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Working Time, Holidays, and Labour Conditions in Early Modern Normandy

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Abstract

This chapter examines the evolution of working conditions in pre-industrial Normandy, focusing on the longstanding debates over working time and public holidays. During the Middle Ages, theologians like Nicolas de Clamanges criticised the rising number of non-working religious days, arguing that they promoted non-religious behaviour and harmed poor workers. This debate persisted in the following centuries, particularly between Catholic and Protestant intellectuals. More recently, seminal works in economic history have emphasised the significance of working days for our understanding of past living standards, prompting further methodological refinements. Using new data on religious holidays and payment records, we assess the actual versus theoretical working days in Normandy from the fourteenth to the eighteenth century. Our analysis suggests that the common assumption that 250 working days per year was the norm for many labourers during the late Middle Ages. This figure seems, however, higher for the later period. By the mid-eighteenth century, it was not uncommon for individuals to work as many as 290-300 days per year. We further explore changes in labour regulations to document daily working conditions, showing that working hours increased by one to two hours per day between the Middle Age and the late eighteenth century. While we focus on Normandy, an important commercial and industrial centre in France, we believe this study offers valuable insights into the economic history of early modern Europe.

Keywords: Working time; Labour conditions; Normandy; Middle Ages; Early Modern period.

JEL Classification: J3, J4, J22, I31, N33.

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Working Time, Holidays, and Labour Conditions in Early Modern Normandy

Theologians repeatedly engage in debates about working time and public holidays at least since the Middle Ages. At the beginning of the fourteenth century, several voices expressed their disapproval following the steady increase in the number of days dedicated to prayer during which work was forbidden. Among them, Nicolas de Clamanges (1363-1437), rector of the University of Paris, called for a reduction in the number of holidays, because he viewed those as conducive to debauchery and non-religious behaviour such as dancing, drinking, and gambling. These non-working days were also detrimental to the poor workers paid on a daily basis (Barralis 2007). Over the next centuries, the debate over public holidays has been at the centre of many controversies and a constant source of conflict between Catholic and Protestant intellectuals (Maitte and Terrier 2020).

More recently, seminal works of de Vries (1994, 2008) and Allen (2001) on the dynamics of the Great Divergence have once again brought the question of working days at the centre of numerous debates. Building on Allen's landmark study, numerous scholars have advocated methodological refinements to improve the precision of estimates of living standards. These range from reassessing the composition of the consumption basket (Humphries 2015) and accounting for women's wages (Humphries and Weisdorf 2019), to focusing on rural workers (Rota and Weisdorf 2021) and considering the structure of payments (Stephenson 2018). Among these considerations, the length of the work year has received particular attention due to its central role in determining total annual income. While Maitte and Terrier (2020) and Ridolfi (2021) provide important contributions for France, a comprehensive overview covering the whole of Europe remains elusive and lacks empirical investigation.

This chapter contribute to the existing literature by providing a meticulous examination of the evolution of working conditions in pre-industrial Normandy. Located to the west of Paris, Normandy constitutes an ideal case study for several reasons. Since the Middle Ages, it is one of

the most important commercial and industrial centres of France, and Rouen, its capital, is the second largest city in the kingdom until the late seventeenth century.³ Spurred on by the textile industry, the rapid development of cotton spinning and weaving, and a tight labour market, Normandy also underwent early efforts to mechanise work during the second half of the eighteenth century (Chambrou and Maneuvrier-Hervieu 2023). Because a significant share of its population converted to Protestantism during the sixteenth century, it also lays at the intersection of Protestant and Catholic Europe making it an interesting case for the study of the evolution of working time.

We rely on several but complementary approaches to address the issue of changes in working time between the fourteenth and the eighteenth century. First, we build on the work of Garcíá-Zúñiga (2014) and Shusterman (2009) and incorporate newly assembled data on religious holidays to document the evolution of the theoretical maximum number of working days per year. We then examine if employers and workers respected religious holidays by matching this dataset with individual-level information on payment days and the number of days worked weekly and/or monthly. This helps us to assess whether the number of available working days per year, as fixed by religious calendars, is a reliable indication of an average working time, a maximum rarely reached, or a minimum. Beyond, the consideration of the length of the working year and the intricacies of calculating total annual income, we also examine changes in labour regulations to document the evolution of daily working conditions. We posit that considering daily working conditions is an important element in understanding the evolution of living standards over the long run.

1. Public holidays or working days?

In a seminal work, de Vries (1994) coined the concept of ‘industrious revolution’ to describe the concomitant increase in the family labour supply per year, and the consumption of novel manufactured and imported goods. Ever since, the question of working time has been intertwined with the evolution of religious holidays in Europe. Many studies suggest that reducing the number of holidays has led to increased labour supply and allowed consumption to rise (Voth 2000, Allen and Weisdorf 2011, Koyama 2012). Far from being unanimously supported, the ‘industrious

³ According to Sadourny (1979), the population of Rouen was around 30-40 000 inhabitants during the thirteenth century and around 80 000 in 1650 (Bardet 1983).

revolution' nevertheless put the question of available working days per year at the centre of the debates on the European Little Divergence (Clark 2010, Béaur 2017, Moreno Calverías 2017). As part of these discussions, following Allen (2001), economic historians rely on the number of religious holidays per year to compute annual welfare ratios. Based on limited information about public holidays in the Middle Ages, they establish a conservative estimate of 250 working days per year for the period 1300-1800. Although they acknowledge differences between Protestant and Catholic countries, this assumption is criticised as Western Europe never had an unified calendar for religious holidays and the impact of Reformation in reducing them remains uncertain (Grenier 2012, García-Zúñiga 2014).

In France, the number of holidays decreased significantly during the seventeenth and the eighteenth centuries, resulting in an increase in the number of available working days from 270 in the 1640s to almost 300 in the 1780s (Shusterman 2009). However, little is known about the evolution of holidays in the long run and their observance by workers and employers (Rodgers 1940, Léauté 2012, Vincent 2017). In 1232, Pope Gregory IX introduced a general rule that allowed communities to request dispensations to work on holidays if it was necessary, such as during the grape-picking and harvest season. This ended the general prohibition of working on holidays. For instance, in the answers to an enquiry ordered by the Archbishop Colbert of Rouen at the end of the seventeenth century, parish priests made no secret of the abuses and disrespect of religious holidays by their parishioners (Join-Lambert 1953). This raises questions about the use of holidays as a proxy for estimating the number of available working days per year. In this section, we make use of newly collected data derived from synodal statutes, calendars, breviaries, book of hours, and liturgical books, to document the evolution of religious holidays in Normandy between 1250 and 1800, and empirical assess if workers and employers respected them.

In Normandy, as in the rest of medieval Europe, little is known about the evolution of the number of public holidays. The lack of uniformity and the absence of a common legislation have made it difficult to gather information on holidays over time (Grenier 2012).⁴ In the Middle Ages, the right to legislate on holidays, confirmed by Pope Gregory's general rule of 1232, belonged to the bishops, who could abolish or create holidays in their diocese to promote the cult of local

⁴Only the Decree of Gratien in the middle of the twelfth century and the Decretals of Gregory IX in 1232 provide general lists of universal holidays. In the Decree of Gratien, there are 36 holidays in addition to the 52 Sundays. The Decretals of Gregory IX add 4 days to the previous list.

saints. Changes in the number of holidays are therefore specific to each diocese and depend on the pastoral approach that the bishop wished to implement. Despite the variety of situations, based on several studies on French diocese historians have identified two distinct periods (Delmaire 1994, pp. 351-68, Lalore 1869, Léauté 2012). The first period saw a continuous increase in the number of holidays from the first centuries of Christianity to the thirteenth century. The second period, from the thirteenth century until the Industrial Revolution, witnessed a steady decline. Beyond these general trends, the evolution of public holidays in the fourteenth and fifteenth centuries, particularly after the Black Death, is still unclear as local studies only rely on one or two sources to provide such a list. According to Barralis (2017), the limited number of legal documents regarding holidays indicates that episcopal body did not intend to legislate on this matter during the fourteenth and the fifteenth centuries. To explore the evolution of holidays across Normandy, it is therefore essential to study each diocese and go beyond the legislative documents in order to provide a comprehensive picture.

Our analysis covers all Norman dioceses (Avranches, Bayeux, Coutances, Évreux, Lisieux, Sées, and Rouen the archbishopric) and is based on a wide range of sources that can be classified into three categories.⁵ The first category consists of provincial council statutes or synodal statutes, which contain all the laws and rules that had to be respected inside the ecclesiastical province or in the diocese such as the time of the mass on Sundays or the list of holidays. As already pointed out by researchers (García-Zúñiga 2014, Barralis 2017), information on holidays is scarce in the synodal statutes, as not all synods were accompanied by the publication of calendars. Most of the time, bishops just remind people that working is forbidden, as well as dancing in public, and that shops and taverns must be closed during religious holidays (Bessin 1717, p. 579). The publication of a list of holidays in synodal statutes always coincides with calendar changes, such as in 1522 when the Archbishop of Rouen, Georges II d'Amboise, abolished ten holidays. The second category comprises pastoral letters or *mandements* issued by bishops to change a regulation and update the list of holidays. These documents progressively replaced synodal statutes during the seventeenth and the eighteenth centuries. After 1695, any application of a new list of holidays in the diocese required the acknowledgment and the endorsement by the royal government through the publication of *lettres patentes* (Shusterman 2009). The last category of sources comprises liturgical documents such as breviaries, missals, manuals, and books of hours intended for a private use.

⁵ See Appendix 1 for a list of the sources used to estimate the number of religious holidays. We adapt the categories used Shusterman (2009) for the seventeenth and eighteenth centuries to classify the documents.

These documents, whether illuminated or printed, always contain a calendar displaying the holidays observed in the area. Figure 1 shows an example of a book of hours used in Rouen around 1475. Holidays, here St. Barnabas on June 11, are often reported using gold ink.⁶ However, it is important to remain cautious when using these documents. They were intended for private use and may contain errors or omissions. Above all, individuals or institutions purchased them for liturgical purposes. Because they were not intended for annual use, they do not indicate moveable holidays, such as the number of holidays after Easter or Pentecost. To circumvent this issue, we allocated moveable holidays to these calendars based on the known synodical statutes of the diocese for the period.



