
Black Death Labour Market Shifts

Question: How did the Black Death reshape Europe's labour market and wages in the century after 1348? Compare the evidence for England, Italy and the Low Countries, separate what the records actually show from later theory, and say where historians still disagree.

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"I learn; I become acquainted with."

from *discere* — to learn

The Black Death reshaped Europe's labour markets in the century after 1348 by sharply raising real wages – roughly doubling in most cities from the 1340s to the mid-15th century, in Pamuk's comparative assessment – before population recovery from the mid-15th century began pushing them back down ¹.

The broad pattern was similar across England, Italy, and the Low Countries, but with important differences: England's rise was delayed to the 1370s and partly driven by monetary deflation and downward nominal-wage rigidity ^{2 4}; Florence saw immediate sharp nominal rises, though the consensus series omits state and military wages and rests on an unrepresentative construction workforce ⁵; Holland became the highest-wage region in Europe ¹.

The records themselves show a more modest and uneven rise than some later theory claims: Munro rejects Clark's "tripling" of English agricultural real wages ², and Humphries & Weisdorf's annual-income series shows that day-wage series overstate medieval living standards because labour input was far below the assumed 250 days per year ³.

Historians still disagree on the magnitude of the wage rise – Pamuk's "roughly doubled" against Munro's more modest rise and his rejection of Clark's "tripling" ^{1 2} – on whether it translated into annual incomes ³, on the causes (Malthusian population dynamics versus monetary and institutional factors) ^{1 2 8}, and on when the north-western divergence from the south began ^{1 8}.

01

The Common Pattern: An Inverse-V of Real Wages

Pamuk's comparative analysis of urban real wages across Europe and the eastern Mediterranean shows a remarkably similar broad pattern: real wages roughly doubled from the 1340s until the middle of the fifteenth century in most cities for which data exist ¹. Urban real wages rose by as much as 100 per cent in the decades after 1350 and remained above their earlier levels until late in the sixteenth century ¹. The population of Europe declined by almost one-third by the end of the fourteenth century ¹, and real wages tended to reach their peak a little later than the low point in population ¹. The decline in real wages began in the second half of the fifteenth century, most rapidly in Holland, the highest-wage region in all of Europe, and an inverse-V-shaped pattern was completed in the second half of the sixteenth century in many countries ¹.

This pattern is broadly Malthusian in Pamuk's interpretation: the demographic shock raised the land-to-labour ratio, wages rose, and as population recovered from the mid-15th century, wages and per capita incomes declined towards their pre-plague levels ¹. But the same evidence also shows the limits of a purely Malthusian reading. Interest rates declined sharply

in both southern and northwestern Europe during the fourteenth and fifteenth centuries and did not go back up in the sixteenth century with the recovery of population, a pattern suggesting that even though the decline may have been triggered by the demographic shock, something structural had changed ¹. And the wage data themselves are not a simple proxy for income per capita: Pamuk notes that GDP per capita and real wage series in western Europe tended to diverge during the early modern era, that construction workers' wages may have declined relative to other incomes, and that household incomes were often determined by employment levels, participation ratios, and non-market incomes rather than wages alone ¹.

02

England: Delayed Rise, Wage-Stickiness, and the Contested "Tripling"

The English records show a rise in real wages that was real but delayed and uneven. Munro's tables for southern England building craftsmen show real wages rising from the 1370s and peaking in the early fifteenth century ². For agricultural piece-work, real wages of threshers and winnowers rose 48.53 per cent from 1366-70 to 1396-1400, reapers and binders 28.23 per cent, and mowers only 9.76 per cent ². The nominal component of these rises was modest: threshers' nominal wages were 19.36 per cent higher in 1396-1400 than in 1366-70, reapers 6.5 per cent higher, and mowers 11.74 per cent lower ². From 1396-1400 to 1426-30, nominal wages changed by only 3.24 per cent for threshers, 3.60 per cent for reapers, and fell 2.34 per cent for mowers; the corresponding real wage changes were 2.03 per cent, 2.50 per cent, and a 2.34 per cent decline ².

