

Consumptions and Incomes in Early Modern Europe A Puzzling Relationship

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Since the 1980s, interest in consumptions in early Modern Europe has risen. A new generation of historians has begun to follow the lines of research undertaken by J. Thirsk, on one hand, and N. Mc Kendrick, J. Brewer and J. H. Plumb, on the other, and to stress the importance of demand in the socio-economic transformation of early modern Europe.¹ Research on England, France, the Netherlands and the American colonies has revealed the 18th century to be an epoch of rise in the consumption of durable goods, favoured by the development of trade techniques and distribution. Historians began to speak of a “consumer revolution”, which preceded the industrial revolution.² This revolution did not only concern durables, but also goods such as sugar, tea, coffee, tobacco and new kinds of textiles, all of which began to be consumed by the lower strata of society as well.³ Economic historians, however, began to emphasize the contrast between the theory of a consumer revolution and the trend of prices and incomes.⁴ Both past and more recent research in this field had in fact highlighted a decline rather than an increase in wages and labour productivity for Europe as a whole, especially during the 18th century. “How could the farmers and artisans afford the luxuries they were buying?”⁵ wondered R. Allen, considering the decline in labour incomes.

There is no doubt that between 1600 and 1800 consumptions in Europe increased in aggregate terms. Since population almost doubled in these two centuries, agricultural and industrial consumptions and trades could not but increase substantially. We can wonder, however, if this rise also concerned per capita consumption, taking into account the remarkable decline in real wage-rates. A clear answer to this question is much more problematic.

¹ Thirsk, *Economic policy and Projects* and McKendrick, Brewer, Plumb, *The Birth of a Consumer Society*.

² Among others: Brewer, Porter, *Consumption and World of Goods*; Perrot, *Le luxe: une richesse entre faste et confort*; Roche, *Histoire des choses banales*; Schama, *The Embarrassment of Riches*; Shamma, *The Pre-industrial Consumer* and Weatherill, *Consumer Behaviour and Material Culture in Britain*.

³ For a general overview, see Clemente, *Storiografie di confine?*, on the different branches of research, see the recent studies by Capuzzo, *Culture del consumo*; Higman, *The Sugar Revolution*; De Vries, *The Industrious Revolution*; Lemire, *The Force of Fashion in Politics and Society*; Berg, Eger, *Luxury in the Eighteenth Century* and North, *Material Delight and the Joy of Living*.

⁴ See, also, the classic works by Abel, *Agrarkrisen und Agrarkonjunktur*, and Braudel, Spooner, *Prices in Europe 1450-1750*.

⁵ Allen, *The Great Divergence in European Wages and Prices*, p. 412.

J. De Vries tried to solve the contrast between these diverging perspectives with the proposal of an “industrious revolution”. Industrious revolution means, in his opinion, a reallocation in the 17th and 18th centuries of family labour time, aimed at expanding the consumption of durables through a higher involvement of the family members - especially wife and children - in labour.⁶ While some researchers tried to support the empirical basis of De Vries’ thesis, others put the whole idea of an industrious revolution in doubt, especially for Southern European regions.⁷

We will follow the example put forward by De Vries and try to show how the increase in some consumption items is not in contrast with decline or stability in labour incomes and, probably, per capita output. The “social” perspective of improvement in living conditions can actually be reconciled with the “economic” perspective of a fall in wages. However, our view will be much less optimistic than that proposed by De Vries. In our opinion, the negative aspects prevail over the positive ones.

The purpose of this paper is to address the topic of consumption in early modern Europe from the perspective of prices, incomes and per capita GDP. We will try to summarize the recent results on these topics and discuss them in relation to the European economy. Since many more data are available regarding both the prices and wages of Southern England and Central and Northern Italy and since both these regions of Europe represent different paths towards modernity, we will focus more specifically on these. After an analysis of prices (§ 1), we will deal with wages (§ 2) and per capita consumption of agricultural goods (§ 3). Having examined the trends of average and marginal labour productivity (§ 4), we will discuss the topic of the consumption of durable goods and the influence on this of the change in working time (§ 5), prices of agricultural and non-agricultural goods (§ 6), volatility of pre-modern incomes (§ 7), then per capita GDP (§ 8). Finally we will suggest (§ 9) how to solve the puzzling question of incomes and consumptions in early modern Europe reconciling the apparently opposing perspectives of social and economic historians (§ 9).

1. *Price indices*

The price trend in Europe in the early Modern Age shows a direct relationship with that of population. Prices rose 2.5 times during the 16th century, declined in the 17th century, and increased again in the 18th century by 60-70 percent.⁸ Over the three and half centuries between 1500 and 1850, the increase for Europe as a whole was 3-3.5 fold, or about 0.30 percent per year. In the 16th century, with the rise in population, prices increased; in the 17th century, population fell in several regions and was relatively stable in others, increasing again in the 18th century when the demographic transition started. Only during the 19th century was the direct relationship between population and prices replaced by an inverse relationship: population grew and prices diminished.

According to the quantity theory of money, -only the amount of money- the velocity of circulation and the expenditure for goods determines the price level.

⁶ De Vries, *The Industrial Revolution and the Industrious Revolution*.

