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Resource Constraints and Demographic Regimes**

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The Old Poor Law:
Resource Constraints and Demographic Regimes¹

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The Old Poor Law: Resource Constraints and Demographic Regimes

1. Introduction

Although consumption and productivity per capita were higher in England on the eve of the industrial revolution than in the late medieval era, the living standards of the common people did not rise in tandem (de Vries 2008; Allen 2001; Clark 2007). Recently-constructed time series describe a dramatic fall in real wages between the late fifteenth and the early seventeenth centuries, with stasis or a mild recovery thereafter. The two graphs in Figure 1—one based on Clark (2007), the other a composite of series produced by Munro (for 1300-1450) and Allen (for after 1450)¹—imply that real wages were lower or, at best, no higher on the eve of the Industrial Revolution than in the wake of the first outbreak of the Black Death. Recent research on adult heights corroborates: it indicates that people were taller in the middle ages than in the eighteenth century, prompting a leading anthropometric historian to suggest ‘at least tentatively, that net nutritional conditions of the past millennium reach[ed] a low point in Europe prior to the onset of industrialization’ (Steckel 2005: 241; see too Steckel 2004). Even in the late eighteenth century the bottom fifth of the population ate so poorly that they were ‘effectively excluded from the labour force’ (Fogel 1994: 374-75).

Meanwhile England’s demographic regime shifted. It is not clear by how much. Estimates of mortality in medieval southern and central England have been derived from manorial data—heriots in the case of Postan and Titow (1959: 399-400), court rolls in the case of Razi (1980). The former proposed a death rate ranging

from 40 to 52 per thousand for adult property-holders, the latter estimates suggesting an adult life span of 'between 18 and 22.8 years' (Smith and Poos 1984: 141). The implied life expectancies are implausibly low. More convincing recent evidence suggests that landless males or monks who had managed to survive to age 20 in medieval or late medieval southern England might have expected to live only another 27 years or so. But in the seventeenth century, when the data are better, Englishmen and Englishwomen who survived to age 25 had on average another 31 years to live; in the eighteenth century, another 34 years (Ecclestone 1999: 24; Hatcher, Piper and Stone 2006; Wrigley and Schofield 1997: 290-1).

Demographic regimes in England and France also diverged, with death rates in France much higher on average. In the first half of the eighteenth century life expectancy at birth in England was about 35-37 years; in mid-eighteenth century France it was about 25 years. French mortality also varied more, though fluctuations in both countries show signs of attenuation over time. Between 1670 and 1720 France was subject to three major crises while England was virtually immune; thereafter vital rates fluctuated less in both countries, with the important exceptions of 1727-30 and, to a lesser extent, 1740-42 in England (on which more below).

[FIGURE 1 ABOUT HERE]

England's demographic shift led to the disappearance, or near disappearance, of the Malthusian positive check. Recent research confirms the presence of such a check in

medieval England (Kelly and Ó Gráda 2009a), but several studies linking demographic data from Wrigley and Schofield (1981) with proxies for the living standards of those at greatest risk such as corn prices or real wages find that the positive Malthusian check had been virtually eradicated in England by the mid-seventeenth century (e.g. Lee 1981; Weir 1984; Lee and Anderson 2002).

So why was the positive check so much weaker in England from the seventeenth century on than in the fourteenth and fifteenth? Clark's wage data rule out any explanatory role for workers' rising living standards. The same does not quite hold for Allen's series, with its post-1600 rise in real wages, although it too indicates that real wages were still lower at the end of the seventeenth century than in the late fourteenth or fifteenth (see Figure 1). Steckel and others have made the case for climate change, but Kelly and Ó Gráda (2009b) claim that climate in northwestern Europe was essentially unchanging between the thirteenth and nineteenth century. The more effective functioning of grain markets is another candidate: improved intertemporal and spatial arbitrage would have reduced the cost of storage and the likelihood of regional shortages (Federico 2009; Ó Gráda 2009, ch. 5). Yet similar patterns in at least the maritime sections of France and Spain did not spare them from subsistence crises.

A fourth candidate is an increase in family income due to a rise in the number of days worked annually. However, the 'industrious revolution' in agriculture posited by Apostolides *et al.* (2008: Table 15), whereby the number of days worked per household rose by half between 1450 and 1600, barely compensated for the drop in the real daily wage in this period.

Until relatively recently, another candidate—the old poor law (OPL)—earned very low marks from historians. Some, along with Malthus, saw it as a spur to overpopulation. Others stressed its ineffectiveness and harshness. However, a new literature combining comparative analysis and careful case studies has been restoring the reputation of the OPL, pointing to its efficacy in relieving the indigent and even linking it to economic progress in the early modern era. In an influential study Solar (1995) has claimed that the system minimized moral hazard by building on local information, and combined insurance against unemployment and life-cycle poverty with the growing need for a mobile labour force. In a long series of important and wide-ranging papers, Smith (1996; 2001; 2002; 2007; 2008) has made the case for the OPL's role in keeping rural destitution and epidemics at bay. Smith (1996: 39) has linked parish relief with reduced marital fertility and a lower re-marriage rate of widows, and argued that the attendant increase in old age security facilitated the out-migration of young people who left with reason to hope that the parish would, if necessary, look after their parents. Horrell, Humphries, and Voth (2001) likewise hold that the OPL militated against permanent pauperism, while Hindle (2004) argues that it reduced nuptiality among the indigent. In rural areas moral pressures may also have limited the incidence of bastardy and attendant demands for relief. The OPL reduced not only vagrancy but the destitution that often gave rise to it (Clark 1979: 86-88).

