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The Price Revolution in Sixteenth-Century Spain

Interest Rates, Payments, and Deadweight Loss

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This article supports scholars who question the hypothesis that the inflation experienced in sixteenth-century Spain was primarily the result of the influx of precious metals from America. It cites evidence of high interest rates and the development of highly efficient clearinghouse payments mechanisms as indications of a dearth, rather than an abundance, of actual silver and gold coinage. The article suggests that market distortions created by cartel-like arrangements in commodities financing and trading may be an overlooked but important cause of the "price revolution" of the time. The article bases its arguments upon evidence provided by firsthand contemporary observers with particular reference to the Castilian wool trade.

Introduction

Sixteenth-century Europe experienced an economic revolution.[1] This was particularly manifest in Spain. Economic historians may debate over the degree to which the economic energies of the sixteenth century were a departure from or continuity with the late Middle Ages. However, there is no doubt that new and extraordinary things were happening, and that Spain was squarely in the middle of them. The opening of America and the discovery of its deposits of precious metals had, by the mid-century, shifted international silver production from Central Europe to the Americas and Seville. The Castilian fair town of Medina del Campo was now at the center of European banking and finance.[2] At around the same time, Spain saw both rapid population growth and significant population shifts in response to economic stimuli.[3]

The general inflation experienced throughout Europe that coincided with these events—commonly referred to as the "price revolution"—was especially pronounced in Spain. The overall price level roughly quadrupled between 1501 and 1600,[4] amounting to an average inflation rate of about 1.4 percent per year. The period from 1501 to 1562 saw the sharpest average annual rate of about 2.8 percent.[5] By twenty-first-century standards, these are moderate price increases. But in sixteenth-century Europe, which lacked the tools to control them, they were a new and unsettling phenomenon, and one that had an unevenly severe impact upon the poorer classes.[6]

The most popular hypothesis attributes this price level rise to an increase in the supply of money resulting from the influx of silver and gold from the New World. The most prominent proponent of this view is E. J. Hamilton.[7] Hamilton's work, published in 1934, received support from the Spanish economists M. J. Bernadete[8] and Ramon Carande.[9] Hamilton's hypothesis drew strong criticism, however, in a 1959 article by another Spanish economist, Jordi Nadal Oller, who questioned the validity of Hamilton's statistical analysis.[10] In more recent times, the "Hamilton hypothesis" has been challenged by economic historians who propose alternative reasons for the rising prices experienced in the sixteenth century.[11]

The modest objective of the present article is twofold. First, I shall offer evidence that is contrary to the "Hamilton hypothesis," that is, that the price revolution was mainly the result of the influx of precious metals from America. Second, I shall suggest what may be a partial alternative explanation of the phenomenon. In doing so, I shall draw upon the firsthand observations of the economic life of mid-sixteenth century Castile by a contemporary witness: one Dr. Saravia de la Calle Beronese.

All we really know of Saravia comes to us from his only extant work, the *Instrución de mercaderes muy provechoso* (*Instrución*), published in 1544.[12] Two Spanish scholars, Pablo Ruiz de Alda and Abelardo del Vigo Gutiérrez, and an Englishman, John Reeder, have attempted to tease some biographical details from the text. Ruiz de Alda surmises that Saravia was a young priest "on fire with apostolic fervor" when he wrote the *Instrución*, and that the epithet "Beronese" suggests that he had studied in Verona.[13] Reeder, on the other hand, perceives Saravia as "a cleric … who speaks with the voice of jaded experience."[14] Vigo de Gutiérrez is more cautious, stating that all we can be certain of is that Saravia was a priest. He suggests that "Beronese" may indicate that the author was from the Rioja region (whose name in Roman times was Beronia). Beyond this, he says, we are in the realm of pure conjecture.[15]

In terms of the broader historical context, Saravia was one of a number of Spanish clerical writers, sometimes referred to collectively as the "School of Salamanca" or the "Spanish late scholastics." These late scholastics responded to the economic revolution of the sixteenth century with numerous volumes of analysis of the commercial transactions of the day. They did this in an effort to identify transactions that were unjust from the point of view of Catholic moral theology. Specifically, they concerned themselves with exploitation in setting prices (the principle of the "just price") and usury, that is, illicit lending of money at interest. With regard to the latter, the official position of the Church was that any loan of money that carried a rate of interest based on the term of the loan (for example 4 percent per year or 1 percent per month, and so on) was a violation of the natural law and tantamount to theft.[16] The moral preoccupations of these churchmen led them to examine in detail the commercial and financial transactions of the day, creating an abundant source of information for the student of the history of economic analysis. Saravia's work is squarely in this late scholastic tradition.[17] Despite the rich level of detail it provides about the commercial life of mid-sixteenth century Spain, it has until recently not been the focus of a great deal of scholarly attention.[18]

