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*In kind wages between city and countryside:
Northern Italy in the eighteenth century*

1. Introduction

The paper aims at clarifying the characterisation and the role played by in-kind payments in wages' composition both in the cities and in the countryside in eighteenth century Northern Italy. This is a crucial issue, given that wages' level has been widely used in order to support relevant theories, such as the debated explanation proposed by Allen of the English industrial revolution exactly because of being an «high-wage economy» (Allen 2009; 2015), or the related thesis of the Little Divergence between Mediterranean and Northern Europe in the Early Modern period (Allen 2001; Malanima 2013). Clearly, a different consideration of the in-kind part of the wages can lead to a reconsideration of the wage levels themselves and, therefore, entail a revision of these theories. In order to contribute to the problematization of these hypothesis, we will move from Northern Italy, using case studies mainly from Bologna, Padua, and Milan, and their countryside. The choice to focus on Northern Italy and on these specific areas lays on two main points, besides the availability of sources: first, Northern Italian wages (including the Milanese ones) have already been used as a term of comparison with the English ones in order to propose a chronology of the Little Divergence (Malanima 2013; Rota and Weisdorf 2021). Therefore, our contribution places itself in a well-established debate. Second, as we will state in the following pages, the choice of these case studies allows at observing the relevance and the composition of the in-kind part of the wages in different demographic and economic contexts. This is clearly important not just for the comparative potential of the paper, but mainly because by that way our findings become representative of the various contexts that were included in the Early Modern Northern Italy.

At least since the eighties of the last century historians have abandoned the idea that non-monetary transactions should be considered as the heritage of 'backward' societies, within a teleological process of market growth in which money would prevail (Ciriaco 1985); in the Italian area, the essays included in the volume 6 (*Economia naturale, economia monetaria*) of the annals of the *Storia d'Italia*, edited in 1983 by Ruggero Romano and Ugo Tucci, clearly summarize this important historiographical step in the interpretation of the ways in which people – in the pre-industrial period, but also later – exchanged goods and services. About wages, exactly the introduction by the editors underlined the relevant lacks in the Italian historiography, charged of «forgiving, obliterating, *escamoter* every trace of natural

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economy, as it were a poor relative, or a family member affected by a shameful sickness»¹ (Romano and Tucci 1983, XXIV). The consciousness of the importance of the so-called ‘natural economy’ even in societies in which monetary transactions were predominant, and its not being maidservant of the more developed ‘monetary economy’ but playing just a different – and often intertwined – role was clearly a great step forward in the interpretation of historical economies. However, unfortunately, at least from our point of view it has been scarcely adopted in practice in the researches that focused on wages, especially in the ones that aimed at the creation of long-run datasets of nominal and real wages. In brief, in the collection of the archival data – a operation that, using Marc Bloch’s words, is not just a photograph of a society, but already an interpretation (Bloch 2019, 75) – and in their analysis the in-kind part of the payments remained a ‘poor relative’ almost always forgiven. Recently, Hatcher and Stephenson (2018, 4; Hatcher 2018, 17, 19, 40, 47; Muldrew 2018, 167; Mocarelli and Ongaro 2019, 81) underlined that one of the main biases in the reconstruction of wage series is exactly the absence of the in-kind part of the payments. This quite generic definition includes various elements that are usually left out from the estimations: the real in-kind component of the wages, that together with the in-cash part built up the daily or yearly sum due to the worker for the accomplishment of a specific task; the non-monetary rewards and supplements; the food, drink, clothes, and lodging that often the employers supplied to the workers. In summary, a very variegated and variable spectrum of products that is frequently difficult to trace in the archival documents and to quantify – and therefore many scholars have been in a certain way ‘forced’ to left it out from quantitative reconstructions. However, the scarce traces left behind do not mean that the products (foodstuffs, clothes, and so on) that the workers received were irrelevant in the definition of their incomes, as we will demonstrate in the following pages. Certainly, however, it means that it is very difficult to supply precise figures of the total wages. Indeed, in this paper we will provide some approximate estimations of the in-kind and total amounts that the workers received in various contexts, periods, and for different tasks; therefore these information can be useful just for adjusting existing wage series, for re-evaluating the trends of remunerations in specific areas and historical periods, and especially for the understanding of the negotiation between employers and employees, the purchasing power of the population and, broadly, the living standards. Indeed, as we will demonstrate, not only a more correct evaluation of the in-kind part of the wages leads to a (relevant) redefinition of the wages’ level in the Italian cities and countryside, but it also shows how, together with other elements (such as the presence of the public victualling institutions), the supply of foodstuff and wood to the workers strongly affected not only the *level* of the purchasing power, but also its *stability* across time. We think that these are very relevant achievements, especially considering that for the Italian areas such evaluations are almost entirely lacking; if we look to the existing historiography, urban wage series – both nominal and real – include exclusively in cash wages

¹ Original sentence: «Si trattava dunque di dimenticare, obliterare, *escamoter* ogni e qualsiasi traccia di economia naturale, quasi si fosse trattato di un parente povero o di un membro della famiglia affetto da una malattia vergognosa».

(Malanima 2013; Federico and Malanima 2004, 441; Rota and Weisdorf 2020), even not specifying if the in-kind part lacks because of its irrelevance or, more practically, because it was not possible to estimate it. Moving from the cities to the countryside the picture is less desolate, but still, in our opinion, unsatisfying: the real wages proposed by Federico and Malanima (2004, 441-442) for Central-Northern Italy, besides supplying just one level of wages for the entire rural population, refer just to 'money wages' (441), therefore completely ignoring the in-kind part of the payments that especially in the countryside was quite significant. More recently Mauro Rota and Jacob Weisdorf (2021, 456-458) directly tackled the problem, admitting that «the sampled wages [presented below] are far from perfect. The sample size is relatively modest, and the sources are occasionally lacking when it comes to revealing workers' ages, managerial responsibilities, and payments in kind» (456). At the same time, they recognized that «a central problem is that both stable and casual workers often received food and drink as part of their payments in kind [...]. Regardless, and as in tradition, payments in kind need to be monetized added to the workers' cash payments in order to determine their overall remuneration» (458). The way that the two authors found to solve this gap was, basically, the calculation of the difference between the cost of Malanima's 'respectability' consumption basket (that, in addition, is an *urban* and not a *rural* consumption basket) and the level of in-cash wages, identifying in the resulting sum the in-kind payment (458-459). The attempt is certainly praiseworthy, at least because Rota and Weisdorf did not sweep under the carpet the problem, and they tried to solve it, and the results they obtained in the evaluation of the share of in-kind and in-cash payments in the total wages are for a large part confirmed by this paper. However, how can we assume that the in-kind part of the rural wages allowed at reaching the cost of the 'respectability' consumption basket? On the one hand, in this way we would appoint to the wage an effectiveness in terms of purchasing power that has to be proven, especially considering the very relevant role that self-production and self-consumption that almost certainly characterized the rural environment. On the other hand, conversely, we would predetermine that wages allowed *just* to cover the cost of a 'respectability' consumption basket for an adult male, without considering the possibility that wages would allow at obtaining extra earnings beyond the level of subsistence. This would, therefore, impede also to observe potentially relevant changes in wages level and consumption patterns across time. Conversely, implying no changes in monetary wages level, and the in-kind part aimed just to reach the subsistence level, we would obviously assume that changes in consumption patterns, according for example with de Vries' 'industrious revolution' (de Vries 2008), would be based just on the increase in working time (Allen and Weisdorf 2011) and not, maybe, on an increase of the in-kind part of the salary that could have 'freed' cash for other market products. More, this approach completely neglects the fact that a single worker's wage could be built up not just for his own nourishment, but maybe also for the sustenance of his family, or for having products to be sold on the market. In short, more precise estimations are needed, and this is exactly what we are going to propose in the following pages. The first part of the paper, after a description of the case studies and of the sources, will propose some figures to understand which was (approximately) the level and the

percentage of the in-kind part of adult male wages² in Northern Italy's cities and countryside, also observing how these figures changed according to the various tasks to be accomplished. We will also analyse possible changes of the values across time and in different areas. Clearly, even if the sources we found allow at more precise estimations compare, for example, to Rota and Weisdorf ones, we share the same problems linked to the faultiness of the archival documents; therefore, we will specify in our estimations where it has been possible to include all the payments in kinds (the completing part of the monetary wage, the rewards and supplements, the food and lodging) or just some of them.

We will also characterize the in-kind part of the payments, observing which products and in which amounts the various workers received; we include in our analysis both the stable and the casual workers, to supply an as exhaustive as possible overview. The quantification of the amounts of products received will allow as also to propose some considerations on the aim of the in-kind part of the wages: was just directed to the satisfaction of the basic food needs of the labourer or did it allow also at supplying with wood and foodstuff his family, or to sell the exceeding part on the market? Finally, the characterisation of the in-kind part of the payments means also to understand if it was a fixed amount of products or of their value (i.e., varying amounts according to prices), or if it varied according to the needs of the worker.