This paper follows the lead of Smith and others in seeking to explore further the link between the OPL and pre-industrial England's 'low pressure' demographic regime. Part 2 reviews the burgeoning literature on the OPL, both in aggregate and

at local level. Part 3 employs county and parish level data in an analysis of the determinants of relief outlays, while Part 4 addresses the link between the OPL and England's demographic regime. Part 5 concludes.

2. The Old Poor Law

The OPL emerged in the wake of a protracted period of declining real wages. Before its introduction in the early seventeenth century², the English poor relied—when family support was lacking—on a shifting combination of philanthropy, municipal regulation, and the church. The dissolution of the monasteries in the 1530s had left a vacuum, which, at first at least, private philanthropy and local charity in the form of endowing institutions such as almshouses by wealthy individuals, and municipal action in the form of the provision of food rations or doles to the poor in the larger towns, were unable to plug (Slack 1989; Walter 1989). Adjusting the annual yield from private benefactions for inflation and population change implies that the real yield per capita hardly rose during the sixteenth century but rose considerably in the first half or so of the seventeenth century (Hadwin 1978: Table 2; Allen 2001; Wrigley and Schofield 1981). Assuming that monastic contributions matched private giving in the 1530s (Hadwin 1978: 113) would imply that aggregate spending on the poor rose little between then and the 1650s, and that spending per head on relief—given the rise in population in the interim—was still significantly lower in the 1650s than in the 1530s. The decadal total of private

benefactions in the 1650s (£469,621) was equivalent to an annual 2d per head of population—or a quarter or one-fifth of an unskilled worker's daily wage.

That is before public relief is factored in. Historians detect the beginnings of a concern with public charity and public health in the mid-sixteenth century. Elites had ample incentive to act: they too were at risk from the hunger-induced diseases which killed the poor. At the outset the response of central government focused on regulating the grain trade and on controlling vagrancy (Smith 1996, 2001, 2008; Slack 1989: 113-137; Fogel 1992). The eradication of plague in England in the mid-17th century—the last outbreak in 1665 was restricted to the southeast—seems to have been the product of public policy rather than any change in the character of the disease itself. An increased commitment to controlling disease is reflected in the Books of Orders referring to plague, the first of which dates from 1578. Others followed whenever the disease struck, decreeing the enforced isolation of infected households and the controlled burial of victims and the burning of their clothes, and offering 'advice' on matters such as appropriate medicines and the link between overcrowding, poverty, and the spread of epidemic disease (Slack 1990). Another sign of the shift in official attitudes was the eagerness of the authorities to spread information about outbreaks of disease as quickly as possible. This is reflected in the publication and distribution from July 1603 on of the London bills of mortality (Greenberg 2004). The bills, produced weekly, were aimed at monitoring the spread of disease and enabling timely preventive measures.

But what made England unique during the seventeenth and eighteenth centuries was its comprehensive, national but locally-funded system of outdoor poor

relief. In the 1620s the state developed a short and highly effective chain of administration from the king's Privy Council, through local grandees acting as county magistrates, to small local property owners who served as 'overseers'. This marked the beginnings of a system of local taxation which financed discretionary long-term assistance for the elderly, and temporary relief to those hit by illness, unemployment, or high food prices.

The OPL was already sufficiently well entrenched by the 1640s to survive the Civil War (Hindle 2008). Yet average benefactions per annum in the three decades before the Restoration—about £42,000—pale into insignificance beside the annual £0.4 million spent by parishes on poor relief at the end of the seventeenth century (Hadwin 1978: 112; Hadwin 1981; Slack 1990). During the seventeenth century the ratio of public to private expenditure on poor relief rose dramatically—from perhaps two-fifths to nearly 250-300 per cent (Slack 1990: 171-2). Slack reckoned that by the end of the seventeenth century, poor law expenditure amounted to about 1 per cent of national income, or enough to provide year-round subsistence for 5 per cent of the population of England and Wales (Slack, 1989; Slack 1990: 172-3; Poynter 1969: 19).³ This tallies with Smith's recent extensive study of pension outlays between 1600 and 1740, which found that beneficiaries and their families then made up five per cent of the population (Smith 2002: 37-8). Spending on poor relief doubled to around 2 per cent of national income by the end of the eighteenth century. While elite attitudes on the mechanisms of relief shifted back and forth, outlays rose over time, and there was a significant increase in average spending per

claimant. The 'deserving poor' as revealed by Smith's study were disproportionately the elderly, especially elderly women.⁴

Compare this to Hufton's assessment of public spending on poor relief in late *ancien régime* France (1914: 176):

In the wealthiest departments...[resources available for formal relief] stood in the region of a *livre* per head of the population of 5-10 *livres* for each pauper per year; in average departments they ranged from 4 to 8 *so/s* per head of the population of 1-4 *livres* per head of destitute per year. Worse than this, in a belt running from the Basses-Pyrénées, through Gascony...up through the Dordogne...to the Creuse and the Puy-de-Dome and bounded by the Indre and the Cher, the total resources divided by the number of destitute would not have been sufficient in any one year to buy a single pound of bread for each hungry person...For the mass of the rural poor, for the immigrant communities in the cities, for those without a sponsor to insure than they spent their declining years in an *hôpital*, formal institutional relief was not a factor in their struggle for survival.