Sources: *Livre d'heures à l'usage de Rouen*, Bibliothèque Méjanes, Ms. 22 (Rés. ms. 2)

Figure 1. Excerpt of a book of hours displaying holidays in August (ca. 1475)

⁶ In other cases, they used red or blue ink. Most of the breviaries and books of hours consulted as part of this study are available online and can be accessed on the website of the *Biblissima* project: <https://portail.biblissima.fr>.

Our analysis relies on more than 2 300 observations of religious holidays derived from 45 sources (5 breviaries, 12 books of hours, 9 *mandements*, 2 manuals, 1 calendar, 1 *collectiarum*, 6 missals, 1 provincial statutes, and 8 synodal statutes).⁷ We compute for each year and diocese the number of religious holidays during which work was not permitted— excluding Sundays and holidays that necessarily fall on a Sunday such as Easter or Pentecost. We did not include days during which it was permitted to work after mass. If the geographical and temporal distribution of observations may seem uneven, we do not think that this is the result of a collection bias. According to Barralis (2017), despite the rise of theological debates on holidays, ecclesiastical authorities did not show interest in legislating on this issue during the fourteenth and the fifteenth centuries. As a result, our data mostly come from private liturgical documents for this period. The desire to reduce public holidays in Normandy seems to have emerged towards the end of the fifteenth century, during the reconstruction period after the end of the Hundred Years' War. On the other hand, our estimate for the eighteenth century relies only on texts issued by bishop, which we thoroughly searched.

Figure 2 displays the evolution of religious holidays in Normandy by diocese between 1250 and 1790.⁸ Our data collection confirms the dynamics previously identified in the literature. The late thirteenth and early fourteenth centuries marked a turning point as the number of public holidays in Normandy ceased to increase. The view of work in Christian societies began to change towards the end of the thirteenth century, and the promotion of laboratories by the clerics within the trifunctional model may have been the catalyst for this shift (Arnoux 2012, Bardoneschi 2018). It was probably with this in mind, and in order to prevent the number of holidays in the ecclesiastical from increasing, that Guillaume de Flavacourt listed 47 holidays to be observed in the statutes of the provincial council of Pont-Audemer in 1282 (Bessin 1717, p. 1747). Due to data limitations, it is nevertheless not possible to determine whether the slight increase of holidays in the second half of the fourteenth century followed or preceded the Black Death. Overall, our results show that the number of holidays remain constant between 1350 and 1500. They also confirm the large number of working days available during the Middle Ages, with around 250-260 theoretical days of work per year, once we subtract Sundays. This estimate grounded on the use of religious

⁷ We would like to thank Noah Shusterman for kindly sharing data on Norman *mandements* for several dioceses in the seventeenth and eighteenth centuries.

⁸ We stop our investigation with the French Revolution and the introduction of the Republican calendar in 1793.

calendars is line with the average number of working days per year at Rouen’s Cathedral during the second half of the fifteenth century (Lardin 2007, pp. 153-6).

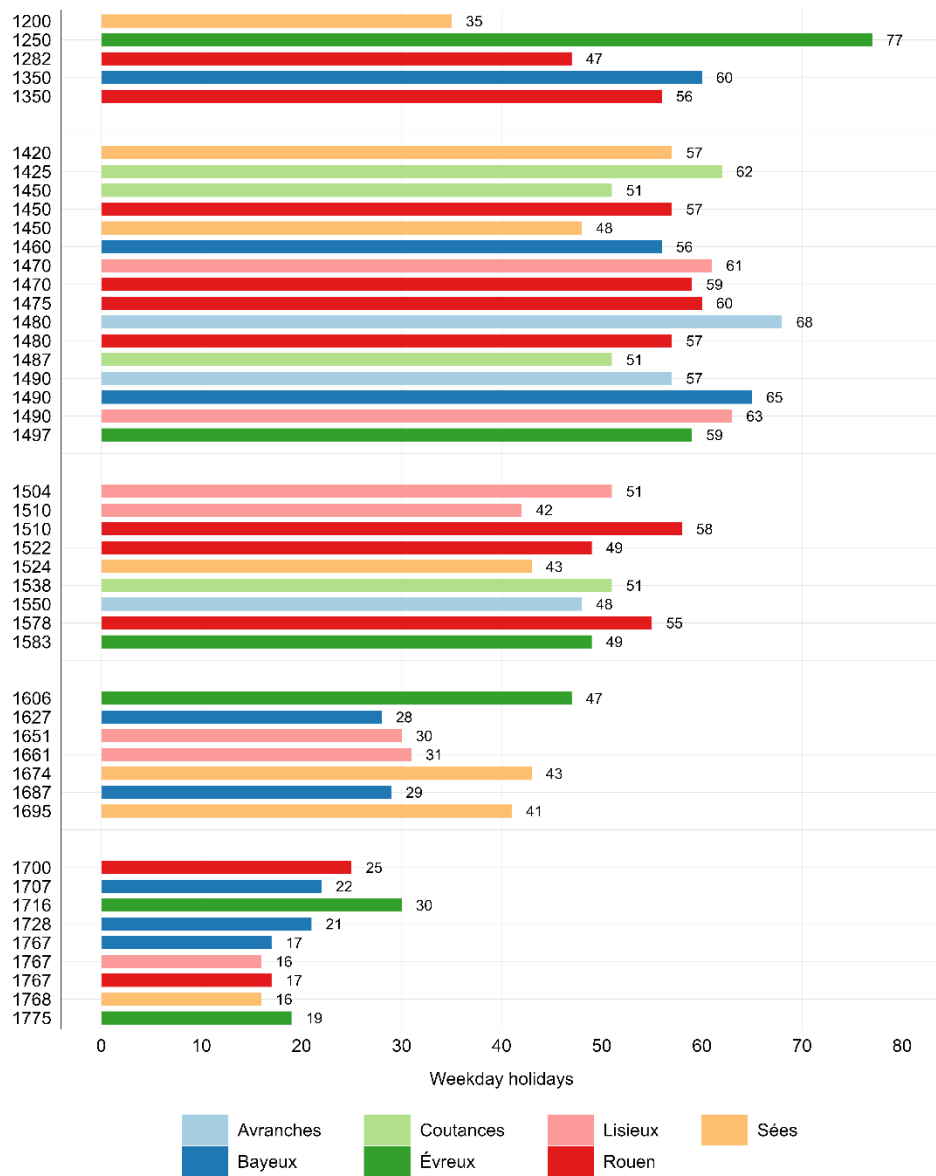
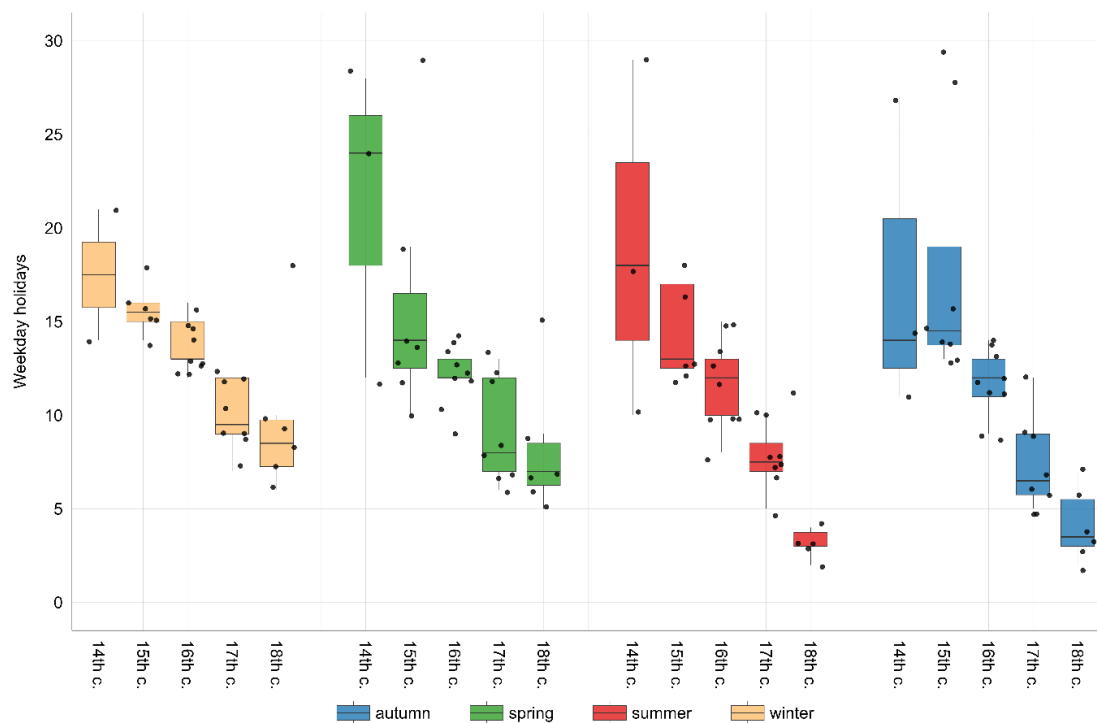


Figure 2. Number of holidays in Normandy by diocese (1250-1790)

We can also use our newly collected data to provide insights into the role of Reformation in reducing the number of public holidays, which is sometimes considered as plausible explanation for the divergence in working pattern between Protestant and Catholic countries (de Vries 1994). In Normandy, the first phase of reduction of holidays preceded the Reformation. The point of departure appears to be the Synod of Coutances of 1487 by Geoffroy Herbert, the first Norman

bishop to promulgate a list of holidays since the provincial council of 1282. Importantly, the synodal statutes shows that, under certain conditions, it was still possible to work during holidays. It explicitly uses the mention *exceptis messoribus* to remind that harvesters could work on certain feasts during summer, such as the Beheading of Saint John the Baptist on 29 August, or the Feast of the Holy Cross on 14 September (Bessin 1717, p. 574). Few years later, the bishop of Lisieux (ca. 1510), the Archbishop of Rouen, George d'Amboise II (1522), and the bishop of Sées (1524) emulated the decision of Geoffroy Herbert and abolished more than ten days of holidays in their diocese, bringing up the theoretical number of working days to 270 in the early sixteenth century. The second major wave of reduction of public holidays began in the second half of the seventeenth century, following the bull of Pope Urban VIII in 1642 and the initiative of Louis XIV (Shusterman 2009). Finally, in Normandy, the last major reduction in the number of public holidays took place in the middle of the eighteenth century, possibly because of the many abuses that took place, and the start of the industrialisation. By the 1770s, about fifteen holidays were observed in all the dioceses, bringing up the theoretical number of working days available to 290-300 per year.⁹

Figure 3. Number of holidays in Normandy by season (1250-1790)



⁹ Interestingly, the first notable reduction in public holidays during the fifteenth century is predominantly attributable to the elimination of days off in the spring, driven largely by the many holidays around Easter and Pentecost (Figure 3). The second wave of reductions appears to focus on the summer and autumn months. Overall, the number of public holidays in winter was halved, while the reductions for spring and summer were even more pronounced, with holidays decreasing by a factor of three.

