# The Late Medieval Decline of English Demesne Agriculture: Demographic, Monetary, and Political-Fiscal Factors

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During the later fourteenth and early fifteenth centuries, a majority of English manorial landlords, lay and ecclesiastical, experienced a significant contraction of their demesne holdings: sometimes by sale or partial abandonment, but more often by leasing them to tenants. J. M. Bean states that 'there is a general consensus that the crucial years in this process were between 1380 and 1420', and his view is supported by a number of studies of ecclesiastical estates.[1] Thus, Ambrose Raftis contends that a dramatic 'collapse' of the direct management of demesnes on the Ramsey Abbey estates took place during and just after the 1390s.[2] Barbara Harvey, having examined the accounts of Westminster Abbey's large number of manors in southern and central England, similarly concluded that 'the turn of the tide may be placed around the year 1390'.[3] Christopher Dyer also found, on the estates of the bishop of Worcester, that 'the main break [the shift to leasing] came with [Bishop] Wakefield's death in 1395'.[4] In his analysis of the manors of the Archbishop of Canterbury, F. R. H. Du Boulay found that 'by 1400 most of the demesnes, and by 1450, all of them were being leased out'.[5]

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1 Bean, 'Landlords', pp. 526–86.

2 Raftis, 'Peasants and the Collapse of the Manorial Economy', p. 196.

3 Harvey, *Westminster Abbey and its Estates*, p. 268.

4 Dyer, *Lords and Peasants in a Changing Society*, p. 147.

5 Du Boulay, 'Who Were Farming the English Demesnes?', pp. 445–46.

*Town and Countryside in the Age of the Black Death*, ed. by Mark Bailey and Stephen Rigby, (Turnhout: Brepols, 2012), 299–348 BREPOLS PUBLISHERS 10.1484/M.TMC-EB.1.100565

In the view of most historians, the contraction of demesne holdings was fundamentally the consequence of population decline: perhaps by some forty per cent, or even more, by the later fifteenth century.[6] Demographic factors alone, however, cannot fully explain the phenomenon of leasing or 'farming' the demesnes itself, so that other economic changes, including monetary forces and fiscal policies, must also be examined for a fuller understanding of what was truly a momentous change in the economy and society of later medieval England.

## *The Ricardian Demographic Model for the Decline of Demesne Agriculture and of Villeinage*

In explaining agricultural change in the later Middle Ages, in particular the leasing of manorial demesnes, we should first consider the standard demographic model, one that is based on Ricardo's economics. The essential argument is that population decline inevitably led to falling grain prices, and thus to falling economic rents (as determined by grain prices), and also to rising real wages, in so far as the alteration of the land:labour ratio (fewer workers per acre of arable) increased labour productivity. This labour scarcity became all the worse, driving up wages even more, as many cottars and landless labourers took up vacated tenancies, at much lower rents, and frequently with few or no obligations to perform 'customary' labour services on the demesne. Thus manorial landlords became victims of a vicious price-cost squeeze and falling incomes that ultimately forced them to abandon direct cultivation and to lease demesnes lands to peasant tenants, on the best possible terms that the peasants would accept. However, whether this model fits all the historical facts, in particular those concerning the actual timing of this transformation, remains to be seen.

## *'Mind the Gap': The Time-Lag between the Black Death and the Commencement of Leasing*

If the Black Death of 1348–52 was indeed the major demographic catastrophe of the fourteenth century, and yet the first major phase of demesne leasing did not begin until the 1380s, how can we explain this time lag of thirty years or more? A. R. Bridbury offered one intriguing solution in contending that England had been so grossly overpopulated that the Black Death was 'more purgative than toxic', in eliminating an excess labour force that constituted 'disguised unemploy-

[6] See Hatcher, *Plague, Population, and the English Economy*, pp. 11–73; Hatcher, 'Mortality in the Fifteenth Century'.

ment', so that only by the later 1370s had ongoing demographic decline become sufficiently severe to bring about the economic changes predicted in the Ricardo model.[7] Few, if any, historians have accepted his thesis, which Bridbury himself subsequently contradicted in an article contending that England was far from being overpopulated on the eve of the Black Death.[8]

Another more promising explanation for this 'time lag' between the Black Death and the onset of demesne leasing is the supposed 'feudal reaction' that immediately followed the Black Death and then endured for the next three decades.[9] The essential argument is that many manorial lords reacted to the threat of labour scarcity and rising wages, not so much by 'reimposing' villeinage (serfdom) in areas where it had waned, but rather by intensifying their exactions of customary villein labour services on their demesnes. While there is some evidence for this thesis, a 'feudal reaction' of this nature is very difficult to substantiate as a widespread phenomenon: i.e., sufficiently powerful to repress the changing market forces in both land and labour. The most substantial support for the 'feudal reaction' thesis is the oppressive parliamentary labour legislation imposed to fix maximum wages, evidently at the behest of landlords, immediately after the Black Death, namely the Ordinance of Labourers (1349) and the Statute of Labourers (1351). The final major measure was the Statute of Cambridge (1388). The debate over the effectiveness of this legislation has generated a vast literature that cannot be considered here.[10] One may observe, however, that, despite substantial evidence of prosecutions for statute violations (chiefly of employees, not employers), to the 1380s, manorial wages for both agricultural and industrial workers did rise in the two decades following the Statute, far above the permitted rates. For example, by the 1360s and 1370s, and constantly thereafter to the 1390s, the prevailing daily wage rate for carpenters on various Winchester manors was four pence (4d.), occasionally 5d.: one-third higher than the 3d. rate prescribed in the 1351 Statute.[11] That rate was all the more difficult to enforce, because it was an

[7] Bridbury, 'The Black Death', pp. 557–92.

[8] Bridbury, 'Before the Black Death'.

[9] See in particular Britnell, 'Feudal Reaction after the Black Death'; Hilton, *The Decline of Serfdom*, pp. 26–59; Bolton, *The Medieval English Economy*, pp. 214–21; Rigby, *English Society in the Later Middle Ages*, pp. 104–27.

[10] The classic study is Putnam, *The Enforcement of the Statue of Labourers*. See also Given-Wilson, 'Labour in the Context of the English Government'; Penn and Dyer, 'Wages and Earnings in Late Medieval England'; Poos, 'The Social Context of Statute of Labourers Enforcement'; Hatcher, 'England in the Aftermath'.

[11] LSE Archives, Beveridge, Boxes A.30–33: for Ecchinswell, Esher, Taunton, Witney, and

Table 18. Price indexes for the Phelps Brown and Hopkins 'Basket of Consumables' and for the prices of grains, meat, dairy products, and English wools (mean of 1451–75 = 100), 1331–35 to 1446–50

| Year | Phelps Brown & Hopkins Composite Price Index (Revised) | Total grains: wheat, rye, barley, peas Price Index | Meat products: beef, mutton, swine Price Index | Dairy products: butter and cheese Price Index | Wools: better qualities: Price Index |
|---|---|---|---|---|---|
| | *base value in pence (d.) 112.801d.* | *base value in d. 21.799d.* | *base value in d. 23.950d.* | *base value in d. 15.579d.* | *base value in pounds (£) £4.8544* |
| **1331–35** | 109.108 | 110.302 | 110.021 | 95.281 | 110.614 |
| **1336–40** | 89.256 | 84.730 | 96.346 | 94.622 | 95.699 |
| **1341–45** | 85.533 | 81.356 | 89.666 | 88.547 | 101.910 |
| **1346–50** | 100.064 | 101.499 | 94.572 | 97.299 | 97.093 |
| **1351–55** | 126.472 | 131.100 | 113.987 | 102.921 | 91.577 |
| **1356–60** | 118.092 | 115.863 | 108.455 | 112.790 | 108.009 |
| **1361–65** | 137.976 | 130.413 | 131.419 | 104.738 | 115.474 |
| **1366–70** | 136.460 | 150.487 | 131.607 | 106.830 | 137.799 |
| **1371–75** | 127.345 | 133.638 | 143.653 | 107.403 | 162.637 |
| **1376–80** | 109.891 | 96.219 | 118.580 | 105.066 | 155.243 |
| **1381–85** | 113.190 | 104.029 | 110.890 | 105.709 | 123.494 |
| **1386–90** | 101.233 | 83.336 | 108.055 | 96.590 | 104.463 |
| **1391–95** | 103.953 | 96.639 | 106.471 | 73.130 | 102.039 |
| **1396–1400** | 110.648 | 105.084 | 111.064 | 100.898 | 107.966 |
| **1401–05** | 112.653 | 117.530 | 110.071 | 102.790 | 117.455 |
| **1406–10** | 109.927 | 108.229 | 106.555 | 106.878 | 128.114 |
| **1411–15** | 108.261 | 91.411 | 105.599 | 110.132 | 122.651 |
| **1416–20** | 113.598 | 114.066 | 103.055 | 107.879 | 94.586 |
| **1421–25** | 103.740 | 94.999 | 93.213 | 91.331 | 108.538 |
| **1426–30** | 112.610 | 107.222 | 99.581 | 104.979 | 103.298 |
| **1431–35** | 109.122 | 110.106 | 106.078 | 106.810 | 115.634 |
| **1436-40** | 124.218 | 148.525 | 109.585 | 110.342 | 109.627 |
| **1441-45** | 92.574 | 75.504 | 96.624 | 97.290 | 107.145 |
| **1446-50** | 101.241 | 97.399 | 106.245 | 106.978 | 110.796 |

unusually low rate that had only temporarily prevailed, just before the plague, in the deflationary 1340s (Tables 20B and 21A).[12]

Wycombe. See also Table 21A below, for Farmer's 'national' means of carpenters' wages: with a mean of 4.194d. in the 1370s.

[12] See Munro, 'Wage-Stickiness', pp. 207–11; Munro, 'Before and After the Black Death'.

*Sources for Table 18. Wool prices*: Lloyd, *The Movement of Wool Prices*, pp. 35–51.

*Other commodity prices*: based upon the Phelps Brown and Hopkins 'Basket of Consumables' Price Index: LSE Archives, Phelps Brown, Box Ia:324, LSE Archives, Phelps Brown, Box J.IV.2.a. These archives contain Phelps Brown's original hand-written working papers, with prices for individual commodities contained in the Phelps Brown and Hopkins 'basket of consumables' price index, which they had presented in Phelps Brown and Hopkins, 'Seven Centuries of the Prices of Consumables' (with price indexes not in the original).

Apart from correcting hundreds of computational errors in their original series, I constructed an entirely new index based on actual prices rather than their index numbers. Using the data in their worksheets, for each commodity, I first calculated the annual prices for all the commodities in the basket. The using their commodity weights, I calculated the sum value of those commodities, to calculate the annual value of the basket. I then constructed the price index, with their base, 1451–75 = 100, from the values of the basket for each year in that twenty-five-year base period.

While the original PB&H commodity basket consisted of fixed commodity weights throughout the entire series — so that, for example, grain prices always account for twenty per cent of the total weight in the basket, the commodity weights, in my revised version, change with changes in relative prices. The commodity price weights for the basket are thus fixed only for the base period: 1451–75 = 100.

## *The Role of Deflation in the Decline of Manorial Demesne Agriculture during the 'bullion famine' of* c. *1370–* c. *1420*

A more effective solution to the problem of the 'time-lag' may be found by resorting to a combined monetary and a related fiscal model, to supplement the demographic model. The essential thesis is that England's manorial economic crisis commenced only with the onset of another severe, prolonged deflation, from the later 1370s to the 1420s, during which not only the Consumer Price Index (CPI) but the prices of all agricultural commodities fell, whereas most agricultural costs did not, thus creating the well-known 'price scissors'.[13] The related fiscal part of the model is that deflation (including the fall of wool prices) exacerbated the very onerous burden of the wool-export taxes, thereby producing a severe contraction in wool exports, and, presumably, in the demand for manorial (and peasant) wools. The deflation itself was the product of a severe, European-wide monetary contraction, the so-called 'bullion famine' (during this same era), which brought to an abrupt end the three-decade long inflation that had followed the Black Death. The evidence that monetary factors were essentially responsible for this deflation have been set forth in so many of publications by so many historians (including the present author) that they need not be presented here.[14]

[13] See Munro, 'Wage-Stickiness', pp. 185–297; Munro, 'Before and After the Black Death'.

[14] See Day, 'The Great Bullion Famine'; Miskimin, 'Monetary Movements and Market

No monetary explanation, however, can ever be divorced from real factors; and the continuing fall in population may have played a role in reducing the income velocity of money, though commercial disruptions, insecurity, and economic pessimism were probably more important.[15]

The severity and extent of this deflation during the 'bullion famine' era cannot be doubted. In England, as Table 18 shows, the quinquennial mean Consumer Price Index (with a base of 1451–75 = 100) fell 23.98 per cent, from 1366–70 (136.46) to 1421–25 (103.74). Over this same period, the quinquennial price indexes for all agricultural commodities fell together, if not exactly in tandem with each other: grains, by 36.87 per cent; meat products, by 29.17 per cent; dairy products, by 14.51 per cent; and wools (better qualities), by 21.24 per cent. Statistical tables for Flanders, published elsewhere, demonstrate a very similar decline in the Flemish CPI and agricultural prices in this same period. As shown in other statistical tables, industrial prices in both England and Flanders also fell, though not by as much as did the agricultural prices, or the CPI.[16] That such a decline in commodity prices, if not in factor prices, was not just confined to grains but was far more general vindicates the view that northwest Europe experienced a genuine monetary deflation during this 'bullion famine' era, to the 1420s.

While the previously discussed demographic model explains why falling population should have led to lower grain prices, that model does not explain the two post-plague series of changes in prices and the price level. In particular, why was the Black Death, producing an indisputably drastic fall in Europe's population, followed not by falling grain prices, as would be expected, but instead by a European-wide inflation that affected all commodity price series

Structures'; Miskimin, *The Economy of Early Renaissance Europe*, pp. 138–50; Spufford, *Money and its Use*, chap. 15, 'The Bullion Famines of the Later Middle Ages', pp. 339–62; Munro, *Bullion Flows and Monetary Policies*; Munro, 'Wage-Stickiness', pp. 211–19.

[15] Note the nature of the variables in the revised Quantity Theorem equation: M.V = P.y: in which M is the total stock of money, V is the income velocity of money ('turnover'), P is the price level (CPI), and 'y' is *real* net national income or national product. Most economists prefer the alternative Cambridge Cash Balances equation: M = k.P.y, in which 'k' (the reciprocal of V) stands for that proportion of net national income that the public chooses to hold in real cash balances. For late medieval income velocities, see Mayhew, 'Population, Money Supply, and the Velocity of Circulation'; and Spufford, *Money and its Use*, pp. 346–47: 'Fear of disorder made men conceal their coin. Fear of not being able to replace coin made men the keener to keep their assets liquid. With scarcity of coin went a reluctance to spend or invest what one had in hand, so that there was a sluggish circulation, which in itself was equivalent to a further reduction in the available quantity of coin'. Nevertheless, he contends, along with most monetary historians, that an increased outflow of bullion to the East was the principal cause of the 'bullion famines'.

[16] Munro, 'Wage-Stickiness', Table 5, pp. 240–44; Tables 8–9, pp. 248–53.