On the eve of the French Revolution expenditure per head on poor relief in England was eight times that of France (Solar 1995: 7).

We focus in this paper on the period before Gilbert's Relief of the Poor Act (1782) and the Speenhamland system (1795). Local studies of the OPL in operation

before then are plentiful. Covering much of England, urban and rural, they describe a regime that, by and large, sought to square a sense of responsibility to the 'deserving' poor (always disproportionately the sickly or disabled elderly) with concerns about the cost of relief and moral hazard. Most return a positive verdict on the law in operation. Relief was neither generous nor unconditional, but its reach was broad. For example, Williams' (2005) study of two communities in late eighteenth-century east Bedfordshire finds that up to one-third of residents received relief at some point during the life cycle, while according to Ottaway's (1998) analysis of parishes in eighteenth century Dorset and Essex parish doles played a vital role in supporting the elderly, and brought their standard of living to a level 'similar to that they attained when in work'. Broad (1999: 986) reports that 'the combination of customary and charitable sources with the parish poor rate provided a raft of security for most rural families'. In Norfolk the maximum dole doubled during the seventeenth century. One could not have subsisted on sixpence per week in 1600 but a shilling was enough to live on c. 1700 (Wales 1984: 354-57). In Westbury-on-Trym, then a rural parish northwest of Bristol, tithings rose from £16 to £82 between 1656 and 1697, or enough to fund poor relief worth about three shillings per inhabitant annually at the later date (Wilkins 1910). By the early eighteenth century several provincial cities such as York, Exeter, and Bristol were relieving 7 or 8 per cent of their populations. In London's affluent West End the percentage was much lower, but public relief there was boosted by aid from City companies (Boulton 2000: 211; also Boulton 1997). In each of the two very different Suffolk villages analysed by Botelho (2004: 72) about one parishioner in ten was

collecting a pension weekly at the end of the seventeenth century. Even in Caverley-cum-Farsley in Yorkshire's West Riding, where relief was far from generous relative to southern England, up to one-tenth of the population 'benefitted' from the poor law in any one year during the eighteenth century (King 1997: 329-30). There was a determination even in the less developed northeast 'to give adequate if not unstinting relief within strongly defended communities' (Rushton 1989: 151). Indeed, it is striking how the significant number of case-studies completed over the past two decades or so has yielded no counter-example to the pattern described above.

Though the bulk of outlays under the OPL catered to structural poverty, there is evidence too that relief was responsive to harvest failures. In northeast England, where routine relief provision was slow to develop, crises 'always evoked grants of financial aid from the county authorities and others' (Rushton 1989: 137). Healey's recent study of seventeenth-century Lancashire links the disappearance of famine after the 1620s to the effectiveness of the poor law (Healey 2008). In Banstead in Surrey during the bitterly cold winter of 1739-40 recurrent weekly doles accounted for the bulk of spending but the overseers allowed £7-6-0, or one-tenth of the total, 'for wood for ye poor' (Sweetman 2004: 32-33). In mid-eighteenth century Brigston, Northamptonshire, casual relief accounted for a significant but variable share of all parochial disbursements (Hindle 2003: 56). The shift to outdoor relief in Eaton Socon (Bedfordshire) in the famine years of 1727-28 may have been prompted by a desire for economy, but the following few years witnessed a significant rise in relief outlays nonetheless (Emmison 1933: 27). And in all six parishes described by Kent

and King (2003), straddling an area that encompassed much of eastern and southern England and as far north as Staffordshire, relief expenditure rose sharply in the late 1720s and also in 1740-41.

3. The County and the Parish

Steve King (1997; 2000) has stressed the regional variation in the administration of the OPL. He has identified two contrasting 'welfare cultures': one in the north and west, where the regime was 'ramshackle and ultimately parsimonious' and accompanied by a 'rhetoric of self-reliance', another in the south and east, which was 'flexible' and 'benevolent' (2000: 256-62)⁵. In the mid-1780s expenditure on the poor was lowest—less than two shillings per head of population—in the extreme north (Cumberland, Northumberland, Westmorland), in the three Yorkshire ridings, and in Cornwall, while it was highest in the southern counties of Sussex, Essex, Buckinghamshire, Berkshire, and Kent (in that order), in all of which spending exceeded eight shillings per head of population (BPP 1803-4; compare Lindert 2006: 123). What accounts for the gap? Does it imply that the OPL was least generous where it was needed most? Certainly, the gap in outlays was much wider than the wage gap between the same two groups of counties.⁶ Spending on poor relief also varied considerably within counties, leaving plenty room for local agency and contingency.⁷

Before considering the demographic implications, it bears noting that this north-south gap in outlays probably dates back to the beginnings of the OPL.