Interest Rates

One important piece of evidence that appears contrary to the Hamilton hypothesis has to do with prevailing interest rates. Based upon contemporary accounts, interest rates in sixteenth century Spain were high. This suggests a shortage rather than a glut of money capital. In the *Instrución*, Saravia reports that a typical monthly "fee" for which a merchant could roll over a loan from one monthly fair to another was about forty *maravedis* per thousand, that is four percent per month or an annual rate of 48 percent per year. The rate could be much higher however. He reports that at the 1542 fair at Medina de Rioseco the rate was six *maravedis* per hundred per month, which he annualizes at 72 percent. The determining factor, the author adds tellingly, is the quantity of money available at the fair: "*según que mas o menos dineros ay en la feria.*"[19] In any event, such high rates are not consistent with an overabundance of silver and gold coinage.

Payments and Settlements

There is significant evidence that by the first half of the sixteenth century the medieval fairs had become more of a vehicle for financial settlements among merchants and bankers than a venue for buying and selling physical goods. Fernand Braudel reports that the fairs acted as clearing houses, at which enormous sums of payables and receivables in the form of bills of exchange were “net settled” with a fraction of their value in physical coinage (“a hundred thousand or so of *ecus d’or en or*—that is real coins—might at the clearing-house of Lyons settle business worth millions”). At the same time, credit was created by the settlement of the net remaining debt with new bills of exchange, that is, simply by rolling the debt over to the next fair, at an annual rate of 10 percent. [20]

Ladislas Reitzer recounts that the fairs of Castile had developed a “remarkable system of public banking and clearing” that greatly reduced the need for hard cash to settle bills of exchange (*cambios*) and that was greatly admired by foreign merchants.[21] Saravia, in fact, gives us a fairly detailed account of the mechanics of this system in the *Instrución*. He recounts that, upon arrival at one of the fairs, merchants would deposit their hard cash with a banker, creating a credit balance. They would then settle their debts at the fair with bills of exchange (*cambios*) drawn on their credit balance with said banker. The recipient of one of these *cambios* would present it to the banker for collection either in hard cash or by way of a credit balance upon which he could, in turn, draw bills to settle his own debts at the fair. Saravia reports that if the drawee required payment in hard currency, the banker would charge a withdrawal fee of 2.5 percent to 3 percent, creating a strong incentive to accept payment in the form of credit.[22]

The creation of this system of payments points to a dearth of hard cash in the form of silver and gold coinage, necessitating the use of some other form of money, in this case bills of exchange, to facilitate commerce. The result, of course, was the relatively uncontrolled creation of money by bankers in the form of credit balances based upon fractional reserves of hard currency.[23] The persistence of high interest rates, however, suggests that the level of money creation in this way was not in itself sufficiently important to fuel inflation significantly.

The Wool Trade

I shall now suggest a partial alternative explanation for the price revolution in sixteenth-century Spain. In doing so, I shall focus on the case of the wool trade. The wool trade was central to the Castilian economy from around the beginning of the fourteenth century.[24] Saravia provides a detailed and technically brilliant account of this trade in his *Instrución*, concentrating on the manner in which it was financed. He focuses his attention on the local Castilian merchants who acted as middlemen in financing the production and sale of wool by local Castilian sheep farmers. The merchants' business model involved the advance sale of one season's output to foreign buyers and the corresponding advance purchase from the sheep farmers, *los pastores o señores de ganado*.