(including grain prices) and one that lasted for thirty years?[17] Why did this post-plague inflationary era come to end in the 1370s, and why was that inflation then followed by the prolonged half-century deflation just described? Such problems in population-based explanations indicate that monetary factors, affecting both money stocks and flows, cannot be ignored.

## *The Behaviour of Relative Prices for Grains and Livestock Products in Late Medieval England*

In answering such questions about changes in prices, we must always distinguish carefully between changes in the price level and changes in the relative prices of various individual commodities. Though monetary factors may have been predominant in determining the overall price level (CPI), a wide variety of real factors, including demographic, and their interactions, especially in their real income effects, together determined the constantly fluctuating changes in relative prices: for example, changes in grain prices compared to changes in meat and dairy prices. In later medieval England, cereal grains accounted for a large share of household expenditures, on both food and drink, for the majority of society (Table 27); and grains had a low price- and income-elasticity of demand, the more so, as their prices fell. Under such circumstances, a steep fall in grain prices that exceeded the fall in the overall CPI and thus the decline in other commodity prices should have liberated substantial household income to be spent on other commodities. Such a shift in household demand would have led to an increase in the *relative* prices of livestock and industrial products, even when their *nominal* prices were also falling.

The conditions of and changes in supply also, of course, played an important role. In general, historically, grain prices fluctuate up and down far more than do other agricultural prices, especially prices for livestock products, which in turn fluctuate more than do industrial prices. To a considerable extent, differences in their respective long-term supply schedules help explain these differences in price changes. The supply schedules for various grains are generally very steeply sloped (highly inelastic), thus helping to explain the sharp decline in their *real* prices with falling aggregate demand. Those for industrial products are only gently sloped (very elastic: with more or less constant-cost production functions); and those for livestock products usually lie in between these two sets of commodities.

[17] For a monetary explanation of the post-plague inflation (*c.* 1350–*c.* 1375), see the sources cited in nn. 12, 14, above, in particular Munro, 'Wage-Stickiness', pp. 211–17.

In late medieval England, much evidence indicates that the agricultural sector underwent a relative shift from the production of grains to the production of various livestock commodities (though not wool, for reasons to be explored later). We should not, however, expect that such changes in the supplies of agricultural commodities would have made their longer-term supply schedules any less elastic; and those supply changes would not likely have offset the 'income effects' from falling *real* grain prices. Tables 18 and 19 clearly confirm the foregoing prediction: that the prices for meat and dairy products and for wools fell to a lesser extent than did grain prices, so that (again) their *relative* commodity prices rose in relation to grain prices.

For most manorial landlords in late medieval England, from the 1370s to the 1420s, the fall in all *nominal* agricultural prices, in comparison with agricultural costs, obviously posed severe problems. The plight was the more severe for those who continued to pursue a traditional demesne economy based on both grain and wool, rather than on other livestock products, for reasons that are set out below. For grain producers, engaged in a very labour-intensive form of production, in contrast to the far less labour-intensive and more land extensive forms of livestock production, the equally important concern was the behaviour of factor prices, especially wages for hired labour on the demesnes.

## *The Behaviour of Factor Prices and the Problem of 'Stickiness'*

The related aspect of the monetary model is that, while these agricultural commodity prices fell steeply, the factor costs of production generally did not fall in nominal terms, and indeed rose in real terms. The principal costs to be considered are interest and wages. While they are indeed 'prices', for the use of capital and labour, historically they have never behaved in the same fashion as commodity prices; and they are not included in any consumer price indexes. It is thus a fallacy to believe that all prices must move together during periods of either inflation of deflation. The primary reason why factor prices generally did not move in tandem with commodity prices is factor-price 'stickiness', a phenomenon well known in Keynesian economics.[18] Although this problem has not yet been well studied for interest rates, the most obvious reason lies in the nature of loan contracts, 'recognizances', mortgages, and related legal instruments used in borrowing money. In virtually all such contracts, the annual interest payments were fixed for the duration of the written agreements. To the extent that manorial

[18] Keynes, *The General Theory*, pp. 4–22, 257–79.

Table 19. Ratios of agricultural prices to the Consumer Price Index (Phelps Brown and Hopkins) and to each other (mean of 1451–75 = 100), 1331–35 to 1446–50

| Year | Ratio of Wool Prices to PBH CPI (Wool/CPI) | Ratio of Wool Prices to Grain Prices | Ratio of Grain Prices to CPI | Ratio of Meat Prices to Grain Prices | Ratio of Meat Prices to Wool Prices | Ratio of Meat Prices to CPI | Ratio of Dairy Products to CPI |
|---|---|---|---|---|---|---|---|
| **1331–35** | 101.380 | 100.283 | 93.384 | 99.745 | 99.463 | 100.837 | 87.328 |
| **1336–40** | 107.218 | 112.945 | 68.845 | 113.709 | 100.677 | 107.943 | 106.012 |
| **1341–45** | 119.146 | 125.265 | 80.805 | 110.215 | 87.985 | 104.831 | 103.524 |
| **1346–50** | 97.031 | 95.659 | 105.200 | 93.175 | 97.403 | 94.511 | 97.237 |
| **1351–55** | 72.409 | 69.853 | 116.148 | 86.947 | 124.471 | 90.128 | 81.379 |
| **1356–60** | 91.461 | 93.222 | 81.215 | 93.606 | 100.413 | 91.839 | 95.510 |
| **1361–65** | 83.691 | 88.545 | 97.901 | 100.772 | 113.809 | 95.248 | 75.910 |
| **1366–70** | 100.981 | 91.568 | 96.691 | 87.454 | 95.507 | 96.444 | 78.287 |
| **1371–75** | 127.713 | 121.700 | 86.819 | 107.494 | 88.327 | 112.806 | 84.340 |
| **1376–80** | 141.270 | 161.343 | 66.984 | 123.239 | 76.383 | 107.907 | 95.609 |
| **1381–85** | 109.103 | 118.711 | 83.923 | 106.595 | 89.794 | 97.968 | 93.391 |
| **1386–90** | 103.191 | 125.351 | 65.270 | 129.661 | 103.438 | 106.739 | 95.414 |
| **1391–95** | 98.159 | 105.588 | 84.629 | 110.175 | 104.344 | 102.423 | 70.350 |
| **1396–1400** | 97.576 | 102.743 | 89.617 | 105.691 | 102.869 | 100.376 | 91.188 |
| **1401–05** | 104.263 | 99.936 | 94.166 | 93.653 | 93.713 | 97.708 | 91.245 |
| **1406–10** | 116.545 | 118.372 | 85.171 | 98.453 | 83.172 | 96.933 | 97.226 |
| **1411–15** | 113.292 | 134.175 | 73.719 | 115.522 | 86.097 | 97.541 | 101.728 |
| **1416–20** | 83.264 | 82.922 | 93.405 | 90.347 | 108.954 | 90.719 | 94.966 |
| **1421–25** | 104.625 | 114.252 | 74.137 | 98.120 | 85.881 | 89.852 | 88.039 |
| **1426–30** | 91.731 | 96.340 | 91.627 | 92.874 | 96.402 | 88.430 | 93.223 |
| **1431–35** | 105.968 | 105.021 | 86.681 | 96.341 | 91.735 | 97.210 | 97.881 |
| **1436–40** | 88.254 | 73.810 | 120.664 | 73.783 | 99.962 | 88.220 | 88.829 |
| **1441–45** | 115.740 | 141.908 | 53.885 | 127.972 | 90.180 | 104.374 | 105.095 |
| **1446–50** | 109.438 | 113.754 | 93.273 | 109.081 | 95.892 | 104.942 | 105.667 |

*Sources*: see the sources for Table 18.

lords borrowed money through mortgages, in using their land as collateral, they normally engaged in very long-term contracts.[19]

[19] For landlord borrowing, see Raftis, *Peasant Economic Development*, pp. 65–70. The universal prohibition against usury (interest) has made it difficult for historians to ascertain interest rates in commercial contracts.

The primary problem that concerned late medieval manorial lords in using capital (for example, that invested in livestock herds) was not nominal but *real* interest rates. The real interest rate is the nominal rate *minus* the annual rate of inflation (percentage annual change in the Consumer Price Index); or, for the period concerned here, the nominal interest rate *plus* the annual rate of deflation. Thus, the deflation of the late fourteenth and early fifteenth centuries inexorably increased the real burdens of the manorial lords' annual interest payments, especially in relation to the much lower prices fetched for the sales of agricultural products. Indeed, Raftis depicts the growing plight of the Ramsey Abbey estates in the 1370s and 1380s as 'a period of lower prices and increasing capital costs on the demesne'.[20]

## *The Novel Problem of Nominal 'Wage Stickiness' in Late Fourteenth-Century England*

In relation to money wages, the problem of 'stickiness' is all the more complex. The flexibility of long-term wage movements depends upon the nature of the prevailing price movements. During periods of inflation, in medieval and early modern Europe, money wages generally did rise, but sluggishly, with significant time lags, and thus almost never in pace with the rise of commodity prices. Therefore, real wages necessarily fell during most periods of inflation, according to the standard formula, expressed in index numbers: RWI = NWI/CPI (the real wage index = the nominal money wage index divided by the Consumer Price Index). In later medieval and early modern Europe, during periods of deflation, wages were far more rigid, so that real wages rose directly with falling prices. In this respect, what is now called 'downward wage-stickiness' is clearly related to monetary phenomena, in so far as they determine changes in the Consumer Price Index.

Henry Phelps Brown and Sheila Hopkins were amongst the first historians to call attention to this particular 'wage-stickiness' phenomenon, though they called it the 'elbow-joint' or 'ratchet effect'. They also contended that it was a new phenomenon in England, dating only from the later fourteenth century, but one that continued to prevail during subsequent periods of deflation, until the 1920s.[21] As they noted, and as did Beveridge and Bridbury, the 1370s marked the first time that money wages did not fall with the Consumer Price Index, as they had done earlier, in the deflationary 1330s and 1340s.[22] The same patterns of nominal wage-

[20] Raftis, *Peasant Economic Development*, p. 68.

[21] Phelps Brown and Hopkins, 'Seven Centuries of Building Wages', pp. 7–8.

[22] Phelps Brown and Hopkins, 'Seven Centuries of Building Wages', pp. 8–10. See in par-

stickiness during deflationary periods can also be demonstrated for the late medieval and early modern Low Countries.[23] Keynes observed that, while an inflation-induced fall in real wages rarely provokes hostile responses from organized labour, during deflationary periods, 'every trade union will put up some resistance to a cut in money-wages, however small', generally for fear that such losses may never be fully recouped.[24] John Langdon's recent study on this issue confirms patterns of wage-stickiness in medieval England, but even before the Black Death.[25] The complex reasons for wage-stickiness, which cannot be the focus of this study, have been explored at length in several of my recent publications.[26]

## *The Evidence of Manorial Wages in Later Medieval England*

The collected evidence for manorial wages, both agricultural and industrial, in later fourteenth- and early fifteenth-century England is presented in Tables 20A–B to 21A–B. Only those purely money rates for labour alone, paid in silver pence, have been utilized, so that any wage payments that combined money and kind (food, drink, clothing) have been deliberately excluded.[27] The most important series are those for such seasonal agricultural workers as threshers and winnowers, reapers and binders, and mowers, presented in Table 20A, in five-year means. They are based the annual index-number data that David Farmer published in two volumes of the *Agrarian History of England and Wales*.[28] Farmer's data have

ticular Beveridge, 'Westminster Wages in the Manorial Era', p. 31. See also Bridbury, 'The Black Death', p. 582.

[23] Munro, 'Wage-Stickiness', pp. 185–97; Munro, 'Money, Prices, Wages, and "Profit Inflation"'.

[24] Keynes, *The General Theory*, p. 15. The late medieval Low Countries provide examples of labour strikes (textile guilds) and civic revolts when authorities attempted to cut money-wages, during deflationary periods, even though real wages were then rising. See Munro, 'Gold, Guilds, and Government'.

[25] Langdon, 'Waged Building Employment in Medieval England'.

[26] See in particular Munro, 'Wage-Stickiness'; Munro, 'Before and After the Black Death'.

[27] Farmer, 'Prices and Wages', pp. 760–78, 811–17; and Farmer, 'Prices and Wages, 1350–1500', pp. 467–90, 516–24; Phelps Brown and Hopkins, 'Seven Centuries of Building Wages', pp. 8–12; Beveridge, 'Wages in the Winchester Manors', pp. 22–43: 'in the Winchester manors there is no reason for suspecting any general practice of supplementation' of money wages, when food payments are not specified'. When they are, they differ from the money-wage alone 'as a rule by 2d. per day' (pp. 36–37). See also Munro, 'Wage-Stickiness', pp. 194–212, and esp. pp. 202–04, and n. 48 (p. 275), for a critique of the view that supplementary wage-payments in kind were used to thwart the wage ordinances: as recently argued in Hatcher, 'England in the Aftermath'.

[28] See also his earlier study: Farmer, 'Crop Yields, Prices and Wages'.

Table 20A. National means of manorial agricultural wages in England: Piece-work rates for processing agricultural commodities (threshing and winnowing; reaping and binding) in silver pence and in index numbers (base: 1451–75 = 100) with calculations of real wages based on the Phelps Brown and Hopkins Consumer Price Index, 1331–35 to 1446–50

| | THRESHING AND WINNOWING GRAINS Piece rates per razed quarter (8 bushels) | | | | REAPING AND BINDING GRAINS per acre of grains | | |
|---|---|---|---|---|---|---|---|
| **Years 5-year period** | **CPI: based on Phelps Brown Hopkins (revised)** | **Threshing & Winnowing razed quarter of grains (Pence)** | **Threshing & Winnowing razed quarter of grains Index: 1451–75 = 100** | **RWI = NWI/CPI 1451–75 = 100 harmonic means** | **Reaping & Binding per acre of grains (Pence)** | **Reaping & Binding per acre of grains Index: 1451–75 = 100** | **RWI = NWI/CPI 1451–75 = 100 harmonic means** |
| **1331–35** | 109.108 | 5.358 | 51.692 | 46.586 | 6.402 | 64.242 | 58.730 |
| **1336–40** | 89.256 | 5.358 | 51.692 | 57.893 | 5.919 | 59.394 | 66.710 |
| **1341–45** | 85.533 | 5.402 | 52.107 | 60.912 | 6.076 | 60.970 | 71.277 |
| **1346–50** | 100.064 | 5.832 | 56.259 | 55.738 | 7.055 | 70.788 | 66.331 |
| **1351–55** | 126.472 | 6.262 | 60.411 | 46.468 | 7.876 | 79.030 | 62.273 |
| **1356–60** | 118.092 | 5.746 | 55.429 | 46.704 | 6.572 | 65.939 | 55.741 |
| **1361–65** | 137.976 | 6.252 | 60.307 | 43.542 | 8.033 | 80.606 | 58.291 |
| **1366–70** | 136.460 | 6.671 | 64.355 | 46.566 | 8.299 | 83.273 | 60.776 |
| **1371–75** | 127.345 | 7.414 | 71.518 | 55.280 | 8.480 | 85.091 | 65.891 |
| **1376–80** | 109.891 | 7.704 | 74.320 | 67.418 | 9.954 | 99.879 | 90.925 |
| **1381–85** | 113.190 | 8.038 | 77.538 | 68.007 | 9.072 | 91.030 | 78.986 |
| **1386–90** | 101.233 | 7.500 | 72.348 | 71.425 | 9.205 | 92.364 | 91.244 |
| **1391–95** | 103.953 | 7.414 | 71.518 | 68.700 | 8.734 | 87.636 | 83.473 |
| **1396–1400** | 110.648 | 7.962 | 76.811 | 69.165 | 8.734 | 87.636 | 77.934 |
| **1401–05** | 112.653 | 8.436 | 81.378 | 69.795 | 9.241 | 92.727 | 82.430 |
| **1406–10** | 109.927 | 8.726 | 84.181 | 76.101 | 9.918 | 99.515 | 90.550 |
| **1411–15** | 108.261 | 7.812 | 75.358 | 69.618 | 10.038 | 100.727 | 93.009 |
| **1416–20** | 113.598 | 8.920 | 86.049 | 74.925 | 9.857 | 98.909 | 86.918 |
| **1421–25** | 103.740 | 8.317 | 80.237 | 77.243 | 9.362 | 93.939 | 90.009 |
| **1426–30** | 112.610 | 8.221 | 79.302 | 70.570 | 9.048 | 90.788 | 79.884 |
| **1431–35** | 109.122 | 8.070 | 77.849 | 71.231 | 9.386 | 94.182 | 86.265 |
| **1436–40** | 124.218 | 10.254 | 98.920 | 77.342 | 9.561 | 95.939 | 77.596 |
| **1441–45** | 92.574 | 9.415 | 90.824 | 97.297 | 10.981 | 110.182 | 118.832 |
| **1446–50** | 101.241 | 8.920 | 86.049 | 84.038 | 9.942 | 99.758 | 98.561 |

