

# The Value of “*Pratica di Mercatura*” as a Document of Economic History

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## *Introduction*

Robert S. Lopez and Irving W. Raymond once praised “*La pratica della mercatura* by Francesco Balducci Pegolotti as a work which holds in its field as important a place as Bede, Villehardouin, or Machiavelli in other branches of history”<sup>1</sup>. On the other hand, Armando Sapori and Fedeligo Melis, the Florentine historians and the great pioneers in the exploitation of business management records such as account books, did not highly value this genre as documents of economic history. According to them, the accounts in them are vague, inexact<sup>2</sup>. Since then, it seems that the estimation of *practica di mercatura* as documents of economic history has somewhat fallen.

Such estimation of Sapori and Melis seems to have been based on the fact that Werner Sombart and Alfred Doren had independently asserted absurdly high transport expenditure based on this genre of documents already published at their time (see below). Those documents are “*La pratica della mercatura*” of Pegolotti (compiled in the 14<sup>th</sup> century)<sup>3</sup> and of Da Uzzano (compiled in the 15<sup>th</sup> century)<sup>4</sup>, both published in 1766 in Florence by Pagnini. The former was criticized later very carefully and republished in 1936 by Allan Evans<sup>5</sup>, but the latter has not yet been criticized. Sapori and Melis found fault with the view presented by Sombart and Doren after completing their own research using business management records

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1 Robert S. Lopez and Irving W. Raymond, *Medieval Trade in the Mediterranean World- Illustrative Documents Translated with Introductions and Notes*, New York and London, 1955, p.3.

2 Cfr., Armando Sapori, Saggio sulle fonti della storia economica, in, *Studi di storia economica*, vol. 1, Firenze, 1955; idem, *Una compagnia di calimala ai primi del Trecento*, Firenze, 1932, pp.61-62; Federigo Melis (Bruno Dini, a cura di), *Sulle fonti della storia economica*, Firenze, anno accademico 1963-64, p.130; idem, *Documenti per la storia economica dei secoli 13-16*, Firenze, 1972, pp.120 ff.

3 Francesco Balducci Pegolotti, *La Pratica della Mercatura*, in, Giovanni Francesco Pagnini del Ventura, a cura di, *Della decima e di varie alter gravezze ec.*, tomo III, Lisbona e Lucca [Firenze], 1766, ristampa anastatica, Bologna, 1967.

4 Giovanni di Antonio Da Uzzano, *La pratica della mercatura*, in, ibidem, tomo IV, Lisbona e Lucca [Firenze], 1766, ristampa anastatica, Bologna, 1967.

5 Francesco Balducci Pegolotti, Allan Evans, ed. by, *La Pratica della Mercatura*, Cambridge Massachusetts, 1936, reprint, New York, 1970.

which have been conserved in great number in the archives of Florence and Prato.

Certainly, business management records have made many aspects of economic life very clear, but *practica di mercatura* gives a bird's-eye view of the economic situation of the time that is not discernable from the business management records alone. From this point of view, isn't it necessary to reexamine the value of this genre? To begin with, are the assertions of Sombart and Doren valid readings of these documents, or are they the results of flawed analyses? Both of these German historians calculated the transport expenditure of English wool to Florence, based on *practicis* compiled by the Florentines mentioned above, while the two Italian historians criticized their views, based on the business management documents made by Tuscan and other Italian merchants. In this paper, we will first reexamine the transport costs found in the documents used by Sombart and Doren, namely Pegolotti and Da Uzzano. Secondly we will analyze six cases of transport costs recorded in an account book of a Florentine company. Based on these analyses, we will reassess the value of *practica di mercatura* as a document of economic history.

### *1 Reexamination of the documents of Doren and Sombart*

#### **1) Assertion of Doren and Sombart**

Giovanni Villani wrote in his chronicle on the Florentine cloth industry around 1338 that the English wool had recently begun to be imported in Florence, and by using it the quality of the Florentine cloth was raised<sup>6</sup>. And the ledger of Rinuccio di Nello Rinucci, a Florentine clothier, registered from 1322 to 1325 testified to the beginning of the production of "French-type" cloths (*panni alla francescha*) made with the English wool<sup>7</sup>. The "French" cloths (*panni franceschi*), as the cloths made in Flanders, Brabant and Northern France were called in Florence, were made mainly with the English wool, so the "French-type" cloths made in Florence were their imitation using the same material. Hidetoshi Hoshino proved that the English wool and the imitated cloth made with it played an indispensable role in the improvement of the quality of the Florentine cloth<sup>8</sup>. There remains, however, the problem of the transport cost of the wool imported in Florence.

On this problem, Doren asserted as follows based on Pegolotti<sup>9</sup>: "Following Pegolotti, the former [the purchase price of the English wool in Bruges] is ca. 1~7 florins per sack or 2 bales (ca. 500 Florentine pounds or ca. 364 English pounds). The transport expenditure [per

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6 Giovanni Villani, *Cronica* (Croniche di Giovanni, Matteo e Filippo Villani, vol. 1), Trieste, 1857, XI-94.

7 Hiromi Saito, A Ledger of Rinucci, a Florentine Clothier, 1322-25, in Mediterranean Studies Group- Hitotsubashi University, ed., *Mediterranean World*, XVIII, 2006.

8 Hidetoshi Hoshino, *L'arte della lana in Firenze nel basso Medioevo*, Firenze, 1980.

9 Alfred Doren, *Die florentiner Wollentuchindustrie von vierzehnten zum sechzehnten Jahrhundert*, Stuttgart, S. 110-11.

sack from London] to this French coast [Aigues Mortes] amounts in total to ca. 9 florins, or 128~900% of its purchase price. Of the transport expenditure from there to Florence, let us add moreover 1/3 to 1/2 of this expenditure. Therefore, in the course from the purchase place to Florence, the price of 1 bale of the wool becomes ca. 2~12 times higher."