Coming up to Shrovetide (*Carnestollendas*),[25] the sheep farmers generally found themselves in need of cash for the purchase of feed and other items necessary for wool production. The farmers obtained this cash by making advance sales of the wool they expected to gather by mid-summer (*San Juan Bautista*)[26]—about four months later. Their buyers were the local Castilian merchants who paid cash in advance. These local merchants funded the advance purchase by selling the wool, for cash in advance, to their foreign buyers. Saravia relates that if the merchants bought the wool, for example, for one *real* per bale, they would sell it to their foreign buyers for about one *real* and a half (*real y medio poco mas o menos*). Saravia relates that the local merchants did not even take delivery of the wool. Rather, they stipulated that it be delivered directly to the ultimate foreign customer. Thus, incurring minimal transaction charges and using none of his own capital, the local merchant realized a gross profit margin of up to 50 percent.[27]

Now, this is a robust business model, but it gets better. The local merchant was able to take advantage of the sheep farmer's need of cash in order to unload onto him almost all of the risk of the transaction. Under the terms of the advance sale, the sheep farmer was obliged to deliver the agreed upon quantity and quality of wool no matter what. If, due to some disaster, the sheep farmer could not make delivery, he had to repay the local merchant not merely the one *real* per bale that he actually received, but rather the one *real* and a half that the local merchant had to reimburse to his foreign buyer.[28]

Saravia astutely observes that the substance of this transaction is not a sale/purchase but rather a disguised four-month loan.[29] That is, on a deal involving, say, one-hundred bales of wool, the farmer received 100 *reales* at the beginning of Lent and, in effect, agreed to repay 150 *reales* four months later, on the feast of St. John the Baptist. The repayment would be made either with the delivery of wool with a market value of 150 *reales* or with 150 *reales* in cash, should the wool fail to materialize. The difference of fifty *reales* between what the sheep farmer received and what he paid constituted interest of 50 percent for four months—an annualized rate of 150 percent. Such a dizzying rate of interest is not consistent with a glut of financial capital in the form of American silver and gold. As we shall see, however, in this particular case the exorbitant rate was also the result of anticompetitive trade practices.

The Cartels

Saravia finds the arrangement by which the Castilian wool trade was financed to be thoroughly immoral. Not only is it blatant usury, but it is also shameless exploitation by the rich of the poor—two things the Church roundly condemned. The thing that made such sustained exploitation possible brings us to the *bête noire* of late scholastic economic analysis—collusion with the goal of fixing the market and jacking up prices. Saravia tells us that the local Castilian merchants were able to maintain their "super profit" year after year because they had a gentlemen's agreement not to compete against each other:

> [I]t is a kind of monopoly that the local merchants who buy the wool create. Because when they know that a certain peasant sells to a certain merchant, none will want to buy from him, so as to compel that shepherd to sell to the merchant to whom he first sold; and so he is unable to earn more for his wool in one year than another.[30]

Thus, each local merchant became a monopsonist with regard to the peasants with whom he habitually did business. This created a buying cartel by which the local merchants collectively formed a monopsony, allowing them to fix prices so as to minimize cost and maximize their collective profit. The merchants, Saravia reports, presented this practice as honorable behavior, but he maintains that it is no such thing. Rather, it was merely their way of protecting their profits by avoiding the competitive bidding that would result from open competition:

> And although they give the appearance of doing this under the title of good manners, in truth they do it under the title of good avarice, because if I took the wool away from one of them, he would take it away from me, and so the price would go up in competition; and, therefore, this practice is harmful to the peasants since they cannot sell their goods as they would sell them if these so-called good manners came to an end.[31]

Saravia goes on to point out that this buying cartel also disadvantaged the foreign merchants, who were the ultimate buyers of the wool: "It is also harmful to the foreign merchants since, because the local merchants have bought up all the wool, they are forced to buy under tough conditions, and so they pay dearly for the wool."[32]

The situation was all the more galling in that the local Castilian merchants, in Saravia's eyes, added zero value to the product. They were nevertheless able to impede competition to the point where it inflicted real harm on the commonwealth, imposing hardship on the poor and creating frequent shortages in the market:

> Such is the business of those who do not transport the merchandise from one place to another, nor with their industry improve or preserve it, but only buy it to resell it later, and to keep the poor from having it at an affordable price by buying directly from those that have it; from these things the republic is often visited with want, preventing others who wish to buy from doing so.[33]

