nagasaki <sup>31</sup>. Cartier explicitly states that his price calculations involved conversion of observed prices (expressed in terms of bronze coins) into «silver-content» prices; in other words, he used bronze-silver exchange rates within China to estimate what rice prices (actually recorded in terms of bronze coins) would have been if rice prices had been expressed in silver terms. The shipment of vast volumes of silver from around the globe depressed silver's value, so naturally the Chinese had to surrender progressively more units of silver in exchange for

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<sup>30</sup> Of course, products exported in exchange for silver deserve as much attention as silver itself. Flynn and Giraldez (1996a) use estimates of America-bound Chinese silk exports through Manila to support Chuan's (1969) contention that silver exports from Acapulco did not fall off during the seventeenth century, as Chaunu (1960, p. 250) had claimed. America-bound silk exports maintained throughout the 17th century, at the same 2 million peso per year rate estimated by Chuan for the reciprocal China-bound silver galleons. Chaunu's estimates were based on official *almojarifazgo* tax records, which ignored (by definition) the increasingly dominant method of exporting American silver —smuggling.

<sup>31</sup> Cartier (1981), pp. 454-66.

rice and other products; this is, of course, the definition of (silver-content) price inflation<sup>32</sup>. Price trends would have looked entirely different had Cartier instead elected to convert Chinese rice prices into, say, gold-content, copper-content, lead-content, or cowrie-based prices. Silver-content price inflation was a global phenomenon in the early-modern period, in other words, but when prices denominated in non-silver terms are under scrutiny, trends in such non-silver prices depended upon supply and demand conditions for whatever particular substance(s) comprised the intrinsic content of the specific money in question.

### III. SILVER PROFITS AND THE SPANISH EMPIRE

The domestic backwardness of early-modern Spain —«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»<sup>33</sup>— renders its imperial global achievements all the more fascinating. With a domestic economy clearly incapable of financing the sprawling Iberian Empire, the alternative is to look beyond domestic borders for an external financial foundation: «Early modern Spain did not have a unified economy, and the most useful way in which we can try to understand its evolution is to recognize that it was a backward country with poor resources, dependent on external markets and external supplies»<sup>34</sup>. The Spanish American silver mining industry was a crucial component of the fiscal foundation of Empire: 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»<sup>35</sup>.

Discovery of history's richest silver mine at Potosi (in present-day Bolivia) in 1545 (in conjunction with other important mine discoveries in Peru and Mexico) was an event of far-reaching consequences for the Spanish Empire. By the time registered American treasure arrived on Spanish soil at Seville, the Crown had already collected approximately 27.5 per cent of total production value in taxes (foremost of which was the *quinto*, a 20 per cent severance tax on mining)<sup>36</sup>. Mine operators could tolerate such heavy Crown exactions dur-

<sup>32</sup> See Flynn and Warner (1991) for a model which connects a fall in silver's value in the bullion market with price inflation emanating from the money market.

<sup>33</sup> Elliott (1961), p. 62.

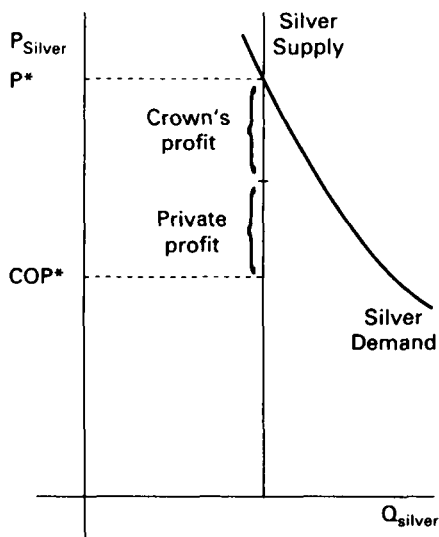
<sup>34</sup> Kamen (1978), p. 41.

<sup>35</sup> Elliott (1977), p. 291.