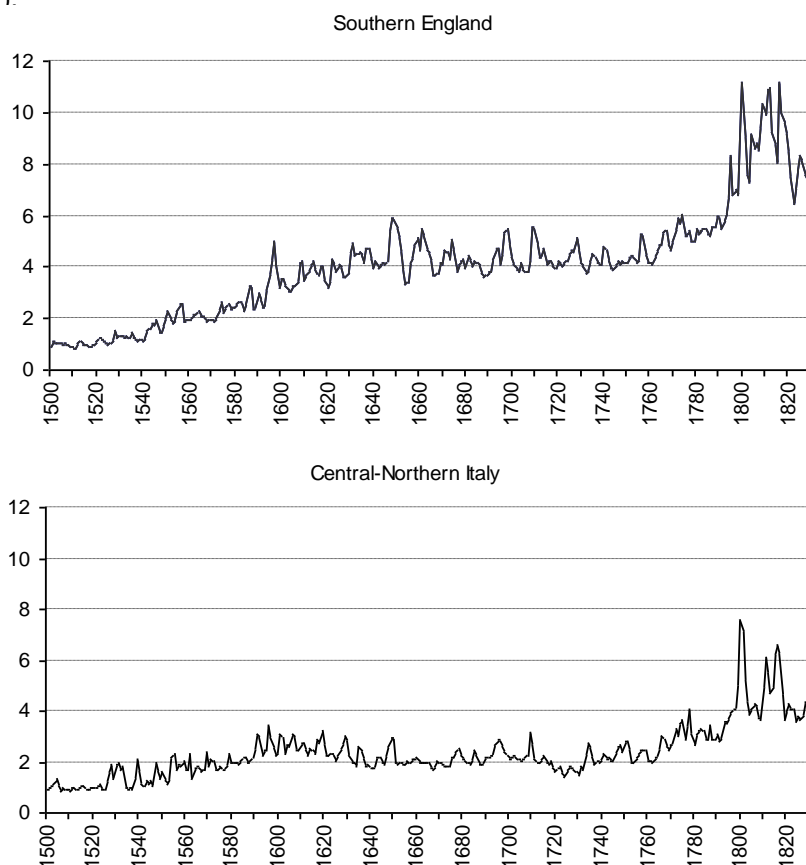
⁷ See Voth, *Time and Work*; Koyama, *The Prices of Time*; Dribe, Van de Putte, *Marriage Seasonality*; Clark, *The Consumer Revolution*; Clark, Van Der Werf, *Work in Progress?*; Ogilvie, *Consumption, Social Capital*; García Zúñiga, *An Industrious Revolution in Catholic Europe?* and Allen, Weisdorf, *Was there an ‘Industrious Revolution’*.

⁸ Allen, *The Great Divergence in European Wages and Prices*, and Malanima, *Pre-Modern European Economy*, Chap. VI.

However, we can suppose that an increase in population implies both an increase in the amount of money and velocity of its circulation and a rise in prices. The increase in the quantity of money contributed substantially to the trend of prices in early Modern Europe.

Consumer price indices for Southern England and Central and Northern Italy, together with some differences in the short term, clearly show the 16th century growth, the 17th century decline and the new rise in the second half of the 18th century. The main phase of the so-called “consumer revolution” occurred during a period of growing prices (Figure 1).

Figure 1. Consumer price indices for Southern England and Central and Northern Italy 1500-1830 (1500-19=1).



Sources: these CPI are based on baskets with the same utility for Southern England and Central-Northern Italy and are different from the available CPIs. Data for England are from Clark, *The Price History*; for Italy www.paolomalanima.it and Malanima, *Wages, Productivity and Working Time in Italy (1270-1913)*. The result for Southern England is very similar to the price index by R. Allen in www.iisg.nl (file on London).

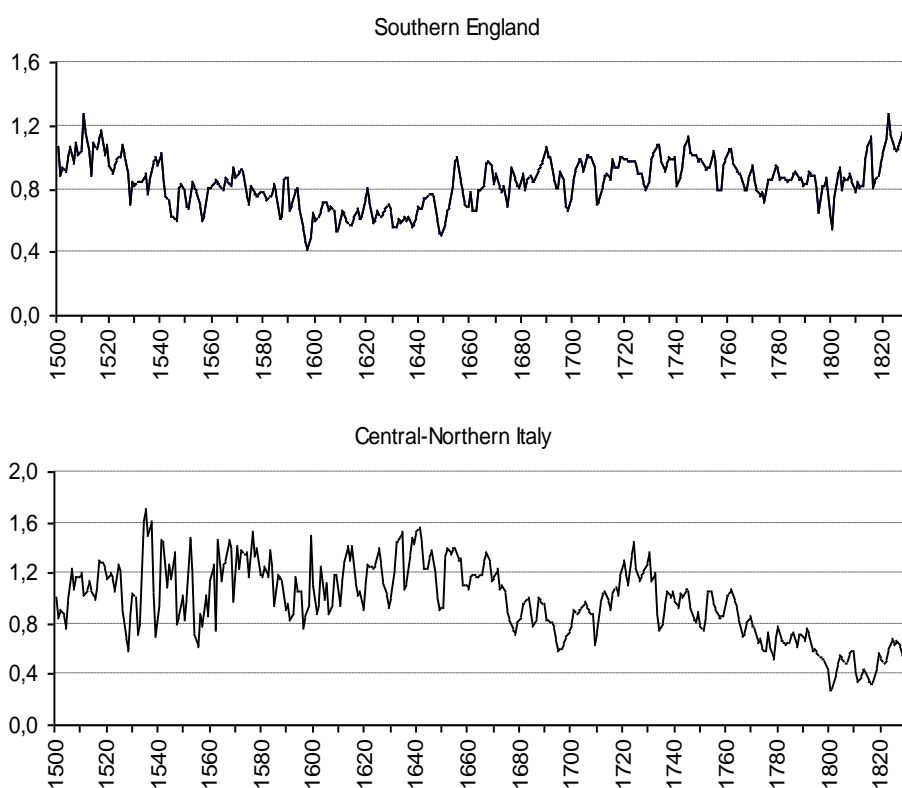
2. Wages

Much more information is available on wage rates (wages per day), than on other kinds of incomes. We do not know how many days workers actually worked and neither do we know the wages themselves (that is the product of the daily wage by the number of days worked in a year). We can look at the wage rates as

proxies of labour incomes as a whole and, consequently, of marginal labour productivity. The best-documented wages are those in the building industry.

The diagrams relating to Central-Northern Italy and England cover the long period between 1500 and 1830 (Figure 2). The Italian trend declines in the second half of the 16th century and, after a recovery due to the fall in population with the 1629-30 plague, declines again and reaches a very low level at the end of the 18th century. The wage curve for Southern England starts from a level lower than that of Italy around 1500 and falls during the 16th century. From the following century, the trend is upward, although in the second half of the 18th century, real wages also diminish in England, if only for a relatively brief period. We see, in fact, that wages rise again in the 1820s. Although different, both curves witness a decline in the 18th century, the epoch in which we are interested.