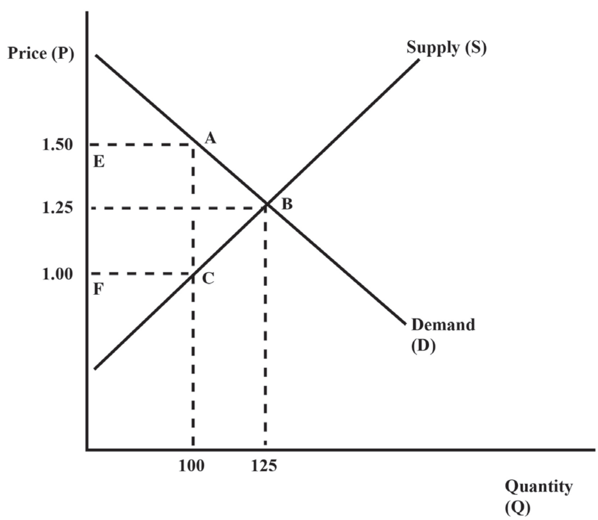
Thus, as well as a buying cartel (monopsony), the local merchants also established a selling cartel (monopoly): "therefore, others are forced to buy from them for whatever price they fancy, and they make any kind of merchandise dearer for him who buys and more profitable for themselves who sell.[34]

The Deadweight Loss

Saravia's account of the way in which the wool trade was financed is perhaps the first indication of what we now call the "deadweight loss." This is apparent in his account of the experience of sheep farmers who somehow managed to sell their wool at the time of the actual sheering rather than having to rely on an advance "sale" to the local merchants in order to obtain finance: "those who do not sell in advance but rather at the time of sheering sell much dearer than the local merchants buy."[35] This proves to him that the "price" at which the local merchants "bought" the wool in advance (one *real*) was unjustly low. This was consistent with the idea that, as we have seen, the so-called "purchase price" of one *real* is simply disguised usury. The control that the local merchants' buying cartel had over the purchase of wool from the cash-strapped sheep farmers had the effect of setting a price ceiling of one *real* per bale of wool. This in turn had the effect of reducing the quantity of wool the sheep farmers supplied, because at the natural, free market price they would have had the incentive to produce and sell more wool. The resulting shortage in turn enabled the local merchants to fetch the artificially high price of one *real* and a half from the foreign buyers. In summary, the local merchants' cartel had an inflationary effect because, by curtailing the quantity of wool supplied by imposing the artificially low purchase price of one *real*, it inflated the wool's sale price from the natural, free market price to the artificially high sale price of one *real* and a half. What is more, the value of the difference between the quantity of wool that the farmers would have produced at the natural, free market price, and the quantity they did produce at the rigged cartel purchase price is the deadweight loss to the real economy, that is, to the collective producer/sellers and consumer/buyers. The only beneficiaries of this distortion of the market were the local merchants, who were, in Saravia's view, mere parasites.

We can express this more clearly, perhaps, by way of the graph presented in figure 1. The y-axis (P) represents the price per bale of wool in *reales*. The x-axis (Q) represents the quantity of bales produced in a specific period of time. The demand function (D) is the schedule of prices at which the ultimate buyers—the foreign merchants—will purchase various quantities of wool in that period. The supply function (S) is the schedule of prices at which the sheep farmers will produce various quantities of wool in that period. Let us assume that the natural, market equilibrium, absent the market rigging by the local merchants, is the production of 125 bales of wool per period, commanding a price of 1.25 *reales* per bale, to a total value of 156.25 *reales*, corresponding to point B. The cornering of the market by the local merchants' buying cartel distorts this equilibrium, suppressing the total value to the sheep farmer to 100 *reales*, that is, 100 bales at one *real* per bale, corresponding to point C. At this suppressed level of output, the price that the local merchants' selling cartel can fetch from the foreign buyers is 1.50 *reales* per bale—0.25 *real* higher than the true market price—giving them a total of 150 *reales*, corresponding to point A. Thus, the sheep farmers (producers) and the foreign buyers (consumers), who represent the real economy, lose a total value of 56.25 *reales* (156.25 minus 100)—the "deadweight loss" represented by the triangle ABC. The local merchants—essentially the middlemen—create an economic rent of 50 *reales*—25 taken from the producers and 25 taken from the consumers—corresponding to the rectangle EACF.

Figure 1



Conclusion

My conclusions from the evidence that I have offered in this article are as follows:

a. The high rates of interest prevailing in the sixteenth century, the development of credit as money and of an efficient net settlement process argue against the "Hamilton hypothesis."
b. An overlooked and possibly important contributing cause of the price revolution may have been the formation of cartels that suppressed output and elevated prices by distorting market equilibria.