Sombart asserted as follows based on Da Uzzano<sup>10</sup>: "Following the famous example that [Da] Uzzano took up from the wool trade between England and Florence (p.118 [~p.120]), the price of the wool of 100 pounds gross is 10 1/2 florins in its place of production, and the wool of 200 pounds net (that corresponds to 300 pounds gross) is sold for 76~88 florins in Florence. In another account that [Da] Uzzano took up (pp.186~187), the price of the English wool of 11 bales is 612 florins (after at least 50% of the expenditures has been added) at purchasing in Calais, and the price of it is 1315 4/5 florins at selling in Milan."

Therefore, in the former case, with its purchase price being index 100, its selling price should be index 241~279. And in the latter case, with its purchase price in Calais being index 100, its selling price in Milan should be index 215.

From these results, it must be concluded that the transport expenditure in the Middle Ages were very high.

## 2) Reexamination of Pegolotti

Now, let us reexamine Doren's assertion based on Pegolotti. In the account of Pegolotti, we find the following three items: (1) the exchange rate of English money and Florentine money, (2) the selling price of English wool in Flanders, and (3) the freight charge, expressed in the Florentine monetary unit, of English wool from London to Aigues Mortes (via Libourne and Montpellier).

(1) In the chapter entitled "Florence"<sup>11</sup>, we find that 1 gold florin (real money) is equal to 29 affiorini (money of account) and the exchange rate as 1 mark sterling is equal to lb.7 d.7 2/11~ lb.5 s.10 d.7 7/8 affiorini. From these descriptions, we can calculate that 1 mark sterling is equal to ca. 4.8~ ca. 3.8 florins.

(2) In the chapter entitled "England"<sup>12</sup>, we find the quantity of wool produced annually by English monasteries and their prices distinguished by 3 quality classes per sack, providing that the prices expressed in marks sterling are those in Flanders, and the prices in England are cheaper than in Flanders. Following Doren, the cheapest price is 4 marks (sterling) and the most expensive is 28 marks (Doren overlooked the 30 marks for the most expensive wool of "Istanfeltro" convent). Doren converted these prices into the prices in florins following the above-mentioned exchange rate, and calculated that the prices of the wool range from 1 ~

10 Werner Sombart, *Der moderne Kapitalismus*, V. Auflage, Bd. 1, München und Leipzig, 1922, Bd. 2-Hälfte 2, S.613.

11 Pegolotti (ed. by Evans, the same below), pp.202-03.

12 Pegolotti, pp. 258-69.

7 florins. However, this conversion is a fatal mistake, as Adolf Schaube pointed out<sup>13</sup>. Being based on that exchange rate, 4 marks are equal to 15.2 ~ 19.2 florins, so 28 marks are equal to 106.4 ~ 134.4 florins. To convert the price in marks into the price in florins, it is necessary to multiply the amount in marks by 3.8 ~ 4.8, but Doren contrarily divided the amount by those numbers. As a result, the price of wool was estimated at less than 7 % of the actual price.

(3) In the chapter entitled “London”<sup>14</sup>, we find the freight charge of wool from London to Aigues Mortes along with some comments. The charge is for wool per sack, and 1 sack (*sacca*) is composed of 2 bales (*balle*). Two bales are equal to 1 load (*carica*) or 1 pack-animal load (*soma*) for a mule. The ship from London goes upstream (via estuary of the Gironde) to Libourne, and the wool unloaded there is transported (via Montpellier) to Aigues Mortes by land where it is loaded on a galley.

The total charge of transport from London to Aigues Mortes is composed of 17 items, and if the “sum of all expenses from England to Aigues Mortes ... is able to be calculated that would be about 9 gold florins per pack-animal load (*soma*)”. The amounts of each of the following items are written down in concrete figures per bale or load: freight from London to Libourne, charge for pilotage, custom duty, etc. But there is no description of the freight charge from Aigues Mortes to Florence. Following Doren, that is supposing it should be 1/3~1/2 of the freight charge from London to Aigues Mortes, we can calculate the charge from London to Florence as 12~13.5 florins.

Here, we must give heed to the fact that in this record, although a continuous series of transport expenses from London to Aigues Mortes is registered, that from Aigues Mortes to Florence is not registered. Therefore we can suppose that this record has been transcribed from some business records of wool transport from London to Aigues Mortes, such as delivery notes or commercial letters.

The price of wool in Bruges is between 4 marks and 30 marks. The most expensive is 7.5 times of the lowest, so the difference in prices is very large. Almost all of the wool produced at English monasteries is divided into 3 classes according to quality, that is, the higher (*buona*), the middle (*moiana*), and the lower (*locchi*). We have calculated the average price per sack of each class as 18.5 marks for the higher, 10.9 marks for the middle and 8.8 marks for the lower. However, in the case of wool of Thame monastery, it costs 27 marks for the higher, 17 marks for the middle and no record for the lower, while in the case of Letley monastery, 12 marks for the higher, 7 1/2 for the middle and 5 marks for the lower. Therefore, the classification must be based on the relative criterion of each monastery. The price of higher quality wool varies from 30 to 10 (average 18.5) marks, so its inner difference is large. The difference in the middle quality is 17~7 (average 10.9) marks, and the lower quality is 10 1/2~4 (average 8.8) marks.

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13 Adolf Schaube, *Die Wollausfuhr Englands vom Jahre 1273*, in, *Vierteljahrshrift für Sozial- und Wirtschaftsgeschichte*, Bd. 6, 1903, S. 176.