<sup>36</sup> Hamilton (1934), pp. 89-91; in a clear summary of sixteenth-century Spanish finances, Steele (1986, pp. 151-152) states that the King's portion of treasure landing in Seville was actually

ing the early years of the mining boom because the market value of silver was so high —relative to the cost of producing it— that large profits were still possible for private-sector participants even after the Crown had skimmed 27.5 per cent off the top. Figure 3 offers a conceptual picture of Crown and private profits. At any point in time, silver's market price ( $P^*$ ) was determined by intersection of silver's stock supply ( $S$ ) and stock demand ( $D$ ). Any excess of  $P^*$  over silver's cost of production ( $COP^*$ ) is economic profit per unit of silver, by definition. The hope of obtaining a share of these profits was the motivating factor, of course, for the conversion of desolate, three-mile-high Potosi into one of history's most spectacular boomtowns. Although two-and-a-half-months' distance by pack animal from Lima (a thousand miles), the population of Potosi rose from zero in 1545 to an estimated 160,000 by 1605, nearly the size of Paris or London <sup>37</sup>. Since the Spanish Crown controlled the lion's share

FIGURE 3  
*Spanish american silver profits*



two-fifths (40 %), considerably more than Hamilton's estimate of 27.5 %. Perhaps our conceptual example should use 40 % as the Crown take rather than 27.5 %, but intentional imprecision underscores awareness of the abstract nature of our argument.

<sup>37</sup> Vilar (1976, p. 131). For population figures for London, Paris, and every other major European city, see de Vries (1984, Appendix I).

of the prodigious silver profits, the Empire's expansion and maintenance were crucially dependent upon vigorous silver production.

Too much attention has been paid to the quantity of silver entering Spain. The important thing was not so much the quantity of silver secured by the Spanish Crown, but its purchasing power. The statement that Spanish or European prices—in silver-content terms—rose three- or four-fold during the «long» sixteenth century simply means that silver coins fell in value to one-third or one-fourth of their previous level. Comparing Crown silver imports during the interval 1591-1595 with imports for the interval 1596-1600, for example. Hamilton found that Crown silver imports *increased* by 9.5 per cent, from 10.023 million pesos to 10.974 million pesos. Since Spanish prices (in silver-content terms) simultaneously rose 12.85 per cent between these two periods, however, inflation-adjusted Crown receipts fell by over 3 per cent<sup>38</sup>. The Crown received roughly 10 per cent more silver, in other words, but each piece of silver received had lost 13 per cent of its purchasing power. The Crown had collected almost a million more pesos in nominal terms during the 1596-1600 interval, while the total purchasing power of that greater quantity of silver fell by more than a quarter of a million pesos<sup>39</sup>.

Decline in the purchasing power of Crown silver continued into the first half of the seventeenth century, at a time when the quantity of official, taxable silver imports also declined<sup>40</sup>. Antonio Domínguez Ortiz reports that this was devastating in terms of the fiscal viability of the Royal Treasury<sup>41</sup>:

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 of silver; 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.

Mark Steele has documented the systematic impact of silver's declining value—otherwise known as silver-content price inflation—on the reduced purchasing power of Crown revenues. The famous *ad-valorem* (sales) tax, the

<sup>38</sup> See Hamilton (1934), p. 34 and p. 403.

<sup>39</sup> Flynn (1982), p. 142.

<sup>40</sup> Decline in official, taxable silver imports does not necessarily imply that total silver imports declined. Smuggling of silver increased over time, a trend documented so heavily by Morineau (1981) and others that Kamen (1983, p. 293) calls it a «now established fact that bullion imports rose in the later seventeenth century».

<sup>41</sup> Domínguez Ortiz (1960), p. 284.

*alcabala*, was converted to a fixed-payment *encabezamiento* in 1523; by 1534 two-thirds of the tax was paid under this new system. Charles I was thereby stuck with fixed payments for a quarter-century during which time the general level of prices in Castile rose by 60 per cent <sup>42</sup>. The «bankruptcy» of 1557 resulted, an event which Steele regards as renegotiation of terms of the debt rather than a true bankruptcy. The *second encabezamiento* of 1560 —40 per cent higher than the first— can be viewed as a sort of medium-term solution to the problem of silver's falling value, but again it remain fixed for many years while price inflation continued to eat away at Crown revenues. The *third encabezamiento* was instituted in 1575, during a year of real fiscal bankruptcy, but that amount was chopped some 30 per cent in an agreement with the Cortes in 1577. Philip II's revenues from all sources did triple during the second half of the sixteenth century, while prices only doubled, but the costs of war continued to outstrip growth in revenue sources. The Crown's financial dilemma continued well into (and worsened during) the seventeenth century <sup>43</sup>:

To bridge the deficit caused by Habsburg imperialism the government was compelled to borrow on a grand scale. In 1557, at Philip II's accession, the Castilian national debt stood at thirty-six million ducats; in 1598, when the king died, it stood at eighty-five million. Two years after Philip IV's accession, in 1623, the total public debt had risen to 112 million ducats —equivalent of at least ten years' revenue; two years after his death, in 1667, the debt stood at 180 million. This five-fold increase in a little over a century was caused in large measure by Spain's insistence on heavy military spending in the Low Countries: the periods of fastest increase in the debt corresponded with the periods of greatest expenditure in the Netherlands.

Even at the apex of the influx of American treasure (the 1590s), Crown expenditures exceeded not only the Crown's portion of the American treasure imported, but the total influx of treasure to Spain (both public and private) <sup>44</sup>. By the reign of Philip IV, «Castile's "crisis" and decadence appear to be not only (or not so much) the consequences of overtaxation, but also the corollaries of a political system whose social implications generated an administrative apparatus incapable of dealing with the enormous costs of an empire much more difficult to defend than that of any other state» <sup>45</sup>.

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<sup>42</sup> Steele (1986), pp. 146-47.

<sup>43</sup> Parker (1979), pp. 188-89; similar numbers for Crown debt can be found in Braudel (1972, vol. 1, p. 53), Castillo (1963, p. 52), and Koenigsberger (1958, p. 312).

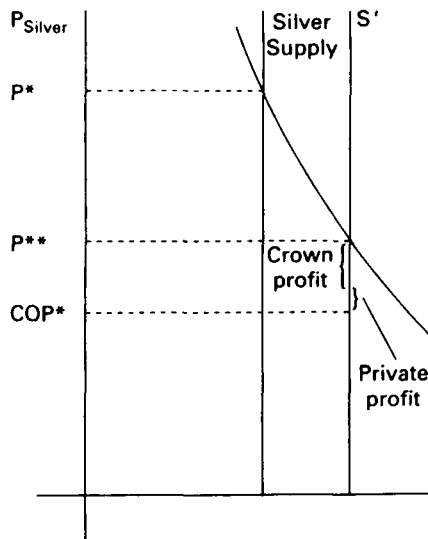
<sup>44</sup> Vilar (1974), p. 203.

<sup>45</sup> Yun (1994), p. 311.



Unavoidable structural difficulties plagued Spain's America-based economy. Decline in silver's market value not only reduced Treasury purchasing power, it also led to the elimination of mine profits for the private sector. A reduction in silver's price from, say,  $P^*$  to  $P^{**}$  in Figure 4, other things equal, would reduce available per-unit profit. The Crown was intent to maintain its 27.5 per cent share of registered silver output—even increasing it, if possible—but it is important to remember that 27.5 per cent of gross value does not equal 27.5 per cent of total economic profit. The Crown's *proportion* of economic profit grew over time because available per-unit economic profit (i.e. public and private combined) was shrinking.

FIGURE 4  
*Falling per-unit profit*



In other words, the Crown suffered because of the declining purchasing power of its silver receipts, but private operators were doubly suffering because their proportion of per-unit profit fell *plus* what they did get was falling in purchasing power (just as it was for the Crown).

At some point in time, the price of silver must have fallen to the point that it exceeded cost of production by precisely 27.5 per cent (then, later, by less than 27.5 per cent). When silver's price exceeded cost of production by pre-

cisely 27.5 per cent, the Crown's 27.5 per cent in taxes (of gross value) would have equalled 100 per cent of the economic profit yielded by the New World mining industry. With no residual profit left over for private operators, subsequent reduction in silver's price had to have forced private-sector participants to either smuggle (i.e. avoid Crown taxes) or cease mine activity. Increasingly rampant smuggling over time is «predicted» by our model. The archives and secondary literature are in fact full of anecdotal evidence suggesting increased smuggling over time, a practice which only exacerbated the Crown's financial nightmare. One example of the prevalence of smuggling in the seventeenth century is provided by Flynn and Giráldez (1996a), who use estimates of the value of Chinese silk swapped for American silver via the Manila Galleons in support of the growth-in-smuggling hypothesis throughout the seventeenth century<sup>46</sup>. In response to (required) increase in smuggling, the Crown eventually reduced its own *quinto* (normally defined as a 20 per cent severance tax) to 10 per cent and sometimes less.