This last element will introduce us to the second part of the paper, the more 'qualitative' one. Basically, we will observe more in depth the variability of the goods that the workers received, even if at a first look the amounts and their value could seem static across time: on the contrary, we will demonstrate that, for example, even if the workers should receive daily a fixed unit of bread (one loaf, in the case of Bologna) for a fixed cost, the weight of the loaf changed, and so its caloric supply. More, even if we are used to think that daily workers received their salary just in the days of effective work, they could receive not only the monetary wage, but also the foodstuffs also in the days they did not work for religious or climatic reasons. Finally, another clarification refers to the quality of the products (and, therefore, their economic value) that the employers supplied to their workers. This is very important especially if we consider the abovementioned sentence by Rota and Weisdorf: payments in kind need to be monetarized, and the easiest way to do this, if we know the amount of products supplied, is to use the current market prices in order to estimate their value. However, we will show that often workers – especially the casual ones – received very low-quality products, if not overtly spoiled ones. This means, besides a probably lower nutritional intake, a lower market value, that clearly affected the general level of wages.

In the conclusions we will summarize the achievements of the paper and their contribution for the methodology to be used in the construction of long-run wage series. Besides the 'quantitative' element, we will also recap how the above-mentioned analysis helps in understanding the processes of wage formation, the negotiations between employers and employees, up to our comprehension of the pre-

² We also found some interesting data on female and child employment, showing the differences in monetary wages, but unfortunately without any reference to potential difference in the foodstuffs supplied. Therefore, we did not include in this paper the above-mentioned data.

industrial living standards. Specifically, we think that one of the main contributions is the re-evaluation of the way people achieved the foodstuffs and the products they need to survive, especially in terms of the role played by the in-kind wages – together with the presence of the public victualling institutions – in lowering the strong fluctuations in the purchasing power of the population. Indeed, if the *Annone* helped in stabilising the prices, lowering their volatility (i.e., affecting the supply side), the fact that up to half of the salary was in kind meant a parallel stabilising of the wages' fluctuations (i.e., the demand side).

2. The case studies and the sources

The data and the information that will be presented in the following pages are the results of extensive research in mainly three areas of Northern Italy: the cities of Padua, Bologna, and Milan, and their countryside. Therefore, different environments first in terms of demographic size of the two cities: the *Anagrafi Venete* describe between 1766 and 1775 around 30.000 inhabitants (pp. 317-318) in Padua, while Bologna maintained during the eighteenth century a population between around 64.000 and 70.000 inhabitants (Dal Pane 1999, 20; Bellettini 1985, 14). Finally, Milan was one of the 15 most populous European cities during the entire Early Modern period, and specifically its population was 124.000 inhabitants at the beginning of the eighteenth century and 135.000 in 1800 (Alfani and Percoco 2019). Other differences refer to the countryside, especially in terms of agrarian structures. The leasing of lands characterized the Paduan countryside: the three families analysed in this paper rented out plots of average dimensions between 1 and 9 acres that, therefore, allowed just the survival of a family of farmers (and even not too numerous). The landowners collected their rents in cash and in kinds (almost entirely wheat) and cultivated directly just a very small part of their lands – that, however, could be cultivated also with lucrative market products, such as rice (Ongaro 2023). On the contrary, the countryside of Bologna was organized according to the 'classic' sharecropping (Poni 1963; 1982). Plots were suitable for the cultivation by a large family of farmers, being usually of around 37-50 acres (Cazzola 2002, 246; Cattini 1978, 868), and the production was diversified in order to assure also the covering of the needs of the sharecroppers' families: in short, grapes, wheat and hemp were the main products harvested and they were equally (at least theoretically) divided between the landowners and the sharecroppers, such as the expenses for the seeds, the livestock and, broadly, the maintenance of plots. Finally, the agrarian landscape of the Milanese area was characterized by proto-capitalistic farms, leased by large tenant farmers, with capital-intensive and market-oriented cultivations (rice, wheat), at least in the southern part of the Lombard region (Zaninelli 1964; 1986; Coppola 1978; 1983; Aiello, Bascapè and Reborà 2013). These information are important because, clearly, different demographic dynamics and economic structures could have affected in different ways the process of wage formation, also in terms of amount and characterization of the in-kind part of the salary.

The research that will be presented in the following pages relies on an extensive collection of data from the private archives of noble families and of charitable

institutions. About Milan, documents have been produced also by public officials and foremen in public building sites.³ In the State Archives of Padua, we went through the accounting books of three families: the Selvatico family for the period 1700-1716 and 1739-1787, the Obizzi family (1711-1713, 1720-1758, and 1777-1781), and, even if for a very short period, to the Frigimelica family (1770-1777).⁴ All these families owned large estates especially in the southern part of the provinces of Padua and Vicenza and in the northern part of the province of Ferrara. As anticipated, they mainly rented out small plots to peasants, but they also cultivated directly part of their landed properties (even if very small plots) with market-oriented productions, such as wheat and rice. Given that we used both the domestic accounting books and the rural ones, it has been possible to collect information on wages' level and composition of both urban and rural workers. Referring to the formers, we have been able to put together wages' series the keeper of the Obizzi's theatre, the secretary, the gardener and deputy-gardener, the assistant chef, and in the case of the Selvatico the entire *famiglia di casa* (i.e., the domestic servants). Moving to the countryside, analogous series have been built up for the daily workers, the rural stewards and deputy-stewards (*gastaldo* and *sotto gastaldo*), farmers (*fattori*), herdsmen and herdsmen-in-chief (*bovaro* and *primo bovaro*), stable hand (*canallaro*), and the shepherd. Data are sometimes incomplete or aggregated (such as in the case of the Selvatico's domestic servants), so they are only partially useful in order to create long-run wage series, indicating the exact salary collected by each category of worker; however, they allow at estimating (at least under-estimating, where lodging and food are not included) the role played by the in-kind part in the process of wage formation. Given that we argue that in the existing historiography there is a strong underrate of the in-kind payments in the calculation of nominal wages, the fact that the series that we will present in some cases clearly underestimate these payments is not a limit but even a confirmation of our assertion.

Similar observations refer also to the data collected in the Bolognese case study. In this case too we went through the urban and rural accounting books of noble families: the Bianchetti-Monti (1759-1790), the Salina-Amorini-Bolognini (1734-1745, 1770-1786), the Scappi-Ariosti (1701-1702, 1720-1769), the Pepoli (1714), and the Boschi (1738-1795).⁵ Differently from Padua, however, in the case of Bologna we collected data also from the accounting books of the hospital Santa Maria della Vita (for the period 1745-1762), the girls' school of San Giuseppe (1714-1718), the orphanage of San Bartolomeo (1746-1772), the pilgrims' lodging of San Francesco (1703-1716, 1777-1789), and from the *Fabbriceria di San Petronio* (1700-1799), i.e. the

³ Historical Archives of the Municipality of Milan (ASCMI), *Località milanesi, Acque*.

⁴ Ledgers are preserved in the State Archives of Padua (ASPD), archival collection Selvatico, sub-collection Frigimelica, folder 436; archival collection Obizzi, folders 515-516, 527-535, 542-545, 548-554, 562-563; archival collection Selvatico, sub-collection Selvatico, folders 1185-1186, 1243-1245, 1264-1265. The data has been collected thanks to the important work by Rachele Scuro.

⁵ Accounting books are in the State Archives of Bologna (ASBo), archival collection Bianchetti-Monti, folders 75-101; archival collection Salina-Amorini-Bolognini, folders 397, 399, 401, 403, 405, 407, 409, 411, 413, 415, 417, 419; archival collection Scappi-Ariosti, folders 212, 214, 216, 218, 220, 222, 224, 298; archival collection Pepoli, folders 12, 1386-1387, 4000-4015; archival collection Boschi, folders 485, 487, 489, 491-492, 495-496, 499, 501.

institution that managed the construction and the maintenance of the Bologna's cathedral.⁶ The extension of the archives included in the analysis means a similar increase in the categories of workers taken into consideration: besides rural day labourers and *fattori*, we have been able to trace the payments to the construction workers (bricklayers and unskilled workers) in the countryside, while in Bologna we collected data on domestic workers (storekeepers – *canevari*, secretaries, servants, chef) and bricklayers, together with the employees in the charitable institutions, such as the church's guardian, nurse and nurse-in-chief, and of the pilgrims' lodging keeper. The enlargement of the number and of the types of workers included in the analysis is crucial in order to understand how different wage levels and tasks' responsibilities affected the amount and the characterisation of the in-kind part of the payments. More, while almost the entire historiographical production on wages – especially when producing long-run wage series – refers to urban bricklayers (at best skilled and unskilled ones), the occupational structures in the cities and countryside were far more articulated. Just to make some examples referred to the case studies included in this paper, in Bologna between 1806 and 1815 (so, chronologically close to our research) 3.11% of the population were «Landowners without any profitable business», 48.43% «Artisans and manual workers», 10.99% «Shopkeepers», 13.02% «Professionals» and 24.45% «Servants, governesses, Hofmeister, coachmen, stable hands, and so on» (Dal Pane 1999, 22). Therefore, our data help to cover, at least partially, especially this last category of workers. In Padua, according to the *Anagrafi Venete* (Schiaffino 1980), between 1766 and 1775 on average around 8.5% of the working population were nobles, 3.8 were «Citizens who live just of earnings», 3% professionals, 7.9% «Professors of liberal arts», 3.5% merchants, 13.2% shopkeepers, 46% «Artisans, manufacturers, workers and shop boys», and 14% «Butlers, chefs, grooms, and lackeys», demonstrating, again, that the skilled and unskilled bricklayers were just one part of the variegated labour market.