Overall, these trends suggest that the evolution of the number of religious holidays in Norman dioceses is in line with that of the dioceses of Cambrai and Troyes in northern France (Desmette 2009), and Spanish dioceses (García-Zúñiga 2014). However, the methodology used in this section has some caveats for the study of working time. While the use of synodal status, books of hours, missals, and breviaries, is useful to track the evolution in the number of holidays over time and across space, they do not provide information on the enforcement of these holidays, an essential parameter for anyone interested in the evolution of annual working time in the long run.

2. The time they work: Sacrosanct holidays or regular working days?

In the countryside, the priest had the responsibility to ensure that parishioners respected the rules of the synodal councils about holidays. They also had to report to the bishop those who did not comply. In addition to enforcing the rules of the synodal councils, they were responsible for authorising individuals who requested to work during holidays (Léauté 2012). Since the Decretals of Gregory IX in 1232, working on holidays was allowed if deemed necessary by the priest. While finishing a linen cloth on a Sunday may not have been considered necessary, most agricultural work, such as milking, harvesting, grape-picking, or bringing in hay before the rain, was deemed urgent and essential. From the Middle Ages to the end of the eighteenth century, despite the number of exceptions to the law, the observance of holidays was a constant concern for bishops, who never ceased to denounce the growing number of abuses during holidays (Léauté 2012, Vincent 2017). The question that arises is whether it is possible to determine if working on holidays was the exception or the norm. In this section, we build on the information collected in Chambru and Maneuvrier-Hervieu (2023) and extend it back to the Middle Ages to study changes in working patterns. In particular, we make use of a subset of workers identified in private and institutional account books to discuss how well public holidays were respected by employers and employees, and how the maximum duration of the weekly and annual working time evolved over the centuries. We then provide additional tentative evidence on the duration of the working year by using various examples of daily labourers registered in account books.

2.1. “They work most of the time, without asking permission”

In 1687, the archbishop of Rouen conducted an enquiry in which he asked the priests, among other questions about the religious life in their parishes, if holidays were respected. The priests' responses reveal many abuses and a reluctance to observe holidays in the countryside. In the rural parish of Oudalle, located 15 km to the city of Le Havre, the priest declared that his parishioners “work on holidays, but we cannot stop them, they are so incorrigible”. The same observation was made by the priest of Etainhus where “they work most of the time even when it is not necessary, without asking permission” (Join-Lambert 1953, p. 270). The abuses reported by priests were not confined to Normandy. In the diocese of Lyon, a survey of 1654 stated that the inhabitants of the countryside were working in the fields on Sundays and during holidays (El Hajjé-Kervévan 1987).

According to the episcopal visits, the non-respect of holidays appears as a constant feature of the early modern era. This observation is echoed in the decrees published by the Parliament of Rouen, many of which reiterate the ban on working on Sundays and during public holidays. For instance, a decree issued on 28 June 1770 reminded all paper mill and textile manufacturers that it is forbidden to work on holidays and Sundays.¹⁰ Only grain millers were allowed to grind on Sundays and holidays except during Mass time. Alongside these reminders, the number of authorisations and exemptions to work on Sundays continue to rise throughout the period creating a scenario with several possibilities. In 1672, an ordonnance issued by Louis XIV authorised the transportation of goods every day, with only four exceptions: Christmas, Easter, Pentecost, and All Saints Day. One century later, on 23 May 1765, a decree issued by the Parliament of Rouen authorised the sale, purchase, and preparation of salted herring on Sundays and holidays, except during the Mass. According to Maitte and Terrier (2020, pp. 173-195), exemptions that permitted work on Sundays or holidays were so numerous that it is probably impossible to compile a comprehensive list. Infractions were also a common endeavour. On September 5, 1777, Charles Lesnault and Pierre Renouf, farmers at Avenay close to the city of Caen, were convicted by royal judicial court of Caen for passing in front of the church during the Sunday mass to work in their fields even if there was no necessity. This caused a great scandal as all the gleaners to leave the mass to follow them into the fields (Vanel 1905, pp. 76-8).

¹⁰ Arrêt du Parlement de Rouen du 28 juin 1770.

It is difficult to ascertain the conclusion we can draw from this small subset of examples derived from the records of the Archbishop of Rouen's visits, Parliament's decrees, or judicial archives. Were holidays and Sundays mere working days rather than days of rest dedicated to prayers? Or is this evidence mostly the product of the rhetoric used by local priests, who authorised all kinds of work on holidays in their parish, to cover themselves during the bishop's visit? To study the extent to which religious holidays were enforced, we focus on a subset of individuals who were paid weekly or monthly for their daily labour and who happened to work during a week with a holiday between 1370 and 1800. The sample includes individuals employed for a short duration, up to several weeks, and a specific task such as harvesting, working on a construction site, or building ships.

One of the earliest documents that can be used is an account written in 1371 by Robert du Port during Du Guesclin's siege of the castle of Conches where many carpenters were employed. Among them was Jehan Le Sirier and eight other carpenters from Lyons-la-Forêt, more than 70 km away from the castle, who received on 8 December 6 *livres tournois* and 15 *sols* for six days of work done since the 2nd of December. According to the Provincial Council of 1282 (Bessin 1717, pp. 170-1), there were only four working days during this week, as in that year the diocese of Rouen celebrated Saint Nicholas on Saturday 6 December and the Feast of the Immaculate Conception on Monday 8, and parishioners were explicitly forbidden to work on both days. Jehan Le Sirier and his companions probably worked during these two holidays. During the Hundred Years' War, the respect of religious holidays varied from one site to another. In the *Clos des Galées*, the king's shipbuilding site located in Rouen, on December 17 and 24, 1379, Jehan Blaise and seventeen other carpenters were paid on both Saturdays for six days of work (Nortier 2000, p. 329). They probably did not respect Saint Thomas' Day on 21 December.

The war or its preparations are not the only reason for the non-respect of holidays. One century later, the Hundred Years' war over, but workers on the building site of the Castle of Neufchâtel did not observe all holidays either. For instance, Colin Serée and Colin Grandin, leaders of a group of dozens of workers digging a ditch, started to work on Monday 1st of June 1472 and were paid on credit for six days. They received eight other payments until 27 July. During these two months, they respected several holidays but bypassed some others. During the week of the Saint John on June 24, they worked only five days and then started the next week on Tuesday 30 because of the Saint Peter and Saint Paul indicating that they respected these holidays. However, on July 20 they

were paid for six full days of work for a week in which there were two holidays (Mary Magdalene on 22 July and Saint Jacob on the Saturday 25). Overall, they worked 50 days between the 1st of June and the 1st of August, even if there were theoretically only 47 available working days (Semichon 1937, pp. 88-97).

In the following centuries, despite the reduction of religious holidays, the observance by workers differed from one site to another, especially during the harvest or apple-picking season in September. In the diocese of Sées, the abbey of Silly-en-Gouffern employed Marie Drugeon daily during the harvest. She received weekly payment between August 3 and September 14, 1698. On August 10, she received 26 *sols* corresponding to six and half days of work, suggesting that she may have worked both on Sunday, probably after the Mass, and during the Feast of the Transfiguration (6 August).¹¹ It is possible that societies and religious authorities tolerated more work after the Sunday Mass. In 1759, on the shipbuilding site of the Duke of Harcourt, Antoine Fouque received a payment for 6.75 days on Saturday 23 June and for 5.75 days on Saturday 30. The three quarters of the day for which he was paid probably correspond to the work he did on Sunday and the Saint Peter (August 1) after the Mass. In private account books, there are many references to work being carried out on Sundays. In the account book kept for over thirty years by François Jacques Maret, a farmer from Bueil, near Évreux, Sunday appears to be the day for accounts, deliveries, and the recruitment of labour for the week. On Sunday 24 October 1745, he wrote that Gilles Delouis has delivered him 38 *aulnes* of canvas. On 17 December 1747, he travelled to Chaussy, 30 km away from his farm, to deliver 58 sheeps to Romain Gissor. Two months before, he had summarised his Sunday (31 October) as follows: “I have counted with Nicolas Eschard, *wheelwright* at Villiers, all the past work up to the present day, both the mowing and wheelwrighting” (Bodinier 2014, pp. 139, 150). In some cases, it is the use of, and conflicts over, natural resources that lead workers to work on public holidays. At the end of the eighteenth century, in the city of Lisieux, a dispute broke out between the tanners and the wool workers (*fabricants de frocs*), who complained about the pollution caused by washing wool in the river and asked for a regulation. The investigation showed that it was impossible to regulate and limit wool production, even on public holidays, without causing great damage to the manufacture of the city (Formeville 1837, pp. 59-60).

11 Arch. dép. Orne, H 1211.

As compelling these examples could be, none of them means that workers were systematically disrespecting holidays during the Middle Ages and the Early Modern period. Our data suggests that both workers and employers respect holidays and Sunday for salaried work. For instance, Johan Renouart and nine other manual labourers (*ouvriers de bras*) of the *Clos des galées* in Rouen happened to work six days week in November 1379. However, they received a payment for 3.5 days of work on Sunday 4 December indicating that they probably did not work on Saint Andrew's and Saint Éloi's Day (30 November and 1st December; Nortier 2000, p. 326). In 1790, during the harvest season at the Castle of Herbouville in the Pays de Caux, a daily worker named Chandelié received a payment for 17 days of work done between August 28 and September 18. This suggests that he probably respected all Sundays and the Nativity of Mary on September 8, as there were 17 theoretical working days during this period.

While our data confirms that the religious calendar cannot be considered as an absolute rule due to the numerous infractions documented in the archives, both the observations on payments and the number of workings days per year suggest that salaried workers generally respected holidays and Sundays, especially in urban areas. From the Middle Ages onward, most guild statutes prohibited working on Sundays and public holidays. The first article of the statutes of needle makers of Rouen stated that 'no person in the trade of needle-maker may work or give work to someone on holidays and Sundays' (Ouin-Lacroix 1850, pp. 639-40). Although salaried workers and urban guilds tended to respect the calendar established by religious authorities, one has to investigate how many working days theoretically available were actually worked on average in rural and urban areas.