However, a tendency for the gap to narrow before the mid-eighteenth century (Smith 1996: 37) continued thereafter. The coefficient of variation of spending per head of population across all English counties fell gradually, from 0.50 in 1750 to 0.43 in 1776, 0.40 in 1813, and 0.38 in 1831. The cross-sectional pattern present in the eighteenth century also persisted into the nineteenth: the correlation across counties between spending per head of population in 1776 and 1831 was 0.792.⁸

[TABLE 1 ABOUT HERE]

While local histories rightly note local peculiarities, cross sectional analysis suggests some broader regularities in the operation of the OPL. Table 1 reports the results of our search for such regularities. Equations 1-3 point to a correlation between county spending per head of population in the mid-1780s (*OPL84*), and *WAGE*, the nominal county wage. The coefficients, reported as elasticities, link a 10 per cent rise in the county wage to a 14 to 17 per cent rise in outlays per head.⁹ Although the underlying model almost certainly suffers from (unavoidable) omitted variable bias, this is an interesting outcome, given the inverse relationship between wages and allowances envisaged by Malthus and Arthur Young. The suggestion that outlays on poor relief in the 1780s were a decreasing function of population growth in the previous two decades or so (*DPOP6181*) must be taken in the same spirit; perhaps both *OLP84* and *DPOP6181* were both functions of a third, unidentified variable. By the same token, the correlation between population growth in 1700-1750 and relief spending per head in 1750¹⁰ was -0.21. This is consistent with

population pressure, before the 1780s at least, not systematically leading to rising relief outlays (as claimed for later by Blaug 1964). Equations 2 and 3 add *PROP*—a measure of wealth per head defined as real taxable property in 1815 divided by 1781 population. They suggest that wealthier counties spent fractionally less on relief per head of population, but the inclusion of *PROP* does not materially change the value of the other coefficients. *CHARPOP* in Equation 3 measures charitable donations for the poor in 1784 (as reported in BPP 1803-4: 715), divided by 1781 population. The outcome is consistent with the view that private charity did not—again, contrary to Malthusian fears—crowd out poor law expenditure at this juncture.

The parish database assembled by the Cambridge Group in conjunction with *The Population History of England* (Wrigley and Schofield 1981; Schofield 1997: 7) prompts the following tentative analysis of the variation in poor law expenditure in the 1780s at a parish level. The database contains information on a range of variables for most or all of the 404 parishes included in its demographic reconstruction. We have used the following variables:

<i>EXP:</i>	expenditure per head on poor relief in 1784
<i>PROP15:</i>	valuation per head in 1815
<i>HGHT:</i>	height above sea level
<i>GENDENS:</i>	a measure of gentry density
<i>CNCWNR:</i>	a dummy variable set at 1 where there are three or less taxpayers in 1798

Clearly the anachronistic character of some of the data may distort our results. Since parish-level population data are unavailable before 1811, we rely on 1811 estimates to generate *EXP*, our measure of parish spending. *PROP15* uses 1811 population and 1815 valuation data to generate a proxy for taxable capacity or living standards in the 1780s. *GENDENS*, an estimate of the number of resident gentry per head of population, refers to the number of gentry seats in 1700, divided by 1811 parish population. Wages in the parish are proxied by the appropriate county wage in 1770 (Hunt 1986). We also employ two measures using parish valuation in 1524. These are derived from the so-called lay subsidy lists, collected in connexion with one of Henry VIII's fiscal proposals (Sheail 1968). The first is that valuation divided by 1811 population (*VAL1524*); the second is the ratio of valuation in 1815 to that in 1524 (*GRVAL*). The partial coverage of the 1524 data means that using *GRVAL* and *VAL1524* reduces the number of observations used in Equations 4 and 5 below considerably.

The regression results in Table 2 below employ these data to account for the variation in poor law expenditure per head across English parishes in the 1780s (*EXP*). *EXP* varied not only across counties; the variation across parishes within every county was also significant.¹¹ Again, coefficients are reported as elasticities. In general, a small number of variables account for one-third or so of the variation in *EXP*. The presence of resident gentry (*GENDENS*) was associated with increased spending, albeit to a slight extent, while the concentration of landownership in a parish

(*CNCWNR*) was not. The size of parish is measured by acreage (*ACRES*); size might be expected to have a negative sign to the extent that moral hazard would have been easier to control in smaller social networks (King 2005). Spending indeed decreased with parish size but, again, the effect was small (compare Blaug 1964). The higher above sea level was a parish's location, the more 'generous' it was, although it remains unclear why.

More significantly, though hardly surprisingly, the outcome suggests that expenditure per head of population tended to have been higher in the high-wage parishes. The elasticity here is high: a 10 per cent advantage in wages was associated with almost a doubling of spending on the parish poor. Thus, both county and parish level data are consistent with spending being geared to the nominal wage. Higher wages reflected higher living standards but also, in part, higher living costs; Frederick Eden's local investigations imply that the cost of household basics such as meat, dairy products, and especially coal were significantly cheaper in northern counties than in southern.¹² The negative coefficients on dummy variable *NORTH* (set at 1 for the Yorkshire ridings, Lancashire, Northumberland, and Cumberland) and *SOUTH* (set at 1 for Bedfordshire, Berkshire, Oxford, Surrey, Sussex, and Wiltshire) in Equations 3 and 4 leave a role for 'geography' or 'culture'.¹³

Equations 2-5 indicate that the wealthier the parish (proxied here by the coefficient on *PROP15*), the higher was the spending on poor relief in the 1780s, with an associated elasticity of about one-fifth.¹⁴ This means that whereas spending per head tended to be lower in wealthier counties, it was higher in wealthier parishes.