In the following pages especially servants' wages will be extensively analysed: besides Padua and Bologna, in Milan too servants were particularly numerous (Sarti 1997, pp. 159-184). Some surveys on Milanese workers produced between 1784 and 1795 confirm this assertion: more than 4.000 people among the 29.778 (in 1784) and 34.239 (in 1795) workers listed.⁷ The number of servants changed according to the socio-professional characterization of each parish: in 1795, in the popular neighbourhood of *San Lorenzo* servants were just 3.4% of the workers listed, while in 1770 in the parish of the cathedral they reached 11% and almost 9% in the central *Santo Stefano maggiore*. More, in the noble neighbourhood of the eastern gate in 1787

⁶ Accounting books are in ASBo, archival collection *Amministrazione degli Ospedali*, sub-collection *Arciconfraternita e ospedale di S. Maria della vita (1200 - 1839)*, *Libri mastri e giornali (1687 - 1805)*, folders 38, 40, 42, 44, 46, 48, 50; *Conservatorio di S. Giuseppe (1532 - 1817)*, *Libri contabili (1628 - 1808)*, folder 33; *Compagnia e orfanotrofio di S. Bartolomeo, poi Orfanotrofio di S. Bartolomeo e S. Maria Maddalena uniti*, folders 147-153; *Confraternita e ospedale di S. Maria delle laudi poi S. Francesco (1271 - 1805)*, *Libri mastri, giornali, amministrazione (1586 - 1805)*, folders 12, 14, 18; Archives of the *Fabbriceria di San Petronio*, archival collection *Liste e ricevute*, folders 580-595. We sincerely thank Dr. Patrizia Busi, who made possible the consultation of the archive of the *Fabbriceria*. On the hospitals, orphanages, girls' schools and pilgrims' lodgings, their accounting books and the data that can be collected from them see Ongaro 2021.

⁷ The two censuses are in the State Archives of Milan (ASMI), *Popolazione*, p.a., folders 11 and 15.

servants were almost 14%, while in 1797 in the central districts they were even more than 22% (Mocarelli 2001, pp. 219-24).

Moving to the countryside, as stressed in the introduction, almost the only extensive quantitative research on wages is the one by Rota and Weisdorf (2021), based on data referred to «stable farm workers and domestic servants»; again, data referred to Padua included in the *Anagrafi Venete* show that the domestic servants were a very small part of the rural labourers (around 0.02% on average between 1766 and 1775), while almost the entire working population (87.5%) were «Country workers». Beyond the reliability of these data, that do not consider the so-called «Integrated peasant economy» (Panjek, Larsson, and Mocarelli 2017) and, therefore, the fact that almost certainly the so-called «Country workers» were employed in different fields (literally, but also economic fields) simultaneously, the figure deserves a specification. Certainly, in this 87.5% we can include the «stable farm workers», used in Rota-Weisdorf contribution, but the analysis of the archival documents – at least for Padua and Bologna – shows, basically, that dependent farm workers were not the majority of the population, given the few names bumped into in the accounting books in areas where sharecropping and, mainly, small rents to peasant families were the prevailing agrarian structures. Therefore, self-sufficiency together with *occasional*, and not *stable*, working in farms or within the ruralised manufacturing system was the most common occupational structure. According to this, even if we include too in our analysis some stable workers (rural stewards, *fattori*, herdsmen, stable hand and shepherd), we will also look to the composition of the daily workers' wages. This is not to quantify their earnings – in such a complex environment, were strong self-production went along with pluri-activity – but to suggest how and how much the in-kind part of their daily wages could contribute to their personal and family economy.

3. In-kind payments and wages level

The data collected in public, families', and charitable institutions' archives allow at proposing some figures on the percentage of wage that was paid in kinds; as anticipated, the following figures are an underestimation of this part of the salary, especially the ones referred to the urban and rural permanent workers (such as domestic servants, farmers, and so on), who besides the monetary and in-kind wages also received the lodging and the board. While it has been possible in almost all the case study to trace out the food and wood that these workers received, and therefore it has been included in the estimates, we have no information about the cost of the lodging and of another relevant part of the goods supplied by the employers (especially in the case of the servants), i.e. the clothes.⁸ It is useful to reiterate that the underestimation of the in-kind part of the wages does not undermine the achievements of this research: on the contrary, given that we will demonstrate that existing wage series – at least the ones referred to the Italian urban and rural contexts – suggest a too low level of salaries, that should be increased substantially taking into

⁸ Archival documents sporadically refer to the purchase of clothes for the servants, but the figures are too few to propose an estimation of the role in the overall purchases of the workers.

account the importance of in-kind payments, our underestimation makes the assumption even more valid.

We will first propose (Tab. 1) a static and general overview of the value of the in-kind payments in relation to the total amounts received by the workers. It should be specified that the values used refer, when possible, to the market value,⁹ and not to the value that the employers assigned to the products they gave to the workers. The only exception is the case of Padua where, except for wheat (that, however, was the main part of in-kind payments) for which we have a reliable long-run series of the fixed price, the other products such as wine, eggs, minor cereals, and wood, are evaluated according to the value recorded in the accounting books, because of the absence of the related published price series. The reason why we choose to use this approach – i.e., using market prices and not the values assigned by the employers – is that it seems the most suitable looking to the wages' value and not to the cost of labour, as we will explain more in depth in the final part of this paper, when we will deal with the value of the products included in the in-kind part of the salary. In general, we assumed that rural day labourers received pure wine, while historians suggest that half-wine (the so-called *vinello*) was far more widespread in the countryside (Malanima 1990, 138; Federico and Martinelli 2018, 138-139). Therefore, in Tab. 1 we propose for the day labourers in the Bologna countryside also a percentage including in the in-kind part of the wage half wine (so, for half value, being almost equally composed by wine and water). However, the resulting difference between the urban and rural wages, and the comparison of the results with Padua's countryside, together with the fact that in the sources the employers refer to 'wine' and not to 'half wine' or '*vinello*' suggest that in the countryside too workers were supplied with pure wine – even if, as we will see in the following pages, maybe with a low quality one. This overview does not consider the varieties of tasks accomplished and the potential differences in the level and composition of the wages, such as the changes of these elements across time. It just divides the wages between urban and rural workers in Padua, Milan, and Bologna and between stable and day labourers. The stable urban workers include both skilled and unskilled workers (from the Governors of the hospitals to the domestic servants), such as the stable rural ones (from the farmers to the stable keepers). On the contrary, both urban and rural day labourers include just the unskilled ones (unskilled construction workers in the cities and farm laborers in the countryside).

The figures clearly show the importance of the in-kind payments in the overall definition of the wages; more, both in Bologna and in Padua they clearly demonstrate that the level of these payments was higher in the countryside than in the city and for the stable workers compared to the day labourers, as happened in other areas of the Italian Peninsula (Doria 1968, 153). The figures on Padua are closer to the ones proposed by Spaggiari for the area of Parma, where «the position of the *salariati* [stable workers] was certainly better than the one of the *giornalieri* [day labourers], given that the in-kind part of their wage was higher, never less than 65% of the entire wage» (Spaggiari 1966, 135). Similarly, in the Lombard countryside, before 1784 the agents for the maintenance of the channels (*camparo*) in the properties of the

⁹ For the sources see Mocarelli, Ongaro, and Prospero (2023).

Consorzio della Misericordia Maggiore of Bergamo received around 67% of their wages in kind (363 of 543 *lire*) (Moioli 1983, 650). More, the figures in Tab. 1 show that the percentage difference between the in-kind payments to the stable and daily workers was higher in the city than in the countryside in both the provinces. Finally, the ones referred to rural stable workers are in line enough (even if a little lower, 50-60%) with the ones proposed by Rota and Weisdorf (2021, 460), who suggest that the in-kind part was around 60 and 80% of the total wage. Similar figures (between 50 and 75%) are suggested also by Giorgio Doria (1968, 153), regarding the mountain village of Montaldeo, in the Liguria region. However, the ones referred to the urban workers clearly call into question the figures proposed by the existing historiography for the urban nominal wages, that completely neglect the existence of in-kind payments.