In addition to silver's falling value, rising mining costs also quickened the erosion of overall mining profits. Per-unit production costs rose as mines were deepened; deeper shafts were of course more susceptible to flooding, and myriad other production difficulties arose as veins played out. Concerted (sometimes frantic) effort was devoted to implementation of new, cost-reducing production technologies in American mines, sometimes with spectacular success; still, costs ultimately crept as readily available ore became more scarce over time<sup>47</sup>. Thus, both the Crown and private operators were caught in a double

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<sup>46</sup> The volume of silk on Manila galleons headed for America supports Chuan's (1969) contention that 2 million pesos worth of silver traversed the Pacific throughout the 17th century. Although TePaske (1983, p. 434) and Barrett (1990, p. 249) respectively offer admittedly conservative estimates of 517,000 and 660,000 pesos in *official silver* passing over the Pacific annually during this period, both admit that an unknowable volume of silver was smuggled: «That the Philippines siphoned off large sums of silver from the New World cannot be denied, but measuring its flow is virtually impossible.» (TePaske, 1983, p. 437) According to Cross (1983, p. 412), 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; while Borah (1954, pp. 88, 123) argues that 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). There was no reason to ship silver from Peru to Mexico, other than to forward it on to Asia via the Manila galleons, so this constitutes additional evidence that millions of pesos in silver flowed annually over the Pacific during the 17th century. Contraband silver also prevailed over the Atlantic routes during the seventeenth century. According to Moutoukias (1991, p. 339), undeclared treasure comprised two-thirds of the trade out of America's «back door» down the Atlantic side of the Andes (1630-1640), rising to as much as 90 % of silver exports between 1650-1659. For a summary of smuggled American silver via a variety of routes, see Flynn and Giráldez (1996b, Section II).

<sup>47</sup> For discussion of the constant battle between rising mine production costs and cost-saving innovations, see Jara (1966) and Szaszdi (1975).

squeeze; product price fell and the cost of producing silver rose as time marched on (as depicted in Figure 5). The question was: When would price and cost converge? Fortunately for the Crown, the enormity of demand-side forces emanating from China postponed complete elimination of above-normal silver profits until somewhere around 1640. That is, even with the advantage of augmented Chinese demand, the decline in silver's world price continued (albeit at a reduced rate) until about 1640, having reduced both Crown purchasing power and overall mining profitability in the process. Figure 6, borrowed from Richard von Glahn, summarizes the elimination of differences in bimetallic ratios around the world by about 1640.

It is interesting to note the years Adam Smith, an early proponent of a cost-of-production thinking about price inflation, felt represented the end of the Price Revolution: «Between 1630 and 1640, or about 1636, the effect of the discovery of the mines of America in reducing the value of silver, appears to have been completed, and the value of that metal seems never to have sunk lower in proportion to that of corn than it was about that time»<sup>48</sup>. The descent of silver's price to its cost of production had eliminated mine profits; value would not fall further until either fresh mine discoveries or implementation of new mining technologies. Stabilization of silver's value, in other words, implied the end of the Price Revolution. Stable and even deflationary (silver-content) price levels, in fact, characterized the last two-thirds of the seventeenth century throughout the world. Our contention is that Imperial Spain's deepening financial crisis was connected to the protracted fall of silver's value; American mine profits were slowly squeezed out, an inevitability which was forestalled—but not eliminated—by the prodigious Chinese demand for silver. At the dawn of the seventeenth century, the Spanish Crown found itself in an untenable financial position. On the cost side, global political and military expenses continued to rise in the face of climbing interest payments on a huge accumulated national debt. The Crown's struggle to service existing debt was certainly no secret to international bankers who were stung by repeated Hapsburg renegotiation, and sometimes repudiation, of debt. The Crown repeatedly hit its credit limit while the purchasing power of Crown revenues continued to fall; in any case, a growing proportion of New World remittances had already been pledged by the Crown. The bankers who facilitated war finance, the «asentistas», were deeply affected by the scarcity of resources and many fortunes were lost. The silver carried by the fleets from 1638 through 1639, for example, was not enough to pay the asentistas and in 1640, «the gravest for

<sup>48</sup> Smith (1776), p. 192.