The coefficients on *VAL1524* and *GRVAL* in Equations 4 and 5 come with an extra health warning. They are consistent with—but hardly any more—relative wealth in Tudor times leading to higher outlays in the 1780s, and rising wealth in the interim having the opposite effect, though only very marginally so.¹⁵

[TABLE 2 ABOUT HERE]

4. *Demography*

Was there a link between the variation in OPL spending, on the one hand, and demographic trends and economic wellbeing, on the other? Malthus attributed England's rapid population growth in his own day partly to the OPL. Yet contrary to Malthusian presumptions, the correlation across English counties between relief outlays per head in the 1770s and 1780s and population growth in the following two decades was negative. Regressing proportionate population change between 1781 and 1801 (*DPOP*) in forty-one English counties on poor relief per head of population in the mid-1770s and mid-1780s (*OPL75*, *OPL84*) and the wage level in 1770 (*WAGE*), produces the outcome reported as Equations 4-6 of Table 2 above. As before, the marginal effects are reported as elasticities throughout. High wages would appear to have linked to population growth, but the same does not hold for high levels of spending on the poor, as indicated by the negative coefficients on *OPL84*. Adding our admittedly crude proxy for county wealth per head (*PROP15*)—real taxable property in 1815 divided by 1781 population—adds explanatory power, but its impact

is the opposite of *WAGE* (Equation 6). The addition of *PROP15* does not substantially change the value of the other coefficients. The outcome suggests that a 10 per cent increase in relief outlays was associated with population growth by 5 to 7 per cent.¹⁶

Did lower spending on relief reduce life expectancy in the poorer north of England? The data required to confirm Eden's confident assertion (1797: I, vii) that northerners lived 'as long, and as healthy' as southerners are lacking, but the Cambridge Group dataset can shed some light on their relative vulnerability to harvest failures and price shocks. Figures 2a and 2b compare proportionate fluctuations from trend in a north-western region and southern region.¹⁷ The regions consist of similar-sized aggregations of parishes with unbroken burial series between 1612 and 1812. The northern region includes all usable parishes in the West Riding of Yorkshire, Cumberland, and Lancashire. The southern region includes all usable parishes in the counties of Bedfordshire, Berkshire, Oxford, Surrey, Sussex, and Wiltshire (for details see Appendix A).

Figures 2a and 2b suggest that there was little to choose between the northern and southern regions in terms of variability of mortality and that the southern region experienced more crises after the 1620s than the northern. Lower poor law expenditures in the north and northwest were sufficient, it would seem, to keep mortality fluctuations in check. How come? Smith (1996) and Hallas (2000; see too King 2003: 20; Snell 1985: 94-95) plausibly point to the part played by a range of other safety nets in the north before the industrial revolution. These include better entitlements to work-related perquisites, steadier employment on the land, a more

resilient proto-industrial sector, and growing towns that offered better prospects for men and women.¹⁸

Northerners were also less demanding in their attitudes to diet and creature comforts. Whereas in the south wheaten bread dominated, in the north and northwest the poor subsisted on cheaper and coarser, but more nutritious, barley or oatmeal soups and breads and, increasingly, on potatoes (Eden 1797: I, 501; Collins 1975). Eden attributed the northerners' 'superior skill and care in culinary contrivances' in part to cheaper fuel, 'another reason why the culinary preparations of the Northern peasant are so much diversified, and his table so often supplied with hot dishes' (Eden 1797: I, vii, 525, 547). Southerners ate most of their food cold. Milk, too, was cheaper and more widely available in the north.¹⁹ An added advantage of barley, oats, and potatoes was their greater resilience against cold and wet weather. In sum, the northerners were rather like the pre-famine Irish; poorer, but better fed.²⁰

In the absence of demographic data, the link between relief and demographic regime remains to be firmly established.²¹ In the meantime, local studies leave little doubt that the OPL was able to keep the threat of outright starvation at bay in both north and south, and to keep the numbers of destitute people below some critical mass needed for epidemic disease to gain a hold in the general population. That prohibitions against vagrancy and strict curbs on entitlements helped in this regard is plausible. Whence Hollingsworth's claim (1986: 663):

It must be sensible to treat seriously human endeavours to avoid crisis mortality. It would go a long way to explaining why, for instance, there were famines in France in the seventeenth century, but not in England. There was no Poor Law in France!

This is claiming too much, however. Although England, unlike France, escaped famine in the early 1660s, the early and late 1690s, and 1709-10 despite sharp rises in wheat prices, its welfare system failed to cope with two eighteenth-century crises linked to much smaller price increases.²² The first struck much of England in 1727-30, and resulted in an excess mortality of about 170,000, or over 3 per cent of the population; the second, a decade later in 1740-42, resulted in about 80,000 deaths.²³ Both crises also affected the birth rate (Figure 3). They differed in their regional incidence across counties, with the north faring relatively worse in the late 1720s.²⁴ Both crises led to corn imports, exceptionally for Britain in the first half of the eighteenth century.²⁵

The first crisis followed poor harvests in 1727 and 1728, and led to excess mortality rose in each year to 1730. The strong negative correlation between changes in numbers of baptisms and burials across parishes in the Cambridge Group database (-0.32, n=395)²⁶ is consistent with a classic subsistence crisis, but the persistence of excess mortality long after prices peaked in 1728 implies that there was more at stake. Indeed, contemporary accounts of the disease environment suggest that diseases other than typhus, typhoid fever, relapsing fever, and diarrhoea/dysentery— those normally associated with famine—were also at work.