The timing matters. Immediately after the Black Death, real wages for master masons and carpenters at Oxford, Cambridge, Canterbury, and Exeter fell, not rose, recovered somewhat during the 1350s, declined again slightly in the 1360s, and did not regain the level achieved in the mid-1330s until about the mid-1370s ⁴. The 1370s marked the first time that money wages did not fall with the consumer price index during deflation, as they had done in the deflationary 1330s and 1340s ². Munro's explanation is that the rise of real wages from the 1370s to about 1400 was due essentially to a combination of monetary deflation and downward wage-stickiness: factor prices did not move in tandem with commodity prices because of factor-price stickiness ². The deflation during the "bullion famine" era was severe and extensive ², and agricultural commodity prices fell substantially – grains by 36.87 per cent, meat products by 29.17 per cent, dairy products by 14.51 per cent, and wools by 21.24 per cent from 1366-70 to 1421-25 ². With nominal wages held up, real wages rose. Threshing rates on Winchester manors remained fixed after peaking until the Beveridge data terminate in the 1450s, demonstrating the same wage stickiness found in English and Flemish industrial wages during prolonged deflation ².

Munro is explicit that this evidence does not support Clark's conclusion that real agrarian wages "tripled": "The evidence presented in this study, while certainly substantiating the view that real agrarian wages ultimately did rise (from the 1370s), does not support Clark's conclusion that they 'tripled'" (2). He also concedes that the deflation-and-wage-stickiness thesis fails to explain the early fifteenth-century rise in real wages for industrial craftsmen, both manorial and urban (2).

The wage evidence sits alongside a broader restructuring of English agriculture. Mean arable sown area per demesne fell 17.02 per cent from 1300-49 to 1400-50, the share of sown acreage in grain fell from 90.47 to 82.21 per cent, and mean livestock units per 100 grain acres increased from 64.80 to 89.30 between the first half of the fourteenth and first half of the fifteenth centuries (2). In counties servicing the London market, demesne revenue from arable fell from 64.40 to 47.80 per cent of the total between 1288-1315 and 1375-1400, with livestock rising correspondingly (2). By the 1390s, more and more manorial lords, perhaps beginning with the greater magnates, leased out demesne lands into leasehold tenancies and converted vacant villein tenancies into leaseholds with fewer or no servile obligations (2). The problem was not just rising wages but the actual supply of available labour, even for pastoral agriculture (2).

The most important challenge to the standard day-wage picture comes from Humphries & Weisdorf's annual-income series for England. Their method, based on labour market arbitrage between day and annual wages, implies that labour input per year grew more than two-fold, from less than 150 days during the medieval period to well over 300 days during the Industrial Revolution (3). If these numbers are even roughly correct, existing estimates of annual incomes based on 250 days of work overestimate medieval incomes as much as they underestimate early industrial incomes, by some 30 per cent (3). The 250-day assumption is problematic historically because it assumes day work was always available and that labour supply was completely inelastic (3). Their real annual income estimates show significant improvements especially in the aftermath of the Black Death, with some ground lost after c. 1550 and regained in a long boom from about 1600 (3). But the gains were not as large as day-wage series suggest: even in the post-plague "Golden Age", an unskilled working man would have struggled to support more than one other person – "there were no gilded medieval breadwinners" (3). Only after c.1700 could an unskilled man's annual labour income purchase more than two of Allen's respectable consumption baskets (3). Before the plague, some four days of casual work per week would provide the same income as an annual worker; after the plague, only 2-3 days were sufficient (3). The shorter working year after c.1350 supports Hatcher's supposition that the post-Black Death labour market did not gild the peasantry's world to the extent previously thought, either because day workers could not find enough work or because their labour supply curves bent backwards (3). Labour's share of total income rose markedly after the Black Death, peaking at over 80 per cent in the late 16th century (3).

The cause of the increase in labour input over the long run remains an open question: whether it was voluntary, as workers gave up leisure for material goods, or imposed by structural changes in employment, the erosion of alternatives to wage labour, more dependants, or shifts in bargaining power [3](#).

03

Italy: Sharp Nominal Rises, but Whose Wages?

The Florentine records show sharp nominal wage rises immediately after the plague. La Roncière cited rises of 160 per cent in the nominal wages of masons and 354 per cent for unskilled labourers in the three years after the plague, and increases of 200 per cent and higher for gardeners from 1350-56 [5](#). Goldthwaite's figures for construction workers show increases from 1349 to 1350 of 25 per cent (13.4 to 16.8 soldi) in the nominal wages of masons and 19 per cent (8.4 to 10 soldi) for unskilled workers [5](#). Tognetti spoke of "forte ascesa", La Roncière of a "spectaculaire montée salariale", and Goldthwaite of a "sharp rise" in money wages [5](#). Malanima extended the conclusions to Tuscany and the rest of Italy, noting a "sharp and undeniable rise" in nominal wages [5](#).