14 Pegolotti, pp. 257-58.

So it should be supposed that the quality must be subdivided within each class. Following the exchange rate mentioned above, the average price of 1 mark sterling is equal to 4.3 florins. The price of wool per sack is, according to this average rate, 129~17.2 florins. The freight charge from London to Florence must be, following the estimation mentioned above, 13 florins. So, the purchase price of wool in Bruges being index 100, its freight charge to Florence must be index 10.1~75.6 (average 42.8).

### 3) Reexamination of Da Uzzano - 1

As mentioned above, Da Uzzano has not yet been criticized academically, and contains quite a few vague parts as Doren pointed out<sup>15</sup>. In Chapter 21 on London<sup>16</sup>, the trade of wool and cloth is recorded, and written as follows: "In London people buy the 'French' wool (*lane Franciesche*) [called 'English' wool in Florence], and there are many sorts [of it]. ... To make clear how they are purchased, and how much they cost, we will show below [as an example] one account from Cotswold. It is true that they have varying prices one by one, but it [such variation] is small."

In the first half of the chapter, there are concrete accounts concerning the transport of the wool. (1) The price of wool purchased at "Sarisestri" Abbey. (2) The freight charge of the wool from the abbey to Southampton by land, and until loading on a ship there. (3) The freight charge and other expenses of the wool [of Cotswold bought in London] from London (via Leghorn and Pisa) to Florence. (4) The selling price of this wool [bought in London]. Now, let us examine these accounts one by one.

(1) The price of 24 bales of Cotswold wool produced at "Sarisestri" Abbey is indicated in two ways as follows. Its price per sack is 14 marks [sterling], and the price of 24 bales is lb.113 s.13 d.4. In this part, there is a description of the tip paid to monks, so this price evidently must be the purchase price at the abbey. There is also a description of the correlation between units, and the calculation based on it shows that the price of the wool per 100 Florentine pounds [weight unit, simply "pounds" below] is 15.6~15.9 florins. The calculation process could be shown as below.

- (A) 1 sack= 14 marks. 1 sack= 2 bales. So, 24 bales= 168 marks. The average exchange rate is 1 mark= (d.160=) 6 1/4 florins. So, 24 bales= 1,050 florins, and 1 sack= 87.5 florins.
- (B) 24 bales= lb.113 s.13 d.4 [= d.27.280= 170.5 marks]. Following the average exchange rate, 170.5 marks= ca.1,066 florins. So, 24 bales= ca.1,066 florins. It is not clear why the difference with 1,050 florins (mentioned above) is brought about.
- (C) After all, the price of 24 bales of wool is 1,050~1,066 florins. So, the price per sack (=2 bales) is 87.5~88.8 florins. (Following Pegolotti, the price of higher quality wool

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15 Doren, a.a.O., S. 111.

16 Da Uzzano, pp.118-24.

per sack is 30~10 [average 20] marks, so its average price is 86 florins.) Then, if the information from Pegolotti (14<sup>th</sup> century) is valid for the condition of Da Uzzano (15<sup>th</sup> century), this wool must be of higher quality.

(D) 1 sack= 60 cloves (weight unit). 1 clove= 7 London pounds (weight unit). 1 London pound= lb.1 oz.4 [=lb.1 1/3]. So, 24 bales= 12 sacks= [12 x 60 x 7 x 1 1/3= ] lb.6,720.

(E) In the end, lb.6,720= 1,050~1,066 florins. So, the price of the wool per lb.100 is 15.6~15.9 (average 15.75) florins.

(2) The sum of expenditure to transport [24 bales of] the wool to Southampton by cart and to load it on ship is lb.56 s.19. So, with its purchase price at the abbey being index 100, the freight charge is index 50.1~50.8. Within this charge, the freight charge of the cart is only lb.3 s.10 (6.1%), and the king's custom (*costuma del re*) accounts for really lb.40 s.6 d.2 (70.1%).

Therefore, if the privilege on the tax is given to the Florentine merchants, this expenditure should be very much reduced. If the tax is exempted, this expenditure should be index 15 against index 100 of the purchase price. And it should be quite possible that Florentine merchants were given such privilege as a consideration to the king's debt to them<sup>17</sup>.

Following the description of Da Uzzano, the loads of the wool are changed from sack (*sacco*) to pack (*poccha/pocca*, usually *paccho/pacco*)<sup>18</sup> before loading on board the ship. 1 sack= 2 packs. So, 1 pack= 1 bale. Of the 24 packs [purchased], 3 packs are of the middle quality [the rest should be of the higher quality]. There is no description on the expenses of transport from Southampton to London.

(3) Of the expenditure of transport from London to Florence, there are records of each item, but there is not the total sum. And, it is necessary to pay attention to the fact that the cost of the wool per three kinds of units (see below) is recorded, but being different from (1) and (2), the expense per 24 packs (= bales) is not recorded. The expenditure of each item is registered as below. The monetary units are f. (florins), s. (soldi, shillings) and d. (denari, pence). As to the units, in some cases there are expression "picciolo" (i.e. of small money), and in other cases no such expression. So, in the former cases, let us express as sp. (s. of picciolo) and dp. (d. of picciolo).

(A) Freight charge from London to Pisa [actually Leghorn], f.2 1/2 per pack.

(B) Fee for pilotage, f. 1/8 per pack.

(C) Charge of unloading and keeping at warehouse in Leghorn, sp.13 per pack.

(D) Charge for transport by cart from Leghorn to Pisa, sp.11 per pack.

(E) Charge of unloading and keeping at warehouse in Pisa, dp.8 per pack.

17 Cfr., Armando Saporì, *La crisi delle compagnie mercantili dei Bardi e dei Peruzzi*, Firenze, 1926, pp.48 sgg.

18 Cf., Florence Edler, *Glossary of Medieval Terms of Business- Italian Series 1200- 1600*, Cambridge, Massachusetts, 1934, reprint, New York, 1970, term "pocca".