*Sources*: *Consumer Prices*: see the sources for Table 18. *Wages*: Farmer, 'Prices and Wages', pp. 760–78, 811–17; Farmer, 'Prices and Wages, 1350–1500', pp. 467–90, 516–24. *For the Phelps Brown and Hopkins CPI*: see the sources for Table 18.

been converted into both silver pence and index numbers for both nominal and real wages, with the Phelps Brown and Hopkins base (1451–75 = 100), which is used in all other tables in this study. The 'real wage' calculations in Tables 20A and 20B are based not on his price index but on my revised Phelps Brown and Hopkins 'Basket of Consumable' Index used in the other tables (see Table 27).

The wage data for medieval English agricultural workers are highly problematic, in two respects. In the first place, these are piece-work wages: payments for the quantity of work done, without any reference to the time taken to fulfil these tasks. Rising piece rates might have meant less work done per day, though of course they still represented a higher labour cost for manorial lords, especially if, in contradiction to traditional economic theory, rising real wages did not represent increased productivity.[29] In the second place, the annual fluctuations of these piece-work wages do not clearly demonstrate the phenomenon of wage-stickiness, especially downward wage-stickiness during deflation. The problem here lies in the compilation of the data as 'national averages' by a method that suffers from 'compositional' errors. Because of both frequent annual gaps in the manorial data and regional wage variations, the calculations of the mean wage for each class of agricultural worker each year do not necessarily reflect actual wage changes in each and every region but changes in the composition of the data, so that the absence of either higher or lower wage manors in any given year skews the results. Furthermore, the piece rates varied according to the type of grain that was threshed and winnowed (wheat, barley, and oats); and not all were consistently recorded. Thus, even within each manor, annual changes in the composition of the piece-work wage group by such grains would also have skewed the results and produced spurious fluctuations.[30]

Taking account of all these caveats, we observe from Table 20A that the nominal piece-work wages of threshers and winnowers (in index numbers) did indeed rise, as expected, after the Black Death: by 23.51 per cent from 1341–45 to 1366–70. That increase in nominal wage rates did not, however, match the inflationary rise in the Consumer Price Index, so that the real wage index actually fell

[29] Recently, Gregory Clark has sought a remedy for this vexing problem by using regression analysis (based on other wage data) to convert English agrarian piece work wages into daily wages (again, on a 'national means' basis); but his results are so strikingly at variance with the evidence produced here that they cannot reasonably be used in this study. Clark, 'The Long March of History', p. 101 and Table 1 at pp. 99–100.

[30] Munro, 'Wage-Stickiness', pp. 196–97. For varying rates according to the type of grain threshed (not made clear in Farmer), see Beveridge, 'Wages in the Winchester Manors', Table II, p. 39.

Table 20B. National means of manorial agricultural wages in England: Piece-work rates for processing agricultural commodities (mowing and spreading) in silver pence and in index numbers (base: 1451–75 = 100) with calculations of real wages based on the Phelps Brown and Hopkins Consumer Price Index, 1331–35 to 1446–50

| | MOWING AND SPREADING PER ACRE OF PASTURE per acre of meadow lands | | | |
|---|---|---|---|---|
| **Years 5-year period** | **CPI: based on Phelps Brown Hopkins (revised)** | **Mowing & Spreading per acre of meadow Pence** | **Mowing & Spreading per acre of meadow Index: 1451–75 = 100** | **RWI = NWI/ CPI 1451–75 = 100 Harmonic means** |
| **1331–35** | 109.108 | | | |
| **1336–40** | 89.256 | | | |
| **1341–45** | 85.533 | | | |
| **1346–50** | 100.064 | | | |
| **1351–55** | 126.472 | 6.452 | 97.486 | 76.788 |
| **1356–60** | 118.092 | 6.181 | 93.381 | 78.689 |
| **1361–65** | 137.976 | 6.328 | 95.605 | 68.743 |
| **1366–70** | 136.460 | 7.618 | 115.102 | 83.481 |
| **1371–75** | 127.345 | 7.641 | 115.444 | 89.996 |
| **1376–80** | 109.891 | 7.505 | 113.391 | 103.194 |
| **1381–85** | 113.190 | 7.811 | 118.009 | 104.173 |
| **1386–90** | 101.233 | 7.392 | 111.681 | 110.193 |
| **1391–95** | 103.953 | 6.883 | 103.985 | 99.552 |
| **1396–1400** | 110.648 | 6.724 | 101.591 | 91.630 |
| **1401–05** | 112.653 | 6.764 | 102.189 | 89.673 |
| **1406–10** | 109.927 | 7.273 | 109.885 | 99.923 |
| **1411–15** | 108.261 | 6.962 | 105.182 | 95.792 |
| **1416–20** | 113.598 | 6.735 | 101.762 | 89.307 |
| **1421–25** | 103.740 | 7.200 | 108.774 | 104.626 |
| **1426–30** | 112.610 | 6.684 | 100.992 | 89.487 |
| **1431–35** | 109.122 | 6.226 | 94.065 | 86.110 |
| **1436–40** | 124.218 | 6.764 | 102.189 | 82.098 |
| **1441–45** | 92.574 | 6.407 | 96.802 | 104.580 |
| **1446–50** | 101.241 | 6.305 | 95.263 | 93.925 |

*Sources*: *Consumer Prices*: see the sources for Table 18. *Wages*: Farmer, 'Prices and Wages', pp. 760–78, 811–17; Farmer, 'Prices and Wages, 1350–1500', pp. 467–90, 516–24. *For the Phelps Brown and Hopkins CPI*: see the sources for Table 18.

by a striking 23.55 per cent over this same period, as a mirror image. Reapers and binders experienced a steeper rise in their nominal wages in this period: a mean of 36.58 per cent, from 1341–45 to 1366–70, though also with a temporary decline in 1356–60; and again, nominal wages rose by only by only 5.36 per cent from 1351–55 to 1366–70. Similarly their real wages also fell after the Black Death: by 21.80 per cent, from 1341–45 to the trough of 1356–60; and, though rising thereafter, their real wages in 1366–70 were still only 85.37 per cent of what they had earned in the early 1340s. Thus we may thus assume that the rise in nominal wages was largely a monetary phenomenon, as part of the post-plague inflations.[31]

In the deflationary era that ensued, from the later 1370s, real wages did rise, as expected, for the various manorial agricultural workers. If we compare real wages in the quinquennium 1366–70 with those for three decades later, in 1396–1400, we find that those for threshers and winnowers had risen by 48.53 per cent; those for reapers and binders, by 28.23 per cent; and those for mowers, by only 9.76 per cent.[32] The nominal wage-rates for threshers in 1396–1400 were 19.36 per cent higher than in 1366–70, but they were virtually unchanged from 1371–75 to 1391–95 (having increased just before and just after those dates). Those for reapers were just 6.5 per cent higher, while those for mowers were, in fact, 11.74 per cent lower (for reasons not readily explained). This evidence suggests that the real wage gains were derived from a combination of monetary deflation and varying degrees of institutional wage-stickiness, though one possibly distorted by the calculation of national means, and by the nature of the occupations.

From the end of the fourteenth century through the first three decades of the fifteenth century, we find moderate fluctuations in the price level, but general stability in the CPI from 1396–1400 to 1426–30. During this thirty-year period, nominal wages changed overall by very modest amounts: a rise of 3.24 per cent, for threshers; a rise of 3.60 per cent for reapers, but a decline of 2.34 per cent for mowers. Consequently, the mowers suffered a small decrease of 2.34 per cent in real wages, while the first two groups enjoyed only minimal real-wage gains: 2.03 per cent and 2.50 per cent, respectively. These observations do not justify any important conclusions about relative labour scarcities during the first third of the fifteenth century.

[31] Munro, 'Wage-Stickiness', pp. 95–291; Munro, 'Before and After the Black Death', pp. 335–64.

[32] Note from Tables 20–23 that the quinquennial mean real wages are computed by the harmonic mean, which is always somewhat lower than the arithmetic mean. For an explanation of these two means, see Munro, 'Wage-Stickiness', pp. 278–79, n. 83. Farmer supplied no wages for mowers before 1350.

Table 21A. National means of manorial building wages in England: Daily wages for master carpenters and thatchers (and mates) in silver pence and in index numbers (base: 1451–75 = 100) with calculations of real wages based on the Phelps Brown and Hopkins Consumer Price Index, 1331–35 to 1446–50

| | | CARPENTERS: MANORIAL in pence per day | | | THATCHER & MATES: MANORIAL in pence per day | | |
|---|---|---|---|---|---|---|---|
| Year Michaelmas Five-year period | Phelps Brown & Hopkins CPI (Revised) | Carpenter solo per day Pence | Carpenter solo per day Index: 1451–75 = 100 | Real Wage Index RWI = NWI/CPI harmonic means | Thatcher & mate per day Pence | Thatcher & mate per day Index: 1451–75 = 100 | Real Wage Index RWI = NWI/CPI harmonic means |
| **1331–35** | 109.108 | 3.243 | 58.877 | 54.050 | 3.792 | 41.639 | 38.030 |
| **1336–40** | 89.256 | 3.136 | 56.945 | 63.373 | 3.882 | 42.625 | 47.834 |
| **1341–45** | 85.533 | 2.999 | 54.444 | 63.364 | 3.553 | 39.011 | 45.560 |
| **1346–50** | 100.064 | 3.293 | 59.786 | 59.090 | 4.204 | 46.156 | 45.180 |
| **1351–55** | 126.472 | 3.524 | 63.992 | 50.181 | 4.682 | 51.413 | 40.626 |
| **1356–60** | 118.092 | 3.956 | 71.835 | 60.774 | 4.608 | 50.591 | 42.687 |
| **1361–65** | 137.976 | 4.188 | 76.040 | 55.102 | 5.333 | 58.558 | 42.389 |
| **1366–70** | 136.460 | 4.332 | 78.654 | 57.697 | 5.685 | 62.418 | 45.798 |
| **1371–75** | 127.345 | 4.194 | 76.154 | 59.602 | 5.887 | 64.635 | 50.731 |
| **1376–80** | 109.891 | 4.194 | 76.154 | 69.304 | 6.066 | 66.606 | 60.747 |
| **1381–85** | 113.190 | 4.319 | 78.427 | 69.095 | 6.171 | 67.756 | 59.676 |
| **1386–90** | 101.233 | 4.207 | 76.381 | 75.388 | 6.119 | 67.181 | 66.293 |
| **1391–95** | 103.953 | 4.269 | 77.518 | 74.465 | 6.313 | 69.317 | 66.240 |
| **1396–1400** | 110.648 | 4.276 | 77.631 | 70.193 | 6.253 | 68.660 | 62.010 |
| **1401–05** | 112.653 | 4.639 | 84.224 | 74.644 | 6.567 | 72.109 | 63.613 |
| **1406–10** | 109.927 | 4.733 | 85.929 | 77.377 | 6.829 | 74.984 | 67.938 |
| **1411–15** | 108.261 | 4.344 | 78.882 | 72.716 | 6.552 | 71.945 | 66.124 |
| **1416–20** | 113.598 | 4.582 | 83.201 | 73.118 | 6.882 | 75.558 | 66.445 |
| **1421–25** | 103.740 | 4.657 | 84.565 | 81.328 | 6.171 | 67.756 | 65.038 |
| **1426–30** | 112.610 | 4.970 | 90.248 | 80.267 | 7.667 | 84.182 | 74.515 |
| **1431–35** | 109.122 | 4.826 | 87.634 | 79.953 | 7.443 | 81.718 | 74.736 |
| **1436–40** | 124.218 | 5.396 | 97.977 | 79.105 | 8.774 | 96.337 | 77.113 |
| **1441–45** | 92.574 | 5.064 | 91.953 | 99.365 | 8.767 | 96.255 | 102.614 |
| **1446–50** | 101.241 | 5.283 | 95.931 | 94.597 | 8.804 | 96.666 | 95.316 |

*Sources*: *Consumer Prices*: see the sources for Table 18. *Wages*: Farmer, 'Prices and Wages', pp. 760–78, 811–17; Farmer, 'Prices and Wages, 1350–1500', pp. 467–90, 516–24. *For the Phelps Brown and Hopkins CPI*: see the sources for Table 18.

Some useful comparisons may be made with the piece-work wage data that Lord Beveridge published so long ago for threshing and winnowing on eight Winchester manors, though regrettably only in decennial means.[33] For the thirty-year period from 1340–49 to 1360–69, the threshers' piece-work wages rose, on average, by 21.27 per cent, from 5.03d. to 6.10d. per quarter (= 8 bushels), and thus by less than half the rate of inflation: a 48.40 rise in the CPI. Over the same period, Farmer's 'national wage data' for threshers rose somewhat less: by 15.03 per cent (from 5.62 d to 6.46 d per quarter). The Beveridge wage data for threshers also continued to rise after the inflation had ceased. If we examine the threshing rates for the individual Winchester manors we find that threshing rates had peaked at 7.25d. per quarter at Downton in 1370–79, at Meon in 1380–89, and at both Overton and Ecchinswell (Itchingswell) in 1400–09. They had peaked at the higher rate of 7.50d. in Wycombe in 1370–79, and at both Wargrave and Farnham in 1380–89. Thereafter, those threshing rates remained fixed in all these manors until the Beveridge data terminate in the 1450s. Thus they demonstrate the same wage stickiness found in English (and Flemish) industrial wages during prolonged deflation.[34]

## *The Evidence of Manorial and Urban Wage Data for Building Craftsmen*

The 'national mean' daily wage rates for manorial building craftsmen are presented in Table 21A, but only for masters (carpenters, masons, thatcher, and tilers/slaters). This wage-rate series is again based on Farmer's published data, which are subject to similar caveats previously noted.[35] If we focus only on carpenters, we do find the expected rise in nominal daily wages after the Black Death: by 44.47 per cent from the mean of 1341–45 (3.00d.) to the mean of 1366–70 (4.33d.); and this table also reveals the same fall in real wages, because the CPI had risen so much more during this period. While these 'national' wage data do not portray the same wage-stickiness found elsewhere, they do reveal a remarkable stability in nominal wages, from the early 1360s to the late 1390s, never varying by more than 1.40 per cent from the mean wage of 4.247d. for these three decades. If, however, we examine the annual wage data for carpenters

[33] Beveridge, 'Wages in the Winchester Manors', pp. 22–43. Data are missing for Witney and Esher manors in the later fourteenth and fifteenth centuries; but the Esher data are excluded from the Beveridge mean.