Figure 2. Real wage rates of masons in Southern England and Central-Northern Italy 1500-1830 (1420-40=1).



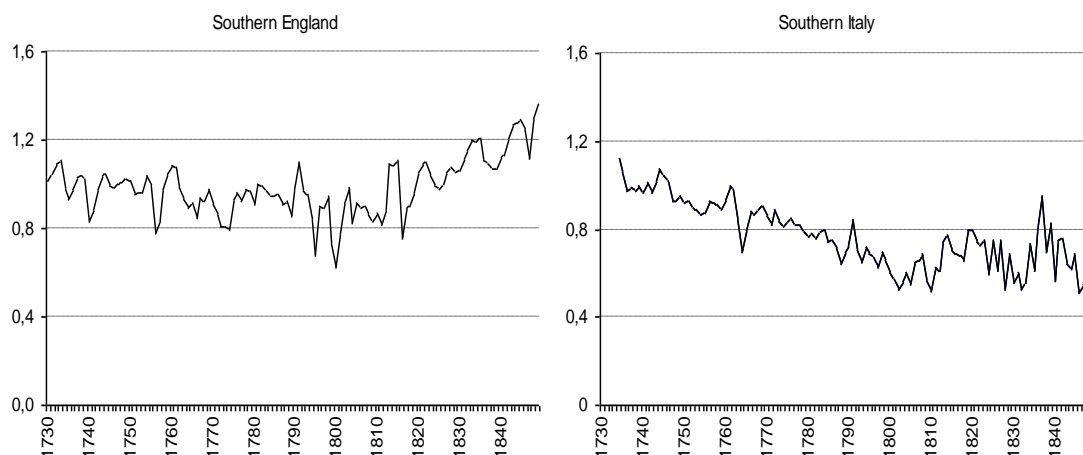
Sources: As for Figure 1

Much less is known about agricultural wage rates than those of industry. Often paid labour was rare in the countryside (in Central and Northern Italy, for example). In many regions of Europe, peasant income was not a wage, but that share of the agricultural product that the peasant family held after payment to the landowner of a rent, in either money or products. Focusing on agricultural wages in the period in which we are interested and looking again at Southern England and Italy (in this case Southern Italy),⁹ the different development is particularly clear (Figure 3). The stability of the agricultural wages in England in the 18th century, af-

⁹ Where waged labour was much more frequent than in Central and Northern Italy.

ter two decades of relative decline, was followed by a remarkable rise from 1820 onwards. The increase between 1700 and 1850 was 50 percent, whereas in Southern Italy the loss was about 40 percent between 1700 and 1850.

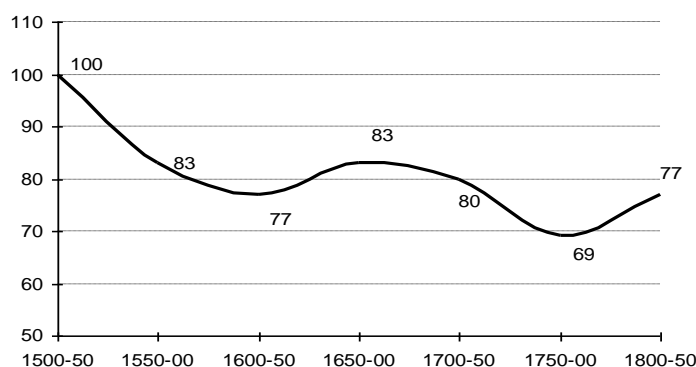
Figure 3. Real wage rates of agricultural labourers in Southern England and Southern Italy 1700-1850 (1700=1).



Sources: data for England are from Clark, *The Price History*, and, for Southern Italy, from Malanima, *Prezzi e salari nel Regno di Napoli* (forthcoming).

Although for England we can avail of copious literature on wages in the early Modern Age, what we know seems to confirm that England was the exception. Average European wages were much nearer the Italian trend than that of England. As may be seen in Figure 4, the wage rates of masons diminished by about 40 percent from the start of the 16th century until the end of the 18th century.¹⁰ A recovery occurred later on, as from the 1820s. Although data on wages outside the building industry are much scantier, we know that the wages of workers in other sectors shared the same trend as the building industry. The interpretation of this trend is that, while population increased, resources per worker diminished, with the consequence that prices were rising and productivity (and hence wages) falling.

Figure 4. Real wage rates in the building industry in Europe 1500-1850 (1500-50=100).



¹⁰ We will see further on that the decline in wages was perhaps less steep than the available curves show, since it was at least in part compensated by changes in the basket of goods the families consumed and increases in working time.

Sources: Allen, *The Great Divergence in European Wages and Prices*, with the changes in Malanima, *Pre-Modern European Economy*, Chap. VI.

3. Consumption of agricultural goods

In pre-modern economies the consumption of agricultural goods, including food and heating but excluding textile fibres, represented 70-80 percent of the aggregate consumption of the lower strata of society. Consumption of agricultural goods by the upper social classes was a negligible share of the total.¹¹

We have already examined the trends of prices and real wages. The rising trend of agricultural goods and the declining trend of real wages suggest a fall in the level of per capita consumption of agricultural goods. An estimate of agricultural consumption per head can be calculated through the following equation:

$$c_a = y^\alpha \cdot P_a^\beta \cdot P_o^\delta$$

where agricultural consumption (c_a) is a function of real¹² per capita income (y),¹³ the real price of the agricultural goods (P_a) and the real price of non agricultural goods (P_o); and where α , β , δ are the elasticities respective to income, to the price of the product i and to the prices of the other goods. While the coefficients α and δ are positive (an increase in income or the prices of the other goods is positively related to the increase in consumptions of the product i), the coefficient β is negative (an increase in the price of the product i is inversely correlated with the consumption of the same product). In both cases, the assumed elasticities are: $\alpha=0.4$, $\beta=-0.5$, $\delta=0.1$.¹⁴

We can compute two series for consumption of agricultural goods in Southern England and Italy by using the series of prices and wages already examined in sections 2 and 3.¹⁵

It can be seen that the results are quite different for these two regions of Europe (Figure 5). A remarkable decline occurred in the 16th century both in Central and Northern Italy and in England. The recovery from 1600 until about 1750 was followed by a new fall: remarkable in Italy, more modest in England. The second half of the 18th century was not a prosperous period. Despite the rise in labour productivity in the 17th century,¹⁶ in England too, "the total available food energy per capita dropped after 1780 as population grew".¹⁷ Whilst calories per capita from food diminished by 25 per cent between 1770 and 1800, they increased from 1600

¹¹ The inclusion of rent in our calculations, on which information is much scantier, would not modify our trends, since consumption of agricultural goods by the big landowners represented a tiny share of total consumption.