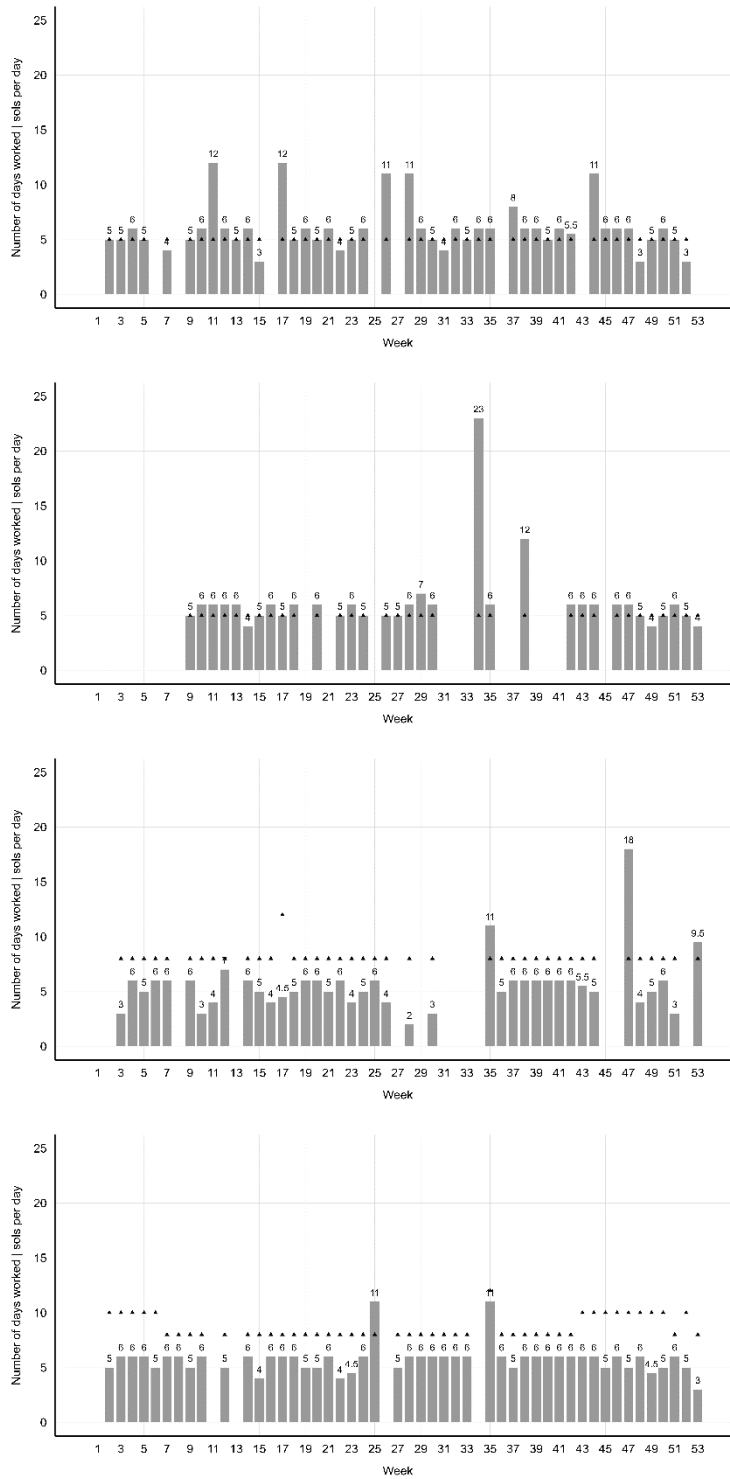


Figure 4. Some working patterns during the eighteenth century

2.2. The Time They Work: The Maximum Number of Days Over Centuries

By definition, individuals retrieved in account books are exceptional since the vast majority of paid labour occurring before the Industrial Revolution did not leave any traces in archives. We think that studying the working pattern of these individuals can nonetheless inform the discussion about the evolution of working time between the late Middle Ages and the 19th century. In this section, we focus on a subset of workers to show what was possible with respect to the number of days worked per week and per year.

During the second half of the fifteenth century, Guillaume Pouchin was working as a mason. Between autumn 1462 and summer 1463, he spent two periods at the Abbey of Montivilliers, 10 km east of Le Havre. On the first spell, he worked an average of four and half days per week, before working an average of five and half days per week during his second spell.¹² Would have Guillaume Pouchin been able to secure employment all year long, he would have worked about 250 days per year. In Louviers, a normal working week has six days in 1454, even though some weeks were shortened to four and a half days due to religious holidays (Sintic 2007). A thorough respect of holidays would imply a working year of approximately 250 days per year (Figure 1). That said, while we find many individuals working consistently 5 days per week over short periods, we are unable to identify individuals putting more working days per week. This suggests that, in line with estimates derived from religious calendars, workers were probably engaging in paid labour for no longer than 250 days before the sixteenth century. These estimates are slightly higher than those provided by Ridolfi (2021) for France for the same period.

Two centuries later, Jeanne du Noier agreed to work for Pierre Sevestre in exchange of 12 *sols* a day without boarding. Her contract stipulated that she accepted to come to work to Sevestre's house every day, except for religious holidays and Sundays (Duval 1883, p. 17). Data from Figure 1 suggest that she probably worked around 270 days that year. At the turn of the eighteenth century, data from the Ardenne Abbeys, near Caen, suggest that among the 75 agricultural workers receiving at least 4 weekly payments, the average length of the working week was five and half days. At the top of the distribution are individuals such as Déterville and Denis Lancé who respectively worked during 291 and 280 days per year, earning 70 and 73 *livres tournois* (Figure 4a).

¹² During both periods, his daily wage remained fixed at 2 *sols* and 6 *deniers*. Arch. dép. Seine-Maritime, 54 H 108.

In 1712, Renoult is also working repeatedly at the Ardenne Abbeys but a lengthy absence in February and January meant that he only totalled 217 working days.

In 1748, Saint-Vas also regularly worked at the Castle of Bénouville before he died in the early days of 1749. That year, he had received 42 weekly payments totalling 226 days, averaging 5.38 workdays per week. Figure 4c reveals a puzzling gap: no work recorded during the summer months. Was he recovering from its weak condition— explaining his missed spring work—, or was he tending his own field or working elsewhere during the peak of the harvest season? Without further evidence, these remain unanswered questions. but that he put nearly 10 days of work during the last two weeks of the year, marked by the celebrations of the Nativity of Jesus and Saint John the Apostle, reveals that his summer absences were probably not entirely voluntary. Sickness was a frequent cause for missed work in eighteenth-century rural communities. Leroy (1934, pp. 171-2) reveals that a daily labourer in Saint-Pierre-du-Boscguérard missed 14 days of works, due fever, drunkenness, childbirth in his family, and coldness on New Year's Eve.

Other workers show more diligence. In 1748, François Morin is a daily labourer working at the Castle of Bénouville paid by the week, for various tasks, such as managing the manure, haymaking, and working at the cider press. By the end of the year, he had worked six days a week 28 times and received 49 weekly payments, totalling 276 days of work (Figure 4d). The same year, the lord of Bénouville reported that he did 11 payments amounting to 71 *livres tournois* to Buchotte for the 356 days of works she accomplished.¹³ Further south in Lévaré, Guilloux was also working five and half days per week as a mason at the local castle. Between 1759 and 1762, he worked from 258 days to 280 days per year.¹⁴ Few decades later, most workers employed at the lordship of Carrouges worked five and half to six days a week. In 1799, Vivans earned 180 French Francs in 49 weekly payments after he worked 270 days. In the following year, he worked every single week and received 52 payments amounting to 195 French and corresponding to 291 days of work. Most workers spent less time at the Castle of Carrouge, working on average 24 to 34 weeks per year— with an average 5.6 days per week—, but a few such as Maugert and Romain worked 296 and 312 days in 1800.¹⁵

¹³ Arch. dép. Calvados, 1J 321, Compte d'exploitation du Château de Bénouville.

¹⁴ Arch. dép. Calvados, F 4172, Compte de dépense du Château de Lévaré.

¹⁵ Arch. dép. Orne, 34J30.

In this section, we scrutinise specific workers, not meant to be representative, to explore the maximum workday possible between the Middle Ages and 1800. By analysing dozens of account books, we observed a general upward trend: from a 250-day maximum in the fourteenth century to 300 days by the late eighteenth century. Our discussion reveals few reasons beyond public holidays why workers might miss workdays. Unfortunately, the paucity of information makes it difficult to understand what individuals like Saint-Vas and Renoult did during their two-month absences. Were these isolated incidents or symptomatic of worsening working conditions? While harsher work is often associated with nineteenth-century factories, the dynamics of work intensity across centuries remain largely unexplored. This next section lays the groundwork for further investigation into this crucial aspect of pre-industrial life.

3. From bells to clock: the length of a working day

On 1st July 1758, a draper appeared before the jurisdiction of the magistrates (*échevins*) of Rouen, who were responsible for the police and the justice of the manufactures, to request a wage increase of one *sol* per day. He claimed that during the last six months his master forced him to work until 8 p.m., which was one hour later than the regular working day for the city's drapery workers. In July 1766, an apprentice dyer came forward to denounce his master for making him work until midnight (Le Parquier 1933, p. 155). Despite unsuccessful requests, these few cases, and the many others documented in judicial archives, highlight an important but less studied aspect of historical research: the length of a working day and its evolution in the long run. This is mainly due to the difficulty to identify relevant information in the archives. Among the dozens of account books we read to collect information on wages, we never find a single instance of employers reporting the duration of the working day (*journalée*). The absence of information in these documents suggest that the latter was either regulated and set by the authorities; or agreed upon by the worker and the employer during the recruitment. However, two question remains: did the length of a working day change between the Middle Ages and the late eighteenth century? Was the length of a working day similar across sectors and across space?