But Caferro's study of Florentine military wages complicates the picture. The salaries of infantrymen rose across the board, with shield-bearer captains in units of twenty to twenty-five men seeing a 227 per cent increase from 1349 levels and their men 42 per cent [5](#). Bibbiena crossbow captains and bowmen in 25-man units saw 37 per cent increases [5](#). Ligurian crossbow captains' wages rose 14 per cent and their men's 24 per cent [5](#). But the nominal wages of cavalry did not change at all from 1349 to 1350, and the sources are silent on why [5](#).

Caferro's central critique is that the consensus wage series for Florence is built on a narrow and unrepresentative base. The methodology follows closely the researches for England of Phelps Brown and Sheila V. Hopkins, focusing on day labourers of the construction industry employed by private institutions [5](#). Completely lacking from the discourse is consideration of military personnel and wages – the current consensus ignores all state employees [5](#). The construction workforce, which Malanima estimated as consisting of only 4-8 per cent of the urban population, was not representative of the overall Florentine workforce [5](#). Such evidence renders problematic any simple macroeconomic interpretation of the movement of Florentine salaries [5](#). Nominal rates cast only an indirect light on overall earnings, and actual compensation often exceeded nominal wages because individuals held multiple roles [5](#). Medieval wages were heterogeneous, supporting Geremek's "caractère hétérogène" of medieval wages [5](#).

The new Roman wage data from the Fabbrica of St. Peter, covering the same city across several centuries (1541-1810), address some of these problems: the Fabbrica hired and paid its labourers directly, with no profit margins needing to be adjusted for and with summer wages easily removed [7](#). The Roman data show a skill premium of about 50 per cent across the

entire early-modern period, matching the size of the skill premium in early-modern London, and thus contesting the conventional view that premodern skill premiums were significantly higher in the south of Europe than in the northwest [7]. Roman construction workers outearned their early-modern English counterparts, which suggests that high wages alone were not enough to trigger industrialization [7].

The Roman data also bear on the long-running debate about when Italy's decline began. The new wage indices confirm the widespread (though disputed) view that urban Italy endured a prolonged early-modern recession starting in the mid-seventeenth century [7]. The downturn began some two decades later in Rome than in the north of Italy, and the regional variation in the onset of decline matches the timing of seventeenth-century plague outbreaks, supporting the hypothesis that epidemics were decisive in triggering Italy's prolonged recession [7]. This is one position in a long historiographical argument: Cipolla dated the onset of the downturn to the seventeenth century, linking it to epidemics and falling competitiveness; Sella proposed that the downturn was mainly an urban phenomenon, as the countryside witnessed both rising agricultural productivity and growing proto-industry; Malanima pushed the starting point forward to the eighteenth century, arguing that the downturn was powered by Malthusian forces; and Alfani reversed the onset back to the seventeenth century, arguing with Cipolla that epidemics set off the downturn [7].

The quality of the underlying Italian wage data is itself contested. Earlier wage data for Italy are plagued by the presence of harvest-inflated summer wages and include a major shift in the locations where the wages were observed [7]. Mocarelli found that Milan's consumer price index overestimated living costs because its price information came from wholesale rather than retail statistics, and that the wages reported by De Maddalena were actually paid to foremen and therefore in most cases exceeded the wages paid to the labourers themselves [7]. The same problem afflicts London: Stephenson's re-examination of the primary sources behind Allen's original study showed that London construction workers were commonly appointed by subcontractors, and once the profit margins were deducted, their actual earnings were significantly lower than suggested by the secondary sources underlying Allen's London wage index [7]. The authors of the Roman study conclude that construction wages are an ambiguous unit of account for regional or international comparison and, consequently, an unsuitable testing ground for the high-wage hypothesis [7].

04

The Low Countries: Holland as the Highest-Wage Region

Pamuk's comparative statement places Holland as the highest-wage region in all of Europe, with real wages roughly doubling from the 1340s to the middle of the fifteenth century, and the decline in real wages beginning in the second half of the fifteenth century most rapidly in Holland [1]. The real wage series for Holland prepared by Jan Luiten van Zanden were used to extend the series for Amsterdam to the period before 1500 in the Allen dataset [1]. The specific

numeric series for Holland's wages is not available in the evidence assembled here; the comparative picture rests on Pamuk's statements and on van Bavel & van Zanden's account of the Holland economy.

van Bavel & van Zanden attribute Holland's high wages and economic development between 1350 and 1500 to a specific combination: high wages in a frontier economy, increasing difficulties in arable agriculture as a result of the subsidence of peat soils, and the absence of feudal restrictions in production and marketing, which together resulted in the rise of capital-intensive industries benefiting from converging wages and increasing market integration [6](#). By c.1500 the Holland economy had already acquired modern traits, as witnessed by the occupational structure and the urbanization rate [6](#).