Dublin-based physician John Ruttly referred to horses in the west of England in November 1727 being 'suddenly seized with a cough and weakness', followed by the same symptoms, sometimes accompanied by nose-bleeding, 'in Dublin and remote parts of Ireland'. A month later the horse population was recovering, but 'a cough and sore throat [had] seized mankind in Dublin'. Two years later Ruttly described an influenza-like 'universal epidemic catarrh, scarce sparing any one family' which 'visited London before us',²⁷ and was 'attended with a cough, soreness of the breast, and some pain of the head and back, and a slight fever'. Its main victims were the elderly (Ruttly 1770: 17). In the badly-affected rural parish of Deane in Lancashire, most victims died 'of agues, pluraisy, etc, tho a fever came ye first', and 'in some respects ye disorder resembled ye Plague' (Timmins 2005). As Wrigley and Schofield (1981: 681-84) make plain, this too reads like a subsistence crisis followed by an influenza-like disease. Gooder's analysis of the crisis in Warwickshire also highlights the role of harvest failure in 1727 and 1728, and refers to a likely outbreak of influenza in late 1729. Thus while there is evidence for classic famine diseases, it would seem that this crisis was compounded by the added, largely exogenous shock of a deadly influenza epidemic. This would help explain why mortality was so high and the crisis so protracted, although the rise in the price of corn was relatively modest.

The second crisis lasted from late 1739 to 1742. The attendant bitterly cold weather, poor harvests, and famine diseases are well documented (Post 1984; Dickson 1997). Births and deaths again followed the classic famine pattern, and the disease symptoms described by Ruttly (1770: 86-97; see too Creighton 1965: II, 78-83)

recall famine fever. The rise in fever deaths in London in 1740-41 is also striking (Landers 1993: 278-9). Rutty (1770: 89) noticed another tell-tale symptom of famine at work in 1741: 'Another notable circumstance seems worthy of being recorded, in relation to the subjects which this fever generally attacked, both here [in Dublin, Ireland] and in England, viz. that they were generally men, and those of a middle age, and strong, and but few women; also children were more rarely attacked.' However, the London Bills of Mortality imply no relative female advantage in these years.²⁸

Two curious features of this crisis are the *rise* in births in 1743 in the wake of the peak in deaths in 1742,²⁹ and the late timing of the peak in deaths, long after food prices had begun to fall.³⁰ Moreover, as Wrigley and Schofield note, 'the delay in the epidemic outbreaks until July 1741 also counts against the view that they were produced by the poor harvest of 1740 or, even more implausibly, by the exceptionally cold winter of 1739-40' (1981: 669; compare Post 1984: Table 1). In this case too it would seem that the subsistence crisis was followed by a surge in largely exogenous mortality.

[FIGURE 3 ABOUT HERE]

5. By way of provisional conclusion

Although the earnings of ordinary people in pre-industrial England fluctuated considerably, they were no higher on the eve of the industrial revolution than during

the century or so after the Black Death. The masses were better off in another sense, though: they ran a much smaller risk of utter destitution or death from famine. If increased wages were not responsible for this, what was?

In this paper we have marshaled some new data in support of the role of one likely factor, the OPL, in bringing about the shift. However, although the OPL had its origins in growing pauperization in Tudor England and although its structure was very much a function of English history, its expansion was probably facilitated by the growth of the economy thereafter. As noted at the outset, between the late fifteenth and late seventeenth centuries GDP per head rose faster than wages.³¹ Rising incomes thus offered the possibilities of shielding an increasing proportion of the population against destitution and allowing the middle and upper classes to be more generous towards the poor. However, key institutional features of the OPL highlighted by historians—funding through the parish unit, local administration as a means of reducing moral hazard, the link between entitlements and settlement—owed more to history than to rising incomes. As Healey (2008) claims, economic growth may have been a pre-condition for more spending on relief, but the OPL ensured its effective redistribution.

Our canvas of mid- to late-eighteenth century data suggests that much of the variation in outlays on poor relief across parishes and counties can be accounted for by differences in resource constraints and the cost of living. It does not support the claim that, at least before the late eighteenth century, the OPL spurred population growth and reduced wages.³² However, the OPL was clearly better at relieving the elderly and at alleviating local food shortages and treating conjunctural poverty than

at stemming the spread of epidemic diseases. While it could contain non-crisis mortality and cope with minor crises, it was ill-gearred to dealing with major shocks such as those of the 1720s and the 1740s. Its inability to prevent excess mortality on those occasions must temper verdicts on its efficacy.

TABLE 1. POOR LAW SPENDING AND POPULATION CHANGE IN ENGLISH COUNTIES IN THE LATE EIGHTEENTH CENTURY

	[1]	[2]	[3]	[4]	[5]	[6]
DEPVAR ->	<i>OPL84</i>	<i>OPL84</i>	<i>OPL84</i>	<i>DPOP8101</i>	<i>DPOP8101</i>	<i>DPOP8101</i>
<i>OPL84</i>				-0.668 [-2.10]		-0.764 [-2.21]
<i>WAGE</i>	1.698 [4.18]	1.642 [4.03]	1.380 [3.19]	2.053 [2.19]	1.982 [2.77]	2.079 [2.97]
<i>OPL76</i>					-0.566 [-2.00]	
<i>PROP15</i>		-.054 [-6.67]	-0.50 [-5.55]			-0.131 [-4.76]
<i>DPOP6181</i>	-.168 [-2.41]	-.165 [-2.40]	-.131 [-2.05]			
<i>CHARPOP</i>			.277 [2.29]			
Prob > F	0.0000	0.0000	0.0000	0.0050	0.0089	0.0000
N	41	41	41	41	41	41
R ²	.399	.425	.495	.143	.121	.194