FIGURE 5  
*Price-cost convergence*

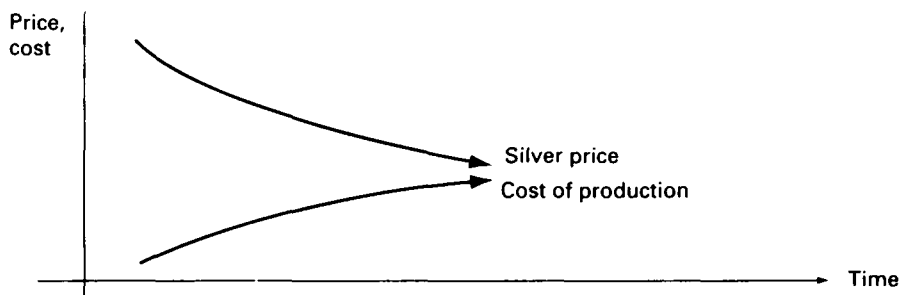
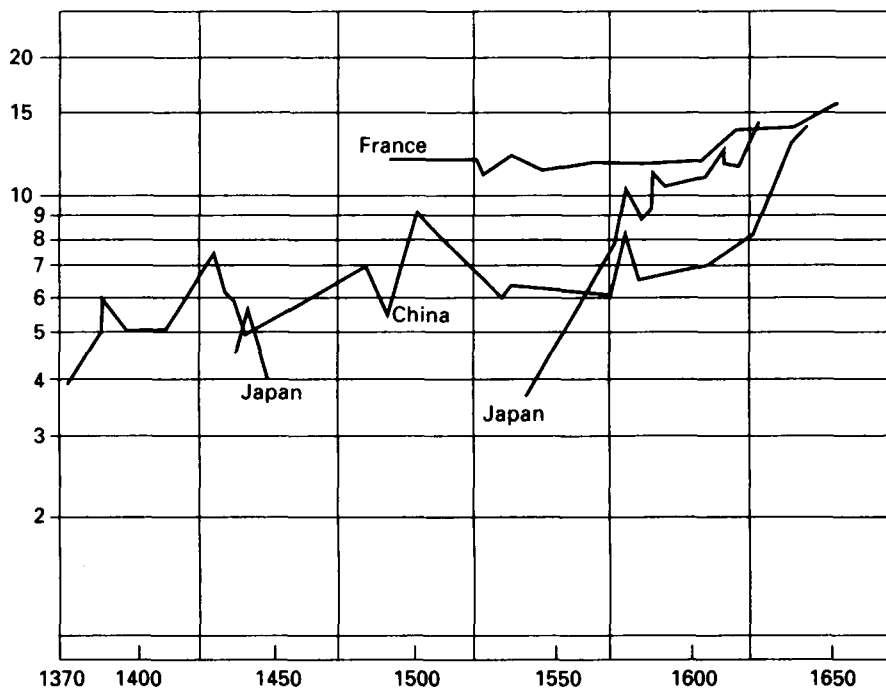


FIGURE 6  
*Gold/silver ratios: China, Japan and France, 1370-1660*  
(Units of silver per unit of gold)



SOURCE: Richard von Glahn, *Fountain of Fortune: Money and Monetary Policy in China, 1000-1800*. Berkeley: University of California Press, 1996, Chapter 4.

the Hispanic Monarchy», these bankers provided only 6,361 escudos, in contrast with requirements of 300,000 escudos *per month* for troops in the Netherlands alone <sup>49</sup>.

There were few remaining financial options by the beginning of the seventeenth century. The Crown either had to begin backing out of the empire business, or increase pressure on every potential revenue source within the Empire. The latter option was chosen. Public assets were sold, private assets seized, and tax rates were raised to (and past) limits of toleration. These actions contributed to civil strife and eventually to civil wars. What we are suggesting is that the loss of purchasing power from the Crown's American enterprise was inevitable; moreover, the state's well-documented relentless pressure for increased taxation within Castile and elsewhere within the Empire was mandatory—given global commitments—in order to compensate for lost external purchasing power. The alternative was conscious surrender of empire, an apparently unacceptable alternative.