Tab. 1. Percentage of the in-kind part of the remunerations received by urban and rural workers in eighteenth century Milan, Padua and Bologna and their countryside (averages)

	Bologna - city	Bologna-countryside	Padua - city	Padua-countryside	Milan - city
Stable workers	36%	49%	45%	61%	
Day labourers (wine)	8,5-9%	28%	22%	48%	6-8%
% difference (wine)	-76,5%/-74,7%	-43%	-51%	-21%	
Day labourers (half wine)		19%			
% difference (half-wine)		-61%			

If Tab. 1 provides a very general overview, the following figures will show how the role of in-kind payments changed across time and according to the different tasks and wage levels in Padua and Bologna. Starting from the diachronic analysis, while the stable labourers in the urban context experienced both in Padua and Bologna a significant stability in the percentage of the wage they received in kinds, in the rural areas the situation was quite different (Fig. 1; Fig. 2).

Fig. 1. Percentage of the in-kind part of the wages on the total farmers' wages in Bologna (1714-1795)

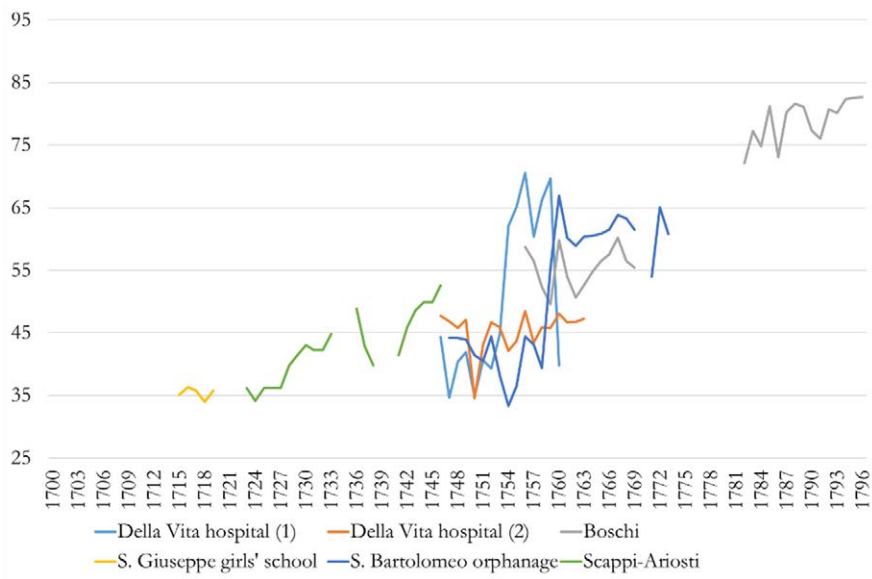
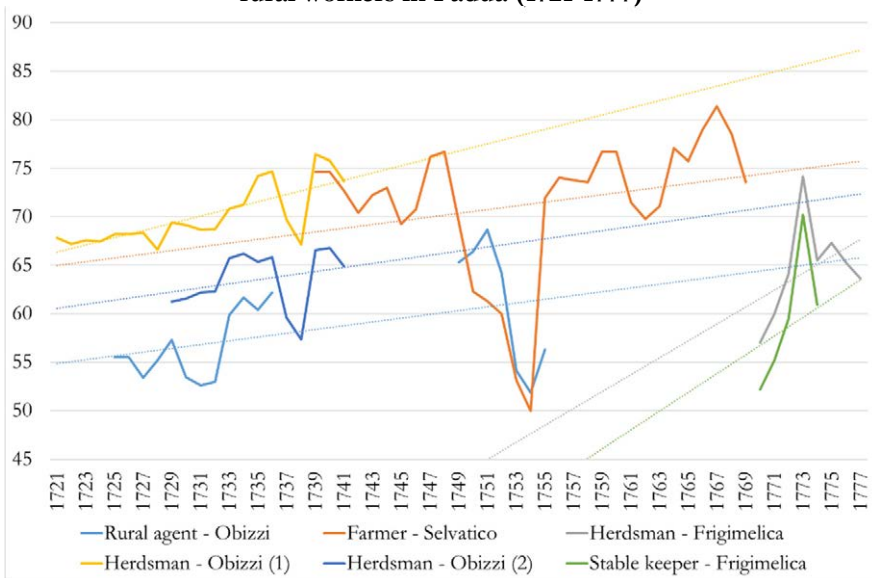


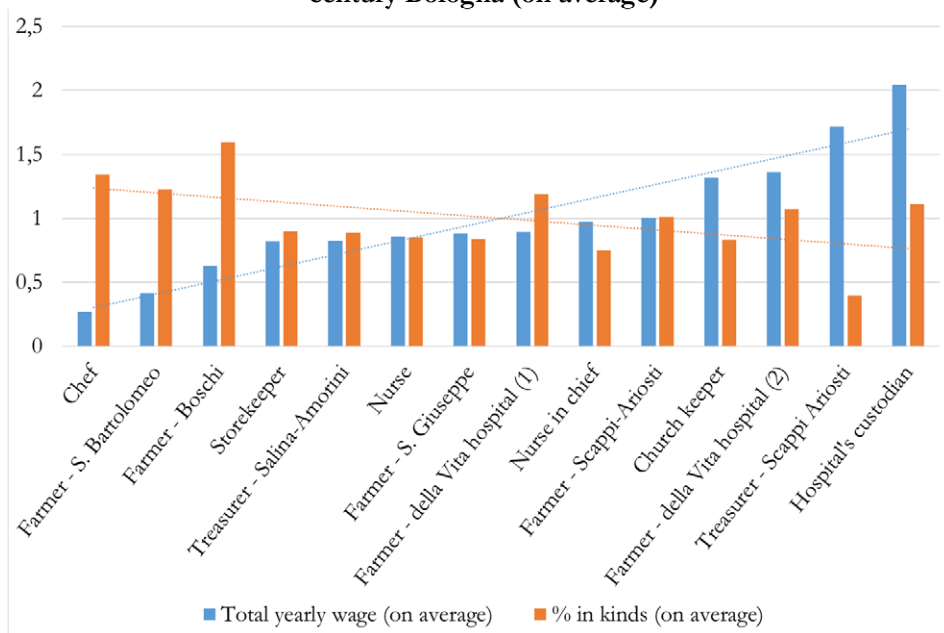
Fig. 2. Percentage of the in-kind part of the wages on the total wages of stable rural workers in Padua (1721-1777)



Looking to the farmers of the Bolognese noble families and charitable institutions, or to the ones and to the other stable workers employed by the Paduan families, it clearly appears that there is a tendency in increasing the value of the in-kind payments across time.¹⁰ This is clearly linked to the increase in prices that affected the Italian economy especially during the second half of the eighteenth century, more than an increase in the amounts of products assigned to the workers. Similarly, short-run differences are obviously attributable to the variations in products' prices.

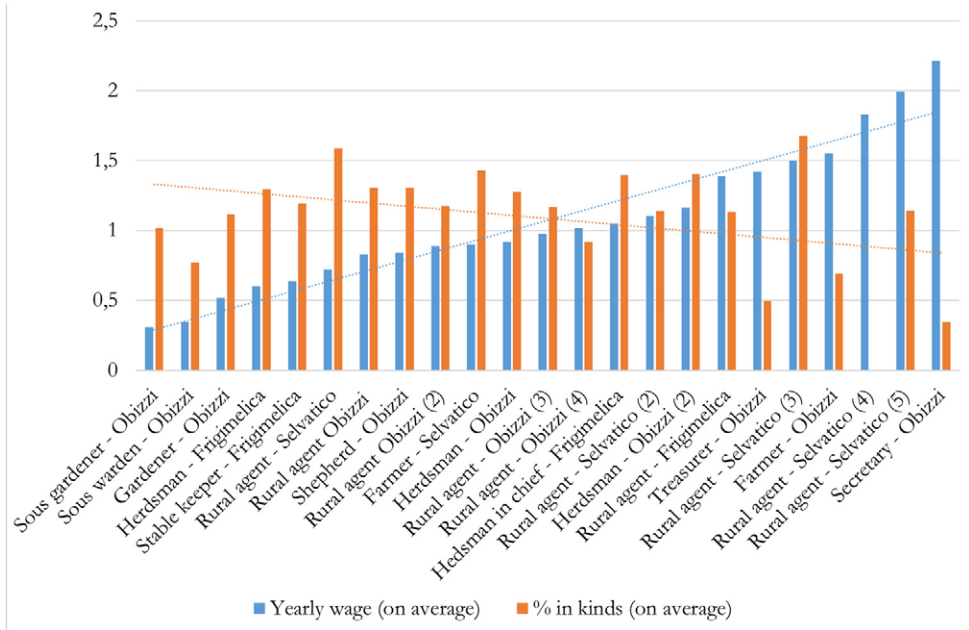
Moving from the chronological analysis to the observation of how proportion of in-kind payments in the total wage changed according to the different tasks accomplished and, mainly, to the overall level of the wages, Fig. 3 and Fig. 4 clearly show that there was an inverse relationship: higher the level of the remuneration, lower its in-kind part.