In the 1960s, seminal works of Scholliers (1960), Le Goff (1960) and E. P. Thompson (1967) sparked a debate on working hours during the pre-industrial era. E. P. Thompson (1967) posited that working hours increased during the Industrial Revolution due to work discipline in factories. Studying the cities of Ghent and Brussels, Scholliers (1960) rather suggests that the Early Modern

period was characterised by a secular increase in the number of working hours. Later, de Vries (1994) follows Scholliers to explain the rise of the ‘industrious revolution’. Using thousands of court cases, Voth (1998) partially confirmed an increase in the number of daily working hours in London between 1760 and 1800. However, as Mokyr (1999) pointed out, we still lack empirical evidence to know with precision how many hours were worked before the Industrial Revolution. Far from being trivial, the length of a working day is an essential parameter to provide a better understanding on the evolution of living standards. In this section, we provide some tentative evidence based on guilds regulations and judicial archives to document the evolution of working hours in Normandy from the thirteenth to the late eighteenth century.

3.1. Working hours in medieval Normandy

In the past two decades, extensive research has been conducted on the history of labour in medieval Normandy. Some studies highlight the enduring concern within medieval societies regarding the measurement of working hours (Roch 2007, Arnoux 2009), while other underscore how authorities or craft institutions seldom exerted direct control over worker remunerations but influence them through market mechanisms (Rivière 2022). Additionally, several studies focus on wages and working conditions within specific sectors, such as the construction sector (Bois 1976, Lardin 1998, Moulin 2007) and the textile industry (Roch 2013).

However, accessing information regarding the length of the working day prior to the Black Death remains challenging. Among the earliest records pertaining to the regulation of working hours in Normandy dates back to the rules established by the drapers of Montivilliers in 1322. These regulations, confirmed by the king in 1332 following protracted conflicts involving weavers, drapers, and fullers, mark a milestone in the historical documentation of labour practices (Roch 2007). The article 8 of the *règlements* indicates that the day of a worker started at sunrise (*soleil levant*) and ended at sunset (*soleil couchant*). According to articles 16 and 17, fullers were allowed to work from sunrise to sunset between mid-September and mid-March, and until the last sound of vespers (7 p.m.) between mid-March and mid-September.¹⁶ In the following years, the outbreak of the Black Death resulted in significant changes with the introduction of clockwork and the introduction of overtime work (Roch 2007). In the city of Rouen, at least since 1389, the clockwork

¹⁶ Ordonnance des Rois de la troisième race, vol. XII, 1777, pp. 456-8.

of the belfry was giving the official time to almost all workers (Lardin 2007). As stated in the statutes of spinners or spursmiths in 1358, the sounds of the two bells marked the beginning and the end of the working day (Ouin-Lacroix 1850, p. 641). Because sunlight varied over months and statutes did not always the duration of breaks, providing estimate of the annual number of working hours remains a difficult exercise.

To circumvent this issue, we rely on a precious document analysed by Lardin (2007): the rule of masons (*règlement des maçons*) working on the Cathedral and several account registers for the years 1385-7. The rule of masons reports the length of working days with detailed indications on the number of hours worked according to the season of the year and whether the day preceded a religious holiday. It also provides information on the number and duration of breaks, and a list of the main holidays. Lardin suggests that the rule of masons applied to the Cathedral worksite and all other building sites across the city, as well as to other sectors. He documents that masons began work as early as 4:30 a.m. between Ascension Day and 1 September, and as late as 7 a.m. between Saint Martin's Day and Lent. A usual working day ended between 5:30 and 7:30 p.m., with three breaks totalling two and half hours in the summer, and two breaks totalling one hour in winter. This means that masons worked for about 9-10 hours a day during the (three) winter months, and about 11 hours a day, not counting breaks, during the rest of the year. In total, a mason working all year long on the Cathedral site in 1385-6, including Saturday and the eve of holidays— when work stopped at an earlier time— would have worked 243 days or about 2559 hours per year. Focusing on the masons working on Saint Paul's Cathedral in London during the eighteenth century, Stephenson (2018) provides a similar estimate, except those masons were working 12 hours a with one hour break.

In the decades following the Black Death, masons were not the only profession in Normandy to work such long hours. To document the evolution of working hours over time and across space, we collected data on the length of a working day in written trade rules (see Appendix 2). For instance, in 1402, the drapers of Caudebec worked similar hours to the masons of Rouen, starting at sunrise and finishing at sunset, with a two-hour break in summer and one and half hour break in winter (Roch 2013, pp. 258-80). In 1424, the distinction between winter and summer disappeared for the drapers and fullers of Rouen, as the working day extended all year round from sunrise to 8 p.m. (*heures de complye*). At the end of the fifteenth century, the increase in economic activity and market expansion after the Hundred Years' War appear to have led to longer working

hours and to a deregulation of working time (Geremek 1968 pp. 80, 105, Roch 2007). Similar working hours can be found in the statutes of the drapers of Gruchet in 1488. If they maintained a distinction between summer and winter as well as two breaks, they agreed to work from sunrise to sunset during winter and from half hour after the sunrise to half hour before the sunset in summer. Finally, in 1505, carpenters of Gisors agreed on a longer working day. They stated that no one would be able to work before 4 a.m. or after 9 p.m. (*après neuf heures de vèpres*) except for urgent work and without mentioning any breaks in their statutes (Passy 1907, p. 57). Overall, research on several sectors and evidence collected from the statutes of craft institutions suggest that the length of a working day increased after the Black Death. Unfortunately, the documentation only pertains to urban corporations and does not offer any information regarding working hours in rural areas. The length of a working in the countryside was probably similar in length to that of Norman towns, indicated by bells from sunrise to sunset.

3.2. Working more to earn more?

By the end of the Middle Ages, there was a notable decline in the number of religious holidays alongside an increase in daily working hours. While our previous investigations have elucidated the reduction in holidays during the sixteenth and seventeenth centuries, it remains uncertain whether working hours also underwent significant changes after the fifteenth century. Such a shift in the two centuries preceding the Industrial Revolution is far from being trivial and could carry profound implications for understanding labor dynamics and economic conditions of the time.

This potential change in working hours has significant ramifications for two key areas. Firstly, there is a crucial concern for well-being, as the disparity between a 9-hour workday and a 12-hour one is substantial. This is also relevant for the development of home-based spinning as a source of additional income. Secondly, the rise in nominal wages during the seventeenth and eighteenth centuries prompts inquiry (Chambru and Maneuvrier-Hervieu 2023): was the increase attributable to productivity gains or simply an extension of daily labour hours? To investigate these issues, we gathered information from judicial sources, guild statutes, and quantitative evidence to document the trajectory of working time on the eve of the Industrial Revolution.

According to the book of trades (*livre des métiers*) of Gisors, which contains most of the guild statutes of the city, the length of a working day in the sixteenth century was slightly longer than

their counterparts in the Middle Ages. For instance, the working day of coopers in 1580 started at 5 a.m. to end at 9 p.m. (Passy, 1907, p. 153). The nail maker's statutes enshrined similar working hours, allowing them to work from 4 a.m. to 8 p.m. in summer and from 5 a.m. to 7 p.m. in winter. Of course, they probably enjoyed one or two breaks during the working day even if they are not mentioned in the statutes. Such working hours seem common throughout Norman towns during the seventeenth century as shown in the updated statutes of several professions (see Appendix 2). In 1652, the drapers of Lisieux collectively updated the statutes of 1422 and abolished the distinction between winter and summer working hours. The new working day started at 5 a.m. to end at 8 p.m. all the year.¹⁷ These 15-hour working days, which probably included breaks, were not specific to the textile industry. In 1608, the needle makers of Rouen set up the working hours between 5 a.m. and 9 p.m. Even if they kept the tradition of summer and winter hours, similar working hour are established by the mirror and glasses makers in 1639 (Quin-Lacroix 1850, p. 695). The working hours defined during the seventeenth century seem to have been maintained in the following century, with working days lasting between 11 and 13 hours. In the 1750s, textile workers in Rouen were working 13.5 hours by day, from 5 a.m. to 8 p.m. with a 30-minute break for breakfast and a one-hour break for diner (Le Parquier, 1933, p. 154).

The guilds' statutes specify working hours, which raises questions about whether they should be considered a maximum that workers rarely reach or the standard working hours for guild workers each day. Some answers can be found in the organization of labour market and in the several conflicts that occurred between workers and masters. Several examples confirm that guilds' statutes correspond to the hours worked by daily labourers. In 1672, after a conflict between dyers' workers and masters, the magistrates of Rouen obliged employers to hire daily workers present on the Pont-de-l'Arquet at 5 a.m. They also forced employers to respect working hours and to not work beyond authorised hours by publishing a regulation bill in the square. The new rule stated that textile workers can only work between 6 a.m. and 7 p.m. in winter and from 5 a.m. to 8 p.m. in summer (Jubert 1931, p. 253). To be hired, daily labourers had to present at 5 a.m. at one of the town's designated squares, such as Croix-de-Pierre, Pont-de-l'Arquet, or Darnétal bridge. In 1739, the statutes of the Carpenters of Rouen state that 'Carpenters, companions or carpenters employed daily may not leave those for whom they work, except for lack of payment, as long as the work

¹⁷ Arch. dép. Calvados, 6 E 326.

they have begun continues, and must adhere to the old customs and regulations regarding pay and working hours' (Ouin-Lacroix 1850, pp. 597-8).

The average 12-hour working day is also confirmed by the rule of several large manufactures during the eighteenth century. In the 1770s, at the manufacture of Tournelville, producing glasses and glazing, the working day began at 5 a.m. and ended at 7 p.m., with a two-hour break (Jigan 2003, pp. 241-59). Miners and carpenters of the Molay-Littry coal mine worked similar hours at the end of the eighteenth century.¹⁸ In 1794, the director of the coal mine even wrote that workers responsible for transporting the coal to the bottom of the pits were complaining about the bread. They said that the pound and a half of bread they were given was not enough for the 14- or 15-hour working day without a break.¹⁹ The archives of the coal mine also shed light on the link between wage increases and working hours at the end of the eighteenth century. After a petition sent by the workers, in March 1792, the director agreed to increase wages but to one condition: an increase of working hours per day. For instance, blacksmiths were to earn 6 *livres* more per month on condition that they work 10 hours a day instead of 9.²⁰ In the countryside, a similar pattern was probably at use during the harvest apple-picking season. In the account book of the Marquis d'Herbouville, the days worked in August (*journées faites au mois d'août*) were distinguished from the other days (*journées*) of the year and were paid more for men and women. In 1789, the wife of Quevedille, employed on several occasions at 15 *sols* a day, was paid 20 *sols* a day for the 16 days she did in August.²¹ This wage increase was probably intended to retain labour for the harvest. However, the addition of the mention 'August days' in the account book suggests that the wage increase corresponds to a, increase in working hours to meet the urgent needs of the harvest.