I have stated above that monopoly was the *bête noire* of late scholastic literature. The anticompetitive practices by *rentiers*, who added no value to production, were so roundly and so frequently condemned in late scholastic literature that it is safe to assume that such practices were widespread and poorly regulated.[36] The impact of market distortions resulting from anticompetitive practices upon price level increases in the sixteenth century, in my opinion, merits closer consideration on the part of economic historians.

Notes

1. See R. H. Tawney, *Religion and the Rise of Capitalism* (New York: Harcourt, Brace and World, 1954), 62–72.
2. Ian Blanchard, "The Long Sixteenth Century, circa 1450–1650," *XIIth International Congress of the International Economic History Association*, held at Madrid, August 24–28, 1998, 11–12.
3. John Lynch, *Spain 1516–1598: From Nation State to World Empire* (Cambridge: Blackwell, 1992), 138–41; Jaime Vicens Vives, *An Economic History of Spain* (Princeton: Princeton University Press, 1992), 332–34.
4. John Lynch, *Spain under the Hapsburgs* (Oxford: Blackwell, 1992), 132.
5. Vicens Vives, *An Economic History of Spain* (1992), 339.
6. This is evident from the theological debate over the imposition of government controls on the price of bread, see Michael Thomas D'Emic, *Justice in the Marketplace in Early Modern Spain, Saravia, Villalón and the Religious Origins of Economic Analysis* (Lanham; Boulder; New York; Toronto; Plymouth, UK: Lexington, 2014), 249–51.
7. E. J. Hamilton, *American Treasure and the Price Revolution in Spain, 1501–1650* (Cambridge: Harvard University Press, 1934).
8. M. J. Bernadete, "La revolución de los precios en España," *Revista Hispánica Moderna* 1, no. 4 (July 1935): 265–68.
9. Carande supports Hamilton's monetarist theory but also acknowledges the role of bad harvests. See Ramon Carande, *Carlos V y sus banqueros: La vida economica de España en una fase de su hegemonia* (Madrid: *Revista de Occidente*, 1943), 152–53.
10. Jordi Nadal Oller, "La revolución de los precios españoles en el siglo XVI. Estado actual de la cuestión," *Revista espanola de la historia*, 19, no. 77 (1959): 503–29.
11. John H. Munro, "Money, Prices, Wages and Profit Inflation in Spain, Southern Netherlands and England during the Price Revolution Era, ca. 1520–ca. 1650," *Historia y Economia: Revista Interdisciplinar* 14 (2008): 13–71; Michel Morineau, *Incroyables gazettes et fabuleaux meteaux. Les retours des tresors americans d'apre les gazettes hollandaises (XVI–XVIII siecles)* (Paris: Editions de la maison des Sciences de l'Homme, 1985); Bernard Gazier, *Or et monnaie chex Martin de Azpilcueta* (Paris: Economica, 1978).
12. Saravia de la Calle, *Instrución de mercaderes muy provechoso* (Medina del Campo: Casa A. de Urvena, 1544). The references to Saravia in this article will come from a critical edition of the work edited by Elena Carpi. See Elena Carpi, ed., *La Instrución de Mercaderes di Saravia de la Calle e la Institutione de'mercanti di Alfonso de*

Ulloa (Pisa: Edizioni ETS, 2007). The original 1544 syntax and spelling are used. The English translations from the original Castilian are my own.