Fig. 3. Total yearly wage and in-kinds percentage for various tasks in Eighteenth century Bologna (on average)



¹⁰ This was not due, however, to a decrease of the monetary part of the wage, as happened in eighteenth century Piedmont (Romano and Tucci 1983, XXVIII; Dal Pane 1958, 202-203). On the contrary, it seems that the situation in Padua and Bologna was similar to the Lombard one, where «the payment in cash remained stable during the first three quarters of the eighteenth century, then increasing at the end of the century» (Zaninelli 1964, 126). Therefore, the increase of the value of the in-kind part acquires even more relevance.

Fig. 4. Total yearly wage and in-kinds percentage for various tasks in Eighteenth century Padua (on average)



If the two figures summarize the data collected in the Paduan and Bolognese archives, the archival documents in Milan confirm that the situation was similar: looking, for example, to the local *Pie Case d'Industria* and the *Pia Casa degli Incurabili* in Abbiategrasso, the in-kind part of the Directors' wages were around 14% (211 *lire* on 1.500 *lire* of yearly wage), while the porters received 118 *lire* of in-kind wages among 360 *lire* of yearly wage (33%) (Various Authors 1993, 177).

More, it is interesting to observe that both the level of the wage and its in-kind part varied (even relevantly) not only according to the different tasks – obviously, a Treasurer's wage was higher than a sous chef's one – but between labourers with the same responsibility (Hatcher 2018, 19, 40; Mocarelli 2018, 99-104). The great variety of the remunerations assigned, for example, to the rural agents and to the farmers is a clear indicator of the strong 'personal' character of the wages. Indeed, they were the result of a negotiation between the employers and the employees, influenced not only by the task to be accomplished,¹¹ but also by social, relational, and personal elements (Caracausi 2018, 116-21; 2008, 71-72; Mocarelli and Ongaro 2019, 76); the in-kind part of the salary and its variations were clearly not exempt from this (Caracausi 2018, 110).

¹¹ On the variations of the wages' level according to the work to be performed in the countryside see Dallaglio 2005, 22; Bonelli Conenna 1978, 915; Cormio 1972, 957; Zaninelli 1964, 126; Belloni 1983, 57; Spaggiari 1966, 134; Pugliese 1908, 10-55; Palumbo 1979, 70-77. On similar variations in the building sites in Milan see Mocarelli 2008, 211-215, and for the textile manufacturing in Padua Caracausi 2008, 72.

4. Characterize in-kind wages: what and how much?

In the previous pages we suggested some estimations of the relevance of in-kind payments in the total wage level, concluding that (on average) in the eighteenth century around 35-45% of the earnings of the urban stable workers were in-kind, while in the countryside the percentage was quite much higher, around at least 50-60%. More, this is probably an underestimation of the real figures, given that in many cases it has not been possible to trace the cost of lodging and clothing – indeed, estimations proposed by Rota and Weisdorf for the Tuscan countryside confirm this assertion, increasing the percentage to 60 and 80%. The situation of the day labourers was different, given that the in-cash part of their wage was more relevant, but in this case too existing historiography probably underestimates the role of in-kinds payments, that were around 9-22% and 28-48% respectively in the city and in the countryside. Finally, we observed the variations in the wage composition across time (with an increasing importance of in-kind payments in the countryside) and the differences between different tasks; basically, we noticed a sort of inverted relationship, more evident in the Bolognese case study, between wage's level and percentage of the in-kind part.

Differences between stable and day labourers were not limited to the role played by the in-cash and in-kinds parts of the wage, but they were related also to the type of goods they received. Very briefly, while skilled and unskilled bricklayers or fieldworkers, who were employed on daily basis, usually received just the basic foodstuffs that were at the basis of the contemporary diet (wine and, sometimes, bread), domestic servants, farmers, treasurers, governors, and so on, were supplied with a far more variegated sample of products. About urban daylabourers, in the case of Milan the importance of wine in the remuneration of the bricklayers is demonstrated by the economic strategies of the most important building contractors: for example, the Ticino family Fè in 1758 took over the Bettinelli and Piazza wine shop exactly in order to reduce the purchasing costs of the precious beverage, and when they participated in the construction of the Paderno canal they asked to be allowed to open «some sorts of inns in order to serve food and wine to the workers ... without any rise of costs due to the duties».¹²

Moving to the domestic servants and, broadly, workers employed for longer periods, besides lodging, clothes, and the yearly gifts that almost all these workers received at Easter and Christmas (usually capons and sweets), tables two and three summarize the average of products that the various urban and rural stable workers in Padua (Tab. 2) and Bologna (Tab. 3) received. Wheat and wine were still the main products; wheat was then transformed autonomously by the workers in bread, thanks to specific bakers that performed exactly this task. According to Guenzi (1982, 26-27), the *fornari da impastaria* (literally, 'kneading bakers') aimed specifically at transforming in bread the flour they received from their costumers; they covered around half of the bread market in Bologna and they were paid withholding part of the flour they received. More, Guenzi (1982, 27) specifies that not only the noble families resorted on these bakers (when they did not have their private ones), but «all

¹² ASMI, *Acque*, document dated 20th April 1773.

the people who were employed by the great landowners [...] such as servants, butlers, and so on, [who] received part of their wage in kinds». However, besides wheat and wine also other products, aimed at completing the daily consumption basket, were supplied to the stable workers: legumes, minor cereals, eggs, and wood. Similarly, in the countryside of the State of Milan the workers of the *fittavoli* received food, wood, and sometimes lodging and the right to collect the products that remained in the fields after the harvest (Zaninelli 1964, 125-27).

Tab. 2. Amounts of products received yearly by Paduan workers (1700-1787)

	Wheat (kg)	Wine (liters)	Maize (kg)	Other minor cereals (kg)	Legumes (kg)	Eggs (n.)	Wood (cubic meters)	Faggots (n.)
Treasurer	762							
Secretary	254	570	268		25	200		
Gardener	339	According to the needs			25		According to the needs	
Sous gardener	222				19			
Rural agent (Frigimelica)	508		536		49			
Rural agent (Obizzi)	635	According to the needs					According to the needs	
Rural agent (Obizzi)	381	570	268		25	300	11	200
Rural agent (Obizzi)	254	According to the needs	268	261	25		According to the needs	
Rural agent (Obizzi)	317	500	268	261	25		According to the needs	
Rural agent (Selvatico)	508	713	134	134	50		9	200
Rural agent (Selvatico)	1016	855					9	200
Rural agent (Selvatico)	635	1426	268	261			4 <i>zocche</i> (stumps)	500
Rural agent (Selvatico)	127	Half-wine according to the needs	491	130				600
Sous rural- agent (Obizzi)	64		268	197	25			

Farmer (Obizzi)	508		268	According to the needs	25		According to the needs	
Farmer (Selvatico)	1016							
Herdsmen in chief	64	500	335	132	25			
Herdsmen (Frigimelica)	64	214	335	132				
Herdsmen (Obizzi)	254	428	670	395	100			1200
Herdsmen (Obizzi)	180	642	402	470	123			
Stable keeper	64	214	335	132	25			
Shepherd	169	642	536	391				

If the data in the accounting books allow at estimate (at least approximately) the products and the amounts that the stable urban and rural workers received in Padua and Bologna, it is more difficult to do the same regarding the day labourers. In the case of the payments by the *Fabbriceria di San Petronio* to the foreman, the archival documents clearly state that the list of expenses he presented yearly should be increased (“as agreed”) between 8 and 12% exactly “for the wine for the bricklayers”. So, it seems that they just received wine, even if we do not know the daily amount. We can just infer that *at least* (because the list of expenses included clearly also the foreman’s earning¹³) between 7 and 10% of their wage was composed by wine. Similarly, as anticipated, in Milan too wine was the main product supplied to the bricklayers¹⁴, not just as the usual part of the daily wage, but also as a sort of reward because of particularly dangerous tasks: in 1749 for example Domenico Berra and Giovanni Battista Bonola, who prepared the scaffolding for the construction of the dome of the cathedral, asked to the *Fabbrica del Duomo* an increase of their payment because, given the dangerousness of the task they had to grant to their workers «an increased daily wage, and also to give them some wine in order to incite their working».¹⁵

¹³ On the criticalities in using the payments to the foremen in order to infer the real wage of the workers see Mocarelli 2018, 97-98; Stephenson 2018.

¹⁴ ASCMI, *Località milanesi*, fos 212, 271, 273; ASMI, *Acque, p.a.*, f. 967.

¹⁵ *Archivio della Veneranda Fabbrica del Duomo di Milano* (from now onward Avfdmi), f. 430, *Deliberazioni dei deputati 1745-1749*.