¹² The series of wages (representative of income), agricultural prices, and non-agricultural prices are divided by the consumer price index, and thus are real.

¹³ Income is represented by real wage.

¹⁴ Other plausible coefficients of elasticity do not modify our results, as shown in Malanima, *The Long Decline of a Leading Economy*.

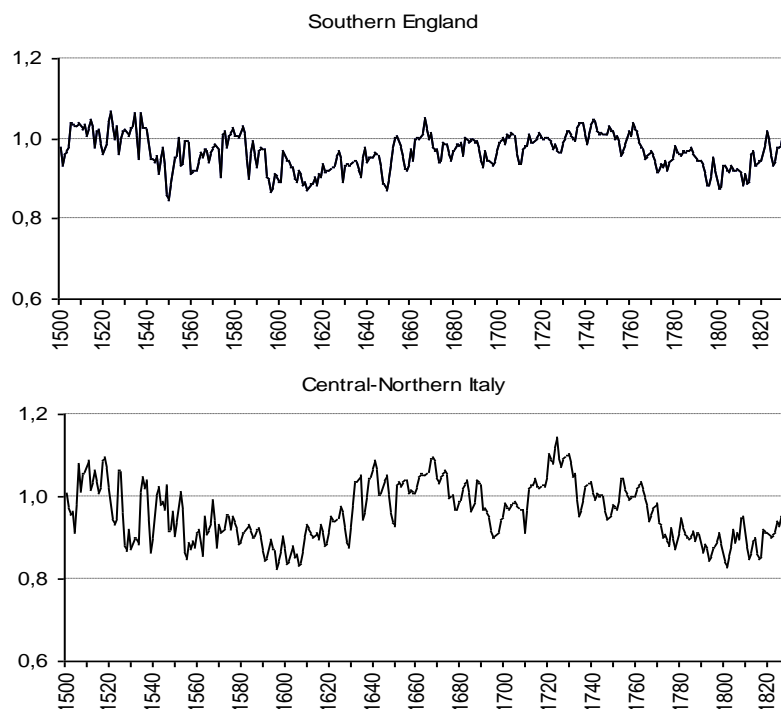
¹⁵ We also need a series of non-agricultural prices to calculate consumption of primary goods. This series will be discussed later (§ 6).

¹⁶ Wrigley, *The Transition to an Advanced Organic Economy: Half a Millennium of English Agriculture*, pp. 453-57.

¹⁷ Muldrew, *Food, Energy and the Creation of Industriousness*, p. 322.

until the first half of the 18th century.¹⁸

Figure 5. Per capita consumption of agricultural goods in Southern England and Central-Northern Italy 1300-1830 (1420-40=1).



Sources: our elaboration of series quoted in Figure 1.

Was Europe, as a whole, more similar to Italy or England? If we take the calculations by R. Allen (with some slight change for Italy) for France and Germany, elaborated through a method similar to that we have just utilised for Southern England and Central-Northern Italy, we see that the decline interested both countries (Table 1).

Table 1. Per capita consumption of agricultural goods in England, France, Germany, Spain and Italy 1300-1800 (intern. \$ 1990 PPP).

	England	France	Germany	Spain	Italy
1300	700				850
1400	950	740	850	820	1,000
1500	1,030	850	740	820	850
1600	950	670	570	670	740
1700	1,050	650	500	770	820
1750	1,090	670	500	670	820
1800	920	670	570	620	700

Sources: Allen, *Economic Structure and Agricultural Productivity in Europe, 1300-1800* (for France, Germany and Spain); Malanima, *The Long Decline of a Leading Economy* (for Italy). For England, the estimate is more recent (the same presented in Figure 5).

This gloomy perspective is confirmed by the information we have on changes in stature. The average height of Europeans diminished by some centime-

¹⁸ Muldrew, *Food, Energy and the Creation of Industriousness*, p. 143.

tres during the 18th century and reached the lowest levels between 1790 and 1820.¹⁹ From direct information on the consumption of carbohydrates, we know that a decline occurred in both quantity and quality. The consumption of bread, wine, beer, and meat diminished. The spread of potato cultivation in Central and Northern Europe and of maize in the South compensated, at least in terms of calories, for the lower bread consumption. Potato and maize are, however, poorer in nutrients than bread. We know that in Italy, and especially in the Po Valley, the increase in the cultivation of maize was followed by the spread of pellagra, an illness determined by the lower vitamin content of maize, compared to that of bread. The spread of these new products contrasted, but only in part, to the fall in consumption as revealed by our previous Table 1, which refers to consumption in money value. In terms of calories if not taste the fall in consumption was mitigated, but certainly not reversed, due to both these goods being much less expensive than wheat.

We know that in the late 17th and 18th centuries new agricultural goods such as coffee, tea, chocolate and sugar began to spread among the high and middle social classes. The trade in these goods was the origin of commercial wealth. However, these products could not counteract the sharp drop in the consumption of many primary goods. Differently from Northern Europe, sugar, coffee and tea did not transform the diet of the Italians!²⁰ While in England, at the end of the 18th century, sugar became a mass-market commodity with a per capita consumption of 1.5 kg, in the Kingdom of Naples, at the same time, consumption was lower than 0.5 kg.²¹ In Italy, in early Modern times, the consumers' basket did not change; with the exception of the increase of maize.²²

4. *The average and marginal product of labour*

If the expense for agricultural goods rises as a share of the family income, little room exists for the growth of other expenses, such as secondary goods and services. Since food expense is inelastic, when its price increases and real income diminishes, the purchase of secondary items and services must fall. This negative view seems, however, to be at odds with the more positive view of the consumption of secondary goods put forward by social historians.