[34] Munro, 'Wage-Stickiness', Table 6, pp. 243–44; Tables 10–15, pp. 252–63.

[35] See above pp. 309–11 and n. 27.

on individual Winchester manors we do indeed find that expected 'wage-stickiness': carpenters' wages that are constantly at 4d. from the 1370s to the 1390s at Ecchinswell, Taunton, Witney (some at 5d.), and Wycombe; and constantly at 5d. at Esher, for these same three decades.[36]

In Farmer's 'national' wage means for carpenters for the fifteenth century, we find another rise in nominal wages during the first-quarter: overall, by 8.91 per cent, from a mean of 4.276d. in 1396–1400 to one of 4.657d. in 1421–25. That rise parallels the rise shown in Tables 21A/B for urban carpenters. Thereafter, however, unlike these urban wage data, the 'national' means of nominal manorial industrial wages continue to rise (despite two quinquennial declines), reaching a mean, for carpenters, of 5.283d. in 1446–50, when they are 23.57 per cent higher than the nominal wages of the late 1390s. Over this same half-century period, the real wage index (for carpenters) also rose — and even more — by 34.77 per cent.[37]

In nominal money values, Farmer's 'national' average daily wage for manorial master carpenters in the base period 1451–75 was 5.508d., which is 91.8 per cent of the Phelps Brown and Hopkins mean wage for small–town master carpenters: 6.000d. (Table 21A). At the end of the fourteenth century, Farmer's 'national' average daily money wage for manorial carpenters (4.276d. in 1396–1400) was 85.52 per cent of the urban daily wage (5.000d.). Earlier, in 1361–65, the gap had been even wider: 83.76 per cent (Tables 20B and 21A). This growing convergence of manorial and urban industrial wages may reflect one or even both of the following possibilities. The first possibility is a growing relative labour scarcity in rural areas, possibly in response to urban industrial competition, aided by an enhanced rural labour mobility — itself a reflection of manorial economic decline.[38] The second but speculative possibility to explain this growing wage convergence is the continual abandonment of direct demesne cultivation from the 1370s to the 1420s; for that may have left only fewer and possibly more profitable manorial and higher wage-paying demesnes to record wage payments, in documents that are indeed very sparse by the mid-century.

Finally, we may supplement Farmer's and Beveridge's 'wage means', presented in Tables 22 and 23, with annual data extracted from several individual manorial accounts: for the Battle Abbey manors, Westminster Abbey, Bury St Edmunds Abbey manor of Redgrave (Suffolk), Croyland Abbey, and for eight of the Winchester manors (Downton, Ecchinswell, Esher, Ivinghoe, Overton, Taunton,

[36] LSE Archives, Beveridge, Boxes A.30–33.

[37] See Table 21A: the percentage changes are calculated by the index numbers.

[38] See Raftis, *Tenure and Mobility*.

Table 21B. National means of manorial building wages in England: Daily wages for slaters (and mates), and masons in silver pence and in index numbers (base: 1451–75 = 100) with calculations of real wages based on the Phelps Brown and Hopkins Consumer Price Index, 1331–35 to 1446–50

| | SLATER/TILERS & MATES | | | | MASONS solo | | |
|---|---|---|---|---|---|---|---|
| Year Michaelmas Five-year period | Phelps Brown & Hopkins CPI (Munro) | Slater/ Tiler & mate per day Pence | Slater/ Tiler & mate per day Index: 1451–75 = 100 | Real Wage Index RWI = NWI/ CPI harmonic means | Mason solo per day Pence | Mason solo per day Index: 1451–75 = 100 | Real Wage Index RWI = NWI/ CPI harmonic means |
| **1331–35** | 109.108 | 5.565 | 57.381 | 52.569 | | | |
| **1336–40** | 89.256 | 5.135 | 52.946 | 59.428 | | | |
| **1341–45** | 85.533 | 5.246 | 54.095 | 63.104 | | | |
| **1346–50** | 100.064 | 5.172 | 53.329 | 52.674 | | | |
| **1351–55** | 126.472 | 6.011 | 61.980 | 49.061 | 3.901 | 68.495 | 54.123 |
| **1356–60** | 118.092 | 6.117 | 63.075 | 53.339 | 4.031 | 70.770 | 59.784 |
| **1361–65** | 137.976 | 6.499 | 67.017 | 48.544 | 4.331 | 76.039 | 55.057 |
| **1366–70** | 136.460 | 7.041 | 72.602 | 53.385 | 4.215 | 74.003 | 53.838 |
| **1371–75** | 127.345 | 7.668 | 79.063 | 60.777 | 4.488 | 78.793 | 60.605 |
| **1376–80** | 109.891 | 7.052 | 72.711 | 66.205 | 4.713 | 82.745 | 75.299 |
| **1381–85** | 113.190 | 7.519 | 77.530 | 68.059 | 4.788 | 84.062 | 73.735 |
| **1386–90** | 101.233 | 7.492 | 77.256 | 76.249 | 4.269 | 74.961 | 73.418 |
| **1391–95** | 103.953 | 7.190 | 74.135 | 71.409 | 4.528 | 79.511 | 75.455 |
| **1396–1400** | 110.648 | 7.381 | 76.106 | 68.835 | 4.324 | 75.919 | 68.453 |
| **1401–05** | 112.653 | 8.050 | 83.005 | 73.674 | 4.651 | 81.667 | 71.885 |
| **1406–10** | 109.927 | 7.848 | 80.924 | 73.568 | 5.054 | 88.732 | 80.270 |
| **1411–15** | 108.261 | 7.816 | 80.596 | 73.867 | 4.849 | 85.140 | 77.680 |
| **1416–20** | 113.598 | 8.326 | 85.852 | 75.202 | 5.296 | 92.983 | 80.323 |
| **1421–25** | 103.740 | 8.358 | 86.180 | 83.027 | 5.429 | 95.318 | 91.175 |
| **1426–30** | 112.610 | 8.167 | 84.209 | 74.237 | 5.313 | 93.282 | 82.142 |
| **1431–35** | 109.122 | 8.454 | 87.166 | 79.566 | 4.979 | 87.415 | 78.991 |
| **1436–40** | 124.218 | 9.006 | 92.860 | 74.641 | 5.569 | 97.773 | 77.873 |
| **1441–45** | 92.574 | 9.091 | 93.736 | 101.119 | 5.224 | 91.726 | 98.609 |
| **1446–50** | 101.241 | 9.154 | 94.393 | 92.497 | 5.531 | 97.114 | 95.690 |

*Sources*: see the sources for Tables 20A and 20B.

Table 22. Wages for master building craftsmen (masons and carpenters) in small towns of southern England (excluding London) compared with the Phelps Brown and Hopkins (Revised) Consumer Price Index and with the value of the annual real wage income expressed in PBH 'Consumer Baskets'. From 1331–35 to 1446–50 in quinquennial means (arithmetic and harmonic) RWI = NWI/CPI: Real Wage Index = Nominal Wage Index/ Consumer Price Index (base: 1451–75 = 100)

| 5-Year Mean | Total Value of PBH Basket in pence (d. sterling) Arithmetic | PBH Prices Consumer Price Index Munro version 1451-75 = 100 Arithmetic | Master Nominal Day Wage in pence (d. sterling) Arithmetic | Master Mason: Nominal Wage Index 1451–75 = 100 [= 6d. daily] Arithmetic | Master Mason: Real Wage Index (Munro) 1451–75 = 100 Arithmetic | Master Mason: Real Wage Index (Munro) 1451–75 = 100 Harmonic | Master RWI No. of Baskets Consumed in one year (210 days) Harmonic |
|---|---|---|---|---|---|---|---|
| **1331–35** | 123.074 | 109.108 | 4.000 | 66.667 | 62.454 | 61.102 | 6.825 |
| **1336–40** | 100.682 | 89.256 | 3.600 | 60.000 | 68.025 | 66.986 | 7.482 |
| **1341–45** | 96.482 | 85.533 | 3.000 | 50.000 | 58.586 | 58.457 | 6.530 |
| **1346–50** | 112.873 | 100.064 | 3.000 | 50.000 | 50.478 | 49.968 | 5.582 |
| **1351–55** | 142.661 | 126.472 | 3.600 | 60.000 | 48.657 | 46.552 | 5.200 |
| **1356–60** | 133.209 | 118.092 | 4.600 | 76.667 | 64.902 | 64.611 | 7.217 |
| **1361–65** | 155.637 | 137.976 | 5.000 | 83.333 | 60.609 | 60.397 | 6.746 |
| **1366–70** | 153.928 | 136.460 | 5.000 | 83.333 | 62.159 | 61.068 | 6.821 |
| **1371–75** | 143.646 | 127.345 | 5.000 | 83.333 | 65.966 | 65.439 | 7.310 |
| **1376–80** | 123.958 | 109.891 | 5.000 | 83.333 | 76.871 | 75.832 | 8.471 |
| **1381–85** | 127.679 | 113.190 | 5.000 | 83.333 | 73.729 | 73.622 | 8.224 |
| **1386–90** | 114.191 | 101.233 | 5.000 | 83.333 | 82.501 | 82.319 | 9.195 |
| **1391–95** | 117.259 | 103.953 | 5.000 | 83.333 | 81.269 | 80.165 | 8.955 |
| **1396–1400** | 124.812 | 110.648 | 5.000 | 83.333 | 75.701 | 75.314 | 8.413 |
| **1401–05** | 127.073 | 112.653 | 5.100 | 85.000 | 76.605 | 75.156 | 8.395 |
| **1406–10** | 123.998 | 109.927 | 5.800 | 96.667 | 88.612 | 88.115 | 9.843 |
| **1411–15** | 122.119 | 108.261 | 6.000 | 100.000 | 92.491 | 92.369 | 10.318 |
| **1416–20** | 128.139 | 113.598 | 6.000 | 100.000 | 88.744 | 88.030 | 9.833 |
| **1421–25** | 117.020 | 103.740 | 6.000 | 100.000 | 96.599 | 96.395 | 10.767 |
| **1426–30** | 127.025 | 112.610 | 6.000 | 100.000 | 90.703 | 88.802 | 9.919 |
| **1431–35** | 123.090 | 109.122 | 6.000 | 100.000 | 91.801 | 91.641 | 10.236 |
| **1436–40** | 140.118 | 124.218 | 6.000 | 100.000 | 84.039 | 80.504 | 8.992 |
| **1441–45** | 104.424 | 92.574 | 6.000 | 100.000 | 108.344 | 108.022 | 12.066 |
| **1446–50** | 114.200 | 101.241 | 6.000 | 100.000 | 98.912 | 98.774 | 11.033 |

*Sources*: *English consumer prices*: see the sources for Table 18. *Wages for building craftsmen (masters and labourers)*: Phelps Brown and Hopkins, 'Seven Centuries of Building Wages'; Munro, 'Builders' Wages in Southern England and the Southern Low Countries'.

Witney, Wycombe).[39] For the period immediately following the Black Death, all extant manorial accounts indicate a rise in the daily money wages for master carpenters, masons, and other building craftsmen (daubers, tilers, thatchers) from about 3d. (or less) to 4d.; but, as just noted, 4d. had been the prevailing daily money wage in the 1330s (at Redgrave, Croyland Abbey, Westminster, and Overton — though not at Wycombe and Ecchinswell). By the later fourteenth or early fifteenth century, the prevailing daily money wage for maser carpenters on these manors had risen from 4d. to 5d. For the 1450s (when the Winchester manorial wage accounts cease), Beveridge has computed a decennial mean average daily wage of 5.23d. for carpenters on eight Winchester manors.[40] The analysis of the aforesaid individual various manorial accounts indicates that the following were the prevailing daily wage rates for carpenters in the 1440s and 1450s: 5d. and sometimes 6d., at Ecchinswell, Esher, Ivinghoe, Witney, and Wycombe; 5d., at Overton and Taunton; 5d. or 6d., at Winchester College; 5d., at Oakington (Croyland Abbey); 5d., at Redgrave; 4d., 5d., or even 6d., at Battle Abbey (but many at 3d. or 4d. with food).[41] In so far as the very sparse subsequent manorial evidence indicates, these rates prevailed into the early sixteenth century.

The overall picture of late fourteenth- and early fifteenth-century agrarian wages is quite clear. Despite the evidence for wage-stickiness and despite evidence for some periodic if modest declines in other agrarian wage data, previously cited, the costs of employing labour on English demesnes had generally risen to a very high level by the early fifteenth century, while the prices of the primary agricultural commodities (along with the consumer price index) continued to fall, sometimes sharply, during the first quarter of this century, as may be clearly seen in Tables 18 and 19. Hence, the price-cost scissors was becoming even worse for so many manorial lords.

## *The Debate about Real Wages and Labour Productivity*

While the 'price-cost scissors' theorem is expressed in terms of purely nominal prices and wages, the vexing question of real wages still has considerable relevance for this debate, in so far as it also concerns the important issue of changes in labour productivity. The evidence for the real-wage changes are presented in

[39] LSE Archives, Beveridge, Box A.33 (Winchester Manors); LSE Archives, Beveridge, Box F.8 (Winchester College); LSE Archives, Beveridge, Box G.10 (Croyland); LSE Archives, Beveridge, Box G.14 (Redgrave); LSE Archives, Beveridge, Box H.10 (Battle Abbey).

[40] Beveridge, 'Wages in the Winchester Manors', Table III at p. 40.

[41] See n. 39 above.