#### IV. FINAL COLLAPSE UNDER PHILIP IV (1621-1665)

According to Domínguez Ortiz, the hegemony of Spain in Europe lasted until 1618 and, although weakened, the Spanish Habsburgs did manage to remain a force with which to contend during the Thirty Years' War (1618-1648). Philip IV's (1621-1665) accession to power, however, coincided with the renewal of an expensive war with the Dutch in 1621. Spain's financial problems date back to the sixteenth century, as Steele (1986) demonstrates, but the Empire's final debacle began in 1621 with the expiration of the Twelve Years Truce. Relentless fiscal pressure to finance renewed war ruined the Castilian economy and was a powerful contributor to political turmoil throughout the Empire.

The army of Flanders' annual expenditures had been running about 1.5 million ducats prior to expiration of the Truce, but these expenses quickly rose to 3.5 million ducats at the beginning of hostilities in 1621: «Bringing the total expenditure for the year to well over 8,000,000 ducats <sup>50</sup>». These additional costs were disastrous for Crown finances. Expenditures for 1622 rose to an estimated 9,161,845 ducats, but even the assembly of all possible sources enabled the Council of Finance to raise only 2,296,500 ducats revenue up to

<sup>49</sup> Domínguez Ortiz (1977), p. 386.

<sup>50</sup> Elliott (1970), p. 459.

1626 [not counting silver from America belonging to merchants and bankers, nor the «millones» already assigned for particular expenditures] <sup>51</sup>. Confronting this dismaying situation, Olivares wrote a memorandum to the King in which he outlined a plan to unify various territories of the Spanish monarchy into a single administrative unit, the famous «Union de Armas» promulgated as a decree in 1626. Behind this administrative reform was the pressing need to collect higher taxes from territories of the Empire in order to finance the war in Europe. Aragon and Valencia reluctantly accepted the requirements, but the Catalans refused to increase their contribution. The meeting of the 1626 Cortes was a failure and the assembly was adjourned in 1632 without any success for the central government.

The Dutch confrontation was global. Vast sums were sent to fortresses and outposts in the Caribbean, with even heavier sums remitted to the Philippines and the Moluccas. According to a Dutch source in 1630, the annual cost of Spanish defense in the East Indies was equivalent to 5,000,000 guilders <sup>52</sup>. Expenditures for distant fortresses and fleets obviously diverted remittances which otherwise could have helped finance the war in the Low Countries. This diversion increased pressure for fiscal contributions from Flanders, Portugal, and also Spanish America. Hapsburg Italy was an important financial source as well, but «the new resources of Spanish Italy [9.2 million ducats between 1631 and 1643] could not compensate for the fall in the financial power of Castile» <sup>53</sup>. In other words, despite partial success in spreading taxes more uniformly throughout the Empire, Castile was left to shoulder the main financial burden itself.

The war with France in 1635 and the conflicts in Portugal and Catalonia exacerbated an already critical situation. The solution to this predicament was to increase direct domestic taxes. The Cortes were pressured for larger contributions. Duties on foodstuffs, the «millones», were raised. New fiscal devices were implemented: There was a tax on salt, another on the sale of paper, and the «media anata» allowed the Crown to retain half of new appointees' income during the first year. The nobility and clergy were under relentless pressure to grant loans and give gifts, «donativos». «Hidalgos» served in the army at their own expense and the high nobility was expected to maintain companies of infantry. Offices of the crown, rents, titles and villages were sold and royal pardons were granted to criminals in exchange for payment. In 1635 the Crown «confiscated half the yield of all juroes held by natives, and the entire

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<sup>51</sup> Domínguez Ortiz (1960), p. 16.

<sup>52</sup> Israel (1982), p. 295.

<sup>53</sup> Parker (1972), p. 157.

yield of those belonging to foreigners —a device imitated in whole or in part almost every year thereafter»<sup>54</sup>.

The disorder caused by the war with France in 1635 prompted rebellion in Barcelona, which was supported by Cardinal Richelieu. The Crown's fiscal pressure on Portugal, coupled with the Dutch attacks on the Portuguese Empire, were the causes of Portugal's drive for independence, an event immediately supported by the French and the English. The Portuguese peace treaty with the Dutch in 1641 resulted from Portugal's desire to maintain their empire in Brazil and Africa.