Before addressing this topic, we will summarize in Figure 6 what has just been described. On the vertical axis are represented: average labour productivity (*ALP*), marginal labour productivity (*MLP*) and the level of subsistence (*S*), which is the value of the basket of goods able to support the survival of a worker. This level is always the same and does not increase or diminish with the number of workers. While marginal labour productivity can be equalised to the wage rate, average labour productivity includes, in addition to labour income, incomes from capital (interest) and land (rent). These last forms of income are represented by the difference between *ALP* and *MLP*. On the horizontal axis, we find the number of workers (*L*).

In a pre-modern economy, as long as the number of workers (*L*) increases and resources per worker diminish, then marginal labour productivity (*MLP*) de-

¹⁹ See, in particular, Komlos, *Shrinking in a Growing Economy?*; Komlos, *Nutrition and Economic Development in the Eighteenth-Century Habsburg Monarchy*, and for Italy A'Hearn, *Anthropometric Evidence on Living Standards in Northern Italy*.

²⁰ McCants, *Poor consumers as Global Consumers*, p. 172.

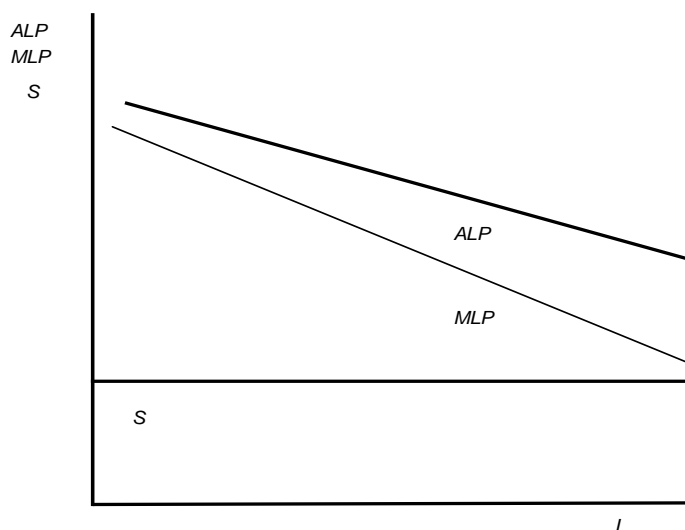
²¹ See Shammas, *The Pre-Industrial Consumer*, p. 76 and Ciccolella, "An almost Necessary Good", pp. 276-77.

²² See the observations by Hersch, Voth, *Sweet Diversity*, pp. 31-3.

creases and approaches the level of subsistence (S). Living standards of the majority of the population deteriorate and consumption diminishes. The rising population implies a decline in the ALP as well. However, it may also be seen that the difference between ALP and MLP increases relatively; as a share, that is, of the distance of ALP from the horizontal axis L . This means that, as soon as MLP diminishes, a redistribution of income takes place and forms of income such as interest and rent rise in both absolute and relative terms.

The classical economists shared a similar opinion: as soon as the number of workers increases and their standard of living deteriorates, income from land and capital rises. What we know about the dynamics of rent in the late Middle Ages seems to confirm the trend presented in Figure 6. During periods of rising prices and falling wages, landowners could enjoy rising incomes because both the wages they paid diminished and the prices of their products increased. When their rents were in money, contracts were renewed in relation to the movement of prices; when leases were in kind, their level was automatically increased by the rise of prices.

Figure 6. Relationship between marginal labour productivity (MLP), average labour productivity (ALP) and labour force (L).



With the fall in agricultural consumptions, that is in the consumption of inelastic goods, it is now hard to explain the increase in elastic consumption goods. In the previous diagram, if we look at the decline of average productivity contemporary to that of marginal productivity, the conclusion is a decline in consumptions and not certainly an increase. Nevertheless, we cannot ignore the evidence collected by researchers and especially social researchers indicating the rising consumption of secondary goods. Their research is in fact, supported by strong evidence on the rise of industrial goods owned by modestly earning families as well, especially in the 18th century.

In a simplified way, Figure 6 shows the declining trend of labour productivity from the late Middle Ages onwards. However, three counteracting forces were working against this downward trend, and this we have now to examine. These counteracting forces concerned:

1. working time;
2. prices of non-agricultural goods;

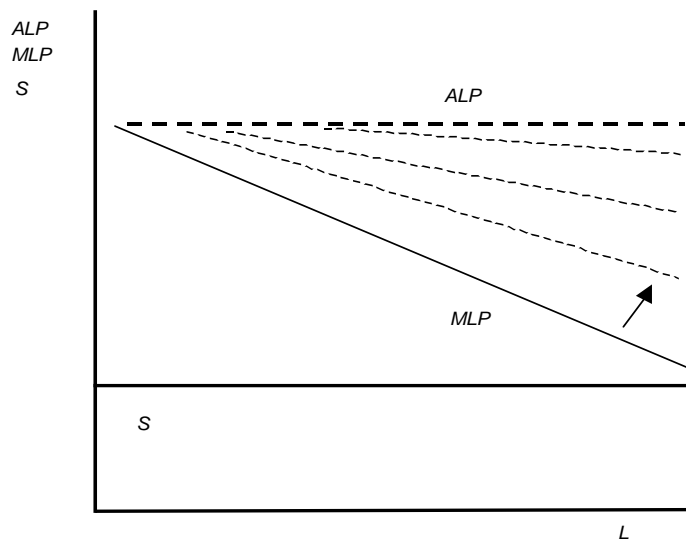
3. volatility of wages.

5. Working time

We have already noted that the series of wages are actually series of wage rates that is wages per day. If, because of the increase in the number of workers and the reduction of resources and capital per worker, both labour productivity and wage per day diminish, families will devote more hours to work increasing both the number of working days per worker and the number of working family members. This is what actually happens in today's underdeveloped peasant economies. As soon as wage per day falls, women and children begin to work.