Table 23. Wages for labourers of master building craftsmen in small towns of southern England (excluding London). Compared with the Revised Phelps Brown and Hopkins 'Basket of Consumables' Consumer Price Index and with the annual real wage income expressed in PBH 'Consumer Baskets' in quinquennial means (arithmetic and harmonic), 1331–35 to 1446–50, base: 1451–75=100 RWI = NWI/CPI: Real Wage Index = Nominal Wage Index/Consumer Price Index

| 5-Year Means | PBH Prices Consumer Price Index Revised version 1451–75 = 100 Arithmetic | Labourer Nominal Day Wage in pence (d. sterling) Arithmetic | Labourer's Wage as Percentage of Master Arithmetic | Mason Labourer Nominal Wage Index 1451–75 = 100 [= 4d. daily] Arithmetic | Mason Labourer Real Wage Index (Munro) 1451–75 = 100 Arithmetic | Mason Labourer Real Wage Index (Munro) 1451–75 = 100 Harmonic | Labourer RWI No. of Baskets Consumed in one year (210 days) Harmonic |
|---|---|---|---|---|---|---|---|
| **1331–35** | 109.108 | 2.000 | 50.00% | 50.000 | 46.841 | 45.826 | 3.413 |
| **1336–40** | 89.256 | 1.800 | 50.00% | 45.000 | 51.019 | 50.239 | 3.741 |
| **1341–45** | 85.533 | 1.500 | 50.00% | 37.500 | 43.939 | 43.843 | 3.265 |
| **1346–50** | 100.064 | 1.500 | 50.00% | 37.500 | 37.858 | 37.476 | 2.791 |
| **1351–55** | 126.472 | 1.800 | 50.00% | 45.000 | 36.492 | 34.914 | 2.600 |
| **1356–60** | 118.092 | 2.600 | 56.22% | 65.000 | 54.943 | 54.039 | 4.024 |
| **1361–65** | 137.976 | 3.000 | 60.00% | 75.000 | 54.548 | 54.357 | 4.048 |
| **1366–70** | 136.460 | 3.000 | 60.00% | 75.000 | 55.943 | 54.961 | 4.093 |
| **1371–75** | 127.345 | 3.000 | 60.00% | 75.000 | 59.369 | 58.895 | 4.386 |
| **1376–80** | 109.891 | 3.000 | 60.00% | 75.000 | 69.184 | 68.249 | 5.082 |
| **1381–85** | 113.190 | 3.000 | 60.00% | 75.000 | 66.357 | 66.260 | 4.934 |
| **1386–90** | 101.233 | 3.000 | 60.00% | 75.000 | 74.251 | 74.087 | 5.517 |
| **1391–95** | 103.953 | 3.000 | 60.00% | 75.000 | 73.142 | 72.148 | 5.373 |
| **1396–1400** | 110.648 | 3.000 | 60.00% | 75.000 | 68.131 | 67.782 | 5.048 |
| **1401–05** | 112.653 | 3.200 | 62.73% | 80.000 | 72.499 | 70.065 | 5.218 |
| **1406–10** | 109.927 | 3.800 | 65.45% | 95.000 | 86.910 | 86.562 | 6.446 |
| **1411–15** | 108.261 | 4.000 | 66.67% | 100.000 | 92.491 | 92.369 | 6.879 |
| **1416–20** | 113.598 | 4.000 | 66.67% | 100.000 | 88.744 | 88.030 | 6.555 |
| **1421–25** | 103.740 | 4.000 | 66.67% | 100.000 | 96.599 | 96.395 | 7.178 |
| **1426–30** | 112.610 | 4.000 | 66.67% | 100.000 | 90.703 | 88.802 | 6.613 |
| **1431–35** | 109.122 | 4.000 | 66.67% | 100.000 | 91.801 | 91.801 | 6.824 |
| **1436–40** | 124.218 | 4.000 | 66.67% | 100.000 | 84.039 | 80.504 | 5.995 |
| **1441–45** | 92.574 | 4.000 | 66.67% | 100.000 | 108.344 | 108.022 | 8.044 |
| **1446–50** | 101.241 | 4.000 | 66.67% | 100.000 | 98.912 | 98.774 | 7.356 |

*Sources*: see the sources for Table 22.

Tables 20–23.[42] The previously advanced thesis (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) fails, however, to explain the early fifteenth-century rise in real wages for industrial craftsmen, both manorial and urban. Why did their nominal wages rise even more, without any significant adjustments in the Consumer Price Index? As noted earlier, however, the evidence for purely agricultural manorial workers (threshers, reapers, mowers) is mixed, without any consistent overall trend in either nominal or real wages.[43] We may well ask how the English economy produced and maintained or justified any sustained rise in nominal wages in and from the early fifteenth century. Was it primarily a question of increased labour productivity, or of Total Factor Productivity (combining land, labour, and capital)? For one answer (but not a definitive one), we may revert to the alternative formula of the real wage, which now must be properly defined as: RW = MRPL: that is, the Real Wage is a function of the *Marginal Revenue Product of Labour*. Thus, if the worker's labour productivity rose but the *real* market value of his output fell, the expected increase in his real wage would have been indeterminate (or even negative).

In this respect, we should reconsider the Ricardian argument advanced earlier in this study, and the one that most economic historians continue to favour: namely, that the post-plague fall in population and the consequent alteration of the land:labour ratio necessarily led to a sharp rise in labour productivity. Indeed, Gregory Clark, in a recent article, stoutly defending the Malthusian-Ricardian approach to European economic history, has presented two dramatic graphs on this issue. The first shows a tripling of labour productivity in English agriculture, apparent from immediately after the Black Death, reaching its peak in the mid-fifteenth century; and the second shows a comparable tripling in agricultural real wages over this same period.[44] 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'.[45]

There are two major problems in using the Ricardian 'real wage' model on rising labour productivity to explain a price-cost squeeze, and specifically one that led to the abandonment of manorial demesne cultivation. The first is theoretical.

[42] See Munro, 'Wage-Stickiness', pp. 185–297.

[43] See above, pp. 312–13. Downward wage-stickiness once again became important during the second deflationary 'bullion famine' from the 1440s to the 1470s, for both England and the Low Countries. See Munro, 'Wage-Stickiness', pp. 217–30.

[44] Clark, 'The Long March of History', Figure 2, p. 104; Figure 3, p. 106; and Figure 4, p. 109.

[45] See above, pp. 315–19.

If rising 'real' wages had been the product of an increasing marginal productivity of labour, with a much smaller quantity of more efficient labour working far better residual lands, why would manorial landlords have been concerned? For their total wage bill, with fewer workers per arable acre, might have decreased, not increased. Furthermore, why would any medieval English landlord have been concerned if his hired labourers earned a higher 'real' wage because their cost of living had fallen, with so much cheaper foodstuffs? To be sure, in accordance with Ricardian theory, the economic rent ('Ricardian surplus') on his demesne lands would have declined over time, but we may doubt that such manorial lords would have gained any more by leasing such lands at a presumably lower annual rental income. Answers to this first problem may be found in an examination of the second problem.

The second problem concerns the evidence on arable labour productivity, evidence that Clark neglected to consider. Several recent studies indicate that labour productivity in arable agriculture very likely fell, not rose, from the Black Death to the late fourteenth century, though they do not explain this paradox.[46] One possible solution is revealed in earlier studies of Bruce Campbell. He had utilized Esther Boserup's well known demographic-agrarian thesis to contend that, in the later thirteenth and early fourteenth centuries, growing population pressures on relatively inelastic supplies of arable land had provided the requisite spur for innovations that led to productivity increases, especially in multiple-course crop rotations designed to reduce the proportion of land in fallow.[47] The subsequent fall in population, especially after the Black Death, resulting (as already noted) in more abundant supplies of land and falling grain prices, thus evidently removed the incentives to use the more advanced fallow-reducing techniques. At the same time, many of those techniques were labour intensive, so that labour scarcities may have prevented their proper implementation.

Tables in Campbell's recent publications clearly demonstrate a steady decline in crop yields and thus in agricultural productivity (Total Factor Productivity), following the Black Death, and well into the fifteenth century. In Norfolk, the weighted annual cereal yields fell from a mean of 11.9 bushels per acre in 1325–49 to one of 8.0 bushels per acre in 1400–24.[48] Various other various studies (Raftis,

[46] Raftis, 'Peasants and the Collapse of the Manorial Economy', pp. 191–206; Farmer, 'The Famuli'. See also: Stone, 'Medieval Farm Management and Technological Mentalities'; Stone, 'The Productivity of Hired and Customary Labour'; Stone, 'The Productivity and Management of Sheep'; Stone, *Decision-Making in Medieval Agriculture*.

[47] Boserup, *Population and Technological Change*; Campbell, 'Agricultural Progress in Medieval England'; Campbell, 'Arable Productivity in Medieval England'; and Campbell, 'Progressiveness and Backwardness'.

[48] Campbell and Overton, 'A New Perspective', esp. Table 5, p. 70; Campbell, *English*

Farmer, Stone, Dyer) on arable productivity in post-Plague English agriculture also indicate, however, a corresponding rise in labour productivity in pastoral or livestock agriculture, in that fewer persons were employed to look after a given flock of sheep or herd of cattle.[49]

## *The Shift from Manorial Arable to Pastoral (Livestock) Agriculture: Price Incentives and Evidence*

Changes in relative agricultural prices in the later fourteenth century further explain why many manorial landlords, in retaining their demesnes, shifted more and more from arable to pastoral agriculture, though not necessarily in the form of wool-growing. As previously noted, and as may be seen again in Table 19, *relative* commodity prices clearly moved in favour of livestock products, especially meats and dairy products, though that favourable movement did not persist into the fifteenth century, except briefly for dairy products.[50] Furthermore, Christopher Dyer has contended that the sustained rise of real wages, by the later fourteenth century, had led to a substantial increase in the consumption of meat and dairy products.[51]

To substantiate this thesis of a shift from arable to pastoral agriculture, we may cite Bruce Campbell's abundant evidence on the use of manorial demesne lands for arable and livestock agriculture. He found that arable sown areas fell from a mean of 172.10 acres (or 69.65 hectares) per demesne ('retained in hand') in 1300–49 to a one of 147.10 acres in 1350–99 and then to one of 142.80 acres in 1400–50: an overall decline of 17.02 per cent. Over these same three periods, the percentage sown in grain (as opposed to legumes, etc.) fell from 90.47 per cent to 82.21 per cent of total sown acreage. For those 'home' counties servicing the

*Seigniorial Agriculture*, Table 7.13, p. 374; Campbell, 'Matching Supply to Demand', Tables 4–5, pp. 837, 840.

[49] See sources cited in n. 46 above; and see also Dyer, *Lords and Peasants in a Changing Society*, pp. 150–51: noting that, on the Worcester manors, in 1449–50, one shepherd managed flocks of 400–500 sheep, compared to a ratio of one shepherd to 250–300 sheep on these manors in the late 1380s.

[50] In these commodity price ratios the price-index for the commodity being considered is the numerator, and that for the product being compared is the denominator. If the ratio moves above 100, the change favours the first product (numerator), if the ratio falls below 100, the change favours the other product (denominator).

[51] Dyer, 'English Diet'; Dyer, 'Changes in Diet'; Dyer, *Standards of Living*, especially chaps 5–8; Dyer, 'The Consumer and the Market'. See *Revolution and Consumption*, ed. by Hicks.

Table 24. Prices and price indexes for wools, livestock products and the Phelps Brown and Hopkins Composite Price Index, and wool export taxes, in quinquennial means, from 1331–35 to 1446–50 (base: 1451–75 = 100)

| Year 5-year means | All Wools: Mean Prices per Sack£ sterling | Wool Price Index: 1451–75 = 100 £3.4917 | Better Wools:* Mean Price per sack £ sterling | Better Wools:* Price Index 1451–75 = 100 £4.8544 | CPI: Phelps Brown & Hopkins 1451–75 = 100 | Denizen Export Duties on Wool Sacks shillings | Denizen Export Duties as Percentage of Prices for Better Wools | Alien Export Duties on Wool Sacks shillings | Alien Export Duties as Percentage of Prices for Better Wools |
|---|---|---|---|---|---|---|---|---|---|
| **1331–35** | 5.031 | 144.080 | 5.370 | 110.610 | 109.108 | 10.373 | 9.66% | 14.559 | 13.56% |
| **1336–40** | 4.264 | 122.110 | 4.646 | 95.700 | 89.256 | 29.556 | 31.81% | 41.501 | 44.67% |
| **1341–45** | 4.498 | 128.830 | 4.947 | 101.910 | 85.533 | 40.247 | 40.68% | 43.333 | 43.80% |
| **1346–50** | 4.222 | 120.910 | 4.713 | 97.090 | 100.064 | 40.000 | 42.43% | 43.333 | 45.97% |
| **1351–55** | 3.923 | 112.360 | 4.446 | 91.580 | 126.472 | 40.000 | 44.99% | 43.333 | 48.74% |
| **1356–60** | 4.050 | 116.000 | 5.243 | 108.010 | 118.092 | 40.000 | 38.14% | 43.333 | 41.32% |
| **1361–65** | 4.306 | 123.310 | 5.606 | 115.470 | 137.976 | 44.110 | 39.34% | 46.110 | 41.13% |
| **1366–70** | 5.624 | 161.080 | 6.689 | 137.800 | 136.460 | 49.650 | 37.11% | 50.000 | 37.37% |
| **1371–75** | 6.422 | 183.920 | 7.895 | 162.640 | 127.345 | 51.584 | 32.67% | 53.333 | 33.78% |
| **1376–80** | 6.582 | 188.490 | 7.536 | 155.240 | 109.891 | 51.584 | 34.22% | 53.333 | 35.38% |
| **1381–85** | 5.097 | 145.960 | 5.995 | 123.490 | 113.190 | 51.584 | 43.02% | 53.333 | 44.48% |
| **1386–90** | 4.111 | 117.740 | 5.071 | 104.460 | 101.233 | 50.100 | 49.40% | 52.166 | 51.43% |
| **1391–95** | 4.266 | 122.170 | 4.953 | 102.040 | 103.953 | 51.414 | 51.90% | 53.163 | 53.66% |
| **1396–1400** | 4.814 | 137.860 | 5.241 | 107.970 | 110.648 | 51.584 | 49.21% | 56.555 | 53.95% |
| **1401–05** | 5.065 | 145.050 | 5.702 | 117.460 | 112.653 | 52.771 | 46.28% | 61.187 | 53.66% |
| **1406–10** | 4.974 | 142.440 | 6.219 | 128.114 | 109.927 | 51.584 | 41.47% | 60.000 | 48.24% |
| **1411–15** | 5.426 | 155.380 | 5.954 | 122.650 | 108.261 | 51.584 | 43.32% | 60.000 | 50.39% |
| **1416–20** | 4.155 | 119.000 | 4.592 | 94.590 | 113.598 | 51.584 | 56.17% | 68.000 | 74.05% |
| **1421–25** | 4.205 | 120.420 | 5.269 | 108.540 | 103.740 | 45.425 | 43.11% | 62.658 | 59.46% |
| **1426–30** | 4.613 | 132.110 | 5.015 | 103.300 | 112.610 | 51.584 | 41.46% | 53.333 | 53.18% |
| **1431–35** | 4.928 | 141.130 | 5.613 | 115.630 | 109.122 | 41.584 | 37.04% | 57.103 | 50.86% |
| **1436–40** | 4.440 | 127.160 | 5.322 | 109.630 | 124.218 | 41.584 | 39.07% | 62.267 | 58.50% |
| **1441–45** | 4.188 | 119.930 | 5.201 | 107.150 | 92.574 | 41.584 | 39.97% | 63.333 | 60.88% |
| **1446–50** | 4.119 | 117.960 | 5.379 | 110.800 | 101.241 | 41.584 | 38.66% | 63.333 | 58.88% |

* Prices for wools from Wiltshire, Hampshire, and St Swithin's manors (all of the bishop of Winchester's manors), Wiltshire and the Berkshire Downs, the Vale of White Horse to Thames Valley; Oxfordshire, Berkshire, and adjacent parts of Wiltshire; Worcestershire, the Cotswolds (Oxfordshire, Gloucestershire, and adjacent parts of Wiltshire); the Chilterns (Oxfordshire, Buckinghamshire, Hertfordshire); north-east Oxfordshire and north Buckinghamshire.