This interpretation is not uncontested. Gelderblom & Jonker argue that it was not the early decline of feudalism that stimulated the successive phases of economic growth in the Low Countries, but urban competition, which produced both a dynamic evolution of contracting institutions and effective constraints on local and central executives [9](#). The relative ease of trade and communication combined with economic competition between towns and regions produced a fairly rapid diffusion of information, production techniques, legal concepts, and market design from one region to the next [9](#).

The demographic context differs from England. The population of the Netherlands fell from 800,000 in 1300 to 600,000 in 1400, then rose to 950,000 in 1500 [1](#). Pamuk notes that in the Low Countries population recovered much faster, in part because the impact of the Black Death was more limited [1](#). Yet the Low Countries and England were able to resist to a greater extent the general tendency for wages to decline during the second leg of the demographic cycle that began with the Black Death, and a wage gap thus began to emerge between the northwest and the rest of the continent after 1450 [10](#). Pamuk's regression analysis for unskilled workers shows that the log ratio of northwestern to southern real wages rose over 1413-1600 with a trend coefficient of 0.0019 per year, with the increase in real wages until 1450 faster in the northwestern cities and the decline after 1450 slower in relation to the leading cities in the south [1](#). The results are not equally strong for the wages of skilled workers [1](#).

Fochesato's analysis of fourteen European cities adds a different temporal marker. In four north-western cities – Amsterdam, Antwerp, London, and Oxford – urban real wages were detached from population before the Industrial Revolution, while in central and southern Europe wages had a moderate or negative response to population changes, and this different response dates back to the 16th century [8](#). Fochesato claims these results support three possibly non-alternative interpretations of the "little divergence": changes in fertility regimes, rural and urban labour organizations, or the onset in early modern north-western Europe of non-strictly Malthusian growth mechanisms [8](#).

What the Records Show versus Later Theory

Several of the sharpest disagreements in this literature turn on the difference between what the archival records show and the theoretical constructions built on them. The magnitude of the wage rise divides Pamuk's comparative statement that real wages roughly doubled from the 1340s to the middle of the fifteenth century in most cities [1](#) from Munro's English data, which show a more modest rise and explicitly reject Clark's claim of a "tripling" of agricultural real wages [2](#). The translation from day wages to annual incomes is challenged by Humphries & Weisdorf's annual-income series [3](#). The composition of the wage series is questioned by Caferro's critique of the Florentine consensus [5](#) and by the Roman study's findings on subcontractor margins and distorted Italian data [7](#). And the consumption basket used to deflate nominal wages is itself a point of contention [31](#).

First, the magnitude of the wage rise. Pamuk's comparative statement is that real wages roughly doubled from the 1340s to the middle of the fifteenth century in most cities [1](#). Munro's English data show a more modest rise, and he explicitly rejects Clark's claim of a "tripling" of agricultural real wages [2](#). The difference matters for the Malthusian interpretation: a tripling would imply a much larger productivity response than a doubling.

Second, the translation from day wages to annual incomes. Humphries & Weisdorf's annual-income series shows that day-wage series overestimate medieval labour incomes because they assume near-full-year employment [3](#). Their finding that labour input grew from under 150 to over 300 days per year between the medieval period and the Industrial Revolution undermines the "Golden Age of Labour" narrative: even in the post-plague period, an unskilled man's income could barely support more than one other person [3](#). This is a direct challenge to the welfare-ratio approach that converts day wages into annual incomes using a fixed number of working days.

Third, the composition of the wage series. Caferro's critique of the Florentine consensus – that it ignores state and military employees and rests on a construction workforce that was only 4-8 per cent of the urban population – applies with equal force to the English and Low Countries series, which are also built primarily on construction and agricultural day wages [5](#). The Roman study shows that even the best-known series (Allen's London index) were inflated by subcontractor profit margins, and that earlier Italian series were distorted by summer wages, regional shifts, and foremen's wages mistaken for labourers' wages [7](#).

Fourth, the consumption basket. The real wage indices are constructed by dividing nominal wages by a consumer price index, and the choice of basket matters. Humphries & Weisdorf note that Allen's fixed consumption basket cannot capture shifts in the quality of in-kind benefits, such as a swing from cereals to meat and dairy after the Black Death, and that their income series might under- or overestimate actual remunerations because the basket does not allow for fluctuations in non-pecuniary pay [3](#). Pamuk similarly cautions that real wages may

not be a good proxy for income per capita, since GDP per capita and real wage series in western Europe tended to diverge during the early modern era, and household incomes were often determined by employment levels, participation ratios, and non-market incomes [1](#).