Tab. 3. Amounts of products received yearly by Bolognese workers (1701-1795)

	Bread (kg)	Wheat (kg)	Bran (kg)	Legumes (kg)	Spelt (kg)	Wine (liters)	Grapes (kg)	Wood	Large faggots (n.)	Small faggots (n.)
Church keeper ¹⁶	250							4 <i>quart</i> ¹⁷	1000	500
Nurse	250									
Nurse in chief	250									
Chef	250									
Hospital's custodian		574					1750			
Treasurer (Salina- Amorini)		287					875			
Treasurer (Scappi- Ariosti)	219 (until 1728)	287 (from 1728)					875			
Store keeper	264 (until 1735)	287 (from 1735)				943 (until 1746)	875 (from 1746)			
Farmer (Della Vita hospital)		287	6,5	167			1750			
Farmer (Della Vita hospital)		287	6,5	167	197		875			
Farmer (Boschi)		287					875		650	
Farmer (San Giuseppe girls' school)		287					875		500	
Farmer (San Bartolomeo horphanage)		172-230					437,5- 875		250	

¹⁶ The amount of bread supplied to the church keeper, the nurses, the nurse in chief, and the two chefs is unified in the documents; therefore, we divided it equally among the three types of workers, even if this is clearly just an estimation.

¹⁷ We have been not able to trace the real value in kgs or cubic meters of the *quarto*, that is not included in the existing literature on the ancient units of measurement in Bologna.

Moving to the countryside of Bologna, in the case of the Bianchetti-Monti family, daily wages until 1781 included on average a in-cash payment of 0.3 *lire* (i.e. 1,61385 silver grams) and one *tiere* (loaf) of bread¹⁸ and around 0.06-0.1 *corbe* (around 5-8 liters) of wine. No need to say that the amount of wine is quite surprising, but we will come back on this later. From 1784 it seems that wine remained the only in-kind part of the payment (with the same amount), while in-cash wage was increased to 0.5-0.6 *lire* (i.e. 2.7-3.2 silver grams) including the bread ration. A similar increase happened in the countryside of the State of Milan, as stated by Sergio Zaninelli (1964, 126). At a first look it could seem a worsening of the labour conditions, according to the fact that usually in-kind payments are considered more ‘resilient’ to inflation (Romano and Tucci 1983, XXVIII), but this is not the case: actually, even before 1784 the day labourers did not receive a fixed amount (kg) of bread, but one loaf. According to the established researches on the Bolognese victualling system, as almost elsewhere in the Italian peninsula the cost of the loaf was fixed (in Bologna, 2 *bolognini*, i.e. 0.1 *lire*), while its weight changed according to the variations in wheat’s prices (Guenzi 1982; Mocarelli, Ongaro, and Prospero 2023). Therefore, in practice nothing changed, or even the wage increased given that it moved from 0.3 *lire* to 0.5-0.6, while the cost of one loaf in the city was 0.1 *lire* (and in the countryside probably even less). The data referring to the Salina-Amorini family refer to the period 1775-1799 and confirm the figures proposed for the Bianchetti-Monti’s ones. The monetary part of the wage moved from being around 0.5 *lire* in the period 1775-1777, 0.6 *lire* between 1778-1788, and 0.75 *lire* from 1789 and 1799, and it was flanked by the supply of, on average 0.05 *corbe* (around 4 liters) of wine daily. Sometimes sources refer to ‘bread for the *opere*’, so probably, as in the Bianchetti-Monti’s case, it could be supplied in kinds even if this happened quite rarely and usually its cost was included in the monetary part of the wage. Finally, the data included in the *libri fattoriali* (farm accounting books) of the Scappi-Ariosti family for the period 1720-1767 helps in understanding the way rural day labourers accessed their daily bread ration. Indeed, also in these documents there is quite often a reference to the ‘bread for the *opere*’, but its amount and cost is recorder in the part of the debits of the sharecroppers, who were also day labourers, and of the day labourers tout court. This means that bread was supplied by the employer, but it was paid by the worker. Finally, as in the case of the Bianchetti-Monti the amount of bread was recorded in *tiere* (loafs), and not with its weight: i.e., in the same way bread was sold in the city. Besides bread, day labourers received by the Scappi-Ariosti around 0.5-0.6 *lire* in cash and, on average, around 0.08 *corbe* of wine (around 6.4 liters). In summary, we can affirm that usually day workers in the Bolognese countryside received an abundant ration of wine (between 4 and 8 liters) besides the in-cash salary. As anticipated, we cannot be sure that it was wine or half wine, but the fact that the documents refer to it just as ‘wine’ (otherwise, when it is half-wine it is specified), such as the percentages of in-cash and in-kind parts of the wages, suggests that it was probably pure wine (Dal Pane 1999, 147; Belloni 1983, 57). What about Padua? Actually, the data referred to the rural day labourers report just the monetary value of the *vituarìa* (board) for the

¹⁸ The supply of one or one and a half *tiere* of bread to the rural day labourers in the plots of the Bolognese family Pepoli in the eighteenth century is recalled in Dallaglio 2005, 22.

day labourers that were hired for the processing of the wheat harvested, without any reference to the types and amounts of products that were supplied. Conversely, we have more clear information, even if just for the period 1741-1753, of what bricklayers and the day labourers for the building sites (both in the city and in the countryside) received from the Selvatico family: besides 2 Paduan *lire* (around 5 silver grams) for the bricklayers and 0.8 *lire* (around 2 silver grams) for the unskilled day labourers, they received, such as their Bolognese counterparts, wine. In two occasions (1741 and 1745) there is the total amount supplied to the bricklayers and day labourers, so dividing it to the number of days they worked it results that they received 0.07 *mastelli* per day (5 liters).

The relevance of wine in the products supplied, and its – at a first look – abundant daily ration, introduces us to another important reflection, related to the role that the in-kind part of the wages played in the family economy of pre-industrial societies. As we recalled in the introduction, in the existing literature when the in-kind part is accounted in order to estimate wages' level (such as in the case of Rota-Weisdorf's rural wages), it is approximated as the lacking part in order to cover the basic daily food need of a person. Given that the data we collected allow a quite truthful estimation of the amounts supplied both to urban and rural workers, we can help in clarifying a point: was the in-kind part of the wages adequate for covering the food needs of a person? Or was it scarce or, conversely, overabundant?

To answer the first question, we estimated the daily supply of bread and wine (were available) to the stable and daily urban and rural workers both in Padua and Bologna, according to the amounts we used for the calculation of the value of the in-kind part of the wages in the first part of this paper. Where wheat and grapes are supplied (and not bread and wine), we calculated the amounts of bread and wine that could be produced.¹⁹ The results, in a certain way, both confirm and confute Rota-Weisdorf's approach. Indeed, both the urban and rural stable workers received, basically, around 0.8-1 kg of bread per day. The daily workers, as we observed, when received bread, they received one loaf. The existing consumption baskets for the Italian area suggest a daily consumption between around 0.6 kg (Malanima 2013, 50) and 0.7 kg (Rota and Weisdorf 2020, 948), so amounts that are generally not so far from the ones supplied to the Bolognese and Paduan workers, even if in some cases they could receive even between 1 and 2 kilograms of bread daily: in this case, however, we can assume (as the archival documents suggest) that these amounts were aimed not just to the sustenance of the church's guardian, of the Treasurer, of the rural agent, or of the farmer, but also of the respective families. Similarly, in the countryside of the State of Milan the stable labourers received around 0.8 kg of maize (sometimes mixed with rye and millet) bread per day, besides wine and soup (Zaninelli 1964, 141). On the contrary, sometimes rations could be inferior to the average: this happened in the case of many rural stable workers (herdsmen and the stable keeper) in Padua, who received 0.5-0.6 kg of wheat, or even less, but this was

¹⁹ The bread produced from a specific amount of wheat is inferred from the *scandagli* (baking tests) made yearly in Ferrara, a province exactly between Padua and Bologna, from 1710 to 1794 (Ongaro and Prospero 2023). The yield in wine of the grapes has been inferred by the farms' accounting books of the Bolognese families, that record exactly how much wine was produced from the grapes processed. In both cases the ratio is almost equal: 1/1.01 in the case wheat/bread and 1/0.99 in the case grapes/wine.