*Sources for Table 24*: *English Wood Prices*: Lloyd, *The Movement of Wool Prices*, Statistical Appendix, pp. 35–51, cols 2–5, 10–13; *English Wool Export Duties*, including the Calais duty on denizen exports to Calais (from 1363): *Calendar of the Fine Rolls*, IV (*Edward II, 1327–1337*) to XXI (*Edward IV, Edward V, Richard III, 1471–1485*); *Rotuli parliamentorum*, II–V; Barnes, 'The Taxation of Wool'; Gras, *The Early English Customs System*, pp. 75–80; Carus-Wilson and Coleman, *England's Export Trade*, pp. 194–96; Ormrod, 'The Crown and the English Economy'. *Comsumer Prices (based upon the Phelps Brown and Hopkins 'Basket of Consumables' Price Index*: LSE Archives, Phelps Brown, Box Ia:324, LSE Archives, Phelps Brown, Box J.IV.2.a. See also the sources for Table 18.

London market, during a different set of comparisons periods, 1288–1315 and 1375–99, the mean cropped or sown arable demesne areas fell even more: 23.21 per cent, from a mean of 224.0 acres to one of 172.0 acres.[52] Campbell's other tables make clear that a corresponding shift to livestock raising had taken place on the surviving demesnes. From the first half of the fourteenth century through the first half of the fifteenth, mean livestock units, per 100 grain acres in demesne, increased from 64.80 units to 89.30 units.[53] Finally, his statistical tables also demonstrate a relative shift in manorial demesne incomes from their arable to their livestock sectors, between the late thirteenth and late fourteenth centuries. In the period 1288–1315, in the counties servicing the London market, manorial demesne revenues from arable lands constituted 64.40 per cent of the total, and livestock for the remaining 35.60 per cent. For 1375–1400, the proportions were almost reversed: only 47.80 per cent of incomes came from arable agriculture and the remaining 52.20 per cent came from livestock raising.[54]

## *The Economics of Wool Production and of Wool Exports in the Fourteenth Century*

Nevertheless, the relative shift from arable to pastoral farming, even in the classic Midlands manorial zone of 'sheep-corn' husbandry, had not necessarily favoured wool production *per se*. Rather, as Tables 19 and 24 indicate, changes in the relative prices ratios, from the 1380s, became more favourable to meat and to dairy products than to wools. Of much more concern for many manorial land-

[52] Campbell, 'Matching Supply to Demand', Tables 4–5, pp. 837, 840; Campbell, *English Seigniorial Agriculture*, Table 4.07, pp. 174–75.

[53] Campbell, *English Seigniorial Agriculture*, Table 4.07, pp. 174–75. 'All national means are the weighted product of six regional means: Norfolk, eastern counties, southeast, midlands, south-west, and the north: 41 counties and districts'. The livestock units are: horses = 1.0; oxen and adult cattle = 1.2; immature cattle = 0.8; sheep and swine = 0.1.

[54] Campbell, *English Seigniorial Agriculture*, Table 4.10, pp. 184–85.

lords (and peasants) was the fate of the wool-export trade in the later fourteenth century. As Table 25 demonstrates, total raw wool-exports fell precipitously and drastically: by 58.39 per cent, from the post-plague peak of 1356–60 (32,666.4 sacks) to the trough of 1411–15 (13,593.2 sacks), a decline that was not fully offset by the cloth export trade until the late fifteenth century.

The explanation for this drastic decline is to be found in changes in both the overseas and domestic economies that had begun as early as the 1290s, with the almost incessant warfare that spread throughout the entire Mediterranean basin and western Europe and merged into the Hundred Years War (1337–1453). Those wars, directly and indirectly, led to steep increases in both transportation and transactions costs that virtually destroyed long distance trade in the cheaper textiles from northwest Europe to their principal markets in the Mediterranean basin.[55] The only surviving export-oriented textile producers in this region were those (with few exceptions) that marketed very costly luxury woollens, but directed to very much smaller, wealthier markets. They did so from the 1320s and 1330s, by changing from 'price-takers' into 'price-makers': engaging in a 'monopolistic competition' based not on price but on the distinctively superior qualities of their woollens. So costly were these ultra-luxury cloths that transportation and transaction costs constituted a far smaller proportion of their sales prices than those for cheaper textiles. By far the most successful cloth manufacturers were those in the Low Countries (Flanders, Brabant, and Holland), and northern Italy (Lombardy, Tuscany: with much closer access to still lucrative Mediterranean markets). The English cloth industry underwent a similar transformation, from the 1350s, but less successfully than these foreign rivals, at least before the 1460s (see Table 25).[56]

England, however, had greatly benefited from this industrial-commercial transformation, from its outset, simply because its high grade wools were the *sine qua non* for luxury woollen-cloth production. The very best wools, which encountered no serious rivals before the sixteenth-century improvement of Spanish *merino* wools, were those from the 'Welsh Marches' of Herefordshire and Shropshire, the Cotswolds (Gloucestershire, Worcestershire, Wiltshire,

[55] Munro, 'Industrial Transformations in the North-West European Textile Trades'; Munro, 'The Origins of the English "New Draperies"'; Munro, 'The "Industrial Crisis" of the English Textile Towns'.

[56] Munro, 'The "Industrial Crisis" of the English Textile Towns', pp. 103–41; Munro, 'The Symbiosis of Towns and Textiles'; Munro, 'Medieval Woollens: The Western European Woollen Industries', pp. 231–48.

Table 25. Exports of English wools (in sacks) and woollen broadcloths (pieces) in quinquennial means, 1331–35 to 1446–50

| Year | Denizen Wool Exports | | Alien Wool Exports | | Total Wool Sacks Exported | Equivalent Broadcloths Exported | Broadcloth Exports | Total as Equivalent Broadcloths |
|---|---|---|---|---|---|---|---|---|
| Michaelmas | in sacks | % of total | in sacks | % of total exports | | | | |
| **1331–35** | 24,633.000 | 73.21% | 9,012.600 | 26.79% | 33,645.600 | 145,797.490 | | 145,797.490 |
| **1336–40** | 13,180.000 | 64.21% | 7,344.800 | 35.79% | 20,524.800 | 88,940.730 | | 88,940.730 |
| **1341–45** | 10,565.510 | 58.45% | 7,510.070 | 41.55% | 18,075.580 | 78,327.430 | | 78,327.430 |
| **1346–50** | | | | | 27,183.130 | 117,793.450 | 2,555.667 | 120,349.120 |
| **1351–55** | 10,169.400 | 33.07% | 20,581.000 | 66.93% | 30,750.400 | 133,251.630 | 1,921.200 | 135,172.830 |
| **1356–60** | | | | | 32,666.400 | 141,554.290 | 9,061.000 | 150,615.290 |
| **1361–65** | 20,899.950 | 69.37% | 9,229.250 | 30.63% | 30,129.200 | 130,559.770 | 11,717.200 | 142,276.970 |
| **1366–70** | 16,345.600 | 61.79% | 10,106.200 | 38.21% | 26,451.800 | 114,624.380 | 14,527.200 | 129,151.580 |
| **1371–75** | 16,712.020 | 64.61% | 9,155.780 | 35.39% | 25,867.800 | 112,093.710 | 12,211.400 | 124,305.110 |
| **1376–80** | 16,898.000 | 82.55% | 3,572.200 | 17.45% | 20,470.200 | 88,704.130 | 13,642.600 | 102,346.730 |
| **1381–85** | 13,886.800 | 79.27% | 3,630.600 | 20.73% | 17,517.400 | 75,908.670 | 22,242.200 | 98,150.670 |
| **1386–90** | 15,574.200 | 80.65% | 3,737.800 | 19.35% | 19,312.000 | 83,685.270 | 25,610.000 | 109,295.270 |
| **1391–95** | 13,593.200 | 73.42% | 4,920.600 | 26.58% | 18,513.800 | 80,226.400 | 39,525.200 | 119,751.600 |
| **1396–1400** | 14,515.800 | 85.95% | 2,373.800 | 14.05% | 16,889.600 | 73,188.210 | 38,775.100 | 111,963.310 |
| **1401–05** | 11,803.400 | 91.47% | 1,100.800 | 8.53% | 12,904.200 | 55,918.160 | 34,569.600 | 90,487.760 |
| **1406–10** | 13,392.800 | 89.48% | 1,575.400 | 10.52% | 14,968.200 | 64,862.150 | 31,746.200 | 96,608.350 |
| **1411–15** | 12,633.200 | 92.94% | 960.000 | 7.06% | 13,593.200 | 58,903.820 | 27,183.400 | 86,087.220 |
| **1416–20** | 13,355.400 | 92.97% | 1,009.600 | 7.03% | 14,365.000 | 62,248.290 | 27,977.200 | 90,225.490 |
| **1421–25** | 13,363.600 | 93.81% | 881.600 | 6.19% | 14,245.200 | 61,729.150 | 40,274.600 | 102,003.750 |
| **1426–30** | 12,429.000 | 93.04% | 929.600 | 6.96% | 13,358.600 | 57,887.220 | 40,405.600 | 98,292.820 |
| **1431–35** | 8,679.400 | 92.49% | 705.200 | 7.51% | 9,384.600 | 40,666.570 | 40,027.400 | 80,693.970 |
| **1436–40** | 4,197.800 | 78.04% | 1,181.000 | 21.96% | 5,378.800 | 23,308.120 | 47,072.000 | 70,380.120 |
| **1441–45** | 6,502.200 | 80.98% | 1,527.200 | 19.02% | 8,029.400 | 34,794.040 | 56,455.800 | 91,249.840 |
| **1446–50** | 9,176.800 | 93.97% | 588.400 | 6.03% | 9,765.200 | 42,315.830 | 45,846.800 | 88,162.630 |

One woolsack = 26 stone = 364 lb. (165.1 kg); and one woolsack = 4.333 broadcloths of assize (24 by 1.75 yards)

*Sources*: Carus-Wilson and Coleman, *England's Export Trade*, pp. 36–119; Bridbury, *Medieval English Clothmaking*, appendix F, pp. 118–22.

Oxfordshire, and Berkshire), and Lincolnshire (Kesteven and Lindsey).[57] The rapid reorientation of the Flemish cloth industry towards luxury products, from the 1330s, may well explain why, despite the population losses from the Black Death, the English wool export trade grew from a mean 18,075.6 sacks in 1341–45 to the aforesaid peak of 32,666.4 sacks in 1356–60.[58]

## *The Wool Export Duties of Edward III and the Calais Staple*

These economic transformations also explain how and why Edward III and his successors came to finance the Hundred Years' War: by heavily taxing the export of wools, which then accounted for about ninety per cent of total exports by value.[59] Edward's new fiscal policy began modestly with a special export levy of twenty shillings per sack: in addition to the Old Custom of 6s. 8d. per sack (from 1275), and, for aliens, the additional New Custom (1303) of 3s. 4d.[60] As the costs of war mounted, so did the wool taxes. By the 1370s, total export taxes had risen to 50s. 0d. a sack for denizens and 53s. 4d. for aliens. From 1336–50 to 1371–75, the mean prices of better quality wools (those exported to Calais), including the export taxes, and Calais duty, had risen from £6.124 to £10.474 per sack, an increase of 71 per cent (Table 24). Initially, the tax 'incidence' or burden was born more by the domestic wool growers (in lower real prices) than by the foreign customers and thus was not immediately injurious to the export trade. As Tables 19 and 24 demonstrate, the ratio of wool prices to grain prices and to the CPI itself moved sharply against wool prices from the mid-1340s until the early 1360s. Noble and gentry landowners in both houses of parliament

[57] Munro, 'Medieval Woollens: Textiles, Textile Technology', pp. 186–91; Munro, 'Spanish *Merino* Wools and the *Nouvelles Draperies*'; Munro, 'Wool-Price Schedules'.

[58] A post-plague hedonistic spending spree, especially of inherited cash balances, may also have boosted a relative demand for luxurious textiles and also contributed to an increased income velocity of money that fuelled inflation, from the 1350s to the 1370s. See Lopez and Miskimin, 'The Economic Depression of the Renaissance'; Miskimin, *The Economy of Early Renaissance Europe*, pp. 134–50; Van der Wee and Peeters, 'Un Modèle dynamique de croissance interseculaire du commerce mondiale'; Day, 'Crises and Trends'.

[59] See Munro, 'Medieval Woollens: The Western European Woollen Industries', pp. 241–55, 269–83; and Lloyd, *The English Wool Trade*, pp. 288–317. In the early 1640s, wool and wool-based textiles still accounted for 92.3 per cent of total export values. See Clay, *Economic Expansion and Social Change*, Table XIII at p. 144.

[60] For the following see, Barnes, 'The Taxation of Wool'; Gras, *The Early English Customs System*, pp. 75–80; Power, *The Wool Trade*, pp. 63–85; Ormrod, 'The Crown and the English Economy'; Lloyd, *The English Wool Trade*, pp. 144–224.

soon mounted a strenuous opposition to the wool export taxes. In March 1363, Edward III sought to resolve this problem by establishing an official staple for all wool exports to northern Europe, at the recently conquered French port of Calais (1347), just across the Channel, later exempting (1378) Italian and Spanish wool shipments by sea, via Gibraltar, to the Mediterranean.

The administration of the new Company of the Staple, vested in the hands of twenty-four merchant-aldermen, with full powers to supervise and control all wool sales at Calais, endeavoured to shift the newly increased export-tax burden more fully on to the foreign buyers. At the same time, the Company enforced an older policy of stipulating minimum wool prices, county by county, in order to thwart internal competition.[61] The Calais Staplers soon found, however, that parliament was undermining its monopoly powers. Parliament did so, first, by selling various Staple exemptions or export licences; and then second, by periodically removing the Staple itself from Calais: in 1369–76, in 1382–88, and 1390–92. Finally, in 1392, parliament restored the Staple permanently to Calais (until the port's loss to France in 1558), and the Staple's full powers, while also agreeing to sell fewer export licences for Staple exemptions (generally allowing them only for the cheaper wools that could not be sold at Calais). By this time, when the Staple finally became an effective cartel, the heavy alien duties (Table 24) had virtually eliminated the Italian merchants from the wool export trade. As Table 25 indicates, the alien share of total wool exports fell from 38.21 per cent in 1366–70 to just 8.53 per cent in 1401–05.[62]

By the 1390s, the deepening deflation had severely increased the wool-export tax burden, because the taxes were *specific* (fixed per sack) and not *ad valorem* (percentage): thus, the real tax burden rose as prices fell. As Table 24 demonstrates, that tax burden for denizen exporters had now risen to over fifty per cent of the current wholesale export price (though diminishing somewhat in the early fifteenth century). Unfortunately, for both exporters and importers, these English wools accounted for very high proportions of pre-finishing production costs in the luxury woollen draperies in the Low Countries: ranging from sixty-five to seventy-five per cent of the total.[63] It would appear that the Low Countries' wool-

[61] See Lloyd, *The English Wool Trade*, pp. 193–256; Power, *The Wool Trade*, pp. 81–85; Munro, 'Medieval Woollens: The Western European Woollen Industries', pp. 278–85. The Nottingham Assembly, which had granted Edward III's first wool subsidy in 1336, initiated this policy of fixed minimum prices by county. See Munro, 'Wool-Price Schedules', pp. 135–37.