- (F) *Gabella* [import duty] at Pisa, s.25 per lb.100 [= s.70 per pack]
- (G) Charge for transport [from custom house] to the city of Pisa, sp.5 dp.6 [per what unit is lacking].
- (H) *Ritratta* [export duty] from Pisa, d.12 per pack.
- (I) Special imposition [*speciale*] of custom house in Leghorn, s.2 d.2 per pack.
- (J) Charge for receipt [of wool] in Pisa, sp.10 per pack.
- (K) Freight charge of transport by cart [from Pisa] to Florence, sp.15 per lb.100 [= f.4 1/5 per pack].
- (L) *Gabella* of Florence, f.1 1/2 per lb.100 [= f.4 1/5 per pack].
- (M) Charge for weighing and intermediation, s.20 per bale [sic].
- (N) Charge for receipt [of wool] in Florence, 2% of the price [of wool] [= f.0.882 per pack].
- (O) Premium from London to Pisa, usually 12~15 [average 13.5] % of the cargo [average f.5.966 per pack].

We find here the freight expenses of wool from London until receipt in Florence. The expenses of each item are per 100 pounds for (F), (K), (L); per wool price for (N), (O); and per pack for the others. In the case of (G), the unit is lacking, but we can suppose from the context that it should be per pack. Additionally, from (1)-(D), 24 bales= [24 packs= ] 6,720 pounds, so 1 pack= lb.280, lb.100= 0.357 packs. Monetary units are florins (real money) for (A), (B), (L); s. and d. for (F), (H), (I), (M); sp. and dp. for the others. And, s. d. (without p.= picciolo) are indicated for taxes and charges for weighing and intermediation prescribed by the authority. Its monetary kind is not clear, but the monetary unit of (L) (*gabella*) is florins (real money), so we could suppose from this fact that it should be s. and d. affiorini, account money based on florins.

Since these calculations have become a bit complicated, let us estimate the total cost of transport expenditure of wool per pack. First, we convert the expense per lb.100 to the expense per pack. (F): lb.100 = [0.357 pack] s.25. So, 1 pack= [25÷0.357 = ] s.70. (K): lb.100= sp.15. So, 1 pack= sp.42. (L): lb.100= f.1 1/2. So, 1 pack= f.4 1/5. Using data from (1-E), the price of wool per lb.100 is 15.6~15.9 (average 15.75) florins. We calculate the following on this figure. (N): lb.100= [15.75 x 0.02 = ] 0.315 florins. So, 1 pack = 0.882 florins. (O): Premium is 12~15 (average 13.5) %, so we calculate on the average figure. lb.100= [15.75 x 0.135 =] 2.13 florins. So, 1 pack= 5.966 florins. Here, we have all expenses per pack.

Next, we will unify the monetary units into florins. (I) The total sum of (A), (B), (L), (N), (O) is 13.673 florins. (II) The total sum of (F), (H), (I), (M) is s.38 d.2 affiorini, that is 1.661 florins. (III) The total sum of (C), (D), (E), (G), (J), (K) is s.82 d.2 of picciolo. In this document, there is no exchange rate between florins and d. of picciolo, but following the data collected by Peter Spufford, in the first half of the 15<sup>th</sup> century when this document was

compiled, the rate was around 1 florin = ca. s.80 of picciolo<sup>19</sup>. Using this figure, s.82 d.2 of picciolo = 1.027 florins. The total sum of (I), (II) and (III) is 16.36 florins. This is the total sum of the transport expenditures from London to Florence. The price of wool is, after (1)-E, lb.100 = 15.75 florins (average), so 1 pack= 44.12 florins (1 sack =88.2 florins). From this test calculation, the purchase price of the wool in England being index 100, the transport expenditure is  $[16.361 \div 44.12 \times 100 = ]$  index 37.1.

Now, we should attend to the sentence in the concerned chapter, “[In] London of England they purchase the ‘French’ wool, and there are many sorts, that are of Bade, of ‘Sirisestri’, ... of Cotswold, ..., and to make clear how they are purchased, and what they have [to pay] of expenditure, we will take here below [as an example] one account of those of Cotswold.” The wool in the item above (3) is, according to the following reason, the wool of Cotswold purchased in London, but not the wool in the items (1) and (2), which is purchased in Cotswold itself and transported to Southampton<sup>20</sup>. Considering the locations of Cotswold, Southampton and London which form three points of a triangle, it is quite unthinkable that the wool is transported from Cotswold to Southampton (a famous port of call for Italian ships), and from Southampton to London, then from London to Leghorn. Perhaps, based on the commonality of the wool of Cotswold, either Da Uzzano (compiler) or Pagnini (publisher) must have put together successively these different items.

(4) Continuing to the premium from London to Pisa, there is a description on the sale of “above mentioned wool” (*dette lane*) in Florence. Therefore, the wool in this item must be the wool of Cotswold purchased in London. And, as in (3), there also is no description for the quantity of wool “24” bales. Its deferred price after 1 year is lb.50~40 affiorini per lb.100 (weight unit). However, though being this sort of wool, the middle quality is about 1/4 cheaper, that is lb.35~30 [affiorini per lb.100]. Therefore, per lb.100 it is converted into 34.5~27.6 florins (higher quality), and 24.1~20.7 florins (middle quality). Per bale, it is respectively 96.3~77.3, 67.5~58.0 florins. Per sack, it is 192.6~154.6, 135.0~116.0 florins.