In Figure 7, we see what simple economic reasoning would suggest. As soon as L rises and both marginal labour productivity and average labour productivity diminish, the economic system reacts, moving in the direction of the arrow in the attempt to keep income far from the line of subsistence. The result can be stability of per capita GDP, despite diminishing labour productivity. The increase in the number of working hours engenders a shift of the lines MLP and ALP instead of a movement along the lines.

Figure 7. Relationship between marginal labour productivity (MLP), average labour productivity (ALP) and labour force (L).



For pre-modern European economies, an indirect estimation of labour time can be made by measuring the value of a subsistence basket. When daily wages approach the price of subsistence, people must work more hours and more people must work. A true *intensification of labour* occurs. However, any estimate of this intensification is far from precise. The number of working days was lower in Italy during the Renaissance than in the 19th century. An indirect calculation suggests a rise from an average of about 150 days in the 15th century, to 200-250 in the 19th century.²³ It is also fair to assume an increase in the participation rate, that is, the ratio of the working population to total population. The number of working days for a farm worker in England has been computed as approximately 150 days in the 15th century and more than 250 days in the 18th century. For a mason the number was

²³ Malanima, *Wages, Productivity and Working Time in Italy*.

less than 200 days in the 15th century and more than 200 in the 16th century, followed by a decline in the 18th century and a new increase to 200 days at the start of the 19th century.²⁴

An “industrious revolution” occurred, to use the expression of A. Hayami²⁵ and J. De Vries.²⁶ However, this revolution depended much more on the need for the family members to cope with a decline in wage rates and living standards than on a reallocation of the “productive resources” by the family “in ways that increased both the supply of market-oriented, money-earning activities and the demand for goods offered in the marketplace”.²⁷ While the view proposed by De Vries is optimistic, the reality seems to have been much less positive. In our view, people were forced to be “industrious”. The “industrious revolution” can be seen as the necessary reaction to the decline in living standards.²⁸ Adam Smith also seemed to share this pessimistic view when he wrote that “in cheap years, it is pretended, workmen are generally more idle, and in dear ones more industrious than ordinarily”.²⁹ The concept of industriousness in pre-modern economies was already clear to the founder of modern economics.

6. *Non-agricultural goods*

In order to meet the inelastic needs of food, the consumption of durables such as textiles, furniture..., must diminish whenever the prices of agricultural goods rise, unless some exogenous change does not occur. The relative decline of industrial prices is one of these changes. We have seen that all prices grew, in the early Modern Age, but they did not share the same rate of increase. In particular, we know that, while agricultural prices grew more than the consumer price indices, industrial prices grew less.

Data on industrial prices are harder to collect and elaborate than data on agricultural goods.³⁰ However, for both Southern England, and Central and Northern Italy, we can avail of the prices of textile goods as proxies of industrial goods. In Figure 8, we present the diagrams of the real price of textiles, that is, the current price of textiles divided by the consumer price index. We see that, during the three centuries under examination, the real price of textile goods diminished (with some recovery only in the 17th century). The fall was meaningful, particularly during the 18th and 19th centuries. In England, while the price index increased by 0.83 per cent per year between 1500 and 1800, the price of nails rose by 0.12 per cent, that of linen-cloth 0.37 per cent, wool cloth 0.37 per cent and bricks by 0.65 per cent.³¹ Information on Belgium and Poland confirms the same trend for non-agricultural goods.³² In France, the price of clothing in 1800 was 20 percent of what it was in 1500 and in the Netherlands 40 percent of what it had been in 1450.³³

²⁴ Allen, Weisdorf, *Was there an 'Industrious Revolution'?*

²⁵ Hayami, *Introduction*.

²⁶ De Vries, *The Industrious Revolution and the Industrial Revolution*, and De Vries, *The Industrious Revolution*.

²⁷ De Vries, *The Industrious Revolution*, p. 10.

²⁸ Allen, Weisdorf, *Was there an 'Industrious Revolution'?*, pp. 722-23.

²⁹ Smith, *The Wealth of Nations*, p. 35.

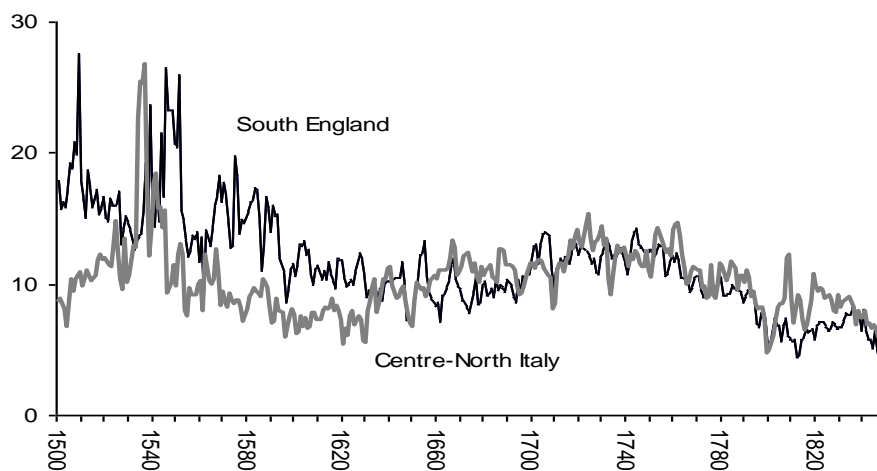
³⁰ It is, in fact, hard to find data always referring to the same product, with the same qualitative features over several centuries.

³¹ Prices of these manufactured items are taken from the series worked out by G. Clark and available at www.issg.nl.

³² See the concise work on Poland by Kula, *Un aspetto particolare del progresso economico*.

³³ Hoffman, Jacks, Levin, Lindert: *Prices and Real Inequality in Europe*, pp. 332-33, 344.

Figure 8. Real prices of textiles in Southern England and Central-Northern Italy 1500-1850.



Sources: as of Figure 1. The current price of textiles has been divided by the CPI for Southern England and Central and Northern Italy.