[62] See Lloyd, *The English Wool Trade*, pp. 193–256; Power, *The Wool Trade*, pp. 86–103; Munro, 'Medieval Woollens: The Western European Woollen Industries', pp. 278–85.

[63] For the data sources, see Munro, 'Industrial Protectionism in Medieval Flanders', Table 13.2 at p. 256; Munro, 'The Medieval Scarlet', pp. 13–70, Table 3.12, p. 52.

len draperies had a relatively inelastic demand for fine quality English wools.[64] But, as economists will argue, a producer's demand for industrial inputs is derived from the market demand for the final product. The demand for luxury goods is by definition elastic, all the more so if there were effective available substitutes. Even if one argues that luxury apparel was a social 'necessity' for much of the European nobility and for the upper bourgeoisie, they were now finding substitutes in a wide variety of Italian-made and imported silk fabrics and other luxury textiles.[65]

## *The Dire Fate of the Luxury Woollen Cloth Industries in the Late Fourteenth-Century Low Countries*

The effect of this wool export-tax burden (admittedly combined with other negative factors) for both English wool exports and woollen cloth production in the southern Low Countries can be seen in Tables 25 and 26: in particular, for the urban draperies of Gent (Ghent), Mechelen, and Leuven in the fourteenth century and, in the first half of the fifteenth century, of Ieper (Ypres) as well (for which no data are available before 1406). They tell a tale even more dismal than that for the English wool trade (whose decline of almost sixty per cent, by the early fifteenth century, has already been stressed).[66] The Gent and Leuven indices reflect a slow decline to about the 1360s, and then a very precipitous decline, into the early fifteenth century (with an unfortunate lacuna for Gent in the 1390s).

[64] As noted earlier (p. 326 and n. 57), Spanish *merino* wools would not finally rival the best English wools until the sixteenth century; but they were being imported into the Low Countries by the 1430s. The major urban draperies refused to consider using them, fearing the loss of customers by damaging their reputation for the ultra-luxury qualities of their finer woollens. Only their upstart small-town rivals, known as the *nouvelles draperies*, who were then marketing cheaper imitations of traditional luxury woollens, dared to experiment with *merino* wools, although mixing them with the finer English wools. See Munro, 'Spanish *Merino* Wools and the *Nouvelles Draperies*', pp. 431–84.

[65] The most luxurious and most costly of all textiles worn in later medieval and early modern Europe were silks. For the late medieval silk industry, see Muthesius, 'Silk in the Medieval World'; Molà, *The Silk Industry of Renaissance Venice*. For the very high prices of some silk fabrics in fifteenth-century England, with comparison with woollens' prices, see Munro, 'The Medieval Scarlet', Table 3.15, p. 69; and Munro, 'Industrial Protectionism in Medieval Flanders', Table 13.3, Part 1, pp. 257–60.

[66] See Table 25. If we focus, however, only on the denizen exports, which chiefly went to Calais, and only from the imposition of the Calais Staple in 1363, we find a less drastic decline: one of 34.96 per cent, from the mean of 20,899.95 sacks in 1361–65 to a mean of 13,593.2 sacks in 1391–95.

Table 26. Exports of English woolsacks and broadcloths and production indices for the woollen draperies of the southern Low Countries, 1331–35 to 1446–50 in quinquennial means, 1331–35 to 1446–50

| Years | English Wool Exports | English Broadcloth Exports | Total English Wool & Cloth Exports | Gent Drapery Farms A | Gent Drapery Farms B | Ieper Drapery Farms | Ieper: no. of stalls rented in Lakenhalle | Mechelen Drapery Farms | Leuven Drapery Farms |
|---|---|---|---|---|---|---|---|---|---|
| | in Sacks | in pieces | as Cloths | in £ groot Flemish | in £ groot Flemish | in £ groot Flemish | | in £ oude groot | in £ oude groot |
| **1331–35** | 33,645.600 | | 145,797.490 | 108.485 | 150.283 | | | 1,563.710 | |
| **1336–40** | 20,524.800 | | 88,940.730 | 87.913 | 123.660 | | | 1,045.045 | |
| **1341–45** | 18,075.580 | | 78,327.430 | 84.015 | 125.070 | | | 782.313 | |
| **1346–50** | 27,183.130 | 2,555.670 | 120,349.120 | 67.240 | 109.378 | | | 506.862 | 250.292 |
| **1351–55** | 30,750.400 | 1,921.200 | 135,172.830 | 68.875 | 114.505 | | | 707.914 | 240.809 |
| **1356–60** | 32,666.400 | 9,061.000 | 150,615.290 | 61.720 | 112.785 | | | 467.723 | 351.436 |
| **1361–65** | 30,129.200 | 11,717.200 | 142,276.970 | 55.778 | 96.825 | | | 496.240 | 709.398 |
| **1366–70** | 26,451.800 | 14,527.200 | 129,151.580 | 34.590 | 67.425 | | | 597.661 | 803.344 |
| **1371–75** | 25,867.800 | 12,211.400 | 124,305.110 | 22.800 | 47.721 | | | 540.698 | 525.557 |
| **1376–80** | 20,470.200 | 13,642.600 | 102,346.730 | 19.355 | 39.311 | | | 471.236 | 564.943 |
| **1381–85** | 17,517.400 | 22,242.000 | 98,150.670 | 14.402 | 22.421 | | | 397.290 | 394.331 |
| **1386–90** | 19,312.000 | 25,610.000 | 109,295.270 | 11.743 | 23.550 | | | 353.349 | 259.114 |
| **1391–95** | 18,513.800 | 39,525.200 | 119,751.600 | missing | missing | | | 297.670 | 224.730 |
| **1396–1400** | 16,889.600 | 38,775.100 | 111,963.310 | missing | missing | | | 300.804 | 169.338 |
| **1401–05** | 12,904.200 | 34,569.600 | 90,487.760 | 5.885 | 15.433 | | | 270.285 | 135.072 |
| **1406–10** | 14,968.200 | 31,746.200 | 96,608.350 | 7.654 | 16.030 | 183.192 | 407.000 | 272.011 | 170.875 |
| **1411–15** | 13,593.200 | 27,183.400 | 86,087.220 | 7.309 | 15.498 | 266.902 | 426.000 | 275.450 | 143.177 |
| **1416–20** | 14,365.000 | 27,977.200 | 90,225.490 | 8.253 | 17.782 | 266.912 | 489.300 | 276.334 | 81.769 |
| **1421–25** | 14,245.200 | 40,274.600 | 102,003.750 | 8.623 | 20.619 | 265.633 | 410.000 | 357.119 | 58.932 |
| **1426–30** | 13,358.600 | 40,405.600 | 98,292.820 | 9.331 | 23.648 | 249.817 | 356.600 | 352.707 | |
| **1431–35** | 9,384.600 | 40,027.400 | 80,693.970 | 7.267 | 22.314 | 235.327 | 319.400 | 220.532 | |
| **1436–40** | 5,378.800 | 47,072.000 | 70,380.120 | 4.267 | 14.783 | 156.022 | 192.600 | 186.976 | |
| **1441–45** | 8,029.400 | 56,455.800 | 91,249.840 | 4.418 | 14.431 | 176.453 | 182.400 | 190.881 | |
| **1446–50** | 9,765.200 | 45,846.800 | 88,162.630 | 4.773 | 14.512 | 177.450 | 152.200 | 162.950 | |

One woolsack = 26 stone = 364 lb. (165.1 kg) = 4.333 broadcloths of assize

*Sources*: *English Wool and Cloth Exports*: Carus-Wilson and Coleman, *England's Export Trade*, pp. 36–119; Bridbury, *Medieval English Clothmaking*, appendix F, pp. 118–22. *Gent (Ghent) A: Total Drapery Excise Farms; Gent B: Excises for 'Ramen en nieuwe huisgeld' only*: all from Gent, Stadsarchief, Stadsrekeningen, 1335–1520, 400:3.1–17.2; Algemeen Rijksarchief, Rekenkamer, 34,862. *Ieper (Ypres)*: Algemeen Rijksarchief, Rekenkamer, 38,635–722. *Mechelen*: Mechelen, Stadsarchief, Stadsrekeningen, 1316–1550, Series 1: nos. 3–225; Algemeen Rijksarchief, Rekenkamer, 41,219–85. *Leuven*: Leuven, Stadsarchief, Stadsrekeningen, 1345–1500, nos. 4986–5124.

This sharp decline may indicate that, even from its inception, the Calais Staple had a significant impact in shifting the wool-tax burden from English growers to the Flemish and Brabantine woollen draperies. From the mean of 1356–60 to that of 1401–05, the Gent A series data fell by 90.46 per cent; the Gent B series data fell by 86.32 per cent; the Leuven data, from the peak of 1366–70, fell by 83.19 per cent; the Mechelen data fell by 61.82 per cent from the earlier mean of 1351–55 to the 1401–05 mean.[67]

The explanations for this decline of the Low Countries' urban draperies are very complex, involving a myriad of factors, domestic and foreign, all of which have been considered at length in numerous recent publications.[68] Some of the latter are considered in the debate about the so-called 'Great Depression' of the later Middle Ages, including the continued negative impact of warfare on the economy: especially in terms of the rising burden of taxation, and continuous disruptions of international trade, and continuously falling population, which, however, cannot account for all of the indicated industrial decline.[69]

## *The Rise of the English Cloth Export Trade: Its Impact on Manorial Demesne Economies*

As is well known, the sharp decline of the English wool export trade was countered by a rise in woollen cloth exports, which clearly bore a major responsibility for the decline of both the wool-export trade and of the Low Countries' luxury cloth industries. As Tables 25 and 26 indicate, the English cloth trade had enjoyed only a very minimal importance before the Black Death, or indeed before the imposition of the heavier wool-export duties. The major if quite unintended beneficiaries of English fiscal policies were the producers and exporters of English woollens, because domestic clothiers were able to purchase the same fine English wools (the same as those sold in the Low Countries) tax free, while cloth exporters paid only minimal duties. Denizens had in fact paid no duties

[67] These are not based on cloth outputs but on the sale of tax farms: i.e., the right to collect taxes imposed on the production and sales of woollen cloths (taxes on both the inputs for cloth production and on the cloth outputs). Since they were sold at competitive annual auctions, they should reflect the dire economic realities, though possibly they exaggerate them as well (if tax rates declined with economic adversities).

[68] See in particular Munro, 'Medieval Woollens: The Western European Woollen Industries', pp. 244–62, 269–91; Munro, 'The Symbiosis of Towns and Textiles'.

[69] See the sources cited above, in nn. 14 and 58; and also Postan, 'The Trade of Medieval Europe'; Hatcher, 'The Great Slump'; Nightingale, 'England and the European Depression'.

at all, until the imposition of the Cloth Custom of 1347, which levied a very small export tax of 1s. 2d. per standard broadcloth of assize. German Hanseatic merchants refused to pay this new duty, claiming their 1303 *Carta mercatoria* privilege of paying only 1s. 0d. per broadcloth; but other alien merchants were forced to pay both duties, for a total of 2s. 4d. per cloth, and later a five-per cent 'poundage' tax, as well.[70] Not surprisingly, English and Hanse merchants together soon achieved an overwhelming dominance in the English cloth export trade, usually commanding seventy-five to eighty-five per cent of the total.[71] Their low export duties amounted to about 2.5 per cent of the mean value of broadcloths that they shipped: about £2 to £2 10s. 0d. per broadcloth, in the early fifteenth century. The cost advantage of the English cloth trade over its Flemish rivals has been calculated at about twenty-five to thirty per cent. By the early fifteenth century, the mean export prices of English woollens were only about only thirty-five to forty per cent of the prices for the finer Flemish and Brabantine woollens, though English woollens were not of the same quality.[72]

As Tables 25 and 26 also indicate, English broadcloth exports enjoyed a twenty-one-fold increase in the second half of the fourteenth century: from a mere 1921.2 cloths in 1351–55 to a peak of 39,525.2 in 1391–95 (in quinquennial means). Thereafter, for reasons explained elsewhere, those exports declined to a mean of 27,183.4 cloths in 1411–15; but then English cloth exports recovered to reach a mean of 40,274.6 cloths in 1421–25.[73] Despite the impressive expansion of the English cloth-export trade, and then its strong recovery by the 1420s, it did not offer manorial landlords much hope of maintaining the prosperity of

[70] Carus-Wilson and Coleman, *England's Export Trade*, pp. 13–18, 194–98; Gras, *The Early English Customs System*, pp. 66–85; Munro, 'Medieval Woollens: The Western European Woollen Industries', pp. 278–88, 292–96; Munro, 'Industrial Protectionism in Medieval Flanders', pp. 229–68; Munro, 'The Symbiosis of Towns and Textiles'. Broadcloths that were dyed either partially or wholly in 'grain' (in kermes, the scarlet dye) were subjected to much higher duties; but very few were exported in the later medieval era. See also nn. 71–72 below.

[71] See Munro, 'Medieval Woollens: The Western European Woollen Industries', Table 5.4, pp. 306–07. See also Munro, 'Hanseatic Commerce in Textiles'.

[72] Munro, 'Medieval Woollens: The Western European Woollen Industries', Table 5.10, pp. 318–24; Munro, 'Industrial Protectionism in Medieval Flanders', Table 13.3, pp. 257–62, Table 13.5, pp. 266–67; Munro, 'The Origins of the English "New Draperies"', Tables 1–2, pp. 39–40, Table 3, pp. 42–44; Munro, 'The Symbiosis of Towns and Textiles', Table 2, p. 50; and especially Munro, 'Three Centuries of Luxury Textile Consumption', Tables 1.3–1.4, pp. 20–25; Tables 1.5–1.6, pp. 27–29; Table 1.7, pp. 31–32; Tables 1.11–1.17, pp. 39–50.

[73] See Munro, 'Medieval Woollens: The Western European Woollen Industries', pp. 283–88; Munro, 'Hanseatic Commerce in Textiles', pp. 97–102.

their wool-growing demesnes during the later fourteenth and early fifteenth centuries. As the final column in Table 25 clearly indicates, the combined total volume of wool and of cloth exports, expressed as broadcloths (at the accepted ratio of 4.333 broadcloths per wool sack), had fallen by 32.27 per cent: from a mean of 150,615.29 cloths in 1356–60 to one of 102,003.75 cloths in 1421–25. Furthermore, evidence from taxes on domestic production (from the aulnage accounts) indicates that the English home market absorbed an increased domestic production of only 2800 broadcloths, by 1390s (when the evidence ceases), chiefly displacing the former foreign imports.[74] Furthermore, the fact that a broadcloth fetched a higher value when exported than did the same quantity of raw wool in a woolsack (apart from taxes) clearly benefited domestic clothiers and cloth merchants, but did not directly benefit the wool-sellers.[75] Presumably, manorial and peasant wools were sold to domestic clothiers at the same price as those wools sold to agents of the Staplers.