compensated with relevant amounts of minor cereals, such as maize (mainly), or a mixture of wheat and maize, sorghum, or millet. About rural day labourers, we know that in Bologna during the Eighteenth century – at least in the city – the weight of the loafs varied, but on average they weighted a little less than 0.6 kg; therefore, perfectly in line with the figures recalled above. About wine, existing consumption baskets suggest a very low consumption – around 0.2 liters per day – but with a high alcoholic content – around 12.5-15.5 degrees. Actually, archival sources indicate that wine consumption in pre-industrial cities and countryside was far more relevant – not less than 1 liter per day, up to 2 liters – given the low alcoholic content of the product, that was not more than 10 degrees (Mocarelli, Ongaro, and Prospero 2023). The figures recalled above confirms these estimations and suggest that workers received the wine not just for their personal consumption, but almost certainly also for their families. More, this is not true just in the Bolognese or Paduan case: from mid-seventeenth century the farmer of the Borromeo farm of Comairano, in the area of Pavia, received as yearly wage, besides the in-cash payment and various foodstuffs, around 572 liters of wine (i.e., more than one liter and a half per day) and around seven hectolitres of wheat, that would have allowed the production of around one kg and a half of bread per day (Belloni 1983, 57). More, Fanfani suggests that almost in the same period in Piedmont the day labourers received around one liter and a half of wine daily if men, and 0.7 liters the women (Fanfani 1959, 331), and the importance of the in-kind payments to urban and rural stable workers during the entire Early Modern period is confirmed also for the area of Vercelli, in the same region, by Pugliese (1908, 11-22), for Parma by Spaggiari (1966, 134-135), and for Venice, where Davis suggest a daily consumption of around 1.4 litres per day (on average) by the workers of the *Arsenale* in the second half of the seventeenth century (Davis 1997, 78). Moving to Tuscany, Lucia Bonelli Conenna (1978, 914-915) wrote that in the Eighteenth century in the area of Grosseto the rural stable and day labourers received around one liter and a half of wine and more than one kg of bread per day. Finally, Vergani referring to the miners in the area of Belluno, in the Republic of Venice, asserts that the maize they received as in-kinds part of their wage «corresponded [...] for the yearly needs of two-four people» (Vergani 1983, 644).

So, in-kind payments did not just *help in obtaining* the daily consumption basket of a person, but for its most important parts (bread and wine, but also eggs, wood, and so on, in the case of the stable workers) they *completely cover* the daily ration, and sometimes even help in covering not just the consumption needs of a worker, but also of his/her relatives. Therefore, if percentages of in-kind and in-cash payments confirm the ones suggested by Rota and Weisdorf for rural areas (between 20 and 40% in cash, as in Rota-Weisdorf 2021, 460), the approach should be probably overturn: it was not the in-cash payments that were insufficient for survive (Ibid., 458), but the in-kind ones that were exactly calculated (and negotiated) with this aim. This is also confirmed by the fact that day labourers could also negotiate the payment of the in-cash part also during the holidays and in the days they did not work because of adverse weather conditions: numerous examples indeed testify that the rural day labourers of the Bianchetti-Monti family, who were employed continuatively in the maintenance of the buildings of the Crocetta farm, received the daily ration of wine

also in the holidays and ‘in rainy days’.²⁰ This was not a peculiarity of the Bolognese area, given that in the Paduan textiles manufactures too the payment of the salary even in days in which the worker did not work was a way to consolidate the relationship between employer and employee and to maintain the exclusivity of the service of the latter (Caracausi 2008, 68-69).

5. Characterize in-kind wages: what quality and value?

In the previous pages we proposed estimations referring, very briefly, to ‘bread’, ‘wheat’, and ‘wine’, as standardized products. However, we do not know the *quality* of the products the workers received and, therefore, their *real* value. It is well established that quality variations in agricultural products (especially wheat and wine, given their role in the contemporary diet) affected relevantly their price (Ronsijn, Ongaro, and Prosperi 2022; Ongaro and Prosperi 2023); consequently, if they contributed to the definition of the wages, changes in their quality could affect the resulting figures, especially if we observe these dynamics from the point of view of the employers. It is certainly a difficult problem to tackle, given that often sources do not refer to the specific quality of the bushels of wheat, or mugs of wine the workers received. Additionally, for bread the situation is even more complicated, given that the composition of the loafs could not only include high- or low-quality wheat, but the dough could be produced with various cereals (alone or mixed) of various quality. Clearly, this changed the economic value – besides the nutritional one – of the final product.

Besides the difference between *vino piccolo* (half-wine) and *vino puro* (pure wine), the dilution of the wine with water before supplying it to the workers was common practice: in 1759 for example the Treasurer of the Scappi-Ariosti family registered an unexpected increase in the family earnings from the wine management because the amount of wine in the cellar «increased because of the water mixed to the wine aimed at the *operos*».²¹ More, in the documents there are several references to low-quality wine supplied to the workers. For example, in 1765 the farmer of the Crocetta farm of the Bianchetti-Monti did not use the wine produced with the family’s grapes for the day labourers, but he purchased expressly *vini vecchi* (‘old wines’, in other words, almost-vinegar ones) to be used «for the hay makers, coal makers, in country works and other tasks».²²

About bread, Lucia Bonnelly Conenna (1978, 914) wrote that in the Eighteenth century Maremma the stable rural workers received bread «certainly mixed with legumes or bran»; this clearly open the question of the quality of the bread that the workers – not just the stable ones, but, to a greater extent, the day labourers – received. Our sources show that both in the cities and in the countryside, however, both in Padua and Bologna, the stable workers usually received wheat as in-kind part of their salary, not bread, despite few exceptions. This means that the amounts of

²⁰ See ASBo, archival collection Bianchetti-Monti, folder 83, fo. 32; folder 84, fo. 33; b. 86, fo. 33.

²¹ ASBo, archival collection Scappi-Ariosti, folder 222, fo. 70.

²² ASBo, archival collection Bianchetti-Monti, folder 76, fo. 31.

bread we proposed as the daily supply they received is supposed to be entirely wheat bread. The situation changes moving from the stable to the day labourers: while in the city they just received wine, and then they probably purchased the daily ration of bread from the bakers, in the countryside they actually were supplied with bread by their employers. As anticipated, rarely archival documents specify the quality of the bread itself, but we can make some guesses. According to existing historiography, the Eighteenth century is when maize definitively replaced the other minor cereals in the peasants' diet in Central-Northern Italy (Ongaro 2020; Finzi and Baiada 1985); basically, it seems that while wheat was a 'urban' cereal, wheat bread was almost completely irrelevant in the countryside. According to this statement, it would be natural to suppose that day labourers received maize (or maize and legumes, or maize and other minor cereals) bread. However, sources point in another direction: first, looking to the inventories of the farms and domestic granaries of the Bolognese and Paduan families, it clearly appears that certainly maize production never entered the urban walls and was almost completely distributed to sharecroppers and day labourers, but it was sold or given on credit to them, or as payment in-kind of the in-cash part of their wages. In other words, certainly peasants consumed maize, but they did not receive it as in-kind part of the salaries – neither in grains, grounded or baked. On the contrary, we have some evidence that the bread distributed to the rural day labourers was wheat bread, or at least bread produced with a mixture of flours, in which wheat played a role. From 1734 to 1745, for example, the Treasurer of the Boschi family specified that every year the wheat flour stored in Bologna was used «for the payment of the domestic servants, and for the production of the bread for the family, the servants, and the peasants».²³ Similarly, in 1733 the farmer of the Scappi-Ariosti's farm in Viadagola ground more than two hectolitres of wheat that was then mixed with around 40 liters of ground fava beans for the production of the «bread for the *operi*».²⁴ As anticipated, in the case of Scappi-Ariosti bread was not included directly in the daily wage, but the monetary part of the salary was higher exactly in order to include the cost of the bread supplied by the employer. Another example refers to the Paduan countryside: the accounting books of the Obizzi's farm in Giarabassa record in 1712 around 60 liters of wheat «made in bread for the two herdsmen who stayed one month in Giarabassa, and for the men who ploughed in Campo San Martino».²⁵ In the same year they refer also to more than two hectolitres «made in bread for the men who harvested wheat», besides the amounts supplied to the farmer and the herdsmen as in-kind part of their wage.²⁶

A final remark: the fact that wheat was used to produce the bread supplied to the rural day labourers, besides the urban and rural stable ones, does not automatically mean that they received high-quality (and, therefore, high value) bread. The quality of the cereals was quite variable, according to the weather conditions during their growth, harvest, transport, and storage. More, quality changed across time also because of the loss of the humidity of the newly harvested grains, that means an

²³ ASBo, archival collection Boschi, folder 485, fo. 139.

²⁴ ASBo, archival collection Scappi-Ariosti, folder 290, fo. 11.

²⁵ ASPd, archival collection Obizzi, folder 562, fo. 38.