Overall, a cautious estimate would set the length of a working day to be around 11-12 hours throughout the seventeenth and eighteenth centuries. With an estimated 270-290 working days—derived from the number of religious holidays—, this suggests an annual average of 2,970 to 3,480 working hours. Contrasting this with the estimated maximum annual working time of a mason towards the end of the fourteenth century, we note a significant increase in annual working hours, ranging from a 16-35%. The paucity of sources detailing working hours makes it difficult to refine

18 Arch. dép. Calvados, F 7052. For additional information about labour at the coal mine of Molay Littry, see Coftier (2006).

19 Arch. dép. Calvados, 4 L 9.

20 Arch. dép. Calvados, Nouvacq 804.

21 Arch. dép. Seine-Maritime, 138 J 28.

these estimates further. Nevertheless, our estimates align closely with those put forth by Maitte (2011, pp. 27-49) for Venice and Brussels. She found that glassworkers in Venice were working around 2,900 hours a year and workers in Brussels between 2,700 and 3,240 hours at the end of the eighteenth century. Voth (1998) also suggests that the number of annual working hour in London were probably ranging around 3,000 hours at the end of the eighteenth century. These estimates imply that the benchmark of 3,000 working hours per year, commonly associated with the 19th century and the advent of the Industrial Revolution, likely existed as early as the seventeenth and eighteenth centuries.

Conclusion

The relationship between changes in working time and the evolution of living standards in the long run is probably one of the most debated topics in the literature on the onset of the Industrial Revolution. This chapter uses a wide range of sources and approaches, including number of available working days per year, individual workday counts from account books, and daily working hour estimates, to address several key questions. While the limitations of historical archives require caution in interpreting our findings, the results nonetheless prompt a reevaluation of long-term trends in working time and labour conditions. Our analysis suggests that the common assumption that 250 working days per year was the norm for many labourers during the late Middle Ages. This figure seems, however, higher for the later period. By the mid-eighteenth century, it was not uncommon for individuals to work as many as 290-300 days per year. In addition, working hours also increased between the Middle Ages and the eve of the Industrial Revolution. This rise in working time seems attributable to two factors: lengthened daily hours (adding one or two hours) and reduced holidays, leading to more available working days. Thus, the increase was both extensive (more days) and intensive (longer days), with significant implications for living standards. In general, the increase of working time can be attributed to two different factors: longer working hours (one or two hours per day) and the reduction of holidays which resulted in more working days available per year. One question concerns the additional income generated. Did it outweigh the increased caloric needs from longer hours? Another vital aspect is the impact of intensified work on living standards. While higher income may have spurred consumption of new goods, if achieved through worsening labor conditions, true improvements in living standards remain debatable.

References

- Allen, Robert C. 2001. "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War." *Explorations in Economic History* 38 (4): 41-47. <https://doi.org/10.1006/exeh.2001.0775>.
- Allen, Robert C., and Jacob Weisdorf. 2011. "Was There an 'Industrious Revolution' Before the Industrial Revolution?" *The Economic History Review* 64 (3): 715-729. <https://doi.org/10.1111/j.1468-0289.2010.00566.x>.
- Arnoux, Mathieu. 2009. "Relation salariale et temps du travail dans l'industrie médiévale." *Le Moyen Age* CXV: 557-581. <https://doi.org/10.3917/rma.153.0557>.
- Arnoux, Mathieu. 2012. *Le temps des laboureurs. Travail, ordre social et croissance en Europe (XI^e-XIV^e siècles)*. Paris: Albin Michel.
- Bardet, Jean-Pierre. 1976. *Rouen au XVII^e et XVIII^e siècles. Les mutations d'un espace social*. Paris: Société d'édition d'enseignement supérieur.
- Barralis, Christine. 2017. "Jours chômés et fêtes dans la moitié nord du royaume de France au XV^e siècle, d'après les normes épiscopales." In *Orare aut laborare ? Fêtes de précepte et jours chômés du Moyen Âge au début du XIX^e siècle*, edited by Philippe Desmette and Philippe Martin, 73-83. Villeneuve d'Ascq: Presses universitaires du Septentrion. <https://doi.org/10.4000/books.septentrion.17331>.
- Bessin, Guillelm. 1717. *Concilia Rotomagensis provinciae*. Rouen: François Vautier.
- Bodinier, Bernard. 2013. "Un journal paysan au XVIII^e siècle. Le livre de recettes et dépenses de François Jacques Maret laboureur et vigneron à Bueil (Eure), de 1730 à 1761." *Histoire & Sociétés Rurales* 40 (2): 97-54. <https://doi.org/10.3917/hsr.040.0097>.
- Bodinier, Bernard. 2014. "Un journal paysan au XVIII^e siècle. Le livre de recettes et dépenses de François Jacques Maret laboureur et vigneron à Bueil (Eure), de 1730 à 1761." *Histoire & Sociétés Rurales* 41 (1): 137-193. <https://doi.org/10.3917/hsr.041.0137>.
- Bois, Guy. 1976. *Crise du féodalisme*. Paris: Presses de la F.N.S.P. <https://doi.org/10.3917/scpo.bois.1976.01>.
- Chambru, Cédric, and Paul Maneuvrier-Hervieu. 2023. "The Evolution of Wages in Early Modern Normandy (1600-1850)." *The Economic History Review* 76 (3): 917-940. <https://doi.org/10.1111/ehr.13220>.
- Chaumet, Louise. 1975. "La Corporation des tisserands et drapiers de Gruchet-le-Valasse et son statut en 1488." In *Le Textile en Normandie : études diverses de Rouen*, 107-118. Rouen: Société libre d'émulation de la Seine-Maritime.
- Clark, Gregory. 2010. "The Consumer Revolution: Turning Point in Human History, or Statistical Artifact?" Working Paper No 25467. Munich Personal RePEc Archive. <https://mpra.ub.uni-muenchen.de/25467>.
- Cotier, Pierre. 2006. *Mineurs de charbon en Normandie, XVIII^e-XX^e siècles*. Cabourg: Cahiers du temps.
- Delamare, René. 1919. *Étude historique sur les jours fériés dans le diocèse d'Évreux*. Paris: Librairie Auguste Picard.
- Delmaire, Bernard. 1994. *Le diocèse d'Arras de 1093 au milieu du XIV^e siècle. Recherches sur la vie religieuse dans le nord de la France au Moyen Age*. Mémoires de la Commission départementale d'histoire et d'archéologie du Pas-de-Calais.
- Desmette, Philippe. 2009. "Les fêtes de précepte dans le diocèse de Cambrai à l'époque moderne." *Revue du Nord* 379 (1): 61-81. <https://doi.org/10.3917/rdn.379.0061>.
- Duval, Louis. 1883. *Documents pour servir à l'histoire du pont d'Alençon*. Alençon: E. Renaut-de-Boise. <https://gallica.bnf.fr/ark:/12148/bpt6k66997b>.

- El Hajjé-Kervéan, Nicole. 1987. "Une réforme du calendrier liturgique : l'exemple des fêtes chômées dans le diocèse de Lyon (vers 1650-1787)." *Annales de Bretagne et des pays de l'Ouest* 94 (4): 389-405. <https://doi.org/10.3406/abpo.1987.3265>.
- de Formeville, Henri. 1837. *Notice historique sur la manufacture d'étoffes de laine de Lisieux, depuis sa fondation*. Paris: Derache. <https://gallica.bnf.fr/ark:/12148/bpt6k1161204q>.
- García-Zúñiga, Mario. 2014. "Fêtes chômées et jours de travail en Espagne (1200-1900)." In *Les temps du travail. Normes, pratiques, évolutions (XIV^e-XIX^e siècle)*, edited by Corinne Maitte and Didier Terrier, 63-80. Rennes: Presses Universitaires de Rennes.
- Gemerek, Bronislaw. 1968. "Les salariés et le salariat dans les villes au cours du bas Moyen Âge." In *Troisième Conférence Internationale d'Histoire Économique*, 553-574. Paris: Imprimerie Nationale. <https://doi.org/10.1515/9783111416939>.
- Grenier, Jean Yves. 2012. "Temps de travail et fêtes religieuses au XVIII^e siècle." *Revue historique* 3 (663): 609-641. <https://doi.org/10.3917/rhis.123.0609>.
- Humphries, Jane, and Jacob Weisdorf. 2015. "The Wages of Women in England, 1260-1850." *The Journal of Economic History* 75 (2): 405-447. <https://doi.org/10.1017/S0022050715000662>.
- Humphries, Jane, and Jacob Weisdorf. 2019. "Unreal Wages? Real Income and Economic Growth in England, 1260-1850." *The Economic Journal* 129: 2867-2687. <https://doi.org/10.1093/ej/uez017>.
- Jigan, Claude. 2003. "Au sujet du personnel de la manufacture des glaces de Tourlaville (Manche)." *Annales de Normandie* 53 (3): 241-259. <https://doi.org/10.3406/annor.2003.1445>.
- Join-Lambert, Michel. 1953. "La pratique religieuse dans le diocèse de Rouen sous Louis XIV." *Annales de Normandie* 3 (3-4): 247-274. <https://doi.org/10.3406/annor.1953.4259>.
- Jubert, Paul. 1931. *La Juridiction et l'inspection des manufactures à Rouen*. Rouen: Imprimerie Albert Lainé.
- Koyama, Mark. 2012. "The Transformation of Labor Supply in the Pre-Industrial World." *Journal of Economic Behavior & Organization* 81 (2): 505-523. <https://doi.org/10.1016/j.jebo.2011.07.015>.
- Langlois, Eustache-Hyacinthe. 1869. *Les fêtes chômées dans le diocèse de Troyes : depuis l'origine du christianisme jusques en 1802*. Troyes: E. Caffé. <https://gallica.bnf.fr/ark:/12148/bpt6k58189246>.
- Lardin, Philippe. 1998. *Les chantiers du bâtiment en Normandie orientale (XIV^e-XV^e siècle) : les matériaux et les hommes*. Villeneuve d'Ascq: Presses Universitaires du Septentrion.
- Le Goff, Jacques. 1960. "Au Moyen Âge : temps de l'Église et temps du marchand." *Annales. Economies, sociétés, civilisations* 15 (3) : 417-433. <https://doi.org/10.3406/ahess.1960.421617>.
- Le Parquier, Eugène. 1933. "Ouvriers et patrons dans la seconde moitié du XVIII^e siècle." *Bulletin de la Société libre d'émulation du commerce et de l'industrie de la Seine-Inférieure* Année 1932: 111-200. <https://gallica.bnf.fr/ark:/12148/bpt6k6565967w>.
- Léauté, François. 2017. "Le respect des jours chômés au XV^e siècle : l'exemple de la Champagne." *Revue d'Histoire de l'Église de France* 98 (1): 5-23. <https://doi.org/10.1484/J.RHEF.5.100448>.
- Leroy, Charles. 1934. *Notes sur une exploitation agricole en Normandie, dans le Roumois au XVIII^e siècle*. Rouen: Imprimerie A. Lestringant.
- Maitte, Corinne, and Didier Terrier. 2020. *Les rythmes du labeur : Enquête sur le temps de travail en Europe occidentale XIV^e - XIX^e siècle*. Paris: La Dispute.
- Mokyr, Joel. 1999. *The British Industrial Revolution. An Economic Perspective*. New York: Routledge. <https://doi.org/10.4324/9780429494567>.
- Moulin, Marie-Anne. 2007. "Argentan au Moyen-Âge. Aspects urbains, sociaux et économiques." Thèse de doctorat, École des hautes études en sciences sociales.
- Nortier, Michel. 2000. *Documents normands du règne de Charles V*. Paris: Bibliothèque nationale de France.