## *The Late Medieval Changes in Manorial Demesne Economies: The Varieties of Landlord Responses*

Not all manorial lords were experiencing severe economic difficulties or the same difficulties in the late fourteenth and early fifteenth centuries. As already indicated, some benefited from switching to the production of other livestock

[74] For the aulnage accounts, see Gray, 'The Production and Exportation of English Woollens', esp. Appendix II, p. 34. The fourteenth-century accounts are available for only two periods: 1353–58 and 1394–98; and they have lacuna for London, Norfolk, Shropshire, and Worcestershire. If we subtract the annual means for total cloth exports from those for total taxed cloth outputs, for 1356–58 and 1394–98, we find that the net balance, presumably indicating domestic consumption, were 5445 cloths and 8256 cloths, respectively, a difference of 2811. For cloth exports, see Carus-Wilson and Coleman, *England's Export Trade*, pp. 76, 85–86. For foreign cloth imports see also Beardwood, *Alien Merchants in England*, Appendix C:3: pp. 161–77.

[75] On the basis of the standard ratio of 4.333 woollen broadcloths per sack of raw wool, and a mean export value of £2.25 per broadcloth, in the early fifteenth century, a sack of finer wools (those exported to Calais) was worth, on average, £5.269 in 1421–25 (Tables 24 and 25); and the same amount of wool exported in manufactured broadcloths would have been worth £9.750, or 85.04 per cent more; i.e., the wool content was worth 54.04 per cent of the value of the broadcloth. But when denizen export taxes were added, the woolsack was worth, on average, £7.540: or 75.46 per cent as much as the 4.333 broadcloths, with export taxes (£9.993). See also the relevant statistical data in the tables presented in Munro, 'Three Centuries of Luxury Textile Consumption', pp. 1–60.

products (other than wool): especially meat (beef, mutton, pork), dairy products, hides (leather). J. M. Bean notes that many gentry landowners maintained sheep flocks more for meat (and for manure) than for the wool clips in the later fourteenth and early fifteenth centuries, and that 'the abandonment of pastoral activities occurred later than that of arable farming'.[76] J. N. Hare similarly found that many ecclesiastical manors in Wiltshire had retained sheep flocks long after having leased their arable demesne lands, as did Christopher Dyer on the bishop of Worcester's estates.[77] While the agrarian changes in some manors had involved only a shift from wool production to other forms of livestock production within the pastoral sector, that reorientation had required, in many other manors, a major shift in demesne land use from arable to pasture, as indicated earlier, with Campbell's extensive data.[78]

However, not all manorial lords were able to make such adjustments and to cope well with the new, harsh economic realties. Their failure was due to several reasons. The first was institutional. Many manorial lords had chosen to have their demesne lands intermixed with those of their tenants, in the form of plough strips, often in order to take advantage of their tenants' communal ploughing. But, in doing so, they had subjected their own demesne strips to the rigidities of communal or Open Field arable agriculture in the Midlands region.[79] They would have had great difficulty in converting such lands to livestock raising without engrossing and enclosing such lands, in most cases by evicting tenants. That was hardly a common practice in the late fourteenth and early fifteenth centuries, and would not become so until the 1460s.[80]

[76] Bean also contended that 'lay magnates continued to maintain large flocks of sheep beyond 1420'; and that not until the 1440s did the Duchy of Lancaster give up its large sheep flocks. Bean, 'Landlords', pp. 574–76. See also Dyer, *Lords and Peasants in a Changing Society*, pp. 148–54; Bolton, *The Medieval English Economy*, pp. 228–29; Power, *The Wool Trade*, pp. 38–40: she also acknowledges that many manorial lords retained sheep flocks longer than they did grain cultivation on their demesnes — but does not mention the products consumed from these sheep.

[77] Hare, 'The Monks as Landlords', pp. 85–87; Dyer, *Lords and Peasants in a Changing Society*, pp. 150–54.

[78] See above, p. 323–25.

[79] See Tawney, *The Agrarian Problem in the Sixteenth Century*, maps I–V, between pp. 166–67: of Salford, Edgeware, Maids Morton, Weedon Weston manors, in the 1590s, showing the intermixing of demesne lands with those of tenancy lands (plough strips).

[80] For the beginnings of the late Yorkist and Tudor Enclosure movement, see Blanchard, 'Population Change, Enclosure'; Clay, *Economic Expansion and Social Change*, chap. 3, 'Rural Society', pp. 53–101; and chap, 4, 'The Progress of Agriculture', pp. 102–41. See also n. 83 below.

The second problem was one of capital (affecting both landlords and peasants). Any extensive conversion of arable lands into pasture required very large amounts of new capital to acquire and build up herds of cattle and flocks of sheep. As already noted, *real* capital costs were rising with deflation (especially with no evidence of any significant fall in nominal interest rates during the later fourteenth and fifteenth centuries). By no means all manorial landlords had ready access to capital, especially in an era when, according to both Pamela Nightingale and Chris Briggs, supplies of credit were seriously contracting, in both the urban and rural economies. Their research provides further evidence that credit instruments were not a remedy for periodic coin shortages (at least in England) and that, instead, access to credit diminished with the effective money supply, especially if lenders feared that they would not be repaid in coin.[81]

The third problem was, again, one of labour supplies. To be sure, livestock raising required much less labour, per acre, than did arable cultivation; and, as noted earlier, later medieval labour productivity in pastoral agriculture was evidently rising.[82] Nevertheless, in the Midlands zone of classic 'sheep-corn' mixed husbandry, many manorial lords, in first encountering manifestations of crisis in the late fourteenth century, were unwilling to contemplate a total abandonment of arable, especially because of the symbiotic relationship between arable and pastoral agriculture (for example, sheep-folding on the post-harvest arable), simply to save on labour costs.[83] They soon found, furthermore, that the problem was not just rising wages (nominal and real) but the actual supply of available labour, even for pastoral agriculture. That was especially the plight of those manorial lords who had previously relied on at least some customary labour services on their demesnes. We hardly need now belabour the often cited point, so well developed in the literature on the decline of English serfdom or *villeinage*, during this era, that so many manorial lords found it more and more difficult

[81] Nightingale, 'Monetary Contraction'; Briggs, *Credit and Village Society*; and especially Briggs, 'The Availability of Credit'. In establishing 'a substantial late-medieval decline in debt litigation (evidently greater than the demographic decline), and hence in real levels of (agrarian) credit' (p. 23), Briggs suggests that institutional changes in courts that handled debt litigation were also responsible, especially in between the two 'bullion famine' eras. See also Raftis, *Peasant Economic Development*, p. 68; Munro, 'Wage-Stickiness', pp. 216–17; and Spufford, *Money and its Use*, pp. 346–47, and n. 15 above.

[82] See above pp. 322–23 and nn. 46, 49.

[83] For other reasons why a shift from arable to pasture was not necessarily profitable (nor all that labour-saving), before the 1520s, see Blanchard, 'Population Change, Enclosure', pp. 427–45, esp. pp. 437–38; and Appendix A, pp. 443–45.

to exact labour services from their villein tenants.[84] Kosminsky, having focused on this particular problem, concluded that the lesser manorial lords, the gentry small holders, fared better than did the great magnates, lay and ecclesiastical, in this economically depressed era, because they had relied to a far lesser degree on villein labour; but he did not take full account of the sharp rises in piece-work rates for hired agricultural labourers.[85]

## *The Economic and Social Varieties of Demesne Leasing: Benefits and Costs for Landlords and Tenants*

Finally, more and more manorial lords, perhaps beginning with the greater magnates, found that their simplest solution, and an increasingly popular one by the 1390s, was to lease out more and more of demesne lands into leasehold tenancies, and to convert vacant villein tenancies into leaseholds, with fewer or no servile obligations. When they chose, finally, to do so, evidently depended on their particular economic and social circumstances. Many indeed may have leased their lands not specifically because of a price-cost scissor, or because of an actual lack of capital and labour, but because of problems of personal indebtedness and lack of ready cash.

Published studies by various historians indicate a very wide variety of leaseholds, from short to long term; but the historical tendency by the early fifteenth century was towards much longer leases: of thirty to forty years, and more.[86] During the deflationary era from the 1370s to the 1420s, most landlords preferred a longer term over a short term lease, and as just indicated, came to insist on longer term leases. Thus, a general fall in consumer prices *ipso facto* meant that the *real* value of fixed annual leasehold-rents was steadily rising (even if rents on new leases were lower). Consequently the burden of sustaining rising operating costs in commercial agriculture generally had to be born by the tenants, especially if they were unable to depend wholly on family labour and had to hire agricultural labourers now in scarce supply.

[84] See Hilton, *The Decline of Serfdom*, pp. 52–59; Hatcher, 'English Serfdom and Villeinage'; and other sources cited in nn. 1–4 above.

[85] Kosminsky, *Studies in the Agrarian History of England*, ed. by Hilton, pp. 256–82.

[86] Hilton, *The Decline of Serfdom*, pp. 45–46; Hare, 'The Monks as Landlords', pp. 18–21; Dyer, *Lords and Peasants in a Changing Society*, pp. 210–11; Kerridge, *Agrarian Problems*, p. 47: giving examples of leases for forty, sixty, or even ninety-nine years, in the early sixteenth century.

Table 27. The Commodity Price Index for England, 1300–1500, mean of prices for 1451–75 = 100 (a revision of the Phelps Brown and Hopkins (PBH) 'Basket of Consumables' Price Index)

| Commodity | Amount | Unit | Metric Measure | Percent by PBH weights | Value in d. sterling | Percentage by value (Munro) |
|---|---|---|---|---|---|---|
| **Farinaceous** | | | | | | |
| Wheat | 1.250 | bu. | 45.461 | | 9.967 | 8.84% |
| Rye | 1.000 | bu. | 36.369 | | 6.279 | 5.57% |
| Barley | 0.500 | bu. | 18.184 | | 2.606 | 2.31% |
| Peas | 0.667 | bu. | 24.243 | | 2.947 | 2.61% |
| **Sub-total** | 3.417 | bu. | 124.257 | **20.00%** | **21.799** | **19.33%** |
| **Drink** | | | | | | |
| Barley (or malt) | 4.500 | bu. | 163.659 | **22.50%** | **24.227** | **21.48%** |
| **Total Farinaceous** | 7.917 | bu. | 287.917 | **42.50%** | **46.026** | **40.80%** |
| **Meat, Fish, Dairy** | | | | | | |
| Sheep | 0.500 | no. | 0.050 | | 8.532 | 7.56% |
| Pigs | 0.500 | no. | 0.050 | 21.00% | 15.418 | 13.67% |
| Herrings | 40.000 | no. | 40.000 | 4.00% | 6.595 | 5.85% |
| Butter | 10.000 | lb. | 4.536 | | 10.238 | 9.08% |
| Cheese | 10.000 | lb. | 4.536 | 12.50% | 5.341 | 4.74% |
| **Sub-total** | | | | **37.50%** | **46.124** | **40.89%** |
| **Industrial** | | | | | | |
| Charcoal | 4.250 | bu. | | | 3.813 | 3.38% |
| Candles | 2.750 | lb. | | | 3.475 | 3.08% |
| Lamp Oil | 0.500 | pt | | 7.50% | 0.865 | 0.77% |
| Canvas/Linen | 0.670 | yd | | | 2.757 | 2.44% |
| Shirting | 0.500 | yd | | | 2.718 | 2.41% |
| Coarse Woollens | 0.330 | yd | | 12.50% | 7.023 | 6.23% |
| **Sub-total** | | | | **20.00%** | **20.651** | **18.31%** |
| **TOTAL** | | | | **100.00%** | **112.801** | **100.00%** |

*Abbreviations*: no. – number; bu. – bushel = 36.39 litres; lb. – pound avoirdupois = 16 ounces = 453.59 grammes; pt – pint = 20 fluid ounces = 0.57 litres; yd – yard = 36 inches = 0.91 metres.

*Sources*: LSE Archives, Phelps Brown, Box Ia:324, J.IV.2a; Phelps Brown and Hopkins, 'Seven Centuries of the Prices of Consumables'.

The positive 'trade-off' for such peasants, economic and social, lay in having that much more land to work, and, if they were villeins by ancestry, greater freedom, and especially dignity as well, and greater freedom to conserve their labour for working their own lands: that is, if manorial lords who had abandoned direct cultivation of their former demesnes had thereby reduced their demand for villein labour services.

All these changes did not mean that there was ever a formal 'abolition of serfdom', and did not necessarily mean the abolition of other servile obligations, such as *merchet* and *heriots*.[87] But they did lead to an inexorable erosion of villeinage. Rodney Hilton commented that 'as customary [villeinage] tenures were turned into copyhold, as was general by the beginning of the fifteenth century, the servility associated with them seemed [...] to melt away'.[88] But in so many cases, what also 'melted away' was security of tenure for themselves and their offspring, i.e. inheritance rights that applied when villeins and their offspring were bound to the estate, since so many copyhold tenures were either 'at will' or were held from one to three 'lives'. As Eric Kerridge has observed, 'twenty-one years and three lives were regarded as equivalents and were of much the same length in practice', at least in the sixteenth century.[89] If so, that change to copyhold tenures meant a substantial loss of the inheritance and thus property rights actually enjoyed by so many (if not all) *villein* tenants.[90]

The variety of these agrarian changes is far too great and far too complex to be considered fully in this study, all the more so since the extant estate accounts are so few, and often incomplete. But one very recent study of the Norfolk Cathedral Priory's Benedictine manors, for the later fourteenth and fifteenth centuries, does provide concrete evidence on prices, production costs, transport and storage costs, and annual profits (and losses) to justify all of the conclusions presented in this current study.[91] At the risk of oversimplification, we may view these changes in the English agrarian economy and society, from the 1380s to the 1420s, as almost the mirror image of the subsequent transformation of the east

[87] See Hilton, *The Decline of Serfdom*, pp. 51–59 ('The last profits of serfdom').

[88] Hilton, *The Decline of Serfdom*, p. 47. Also, p. 31: 'Villeinage was never abolished; it withered away'. 'Copyhold' means: tenure 'by copy of the court roll according to the custom of the manor'. See Tawney, *The Agrarian Problem in the Sixteenth Century*, p. 47. He cites Norden, *The Surveyor's Dialogue*, to note that 'All copyhold land is commonly customary, but all customary land is not copyhold'.

[89] Kerridge, *Agrarian Problems*, p. 47.

[90] Hatcher, 'English Serfdom and Villeinage'.

[91] Slavin, 'Church and Food Provisioning'.

German agrarian economy: from *Grundherrschaft* to *Gutsherrschaft* (from the later fifteenth to early seventeenth centuries).[92] The latter is a manorial economy in which the landlord derived the bulk of his incomes from the direct commercial exploitation of his demesne lands, using chiefly servile labour; and the former is a manorial economy in which the landlord, with few demesne lands, derived the bulk of his incomes instead from the money rents of a largely free peasant tenancy. In this context, one might view the subsequent Tudor Enclosure movement as an English reversion to a form of *Gutsherrschaft* (but with no servile labour). That, however, is another story to be told.

[92] Hagen, 'How Mighty the Junkers?'; Brenner, 'The Rises and Declines of Serfdom'; Blum, 'The Rise of Serfdom in Eastern Europe'.

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