As such, of the wool purchased in Cotswold, there are (1) accounts of its purchase price and (2) its transport expenditure to Southampton, but neither accounts of its transport expenditure to Florence nor its selling price in Florence. On the other hand, of the Cotswold wool purchased in London, there are (3) accounts of the transport expenditure to Florence and (4) its selling price in Florence, but not its purchase price in London. It is not at all clear whether these two wools are of the same quality or not, and are purchased under the same conditions or not. Therefore, comparing the purchase price of the former and the selling price of the latter would have no more meaning other than to estimate quite roughly the transport expenditure. It should be clear that (1) and (2) are, having concrete accounting figures, transcribed from some account record, and also (3) and (4) are, being a continuous chain of

19 Peter Spufford, *Handbook of Medieval Exchange*, London, 1986, pp.20-23.

20 Doren did not distinguish this difference. vedi, Doren, a.a.O., S.111.



transport expenditures from London to Florence, transcribed from another account record.

Nevertheless, we know the purchase price per lb.100 of the former (mainly of the middle quality) is 15.6~15.9 (average 15.8) florins, and the selling price per lb.100 of the latter is, of middle quality 20.7~24.1 (average 22.4), and of higher quality 27.6~34.5 (average 31.1) florins. Estimating on the average figure, the selling price of the middle quality is 141.8% of the purchase price (in London), and that of the higher quality is 196.8%. Included in these selling prices must be not only sales profit but also its interest (generated from deferred payment after one year), so with the purchase price in the producing area of the wool being index 100, the transport expenditure would be the rest obtained by deducting sales profit and its interest from index 41.8~96.8. It is not clear what figure the rest should be, but the figure 37.1 mentioned above (our estimate of the transport expenditure) would have a certain probability.

Following Sombart, the purchase price per lb.100 gross (including tare) of the wool is 10 1/2 florins, and the selling price is 76~88 florins per lb.200 net or per lb.300 gross. Therefore, the selling price per lb.100 net is 38~44 (average 41) florins, and per lb.100 gross is 25.3~29.3 (average 27.3) florins. His handling of the document is careless, and his way of yielding these figures is groundless. Nevertheless, following his guidance, let us estimate the difference between its purchase price and selling price. It is appropriate to take the gross selling price, because the purchase price corresponds to the gross. Calculating on the average price of wool per lb.100 gross, the selling price is  $[27.3 \div 10 \frac{1}{2} \times 100 = ]$  260 % of the purchase price. Therefore, the transport expenditure should be index 160.

Although Sombart suggested that the transport expenditure is index 160.0 contrasting to index 100 of the purchase price, careful examination yields index near 37.1 rather than 160.0. Sombart's carelessness would have inflated it 4.3 times.

#### 4) Reexamination of Da Uzzano - 2

Sombart also considered Chapter 72 on Bruges of the same document<sup>21</sup>. Here, there are data on the English wool about (1) its purchase price in Calais, (2) its transport expenditure from Calais to Milan (via Bruges, Sluis and Malines) and the expenses needed until its sale in Milan, and (3) its selling price in Milan. Judging from the contents of the data, they must be transcribed from some account record. But regarding some data in this document not yet criticized, there are certain incomprehensible parts. Let us follow the description (We have added the numbering), and display with boldface the incomprehensible parts.

(1) 4 sarplars of wool purchased at Calais, namely wool of March at day ...[sic] April 1417, weighed in Calais 10 sacks 18 pounds [=10 1/5 sacks] 90 pounds [per] sack **per marks sack** amount ("*Scarpelliere 4 di lana comperate a Calese, cioè lana di Marcia a di... Aprile*

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21 Da Uzzano, pp.186-87.

1417, *pesorono in Calese sacca 10 libb. 18 libbre 90 sacco per marchi sacco monta*)<sup>22</sup>

	lb. (lir.) 102.--.—
(2)	
(A) For broker's fee [in Calais] at 2 shillings per sarplar	lb. --. 8.--
(B) For custom of Calais at 8 pennies [per] sack	lb. --. 6. 9
(C) For carrying and unloading at 6 pennies per sarplar	lb. --. 2.--
(D) For freight and cartage from Calais to Bruges at 11 shillings [per] sarplar	lb. 2. 4.--
(E) For expense of marking ( <i>Marcho</i> ) [= <i>Marchio</i> ] s.2 per sarplar	lb. --. 8.--
(F) For canvas for 11 sacks 150 ells per pound (" <i>Per canovaccio per sacca 11 alle 150 per libb.</i> ")	lb. 1.18.--
(G) For canvas, and for wrapping given to the conductor	lb. --. 4.--
(H) For 11 hairy skins given to the above mentioned [conductor], to wrap well by a small number (" <i>bene che pochi farieno</i> ")	lb. 1.13. 4
(I) For custom of the lord of Burgundy at 52 groats and two thirds [per] bale of 52 pounds, that are 2 sacks, and for custom of lord of Castle (" <i>Castella</i> ") 1 groat per two sacks, and for custom of the damage (" <i>costuma del danno</i> ") in all	lb. 1. 4.--
(J) And for other expenses to carry, and to send to Sluis 2 shillings per sack, in all amounts	lb. 1. 2.--
(K) To send to Melines 18 groats [are paid]	lb. --.16. 6
(L) To transport until Milan. 13 florins per sack, therefore [with 11 sacks the total sum is] 143 Rhine florins [=Rheingulden] <sup>23</sup> . 1 [Rhine florin] being 34 [Flemish] groats, [143 Rhine florins convert into] lb.20 s.5 d.2 [Flemish groats]. <b>1 Flemish groat<sup>24</sup> equals to, of sterling at 4 percent</b> (" <i>Per conduttura fino a Milano fiorini 13, diremo il sacco sono fiorini 143 di R.o [= Reno] a grossi 34 l'uno vagliono lire 20.5.2 grosso di Fiandra vagliono di sterlini a 4 percento</i> ")	lb. 18. 4. 8
(M) Lb.129.17.5 of [mark] sterling converted [in lb. of Milan] <b>830</b> (" <i>Lire 129.17.5. di sterlini dec. 830</i> ")	
(N) There were 11 bales [not sacks, of wool], namely 10 [bales] of good wool, and 1 [bale] of middle [wool]. <b>We count d.40 as loss of [being it] the middle [wool]. And for expenses paid in Milan until [its] sale d.90, in total</b> (" <i>Furono balle 11, cioè 10 di buona lana, e uno di Mojana, mettiamo per danno della mojana denari 40, e per</i> ")	

22 At the time Calais is an English territory; therefore, this monetary unit should be mark sterling of England.

23 On fiorino di R.o [Reno], namely Rheingulden, vedi, Edoardo Martinori, *La moneta, Vocabolario generale*, Roma, 1977, voce "Fiorino del Reno"; Spufford, *Handbook of Medieval Exchange*, cit., p.240.