- Ouin-Lacroix, Charles. 1850. *Histoire des anciennes corporations d'arts et métiers et des confréries religieuses de la capitale de la Normandie*. Rouen: Impr. Lecointe frères. <https://gallica.bnf.fr/ark:/12148/bpt6k30427652>.
- Passy, Louis. 1907. *Le livre des métiers de Gisors au XVIème*. Pontoise: Société Historique du Vexin.
- Ridolfi, Leonardo. 2021. "The Days They Worked, the Incomes They Earned: New Perspectives on Work Patterns and Annual Earnings in the French Construction Sector (1320-1850)." *Rivista Di Storia Economica* 37 (2): 115-150. <https://doi.org/10.1410/100982>.
- Rivière, François. "Travail et métiers en Normandie à la fin du Moyen Âge : institutions professionnelles et régulation économique." Thèse de doctorat, École des hautes études en sciences sociales.
- Rivière, François. 2022. "Regulating Work, Wages, and Time in the Craft Institutions of Medieval Normandy (Twelfth to Fourteenth Century)." *Comparativ. Zeitschrift Für Globalgeschichte Und Vergleichende Gesellschaftsforschung* 32 (1): 17-38. <https://doi.org/10.26014/j.comp.2022.01.02>.
- Robillard de Beaurepaire de, Charles. 1891. "Recherches sur les horloges et les horlogers de la ville de Rouen." *Bulletin de la commission des antiquités de la Seine-Inférieure* 8 (3) : 472-522.
- Roch, Jean-Louis. 2007. "Ouvriers et patrons dans la draperie normande médiévale. La question des heures de travail." In *Le travail au Moyen Âge. Actes du 127e Congrès national des sociétés historiques et scientifiques de Rouen*, edited by Henri Bresc, 74-87. Paris: Éditions du CTHS.
- Roch, Jean-Louis. 2013. *Un autre monde du travail : La draperie en Normandie au Moyen Âge*. Mont-Saint-Aignan: Presses universitaires de Rouen et du Havre. <https://doi.org/10.4000/books.purh.5460>.
- Rodgers, Edith Cooperrider. 1940. *Discussion of Holidays in the Later Middle Ages*. New York: Columbia University Press. <https://doi.org/10.7312/rodg90874>.
- Rota, Mauro, and Jacob Weisdorf. 2020. "Italy and the Little Divergence in Wages and Prices: Evidence from Stable Employment in Rural." *The Economic History Review* 74 (2): 449-470. <https://doi.org/10.1017/S0022050720000467>.
- Sadourny, Alain. 1979. "Rouen pendant la guerre de Cent ans." In *Histoire de Rouen*, edited by Michel Mollat. Toulouse: Privat.
- Scholliers, Etienne. 284AD. *De levensstandaard in de XVe en XVIe eeuw te Antwerpen*. Anvers: De Sikkel.
- Shusterman, Noah. 2004. "Festivals, Calendars, and the Nationalization of Time in France, 1642-1815." PhD Thesis, University of California, Berkeley.
- Shusterman, Noah. 2009. "The Decline of Religious Holidays in Old Regime France (1642-1789)." *French History* 23 (3): 289-310. <https://doi.org/10.1093/fh/crp064>.
- Shusterman, Noah. 2010. *Religion and the Politics of Time: Holidays in France from Louis XIV through Napoleon*. Washington, DC: Catholic University of America Press.
- Sintic, Bruno. 2007. "Reconstruction et travaux du bâtiment dans quelques petites villes normandes, 1450-1520." In *Le travail au Moyen Âge. Actes du 127e Congrès national des sociétés historiques et scientifiques de Rouen*, edited by Henri Bresc, 100-11. Paris: Éditions du CTHS.
- Stephenson, Judy Z. 2018. "Real' Wages? Contractors, Workers, and Pay in London Building Trades, 1650-1800." *The Economic History Review* 71 (1): 106-132. <https://doi.org/10.1111/chr.12491>.
- Thompson, Edward P. 1967. "Time, Work-Discipline, and Industrial Capitalism." *Past & Present* 38 (1): 56-97. <https://doi.org/10.1093/past/38.1.56>.
- Vanel, Gabriel. 1905. *Mémorial de Philippe Lamare, secrétaire de dom Gouget, bénédictin de l'abbaye de Fontenay, 1774-1788*. Caen: L. Jouan. <https://gallica.bnf.fr/ark:/12148/bpt6k36811w>.
- Vincent, Catherine. 2017. "Les jours fériés et leur observance en Occident entre le XIII^e et le XV^e siècle." In *Orare aut laborare ? Fêtes de précepte et jours chômés du Moyen Âge au début du XIX^e siècle*, edited by Philippe Desmette and Philippe Martin, 59-72. Villeneuve d'Ascq: Presses universitaires du Septentrion. <https://doi.org/10.4000/books.septentrion.17331>.

- Voth, Hans-Joachim. 2000. *Time and Work in England 1750-1830*. Oxford: Oxford University Press.
- de Vries, Jan. 1994. "The Industrial Revolution and the Industrious Revolution." *The Journal of Economic History* 54 (2): 249-270. <https://doi.org/10.1017/S0022050700014467>.
- de Vries, Jan. 2008. *The Industrious Revolution, Consumer Behavior and the Household Economy, 1650 to the Present*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511818196>.

Online Appendix

A. 1. List of ecclesiastical sources used to document religious holidays (1250-1800)

Diocese	Date	Type of document	Reference
Avranches	c. 1480	Book of hours	<i>Heures à l'usage d'Avranches</i> , Bibliothèque patrimoniale, inv. 94.1.1. https://arca.irht.cnrs.fr/ark:/63955/md838049jz1j
	c. 1490	Book of hours	<i>Heures à l'usage d'Avranches</i> , Bibliothèque patrimoniale d'Avranches, ms. 302. https://arca.irht.cnrs.fr/ark:/63955/md7634852712
	1550	Synodal statutes	G. Bessin (1717, pp. 263-4)
Bayeux	c. 1350	Breviary	<i>Bréviaire à l'usage de Bayeux</i> , Bibliothèque municipale de Bayeux, ms. 77. https://archives.calvados.fr/ark:/52329/tdfwk1q5nrm8
	c. 1460	Breviary	<i>Bréviaire à l'usage de Bayeux</i> , Bibliothèque municipale de Bayeux, ms. 76. https://archives.calvados.fr/ark:/52329/fkx27bjzh8n4
	c. 1490	Book of hours	<i>Heures à l'usage de Bayeux</i> , Musée des Beaux-Arts de Caen, Collection Mancel, ms. 239. https://arca.irht.cnrs.fr/ark:/63955/md87br86dr05
	1627	Manual	<i>Manuale rituum ecclesiasticorum ad usum ecclesiae et dioecesis Baiocensis</i> , Bibliothèque nationale de France, département Réserve des livres rares, B-1785. https://gallica.bnf.fr/ark:/12148/bpt6k8708801z
	1687	Manual	<i>Manuale rituum ecclesiasticorum ad usum ecclesiae et dioecesis Bajocensis. Autoritate reverendissimi in Christo Patris, ac DD. Francisci de Nesmond, episcopi Bajocensis, recognitum</i> , Bibliothèque Sainte-Geneviève, 4 D SUP 822 RES. https://archive.org/details/BSG_4DSUP822RES
	1707	<i>Mandement</i>	Shusterman (2004)
	1738	Breviary	<i>Breviarium Bajocense, Illustrissimi Et Reverendissimi in Christo Patris D. D. Pauli D'Albert de Laines, Episcopi Bajocensis Autoritate Ac Venerabilibus Eiusdem Ecclesiae Capituli Consensu Editum</i> , Bayeux, Briard, 1738.
	1767	<i>Mandement</i>	Shusterman (2004)
Coutances	c. 1425	Book of hours	<i>Heures à l'usage de Coutances</i> , Musée des Beaux-Arts de Caen, Collection Mancel, ms. 273. https://bvmm.irht.cnrs.fr/iiif/19749/manifest
	c. 1450	Book of hours	<i>Heures à l'usage de Coutances</i> , Bibliothèque Alexis de Tocqueville, Caen, ms. 849 (in-4° 320). https://arca.irht.cnrs.fr/ark:/63955/md892801s898
	1487	Synodal statutes	G. Bessin (1717, p. 574)
	1538	Synodal statutes	<i>Synodalia precepta Constantiensis ecclesie ab reuerendissimis episcopis eiusdem ecclesie variis synodis in lucem emissa sacerdotibus honeste viuere desyderantibus apprime utilia, Et a vicariis predictorum episcoporum summa diligentia castigara atque emendara recenter excusa. Anno dñi millesimo quingentesimo xxxviii</i> , Universidad Pontificia de Salamanca, ES-SLUP 247 Colección Sinodal "Lamberto de Echeverría" 284 R-108.
Évreux	c. 1250	Missal	Delamare (1919)
	1497	Missal	<i>Missale ad usum ecclesie Ebroicensis</i> ,