<i>TABLE 2. ACCOUNTING FOR THE VARIATION IN POOR LAW SPENDING ACROSS ENGLISH PARISHES IN THE 1780S [t-stats in parentheses]</i>					
	[1]	[2]	[3]	[4]	[5]
<i>GENDENS</i>	0.076 [3.89]	0.043 [2.18]	0.042 [2.26]	0.066 [2.48]	0.098 [3.81]
<i>WAGE70</i>	1.770 [8.75]	1.850 [9.26]	1.308 [6.63]	0.958 [3.51]	1.714 [6.14]
<i>CNCWNR</i>	-0.028 [-2.30]	-0.033 [-2.77]	-0.025 [-2.21]	-0.029 [-2.10]	-0.043 [-2.92]
<i>ACRES</i>	-0.072 [-2.33]	-0.060 [-2.00]			-0.035 [-0.86]
<i>PROP15</i>		0.207 [4.66]	0.195 [4.71]	0.115 [2.37]	0.198 [3.81]
<i>HEIGHT</i>		0.095 [2.51]			0.083 [1.93]
<i>NORTH</i>			-0.048 [-4.42]	-0.052 [-4.17]	
<i>SOUTH</i>			0.060 [4.90]	0.044 [3.35]	
<i>VAL1524</i>				0.080 [2.72]	
<i>GRVAL</i>					-0.028 [-1.97]
N	331	331	331	238	238
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000
Adj R ²	.2876	.3348	.4071	.4271	0.3469

Figure 1. Real Wages, 1311-1796 (5-year averages)