24 On grosso di Fiandra, vedi, Martinori, *La moneta, Vocabolario generale*, cit., voce "grosso"; Spufford, *Handbook of Medieval Exchange*, cit., p.215.

*spese fatte in Milano fino vendute denari 90 in tutto*) lb. 960.--.--

(3) In Milan every sack of 90 pounds of Calais is counted as was said 430 pounds net, therefore [10 1/5 sacks of Calais are counted to] 4386 pounds [of Milan] **per d.30 one hundred, amounts** ("Ragionasi a Milano ogni sacco di libber 90 di Calese come furono dette libbre 430 nette, che sono lib. 4386 **per d. 30 il cento, monta**")

lb.1315 and 4/5

Sombart thought without any ground that this lb.1315 4/5 is 1315 4/5 florins, but it should be lb.1315 4/5 of Milanese monetary unit because in the monetary calculation, there is no relationship between lb. and florin as lb. = florin.

From here, we can get the following results. (1) In April 1417, 10 1/5 sacks of wool produced at March (England) were purchased in Calais, and their purchase price was lb.102 of mark sterling. (2)(A)~(L) are expenditures needed to transport them from Calais to Milan, of which the sum total amounts to lb.18 s.4. d.8 [actually lb.30 s.11. d.3] of mark sterling. (M) The sum total of the purchase price and the total expenditure of transport amounts to lb.129 s.17. d.5 [actually lb.132 s.11. d.3] of mark sterling.

Therefore, being the purchase price of the wool at Calais index 100, the expenditure of its transport from Calais to Milan should be index 27.5 [actually 30.2]. The assertion of Sombart based on this part is also very misleading.

## 2 Analysis of an Account Book of *Buono co.*

On the expenditure of transport in the Middle Ages, Saporì and Melis based their studies on business management records, and they criticized such views as those of Sombart and Doren<sup>25</sup>. Although they criticized the genre of documents consulted by Sombart and Doren, they did not criticize their way of handling the documents.

In an account book of a Florentine company, there are records of transport expenditure of English wool to Venice and to Milan. This book is of "*Duccio di Banchello e Bancho Bencivenni e compagni*" of Florence<sup>26</sup>, registered from 1336 to 1339 by "Piero del Buono e compagni", the Venetian branch of the Florentine company, and now conserved in the ASF (Archivio di Stato di Firenze, State Archive of Florence) as "*Carte Del Bene, n.64*". In the book, especially in the persons' credit side and in the purchased merchandises' account, there are precious data concerning the transport expenditures of the wool at the very time of Villani, namely a little before the compilation of Pegolotti.

As a concrete sample, let us adopt the following two cases among the six cases registered

<sup>25</sup> In addition to note (2); Melis, *Aspetti della vita economica medievale. Studi nell'Archivio Datini di Prato*, Siena, 1962, Parte V- Capitolo III; idem, Werner Sombart e I problemi della navigazione nel Medio evo, in, AA.VV., *L'opera di Werner Sombart nel centenario della nascita*, Milano, 1964.

<sup>26</sup> Late professor Hidetoshi Hoshino told us about the existence of this text in which we could find these precious records.

in this document, cc. 161r.bis, 161t.bis and c.178r. The monetary units are lb. s. d. of grossi complida of Venice<sup>27</sup>; q. is quarter of Venetian grosso, and pi. is Venetian picciolo. We have added the numbering of each item for convenience. And “...” in sentences shows the places we have omitted some information.

**Case A** (Transport cost from Bruges to Venice by sea)<sup>28</sup>

- 1) We purchase from ser Nero Chocho of Venice, day 23 of November in the year above mentioned [1366]...
  - (1) 10 sarplars of long wool of Winchester...they weighed at Bruges sacks 14 cloves 52, for marks 7 1/2 the sack, amounts...[the value in mark sterling is converted into the Venetian monetary units as] 56.15. 7: q.3
  - (2) 13 sarplars of long wool of Winchester...they weighed at Bruges sacks 18 cloves 31, for marks 8 quarters 3 the sack, and s.10 of sterling for all transactions, amounts... 82.17. 10:
  - (3) 9 sarplars of long wool of March...they weighed at Bruges sacks 12, for marks 9 s.8 d. 4 of sterling the sack, amounts... 58.16. 4: pi.21
  - (4) 10 sarplars of long wool of Cotswold ... they weighed at Bruges sacks 13 cloves 50, for marks 11 of sterling the sack, amounts... 77. 4. 2: pi.13
  - (5) 4 sarplars of long wool of Winchester...they weighed at Bruges sacks 7 cloves 12, for marks 7 of sterling the sack, amounts... 25.13. 4:
  - (6) 24 sarplars of lamb wool of Winchester...they weighed at Bruges sacks 41 cloves 54, for marks 8 of sterling the sack, amounts... 170.14. 0: pi.18
  - (7) 6 sarplars of lamb wool of Saint Albans...they weighed at Bruges sacks 9 cloves 58, for marks 8 of sterling the sack, amounts... 40. 3.11: pi. 4
  - (8) 15 sarplars of resheared (*ritoso*) wool of March...they weighed at Bruges sacks 22 cloves 12, for marks 5 quarter 1 of sterling the sack, amounts... 59. 7. 1:
  - (9) Total, sarplars 91 that they weighed at Bruges in total sacks 140 cloves 29, amounts... 571.12. 5: pi.26
- 2) And the expenditures paid in Bruges, the total expenditures paid to be put in galley, amounts ..., 3.18. 9: pi.12
- 3) And it costs for freight from Bruges to Venice, amounts... 143. 5.10:
- 4) And it costs for the premium of maritime insurance (*avaria*) of galley, grossi 9 for sarplar, amounts... 3. 8. 3:
- 5) And it costs in Venice
  - (1) for weighing at galley 0. 3. 1:

<sup>27</sup> On grossi complida, vedi, Hiromi Saito, The monetary system of Venice, in, *The Italian Commerce and Cities in the Late Middle Ages*, Tokyo, 2002 (written in Japanese).

<sup>28</sup> ASF, Carte Del Bene, n.64, c.161r.t. bis.

- |   |                 |
|---|-----------------|
| (2) to porters who draw from galley and load and unload, place it many times  | 0.11. 9:        |
| (3) we give to the scribe of boats ( <i>navichanti</i> )  | 0. 0. 7: q.2    |
| (4) for brokerage   | 2.18. 4: q.3    |
| (5) for <i>braccia</i> (yards) 510 of canvas  | 1. 3. 1:        |
| (6) for <i>braccia</i> 186 of canvas  | 0. 7. 5: q.3    |
| (7) for 28 good sarplars  | 0. 4. 2: q.2    |
| (8) for lb. [pounds] 193 of rope  | 0.11. 0: q.3    |
| (9) for lb. 23 of string  | 0. 2. 2:        |
| (10) for boats ( <i>barche</i> ) that bring from galley 9 sarplars many times   | 0. 0. 5:        |
| (11) for indigo   | 0. 0. 1: q.2    |
| (12) for making porters go to galley, and stay and make bales 205, and fill sacks [with them] and tie [the sacks], in total, we give to Piastro and company | 0.11. 6:        |
| (13) for nails 8 1/2  | 0. 1. 4:        |
| (14) for loading in boats and flatboats   | 0. 1. 8: q.2    |
| (15) for 21 straw mats ( <i>stuora</i> ) for covering   | 0. 1. 9:        |
| (16) for freight of 40 bales placed at Ravenna  | 0. 6. 6: q.2    |
| (17) for freight and [storage of] unsold ( <i>fondo</i> ) of 153 bales placed at Ferrara, we send in 9 times, in total                                      | 1. 8. 6: q.1    |
| (18) for freight and unsold and all expenditures of 12 bales, placed at Bologna, we send them by guide of Chimento  | 0. 8. 0:        |
| (19) for rent [of room] that we take once   | 0. 3. 4:        |
| (20) for quarters 3 of wine that drink tiers and porters  | 0. 1. 6:        |
| (21) Total, the expenditures paid in Venice on the above mentioned wool, as appears here above and below one by one   | <b>9. 6. 9:</b> |
- 6) The sum total of the costs in the whole, prime cost and expenses, sent from Venice then to Ferrara and to Ravenna, and 12 bales of them until to Bologna, in total **731.12. 1: q.1**

**Case B** (Transport cost from Bruges to Milan by land)<sup>29</sup>

- 1) We purchase from ser Niccholetto Lioni, day 20 of March in the year above mentioned [1338, in the present calendar 1339], at interest of 16 percent, the wool we will say below, at the term [for payment] of months 4.
- (1) 9 sarplars of long wool of England...they weighed at Bruges sacks 9 cloves 11, for marks 15 the sack, amounts...[the value in gold florins is converted into the Venetian monetary units as] **58.13. 8:**
- (2) 5 sarplars of long wool of England, of Kirkham...they weighed at Bruges sacks 5

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29 ASF, Carte Del Bene, n.64, c.178r.

- cloves 6, for marks 13 1/2 the sack, amounts... **29. 6. 7:**
- 2) And it costs in expenditures the above mentioned 14 sarplars, paid in Bruges until to be put in cart, as showed by his [Niccholetto Lioni's] letter, **1. 9. 4:**
- 3) And it costs in expenditure from Bruges to Milan, florins 13 q. (quarter) 1 the sack, calculating sacks 14 cloves 42, with ropes to the expenditure, **19.15. 3: q.1**
- 4) And it costs, that we debit at interest of 16 percent at the term of months 4, that amounts, and in this way we do with him [Niccholetto Lioni], gold florins 168, **17. 1. 0: q.1**
- 5) And it costs in expenditure ... (total expenditure paid in the course from Como to Venice via Milan, Lodi, Pizzighetone, Cremona, Brescello, Borsello, Guastalla, Isollo, Borgoforte, and [territory of] Mantua, along Adda and Po) ..., the sum total of these expenses, **5.14.11: q.2**
- 6) And it costs in expenditure that Ambrogio had paid from Venice to Bologna ... for going to Modena and returning, ... for sacks 6 for making cover to the bales, ... hotel expenses at Bologna where stayed days 8, ... for coming from Bologna to Venice, ... and we give to Bartolo as broker's fee of the above mentioned wool, ... total, ... **0. 9. 10:**
- 7) The sum total for all, **132.10. 8:**

Now, let us calculate the ratio of the transport cost from Bruges to Venice or Milan to the price of English wool purchased in Bruges. To simplify this calculation, let us disregard the sum less than d.1. In Case **A**, transport to Venice by sea, the price of wool is 571.12.5, and the total transport cost is 150.12.10. The latter is composed of 3.18.9 (expenditure in Bruges), 143.5.10 (freight) and 3.8.3 (premium). So, we get the ratio  $571.12.5 : 150.12.10 = 100 : 26.4$ . In Case **B**, transport to Milan by land, the price of long wool is 88.0.3, and the total transport cost is 21.4.7. The latter is composed of 1.9.4 (expenditure in Bruges) and 19.15.3 (freight). So, the ratio is  $88.0.3 : 21.4.7 = 100 : 24.2$ .