At the start of the 19th century D. Ricardo had already identified the reason for the different trends of the prices of agricultural and industrial goods. The decline in industrial prices depends on the rise in productivity, always remarkable in the secondary sector, while hard when not impossible in agriculture.³⁴ We also know that in the primary sector notable changes in productivity occurred in the 19th century. In pre-modern economies, it was different. Since productivity stagnated, the consequence was the relative rise in the prices of agricultural goods in epochs of rising population and, in contrast, the relative decline in the prices of industrial goods. In Italy, for instance, productivity growth in the silk sector resulted in a remarkable decrease in the prices of silk products. While in the late Middle Ages only kings, popes and the aristocracy could afford silk goods, in the 18th century these were affordable even to families of lower social classes in both rural and urban areas. In this sector, rise in productivity derived from improvements in the wider cultivation of mulberry trees, from increased productivity in the various phases of the productive process and from changes in the kind of textiles produced.³⁵

This trend favoured above all the high and medium strata of society, especially in the cities. Rich families could take advantage of rising rents and diminishing prices of secondary goods and expand their luxury consumptions.³⁶ The rising magnificence of the aristocratic consumption of durables characterizes European civilisation during the 17th and 18th centuries.³⁷ Thanks to the research on probate inventories, we know that modest families in both the cities and countryside also began to own some “luxury” items: glass at the windows became frequent in the 17th and 18th centuries, textile goods more numerous and fine, tableware and

³⁴ Ricardo, *On the Principles of Political Economy and Taxation*, Ch. 5.

³⁵ Battistini, *L'industria della seta* and Battistini, *Seta ed economia*.

³⁶ Hoffman, Jacks, Levin, Lindert, *Real Inequality in Europe since 1500*, and Hoffman, Jacks, Levin, Lindert, *Prices and Real Inequality*.

³⁷ Girouard, *Life in the English Country House*; Pinchera, *Lusso e decoro* and Stone, *The Crisis of the Aristocracy*.

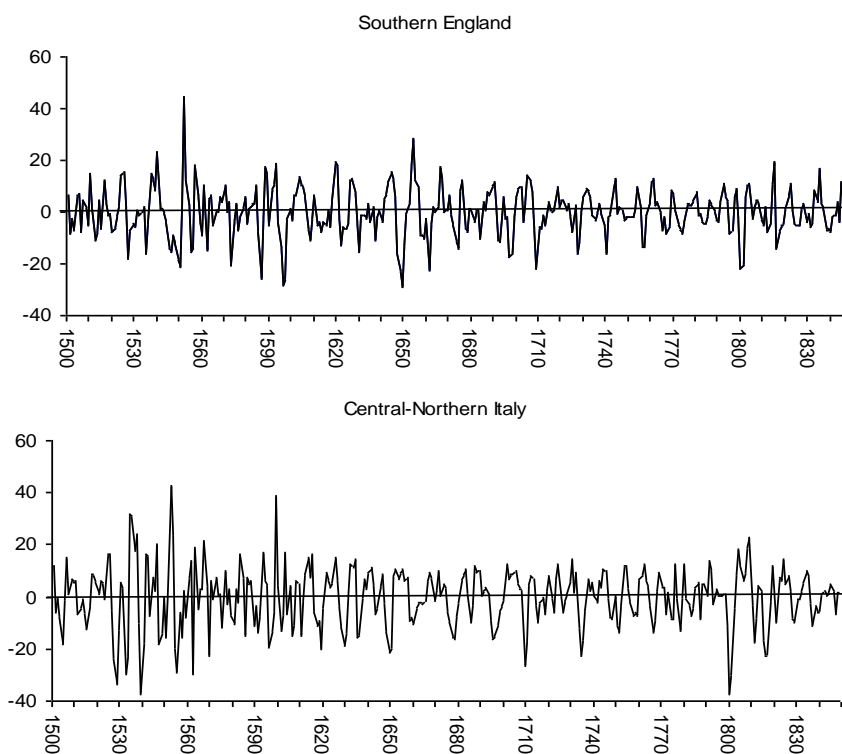
kitchenware more plentiful.³⁸ Pieces of furniture in the homes in both towns and rural villages increased in number.

Assuming that some 10 per cent of the average income was devoted to the purchase of secondary goods, the decline in their prices might imply an increase of real consumption even though in value a fall seems more plausible than a rise.

7. Volatility of prices and wages

Volatility of prices and, as a consequence, wages, characterized past agricultural economies. Since price indices are widely influenced by the conjuncture of agricultural prices and since agricultural harvests were heavily struck by short-term climatic changes, significant variations characterized the incomes of the population. The limited market integration might have contributed to the volatility. The coefficient of variation of our price indices in the three centuries spanning 1500-1800 is between 14 and 30 per cent, for both Italy and England.³⁹

Figure 9. Deviations of wage rates from the trend in Southern England and Central-Northern Italy 1500-1850 (%).



Sources: as Figure 2.

Note: the trend of wages is calculated by the Hodrick-Prescott filter.

³⁸ Ago, *Il gusto delle cose*; Berg, Eger, *Luxury in the Eighteenth Century*; Malanima, *Il lusso dei contadini*; Muldrew, *Food, Energy and the Creation of Industriousness*; Nenadic, *Middle-Rank Consumers and Domestic Culture in Edinburgh and Glasgow*; Roche, *Histoire des choses banales* and Weatherill, *Consumer Behaviour and Material Culture in Britain*.

³⁹ For 16th century England it is, however, 72 per cent.

If we look at the diagram of the percentage deviations of wage rates to the trend of the indices of real wages for Southern England and Central-Northern Italy, we see how discontinuous the profile appears (Figure 9). In several years, during the 17th and 18th centuries, wages were both much higher and lower than the trend. The purchase of durables did not determine a daily expenditure like the purchase of agricultural goods. Years of plenty and high wages could provide the opportunity of purchasing some durables such as pieces of furniture, textile products, even paintings... Once purchased, these products, remained in the same homes for several years and sometimes generations. To the scholars of probate inventories this slow accumulation of goods can suggest an increase in the level of wealth. Often, however, these goods resulted from small purchases over long periods. People in the past had not only to be laborious, but also thrifty. Probate inventories actually witness the stock of goods owned by a family and not the flow of purchases.