06

Where Historians Still Disagree

The disagreements can be grouped under four headings, each resting on different readings of the same or overlapping evidence. The magnitude of the wage rise is contested between Pamuk's "roughly doubled" [1](#) and Munro's more modest rise, which rejects Clark's "tripling" [2](#). The timing of Italy's decline is disputed among Cipolla, Sella, Malanima, and Alfani [7](#). The causes of the wage movements divide Malthusian from monetary and institutional explanations [1](#)[2](#)[8](#). And the timing of the north-western divergence is dated differently by Pamuk (after 1450) [1](#), Fochesato (16th century) [8](#), and Allen (1500-1750) [3](#).

Magnitude of the wage rise. Pamuk's "roughly doubled" [1](#), Clark's "tripling" (rejected by Munro [2](#)), and Munro's more modest rise are not compatible descriptions of the same evidence. The difference drives different conclusions about how much the Black Death raised living standards.

Timing of Italy's decline. Cipolla (17th century, epidemics and falling competitiveness), Sella (mainly urban, countryside prospering), Malanima (18th century, Malthusian forces), and Alfani (17th century, epidemics) all offer different onsets and different causes [7](#). The new Roman data support the epidemic hypothesis but also show that the downturn began about two decades later in Rome than in northern Italy [7](#).

Causes of the wage movements. Pamuk's interpretation is broadly Malthusian – the inverse-V pattern tracks population – but he also documents institutional changes (interest rates that did not rise again with population recovery, changes in marriage and fertility behaviour, women's labour force participation) that point beyond a simple Malthusian equilibrium [1](#). Munro's wage-stickiness thesis attributes the 1370s-1400 rise to monetary deflation plus downward nominal-wage rigidity, but he concedes it fails to explain the early fifteenth-century rise for industrial craftsmen [2](#). Fochesato finds that the four north-western cities' wages were detached from population from the 16th century, supporting non-strictly Malthusian mechanisms [8](#). The Roman study concludes that high wages alone were not enough to trigger industrialization, and that construction wages are an unsuitable testing ground for the high-wage hypothesis [7](#).

Timing of the north-western divergence. Pamuk dates the wage gap between northwestern and southern Europe to after 1450 [1](#)[10](#). Fochesato dates the detachment of north-western wages from population to the 16th century [8](#). Allen's original "little divergence" hypothesis placed the divergence between 1500 and 1750 [3](#). These are not necessarily contradictory – a

gap can begin to emerge after 1450 and become statistically detectable in the 16th century – but the different datings carry different implications for whether the Black Death itself was the origin of the divergence.

Skill premium. Van Zanden's claim that premodern skill premiums were significantly higher in the south of Europe than in the northwest is contested by the Roman data, which show a skill premium of about 50 per cent in both Rome and London across the early-modern period [7](#).

07

Conclusion

The strongest supportable answer to the question is that the Black Death did reshape Europe's labour markets and wages in the century after 1348, but the shape of that reshaping is more contested than the headline numbers suggest. The records show a real and substantial rise in real wages – roughly doubling from the 1340s to the mid-15th century in most cities for which data exist [1](#) – with real wages peaking a little after the population low and then declining as population recovered from the mid-15th century [1](#). England's rise was delayed to the 1370s and partly driven by deflation and downward nominal-wage rigidity [2](#) [4](#). Florence saw immediate sharp nominal rises, but the consensus series omits state and military wages and rests on an unrepresentative construction workforce [5](#). Holland became the highest-wage region in Europe, with high wages attributed to a frontier economy, peat-soil subsidence, and the absence of feudal restrictions [1](#) [6](#).

The decisive uncertainty is the translation from day wages to living standards. Humphries & Weisdorf's annual-income series shows that the day-wage series overstate medieval incomes because labour input was far below the assumed 250 days, and that even in the post-plague "Golden Age" an unskilled man could barely support more than one other person [3](#). If their labour-input estimates are roughly correct, the mainstream accounts of the timing of the take-off into modern economic growth and the onset and extent of the "little" and "great" divergences require revision [3](#). The cause of the increase in labour input over the long run – voluntary or imposed – remains the key unanswered question [3](#).

What would change a consequential judgment: direct evidence on the actual number of days worked per year in the century after the Black Death, rather than the arbitrage-based estimates; the specific numeric series for Holland's wages before 1500, which is not available in the evidence assembled here; and a resolution of the construction-wage problem – whether the day-wage series for construction workers, which underpin most of the comparative literature, are representative of the broader labour market or, as the Roman study suggests, an ambiguous unit of account unsuitable for testing the high-wage hypothesis [7](#).

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