In this document, there are four other records of transport by land of English wool to Milan<sup>30</sup>. We have gathered the results of the analyses of these records in the following table, namely the ratio of transport cost to the price of wool.

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30 We transcribed these records. Hiromi Saito, *Alcuni fogli di "Carte Del Bene, n.64" dell'ASF-Documenti registrati dei costi di trasporto di lana e di panni, della prima metà del Trecento*, in, *Journal of the Faculty of Education- Shinshu University*, No. 39, 1978.

transport number (tagged by us)	1 (Case A)	2	3	4	5 (Case B)	6
carta registered the record	161r.t. bis	162t. bis	175r.	177t.	178r.	178t.
date of entry (year. month. day)	1336 Nov. 23	1337 Mar. 10	1338. Dec. 18	1339. Feb. 18	1339 Mar. 20	1337 Mar. 24
place of purchase & sending of wool	Bruges	Bruges	Bruges	Bruges	Bruges	Bruges
place of arrival of wool	Venice	Milan (*C)	Milan	Milan	Milan	Milan
route (by sea or land)	sea	land	land	land	land	land
wool producing area	England	England	England (*D)	England	England	England
sort of wool (*A)	long, lamb, resh.	lamb	(wool)	long	long	long
quantity of wool (sack / clove)	140 / 29	6 / 23	29 / 29.5	19 / 27	14 / 17	51 / 49.5
average price of wool per sack (lb. s. d.)	4. 13. 8	3.15. 7	6. 2.11	5.19.11	6. 3. 3	6. 0. 3
purchase price of wool at Bruges (lb. s. d.)	571.12. 5	24. 2. 3	181. 6. 2	116.13. 1	88. 0. 3	311.10. 6
total expenditure of transport	150.12.10	9. 8. 9	48.11. 3	29. 5. 7	21. 4. 7	78. 7. 5
{ expenditure at Bruges	3.18. 9	0.10. 0	4.15. 5	2.14. 5	1. 9. 4	6. 3. 9
{ freight charge	143. 5.10	8.18. 9	43.15.10	26.11. 2	19.15. 3	72. 3. 8
{ premium	3. 8. 3	x	x	x	x	x
purchase price of wool at Bruges (index 100)	100	100	100	100	100	100
total expenditure of transport (index)	26.4	39.2	26. 8	25. 1	24.2	25.2
{ expenditure at Bruges (index)	0.8	2.1	2.7	2.3	1.7	2
{ freight charges (index)	25	37.1	24.1	22.8	22.5	23.2
{ premium (index)	0.6	x	x	x	x	x
destination of reexport of wool (*B)	Ferrara, Bo., Ra.	Ferrara	x	Ferrara	Venice	Mantua
expenditure of transport in reexport	omitted	0.10. 8 (*E)	x	7. 5.10 (*E)	6. 4.10 (*E)	13.12. 6 (*E)
rate of interest (term of credit : month)	x	15 % (x)	x	18 % (4)	16 % (4)	16 % (4)
sum of interest (lb. s. d.)	x	3.12. 4	x	25.15. 2	17. 1. 0	62. 7. 7

The monetary unit is lb. s. d. of grossi complida of Venice. More than 1/2 grossi has been rounded up, and less than 1/2 grossi has been rounded down.

The calculation error in the document has been corrected by us.

\* A long = long wool, lamb = lamb wool, resh. = resheared wool

\* B Bo = Bologna, Ra = Ravenna

\* C The destination is not expressed clearly in the document, but it is guessed to be Milan. Because the wool is transported to a place not identified by land and then is reexported to Ferrara, so the place must be Milan.

\* D The wool is of Elmet (Yorkshire) and of Lindsey.

\* E The brokerage fee is included in the expenditure.

From this table, we can say that the total cost of the transport of English wool from Bruges to the northern cities of Italy (Venice and Milan) is, with its purchase price in Bruges expressed as index 100, index 24.2~39.1 (average 27.8).

### Conclusion

As mentioned above, following Doren, with the purchase price of English wool in Bruges being index 100, the expenditure of its transport from there to Florence should be index 128~900. However, from our reexamination, the latter index becomes 10.1~75.6 (average 42.8). Following Sombart, with the purchase price of English wool in London being index 100, the expenditure of its transport from there to Florence should be index 160. But from our reexamination, this expenditure becomes index 37.1. Also following Sombart, with its

purchase price in Calais being index 100, its selling price in Milan should be index 215. But, from our reexamination, its expenditure of transport becomes index 27.5 [actually 30.2].

As a result of our analysis of an account book of Buono co., with the purchase price of English wool in Bruges being index 100, the expenditure of its transport to Venice and to Milan are indexes 24.2~39.1 (average 27.8). From these figures, it could be said that our results of reexaminations are approximately correct.

Therefore, it is possible to get right data of the expenditure of transport from the descriptions of *praticas di mercatura*, if we handle them carefully. The descriptions themselves of *praticas di mercatura* are not misleading. Misleading is the groundless prejudice with which even the German erudite scholar Doren blundered. And this prejudice must have been generated from a priori theory of history in fashion at that time.

When we want to consider the world of the Italian merchants in 14<sup>th</sup> century, it seems that Pegolotti is, as Lopez and Raymond suggested<sup>31</sup>, the best guide.

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31 Cfr., Hiromi Saito, La geografia del Pegolotti, in, Mediterranean Studies Group – Hitotsubashi University, *Mediterranean World*, Vol. 15, 1998.