13. Saravia de la Calle, *Instrución de mercaderes*, foreword by Pablo Ruiz de Alda (Madrid: *Colección joyas bibliográficas* 3, 1949), xiv.
14. John Reeder, "Tratados de cambios y de usura en Castilla (1541–1547)," *Hacienda Publica Española* 38 (1976), 175: "un clérigo … que habla con la voz de la experiencia desengañada."
15. Abelardo del Vigo Gutiérrez, *Cambistas, mercaderes y banqueros en el Siglo de Oro español* (Madrid: BAC, 1997), 107.
16. This implied that the "time value" of the loaned funds was zero, an idea that was eventually to crumble as a result of later, more careful scholastic analysis. See John T. Noonan, *The Scholastic Analysis of Usury* (Cambridge: Harvard University Press, 1957).
17. For a full description of the intellectual context of the *Instrución*, see Carpi, "Introduction," in idem, *La Instrución*, 13–21, 23–26; D'Emic, *Justice in the Marketplace*, 3–5.
18. Carpi, "Introduction," in idem, *La Instrución*, 28.
19. Saravia, *Instrución*, in Carpi, *La Instrución*, 217.
20. Fernand Braudel, *The Wheels of Commerce* (New York: Harper & Row, 1982), 90–91.
21. Ladilas Reitzer, "Some Observations on Castilian Commerce and Finance in the Sixteenth Century," *Journal of Modern History* 32 (1960): 222.
22. Saravia, *Instrución*, in Carpi, *La Instrución*, 215. A similar analysis is provided by a contemporary, Cristobal de Villalon, in his 1542 *Provechoso tratado de mercaderes*. See D'Emic, *Justice in the Marketplace*, 73–79.
23. Jesús Huerta de Soto, *Money, Bank Credit and Economic Cycles*, 2nd ed., trans. Melinda A. Stroup (Auburn, Alabama: Ludwig von Mises Institute, 2009), 87–88.
24. Charles Verlinden, "The Rise of Spanish Trade in the Middle Ages," *The Economic History Review* 10 (1940): 57–58.
25. The days before the start of Lent, generally late February to early March.
26. The Solemnity of the Nativity of St. John the Baptist observed on June 24.
27. Saravia, *Instrución*, in Carpi, *La Instrución*, 174–75.
28. Saravia, *Instrución*, in Carpi, *La Instrución*, 178.
29. Saravia, *Instrución*, in Carpi, *La Instrución*, 179.

30. Saravia, *Instrución*, in Carpi, *La Instrución*, 183: *y es una manera de monopolio que hazen los mercaderes de la tierra que compran las lanas. Porque el que sabe que un labrador vende a un mercader, ningún otro le quiere comprar por obligar al pastor que venda al mercader que primero vendía, y assí no puede haver por sus lanas más un año que otro*.

31. Saravia, *Instrución*, in Carpi, *La Instrución*, 183: *Y aunque esto parece que se haze por título de buena criança, hazese, en verdad, por título de buena codicica, porque si yo quitase las lanas a uno, este me las quitaría a mi y assí subirían a porfia en el precio. Y por esto es en perjuyzio de los labradores, pues no pueden vender su hacienda como la vendería cessando esta buena criança que llaman.*

32. Saravia, *Instrución*, in Carpi, *La Instrución*, 183: *Es también esto en perjuyzio de los mercaders estrangeros pues, por tener los mercaderes de la tierra compradas las lanas son forçados a comprar la carne del lobo, pues les encarecen las lanas.*

33. Saravia, *Instrución*, in Carpi, *La Instrución*, 184: *Como la negociación de aquellos que no llevan las mercaderías de un lugar a otro, ni con su industria la mejoran ni conservan, mas cómpranlas para luego las revender y para impedir a los pobres que no las ayan por competente precio y las pueden comprar de aquellos que las tienen; por las quales muchas vezes viene carestía a la república, preveniendo a los otros que las quieren comprar.*

34. Saravia, *Instrución*, in Carpi, *La Instrución*, 184: *por lo qual los otros son forçados a comprar dellos por el precio que se les antoja, y hazen qualquier mercadería más cara para el que compra y más provechosa para sí que la vende.*

35. Saravia, *Instrución*, in Carpi, *La Instrución*, 178: *los que no venden adelantado sino sobre tigera, las venden mucho más caro que los mercaderes de la tierra las compran.*

36. A full discussion of the late scholastic condemnation of monopolistic practices designed to inflate prices and generate economic rent is provided by Raymond de Roover, "Monopoly Theory Prior to Adam Smith," *The Quarterly Journal of Economics* 65, no. 4 (November 1951): 495–500. Saravia's contemporary, Cristóbal de Villalón, devotes two full chapters to a scathing condemnation of such practices in Cristóbal de Villalón, *Provechoso tratado de cambios y contractaciones de mercaderes y reprovación de usura* (Valladolid: Francisco Fernandez de Córdoba, 1542), chaps. 23–24. In connection with the wool trade specifically, I refer the reader to Carla Rahn Phillps, "Spanish Merchants and the Wool Trade in the Sixteenth Century," *The Sixteenth Century Journal* 14, no. 3 (Autumn 1983): 272–74; Rafael Torres Sanchez, "Lana y blanca. Los servicios financieros al negocio llanero en el siglo XVIII" in *El negocio de lana en Espana*, ed. Agustin Gonzales Enciso (Pamplona: EUNSA, 2001), 253–54.