²⁶ *Ibid.*

improvement in their yield in flour, and in the quality of the flour itself (Ongaro and Prospero 2023; Ronsijn, Ongaro, and Prospero 2022). Clearly, the monetary value of wheat varied according to these changes in quality, such as the nutritional value of the bread produced with it. Therefore, when assigning a monetary value to the in-kind (and, specifically, in-wheat/bread) payments to the workers we should rely to the value that was assigned to the specific stock supplied, and not to the general market value, also because it is easy to assume that, when possible, the employers tried to use the low-quality cereals for their workers, aiming the high-quality ones to the market. Just to make an example, remaining in the Giarabassa's farm owned by the Obizzi, still in 1712 the farmer reports that he mixed around 130 liters of *frumentello* (a mixture of maize and wheat in a one-to-one ratio) to wheat to produce the bread for the herdsmen and the ploughers explicitly «because of being of bad quality».²⁷

Besides the abovementioned examples, we suggest another way to assess the value of the products supplied to the workers, that is the comparison of their value as reported in the accounting books, comparing it to the market price; in our case, this can be done observing the value of wheat supplied to the urban and rural workers in Bologna, given that there are published data of the *calmiere del formento* (i.e., the price fixed by the municipal authorities for the selling of wheat) and that the accounting books of the various families record the value of the cereals supplied to the stable workers. The results of the comparisons are remarkably similar (Tab. 4), even if the chronology is more limited compared to the previous elaborations, given some gaps in the two series. In the case of the Church keeper, nurses, and chefs of the Della Vita hospital – who received bread and not wheat – we evaluated the cost per kg of bread and the corresponding price per kg according to the fixed weight at the same timespan for the tow-*bolognini* loaf.

Basically, from the point of view of the employer, the value of the wheat supplied to the workers was between 6 and 10% lower than the market price; this data can be interpreted in various way. First, it could mean that the quality of the product was low, and therefore its price compared to the standard quality to which the fixed price referred to. Another interpretation, related to the fact that the value recorder is the value assigned by the employer, could be that being self-produced wheat, it was not charged with transport and selling costs (that included, for example, the payment of the brokers). If we consider, as quoted by Guenzi from a contemporary source, that «workers 'were obliged by the noblemen to receive as payment wheat *al calmiere* [i.e., at the fixed price]» (Guenzi 1982, 27), it is easy to infer that also the value of the product itself was not a certain figure, but it was different for the employer and the employee, and it was the result of a complex mechanism. In summary, most likely the difference of value derived from the difference itself for the employer and the employee. This is why, in evaluation of the monetary value of the wheat (or bread) and of the other products supplied to the workers it is more correct to consider the market value, as we did when possible in this paper, and not the value recorded in the accounting books of the employers. This is true if we want to catch the real value

²⁷ Ivi, fo. 60.

of the wage while, clearly, the perspective should be completely overturned if we want to analyse the cost of work.

Tab. 4. Value recorded of the wheat supplied to the workers and fixed wheat price in Bologna and its countryside (average, silver grams per liter)

	Recorder value	Fixed price	Difference fixed price
Church keeper/nurses/chefs (1745-1762)	0.97 (bread, kg)	1 (bread, kg)	+4%
Hospital's custodian (1710-1720)	5.43	5.91	+10%
Treasurer Salina-Amorini (1714-1786)	5.89	6.15	+6.4%
Treasurer Scappi-Ariosti (1728-1765)	5.93	6.13	+5.95%
Store keeper (1735-1765)	5.97	6.24	+7.7%
Farmer Della Vita hospital (1745-1750)	5.87	6.49	+10.7%
Farmer Boschi (1755-1766)	6.22	6.58	+8.7%
Farmer S. Bartolomeo orphanage (1746-1772)	6.24	6.65	+9.47%

6. Conclusions: in-kind payments and living standards

In the previous pages we showed that in-kind payments played a crucial role in the wage formation in Eighteenth century Northern Italy, contributing for more than a half of the wage level of the stable workers in the countryside and almost half of the urban stable workers' one. Looking to the day labourers the figures are certainly lower, both in the city and in the countryside, but they remain relevant. The analysis of the products supplied by the employers reveals that the types and the amounts received allowed the covering of the basic food needs of the workers – and sometimes also of their families – overturning the approach according to which in-kinds payments covered the costs of the consumption basket that the monetary part of the wage did not cover: actually, we can affirm that the in-kind payments almost completely cover the costs themselves, especially in the countryside, while the in-cash ones could be a surplus for the purchasing of other products. So, in this context, which was the effect of this wage's characterization in the living standard of the urban and rural population, especially in terms of purchasing power?

Existing historiography stresses the role played by the in-kinds payments in guaranteeing a higher resilience of the purchasing power of the workers in front of the variations of prices (Dal Pane 1958, 203, 206, 208; Doria 1968, 153; Spaggiari 1966, 134-35; Romano and Tucci 1983, XXVIII): basically, this relies on the fact that the workers should have received always the same amount of products, beyond changes in prices. If the case studies analyzed previously broadly confirm this assertion, given that, for example, the hospital's keeper of the Della Vita hospital received around 690 *libbre* of bread per year, or the Scappi-Ariosti's Treasurer 20 *once* per day (around 0.75 kg), and the store keeper even 24 (0.9 kg), and also the wine and wood, such as the other minor cereals were supplied in fixed amounts. Flexibility in the amounts supplied too could be, at a first look, advantageous for the worker, as the Paduan case demonstrates, given that many workers received wine, minor cereals, and wood 'according to their needs' (Tab. 2). However, we must also be cautious in assigning to the in-kind payments this unquestionable and universal role of 'anti-inflation'; as we observed, the quality of the products supplied could vary, and so their economic and nutritional value, and these variations were, briefly, almost entirely up to the employers and it is arguable that in periods of high prices and/or bad harvests, the dilution of wine for the labourers or the quality of the bread supplied have been affected. More, the flexibility in the amounts supplied, that in some cases could advantage the worker could be also a way for the employer to adapt the quantity of goods for the workers, according to their cost: we already mentioned the case of the bread supplied by *tiera* (loaf) and not by weight in the Bolognese countryside, as confirmed also by Dallaglio (2005, 22). In other words, we should be cautious in the evaluation of the role played by in-kind wages in affecting the living standards and the purchasing power of the workers, given that we should first evaluate, on a case by case basis, the characterization of the wages themselves, resulting from the negotiation between the workers and the employers.

Beyond these clarifications, certainly the fact that workers could count on the in-kind payments for covering almost entirely their food needs, and maybe also part of their families' ones, relevantly affected their resilience to prices' increases. Clearly, stable workers highly benefitted from this, compared to day labourers, but, broadly, the entire society was more or less involved in these dynamics. Therefore, this element should be taken into account in the historical evaluation of the market functioning and, broadly, in the analysis of living standards. When looking to the periods of prices' increase we should consider that the contemporary free/monetary market was not the environment in which transactions took place – or at least, not entirely. On the one hand, in-kind wages contributed to assuring the supply of the basic foodstuffs to the working people even in periods of increasing prices, both in the city and in the countryside; on the other hand, the presence of the victualling institutions faced the problem from another perspective, i.e. artificially controlling prices fluctuations when people had to resort on market transactions. We recently observed (Mocarelli, Ongaro, and Prospero 2023) that this means a lowering of up to 30% of the coefficient of variation of the cost of the consumption basket. This could also contribute to explain the fact that in the cities – where victualling institutions were at play – the in-kind payments were lower than in the countryside, were public institutions had a more limited control of market functioning. Obviously, this was

also due to the different market conditions and labour environments, considering the greater immediate availability of products in the countryside, the widespread self-production and self-consumption of a great variety of goods (from foodstuffs to textiles) and maybe a less developed market, even if this point has been strongly confuted by historians.²⁸

In conclusion, the importance of in-kind payments in the evaluation of living standards means not only a change in perspective in the analysis of the process of wage formation, of the way people accessed foodstuffs and the other products they needed in their everyday life; it also means that the attempts to quantify wages and real wages should find a way to take this into account, increasing nominal (monetary) wages according to the estimated presence of in-kind payments – not just to reach the cost of the subsistence consumption basket, but maybe exceeding it – or, using a different approach, calculating the real wages deflating the nominal ones with the cost of the consumption basket *without* the products that were included as in-kind part in the salary. In other words, our findings can strongly affect relevant historiographical debates (such as the Little Divergence one and the correlation high-wage economy/industrial revolution) in two ways. First, they stress the importance of recalculate real wages including the in-kind part: our indications can be useful for doing so for the Italian area, but clearly a similar re-examination should be done for the other European countries, such as England. Second, and partially in contrast to what has been said previously, our conclusions strongly undermine the rationality of the calculation of the real wages, even including the value of the in-kind payments: if Italian citizens and peasants (or at least part of them) covered their basic food and heating needs with the in-kind part of their wages, how can a series of real wages (indicating monetary values) be representative of the evolution of the living standards? How can explain the evolution of the purchasing power of the population, the changes in wages' level, and the relationship between the consumers and the market? Looking to what it has been stated in the previous pages, we can assume that for the Italian area the answer to these questions is: very very little. At this stage in the research we do not know if the same answer can be valid also for other countries: if yes, this means that the debate on the causes of the industrial revolution and on the supposed Little Divergence should be reconsidered from new bases. If not, it should be investigated how the dissimilar structures of the remuneration and the differences in the relationship consumers-market in various European areas could have produced different economic paths, in terms of both characteristics and chronology.

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²⁸ Just think, for example, to the well known 'industrious revolution' theory and the subsequent debate (de Vries 2008).

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