The financial pressures of these external wars were exacerbated by an array of costly conflicts and rebellions within the Empire's own territories. The year 1640 brought the Catalan revolt and the independence of Portugal. A conspiracy by the Duke of Medina Sidonia and the Marquis of Ayamonte to separate Andalusia from the Crown followed in 1641. Numerous popular uprisings prompted by rising prices for foodstuffs and higher taxes occurred in Vizcaya (1632), Evora (1637), and Naples and Sicily (1647). External conflict and internal disintegration signalled the dramatic twilight of the Empire: «From the end of 1640 Spain and Spain's international power were visibly crumbling»<sup>55</sup>. The territorial arrangements after the Thirty Years War acknowledged the demise of Imperial Spain. The King of Spain accepted the Netherlands' independence in the treaty of Munster in 1648. The Peace of Westphalia sealed the defeat of the Habsburgs of Vienna and Madrid; 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»<sup>56</sup>. The ceding of Artois, Rousillon and part of Cerdagne to France in the Treaty of the Pyrenees in 1659 reflected continuation of Spanish imperial disintegration. Finally, the independence of Portugal was formalized in the treaty of Lisbon in 1668, during the minority of Charles II.

Another means by which to increase Crown revenue was manipulation of «vellon», the copper coins issued since 1603 by Philip III. Seigniorage rates for petty coins reached as high as 91 per cent<sup>57</sup>. Coinage and recoinage of copper was a desperate measure and yielded a benefit of 13,152,000 ducats in the first six years, while the recoinage of 1636 yielded 4,700,000 ducats, compared with 10,000,000 ducats in 1641, 6,000,000 ducats in 1643, and 11,000,000 ducats in

<sup>54</sup> Elliott (1970), p. 465.

<sup>55</sup> Elliott (1970), p. 470.

<sup>56</sup> Beller (1970), p. 358.

<sup>57</sup> Motomura (1994), p. 118.

1651<sup>58</sup>. These are significant revenues compared with the Kings average consignment of only 1,000,000 ducats from galleons arriving in Seville. A more-detailed recent study of Castilian seigniorage corroborates the general picture painted by Domínguez Ortiz: «After 1626, the petty money stock fluctuated with military spending.... The petty currency did not stabilize until two decades of peace after 1680 eased the fiscal pressures on the Monarchy»<sup>59</sup>. By this time, there had been State bankruptcies in 1627, 1647, 1656, and 1664. The Crown had exhausted every avenue to continue financing the Empire, but to no avail. There simply was no substitute for dwindling New World profits. Having benefitted from neither an agricultural revolution nor a transformation of the manufacturing sector, Empire financing was largely dependent upon American mines. Elimination of mine profits contributed mightily to the decline of Spain. Both were inevitable.

#### IV. CONCLUSIONS

The thesis of this essay is that events within Ming China had a fundamental impact on the rise and decline of the Spanish Empire. A crucial aspect of the tremendous surge in global trade in the sixteenth and seventeenth centuries was that one particular product —silver— was the dominant export out of the West and (for a time) out of Japan. Tens of thousands of tons of silver migrated to China because silver was worth up to twice as much there relative to the rest of the world.

A comprehensive analysis of the fiscal basis of the Spanish Empire requires inclusion of the silverization of China. Spanish America silver mines were the richest in world history; in other words, they were enormously profitable. The Crown was successful in procuring the lion's share of silver-industry profits, but prodigious production rates led to a gradual decline in silver's market value. The decline of per-unit profit was inevitable. Our counter-factual claim is that silver profits would have probably vanished within a decade or two —had it not been for the vast and expanding Chinese demand for silver. But Chinese demand for silver did expand dramatically, which in turn contributed to silverization of her entire tributary system. The fact that silver lost value around the globe so gradually, in other words, is attributable to this conversion of a third or more of world population (i.e. China and its tributary

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<sup>58</sup> Domínguez Ortiz (1960), pp. 272-73.

<sup>59</sup> Motomura (1994), pp. 118-19.



states, not to mention India) to the use of silver for monetary and fiscal purposes. Methodical reduction in silver's market value, in turn, implied gradual price inflation (in silver-content terms) around the world, but more important is the implication that enormous profits were thereby transferred to the Spanish Crown (and to the Shogun) from the sixteenth century up to about 1640. We would go so far as to say that Spain's extensive Empire would have been impossible in the absence of events emanating from within Ming China (just as Saudi Arabia today could not maintain its economic power in the absence of oil-demand emanating from a petroleum-based world industrial structure).