8. Per capita GDP

Consumption is primarily a function of income. So far we have dealt with a part of the aggregate income: wages. We will now look at GDP as a whole.

Although attempts have been made in recent years at quantifying per capita GDP for several European pre-modern states, much is still to be done. No consensus presently exists in this field of research, neither on methods nor on results. The data in Table 2 has been calculated using diverse methods.

Table 2. Four series (and indices) of per capita GDP in Europe from 1500 to 1800 (intern. \$ 1990 PPP).

	1	Index	2	Index	3	Index	4	Index
1500	798	100	1,105	100	1,223	100	1,347	100
1600	908	114	1,103	100	1,204	98	1,246	93
1700	1,033	129	1,177	107	1,242	102	1,387	103
1800-20	1,245	156	1,175	106	1,323	107	1,346	100

Sources: 1. Maddison, *The World Economy. Historical Statistics*, p. 59 (data refers to 12 Western European countries);

2. Van Zanden, *Una estimacion del crecimiento económico en la Edad Moderna*, p. 27 (the conversion into intern. dollars 1990 PPP has been done on the basis of Maddison, *The World Economy*, relating to 1820);

3. Alvarez Nogal, Prados de la Escosura, *Searching for the Roots of Retardation*; Alvarez Nogal, Prados de la Escosura, *The Decline of Spain (1500-1850)*.

4. Malanima, *Pre-modern European Economy*.

We have already seen that, according to the indirect method proposed in the previous pages, per capita consumption of agricultural goods diminished from 1500 to 1800. Is it possible that the growth of the non-agricultural sectors was able to offset this decline? The rise of urbanisation in Europe between 1500 and 1800 from 5.6 to 9.0 percent (considering as cities the centres with more than 10,000 inhabitants) would suggest a modest change in favour of the non-agricultural sectors.⁴⁰ The spread of proto-industrial activities in the countryside provides further support to this hypothesis. The rate of growth of workers employed in non-agricultural sectors was higher than that of population.

⁴⁰ Urbanisation data are from Malanima, *Urbanisation 1700-1870*.

As may be noted, these series on per capita GDP present a relatively wide range of values for 1500, from 800 to 1,350 international 1990 dollars PPP (with a difference of 70 per cent between the minimum and the maximum). If we exclude, however, the relatively low estimate in column 1, we see that the range diminishes to about 10 per cent (always for 1500). We see also that, with the exception of the series in column 1, proposed by Maddison, the other estimates seem to suggest a stability of per capita GDP in early Modern Europe, rather than a rise. There was certainly some change in the balance between agriculture and secondary and tertiary sectors. However, according to recent research, the early Modern European economy appears more stable than we assumed two decades ago; at least from the point of view of per capita GDP. We know that social historians of consumption would be more comfortable with slow growth in early Modern Europe than with stability and that this view is supported by micro-historical research on the purchase of goods, particularly durables, by the nobility, middle classes and modest families. Nevertheless, we have to remember that series of GDP always refer to values in money, although deflated through price indices and that, yesterday, as today, industry is the sector where increases in productivity and decline in prices are higher than in the primary and tertiary sectors. Data concerning GDP hides the increase in consumption due to this change in prices. Today industrial production as a share of GDP is declining in Western Europe and other developed economies. At least in part, this is the consequence of increases in productivity and the diminishing price of many industrial goods. The relative weight of the industrial product on GDP is shrinking. It was the same in the past.

Not only was a slow structural change in progress in the composition of GDP but there was also a change in the balance of economic areas, with a decline of Southern and some rise in Northern Europe and especially England.⁴¹ Needless to say, in this case our data are only tentative (Table 3).

Table 3. Indices of per capita product in England, The Netherlands, Germany, France, Spain, Italy between 1500 and 1800 and estimates of per capita GDP (1500=1 and \$ Intern. 1990 PPA).

	England	Netherlands	Germany	France	Spain	Italy
1500	1.00	1.00	1.00	1.00	1.00	1.00
1600	0.95	1.16	0.94	0.98	0.99	0.81
1700	1.33	1.34	0.99	1.08	0.99	0.88
1750	1.51	1.41	1.02	1.13	0.90	0.94
1800	1.42	1.28	1.02	1.05	0.90	0.81
	England	Netherlands	Germany	France	Spain	Italy
1500	1,420	1,600	1,220	1,330	1,450	1,600
1600	1,350	1,850	1,150	1,300	1,440	1,300
1700	1,890	2,150	1,210	1,440	1,430	1,400
1750	2,150	2,260	1,250	1,500	1,300	1,500
1800	2,010	2,040	1,250	1,400	1,300	1,300

Sources: Malanima, *Pre-modern European Economy*, Chap. VI.

We see from these series that from 1500 to 1800, while the English and Dutch economies were growing relatively, and while the Central countries of Europe such as Germany and France were relatively stable, the Southern-Mediterranean economies of Spain and Italy were declining. We think that this view

⁴¹ See the forthcoming article by Nuvolari, Ricci, *Economic Growth in England 1250-1850*. Muldrew, *Food, Energy and the Creation of Industriousness*, p. 323 stresses that “the English labourers were even better off than those in Southern Europe, India and China than already suggested by Allen”.

more or less coincides with what we know about the levels and trends in consumption. In countries such as England and The Netherlands consumption seems to have progressed more than in Central and Southern countries.

9. Conclusions

We have attempted to reconcile the view of a growth in consumption in early Modern Europe, as put forward by social historians, with the quantitative economic approach to prices, wages and incomes by economic historians. Our results are that per capita consumption of agricultural goods was declining while consumption of durables was increasing in real terms. Overall, we could speak of a stability of consumptions per capita (food plus durables) or modest increase from the early 16th century to the late 18th. This stability or modest increase hides, however, important changes. These were represented by the intensification of labour (a “forced industrious revolution” was in progress) and the functional redistribution of income to the advantage of landowners and especially big landowners (the nobility). The relative decline in prices of industrial goods contributed to the spread of consumption of durables among the medium and lower social strata in years of plenty. Although apparently contradictory, the results by social and economic historians are not as conflictual as it might seem. Especially if considering a long-term perspective.

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