			Bibliothèque Sainte Geneviève, OEXV 477 RES. https://archive.org/details/OEXV477/OEXV477/
	1583	Missal	Delamare (1919)
	1606	Ritual	Delamare (1919)
	1716	<i>Mandement</i>	Delamare (1919)
	1775	<i>Mandement</i>	Delamare (1919)
Lisieux	c. 1470	Book of hours	<i>Heures à l'usage de Lisieux</i> , Bibliothèque Alain-Peyrefitte, Provins, ms. 20. https://arca.irht.cnrs.fr/ark:/63955/md074t64jw40
	c. 1490	Book of hours	<i>Livre d'heures à l'usage de Lisieux</i> , Médiathèque d'Alençon, ms. 197. https://arca.irht.cnrs.fr/ark:/63955/md59c534hp61
	1504	Missal	<i>Missale Lexoviense</i> , Bibliothèque Nationale de France, B-27923. https://gallica.bnf.fr/ark:/12148/bpt6k857697c/
	c. 1510	Synodal statutes	G. Bessin (1717, p. 499)
	1651	<i>Mandement</i>	Shusterman (2004)
	1661	Synodal statutes	<i>Ordonnances synodales de monseigneur l'illustrissime et Reverendissime Leonor de Matignon, Evêque & Comte de Lysieux, publiées en son Synode tenu le 31. jour de May mil six cens soixante-un.</i> Imprimerie de Remy Le Boulenger, Imprimeur du Roy, de l'Evêché, & du College. MDCLXI [1661]. https://www.bmlisieux.com/normandie/ordonnan.htm
	1767	<i>Mandement</i>	Shusterman (2004)
Rouen	1282	Provincial council	G. Bessin (1717, pp. 170-1)
	c. 1350	Calendar	<i>Calendrier à l'usage de Rouen</i> , Médiathèque communautaire de Coutances, ms. 4. https://arca.irht.cnrs.fr/ark:/63955/md86nz808k8p
	c. 1450	Book of hours	<i>Heures à l'usage de Rouen</i> , Bibliothèque Centrale de Versailles, ms. 139. https://arca.irht.cnrs.fr/ark:/63955/md88qb98q81n
	c. 1470	Book of hours	<i>Horae (Rouen), Livre d'heures, en latin et en français à l'usage de Rouen, dit Heures de Chrétienne de France.</i> Bibliothèque de l'Arsenal, ms 562. http://archivesetmanuscrits.bnf.fr/ark:/12148/cc79764h
	c. 1475	Book of hours	<i>Livre d'heures à l'usage de Rouen</i> , Bibliothèque Méjanès, Aix-en-Provence, ms. 22. https://arca.irht.cnrs.fr/ark:/63955/md708w32r99f
	ca. 1480	Book of hours	<i>Heures à l'usage de Rouen</i> , Bibliothèque Municipale de Vire, A 507. https://arca.irht.cnrs.fr/ark:/63955/md80vq282d0m
	c. 1510	Book of hours	<i>Heures de la famille Ango</i> , Bibliothèque nationale de France, ms. NAL 392. http://archivesetmanuscrits.bnf.fr/ark:/12148/cc71119j
	1522	Synodal statutes	Dom Jean-François Pommeraye (1677). <i>Sanctae Rotomagensis ecclesiae concilia ac decreta.</i> Rouen, imprimerie B. Le Brun, 1677, p. 324.
	1578	Breviary	<i>Breviarium insignis Metropolitanae Ecclesiae Rothomagensis</i> , Parisiis. Apud Jacobum Kerver, 1578, Bibliothèque nationale de France, B 4840. http://catalogue.bnf.fr/ark:/12148/cb36819639n
	1700	<i>Mandement</i>	<i>Lettres Patentes du Roy, avec le Mandement de Monsieur l'Archevêque pour les fêtes de son diocèse</i> , Recueil des édits, déclarations, Recueil des édits, déclarations, lettres patentes, arrêts et réglemens du

			roy, registrés en la Cour du Parlement de Normandie, depuis l'année 1683 [- jusqu'en 1771]. 1683-1700, p. 856. https://catalogue.bnf.fr/ark:/12148/cb338516859
	1767	<i>Mandement</i>	Shusterman (2004)
Sées	c. 1200	Collectiarum	<i>Collectarium</i> , Archives diocésaines de Sées, n.c. [Saint Pierre de Dives] https://arca.irht.cnrs.fr/ark:/63955/md65h989ts3b
	c. 1420	Missal	<i>Missel à l'usage de Sées</i> , Bibliothèque Municipale de Caen, ms 704. https://initiale.irht.cnrs.fr/codex/11263
	c. 1450	Breviary	<i>Bréviaire à l'usage de Sées</i> , Archives diocésaines de Sées, 31 T. 29 https://arca.irht.cnrs.fr/ark:/63955/md08hd76vj5p
	1524	Synodal statutes	G. Bessin (1717 p. 433)
	1674	Synodal statutes	G. Bessin (1717 p. 450)
	1695	Synodal statutes	G. Bessin (1717 p. 457)
	1768	<i>Mandement</i>	Shusterman (2004)

A. 2. Working hours across several occupations in Normandy (1300-1800)

Year	Occupation	Location	Start	End	Breaks	Period	Reference
1332	Drapers	Montivilliers	Sunrise	Sunset		All year round	Ordonnance des Rois de la troisième race, vol. XII, 1777, pp. 456-8
1332	Fullers	Montivilliers	Sunrise	Sunset		From mid-September to mid-March	Ordonnance des Rois de la troisième race, vol. XII, 1777, pp. 456-8
				Last sound of vespers (around 7 p.m.)		From mid-March to mid-September	
1358	Spursmiths (<i>éperonniers</i>)	Rouen	<i>Cacheribaux du matin</i>	<i>Cacheribaux du soir</i> (9 p.m.)			Ouin-Lacroix (1850, p. 641)
1394	Spinners (<i>filassiers</i>)	Rouen	Sunrise (<i>Esquelle à la Mere Dieu</i>)	Sunset (<i>soleil raouchant</i>)			Ordonnance des Rois de la troisième race, vol. VII, p. 636
1397	Carders (<i>cardiers</i>)	Rouen	Sunrise	Sunset			Ouin-Lacroix (1850, p. 584)
1402	Drapers	Caudebec	Sunrise	Sunset	One hour for breakfast and one hour for diner	From Candlemas to Saint Martin (11 November)	Roch (2013, pp. 258-80)
					Half an hour for breakfast and one hour for diner	From Saint Martin (11 November) to Candlemas	
1402	<i>Gainiers</i>	Rouen	5 a.m.	<i>Six heures de vêpres</i> (6 p.m.)		From mid-September to mid-March	Ouin-Lacroix (1850, p. 675)
			7 a.m.	<i>5 heures de vêpres</i> (5 p.m.)		From mid-March to mid-September	
1424	Drapers, fullers, wool workers	Rouen	Sunrise	<i>Heure de Comphye</i> (8 p.m.)		All year round	Ouin-Lacroix (1850, p. 620)
1451	Drapers	Rouen		<i>Heure de Comphye</i> (8 p.m.)			de Robillard de Beaurepaire (1891, p. 476)
1422	Drapers	Lisieux	<i>Premier son des matins</i>	6 p.m.	One hour for breakfast, one hour and half for diner	From Saint Michael to Easter	Arch. dép. Calvados, 6 E 326
				7 p.m.		From Easter to Saint Michael	

1449	Drapers, fullers	Gisors	Sunrise	One hour before night	one hour for breakfast, one and half hour for diner	From the end of March to end of September	Passy (1907, p. 7)
1488	Weavers. drapers	Gruchet	Half an hour after sunrise	Half an hour after sunset	One hour for breakfast, half an hour for <i>nonette</i> (in the afternoon), and one hour for diner	From mid-March to mid-September	Chaumet (1975, pp. 110-1)
1488	Weavers, drapers	Gruchet	Sunrise (<i>Jour poignant</i>)	Sunset (<i>Jour Faillant</i>)	One hour for breakfast, one hour for diner, excepted from Saint Martin to Candelmas when they had only half an hour for breakfast	From mid-September to mid-March	Chaumet (1975, pp. 110-1)
1491	Coopers (<i>fustailleurs</i>)	Rouen	<i>Son de lesquelles du matin</i>	9 p.m.			Ouin-Lacroix (1850, p. 674)
1505	Carpenters	Gisors	4 a.m.	9 p.m.			Passy (1907, p. 57)
1580	Coopers (<i>fustailleurs</i>)	Gisors	5 a.m.	9 p.m.			Passy (1907, p. 153)
1594	Nail makers (<i>cloustier</i>)	Gisors	4 a.m.	8 p.m.		Summer	Passy (1907, p. 170)
			5 a.m.	7 p.m.		Winter	
1608	Needle makers	Rouen	5 a. m.	9 p.m.		All year round	Ouin-Lacroix (1850, pp. 639-40)
1639	Mirror makers, glassmakers	Rouen	4 a.m.	9 p.m.		Summer	Ouin-Lacroix (1850, p. 695)
			5 a.m.			Winter	
1646	Metal casters	Rouen	5 a.m.	9 p.m.		All year round	Ouin-Lacroix (1850, p. 665)
1652	Textile Workers	Lisieux	5 a.m.	8 p.m.		All year round	Arch. dép. Calvados, 6 E 326
1672	Textile workers	Rouen	6 a.m.	7 p.m.		Winter	Jubert (1931, p. 253)
			5 a.m.	8 p.m.		Summer	

1732	Carpenters	Rouen	5 a.m.	9 p.m.		All year round	Ouin-Lacroix (1850, pp. 597-8)
1734	Knife makers (<i>couteliers</i>)	Rouen	5 a.m.	9 p.m.		All year round	Ouin-Lacroix (1850, pp. 607-8)
c. 1750	Weavers	Rouen	5 a.m.	Sunset		From Easter to Saint Michael	Le Parquier (1933, pp. 154-5)
			7 a.m.	10 p.m.		From Saint Michael to Easter	Le Parquier (1933, pp. 154-5)
c. 1750	Canvas workers, drapers, dyers	Rouen	5 a.m.	8 p.m.	Half an hour for breakfast, one hour for diner	All year round	Le Parquier (1933, p. 154)
c. 1770	Glassworkers	Tourlaville	5 a.m.	7 p.m.	2 hours	All year round	Jigan (2003, pp. 241-59)