We have focused on silver's inevitable profit squeeze because it helps tie together two long-recognized trends in Spanish historiography: (1) The Treasury's fixation with increasingly onerous taxation in the face of enormous resistance, and (2) evidence that international smuggling became increasingly prevalent over time. Declining purchasing power from American-based taxes left the Crown no alternative but to increase the squeeze on domestic citizens; after the far-flung Empire had reached its zenith, the enterprise either had to be supported financially or down-sized significantly. As for smuggling, once the Crown tried to take virtually all of the available economic profit from the mining industry, private participants were forced to choose between tax-avoiding smuggling or cessation of activities. Understandably they chose to smuggle, which itself further reduced tax revenues and exacerbated the Crown's financial dilemma.

It is useful to keep in mind the distinction between the silver trade's pre-1640 «arbitrage phase» versus its post-1640 «non-arbitrage phase». This distinction helps reduce confusion when confronting such things as the mounting evidence that seventeenth-century silver production/exports were considerably larger than previously realized <sup>60</sup>. Again, we need to think in terms of industry profits as opposed to quantities *per se*. Spanish American exports of silver appear to have been relatively robust after 1640 —with no decline at all visible via the direct Pacific route— but the point is that extraordinary profits had already been squeezed out. American silver continued to gravitate toward China after 1640 because Japanese mines began to play out, but more import-

<sup>60</sup> According to the conventional view of Earl J. Hamilton (1934), arrivals of silver to Seville peaked during the late sixteenth century, followed by precipitous decline during the seventeenth century. The research of Michel Morineau (1985, Chapters 1 and 3) contradicts Hamilton's findings with the claim that a steady flow of silver arrived in Spain during the seventeenth century. According to the survey article of Barrett (1990, p. 225), overall silver production in seventeenth-century America exceeded that of the sixteenth century, findings which are consistent with the growing literature which documents the increasing prevalence of contraband silver during the seventeenth century.

antly because normal profits were sufficient to induce shipments into an expanding market. This later period contrasts sharply with the explosive pre-1640 arbitrage phase, characterized by above-normal profits and the associated trade frenzy which accompanied the opening of global trade opportunities. Normal post-1640 profits were not sufficient, however, to continue to finance an aberration on the scale of the Spanish Empire.

The years around 1640 seem to have been critical in many parts of the world. Could seemingly-disconnected events around the world have been linked globally via the silver trade? Not only was the Spanish Empire a shambles by this date, but reduction in profits negatively impacted the American colonies as well as those regions of Europe most closely connected to the Empire via commerce and finance. Japan was the world's second-largest silver producer in the early-modern period —selling, of course, to China as well. We believe that the timing of the so-called «closure» of Japan in the mid-1630s is not coincidental. The Shogun's silver profits declined for the same reasons as did those of Spanish America, but Japan enjoyed gold and copper booms as replacements, and in any case Japan was a more developed country than was Spain <sup>61</sup>.

Goldstone has proposed the interesting hypothesis that the Ming and the Ottomans suffered from essentially similar fiscal crises up to and around 1640; taxes in each case were fixed in terms of silver receipts, while both governments had experienced escalating expenses for some time (because of silver-content price inflation) <sup>62</sup>. Evaluation of the Ottoman case is best left for experts in Middle Eastern history, but we do find plausible Goldstone's contention that fixed Ming silver receipts (in conjunction with silver-content price inflation) may have contributed to Qing overthrow of the Ming in 1644 <sup>63</sup>.

This essay raises many contentious issues, but one thing about which we are confident is that attempts to unravel the multi-faceted complexity surrounding the rise and decline of the Spanish Empire should approach from a global perspective. The global silver trade provides a useful vantage. The physical penetration of Europeans into Asia has understandably prompted scholars to emphasize the impact of the West on Asian history. Economic mechanisms sometimes hide below the visible surface, however, and we believe that China's economic impact on Europe was far greater than all combined Western economic impacts on Asia during this period. Perhaps no European state

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<sup>61</sup> For a comparison between Imperial Spain and the Tokugawa Shogunate, see Flynn (1991).

<sup>62</sup> Goldstone (1991, chapter 4).

<sup>63</sup> Flynn and Giráldez (1995b), section IV.

was as heavily influenced by developments within Ming China as was Imperial Spain.

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