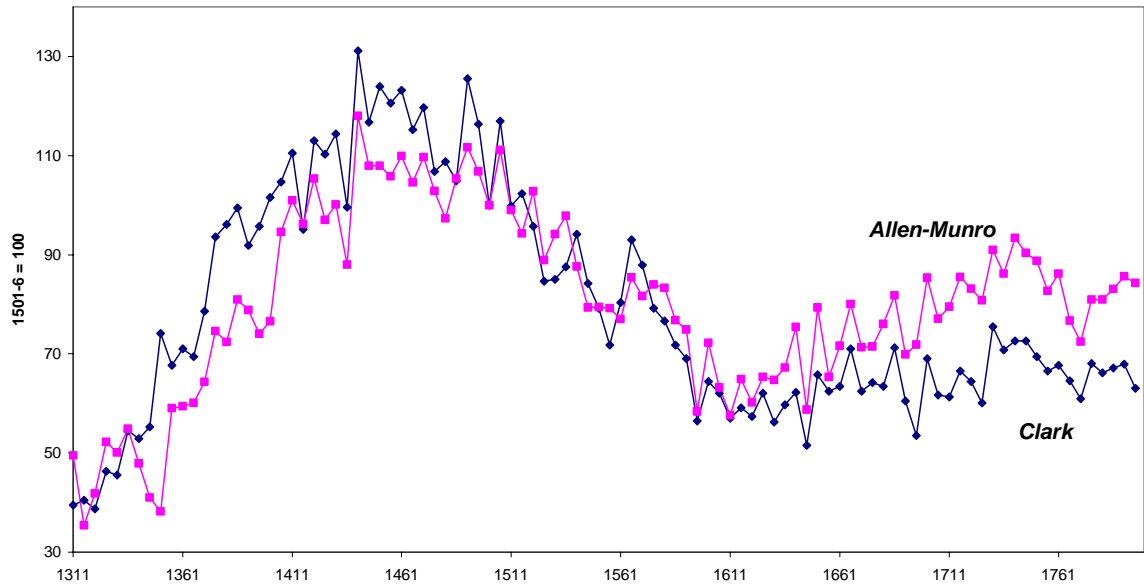


Figure 2a. Residuals North, 1612-1812

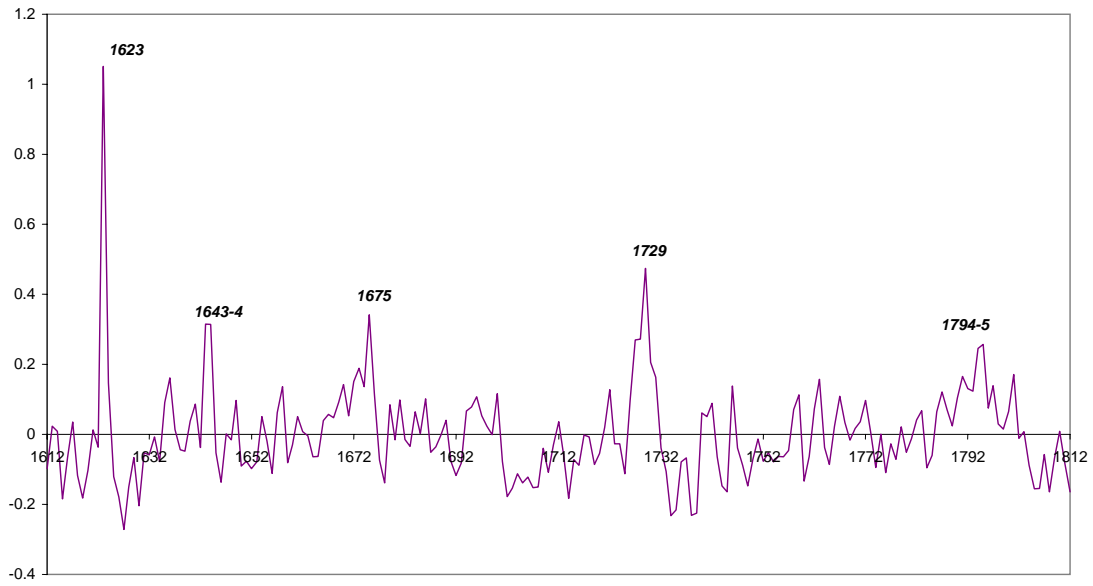


Figure 2b. Residuals South, 1612-1812

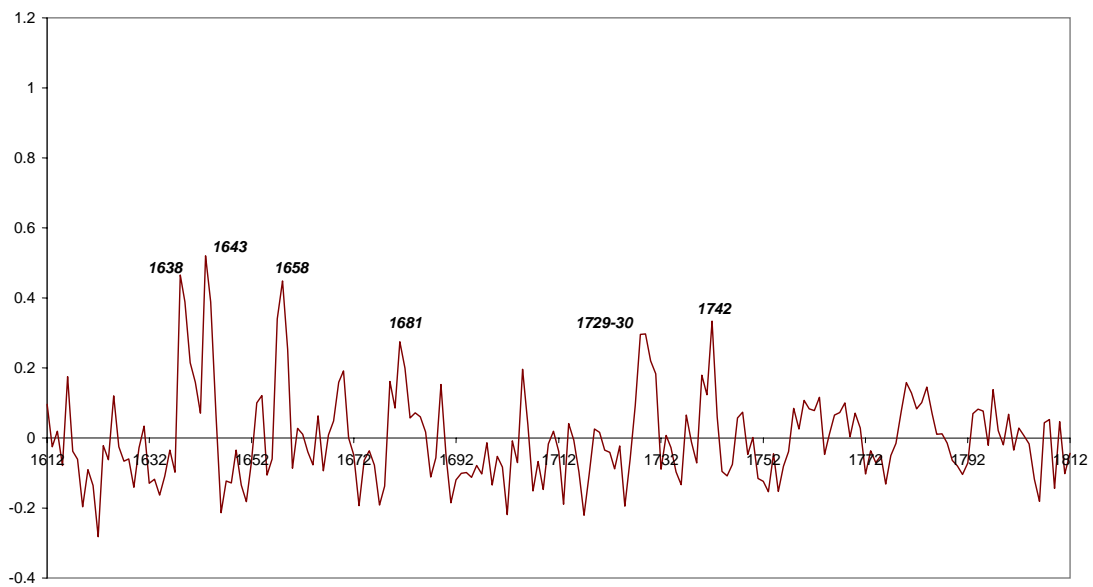
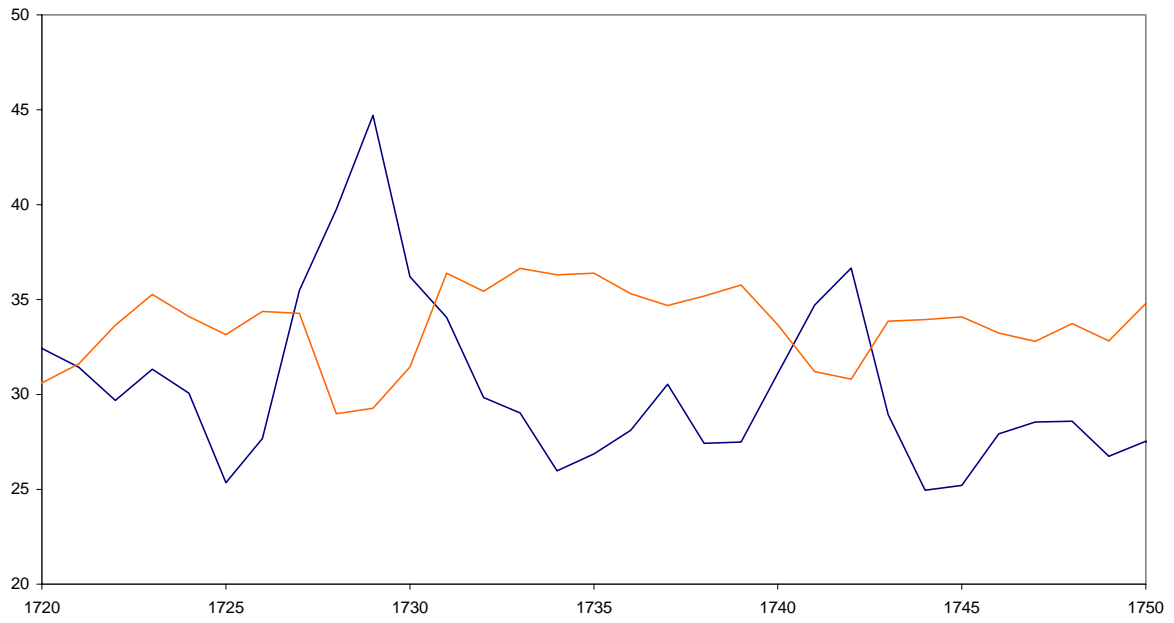


Figure 3. Birth and Death Rates, 1720-50



REFERENCES:

- Allen, R. C. 2001. 'The great divergence in European wages and prices from the middle ages to the first world war'. *Explorations in Economic History* 38: 411-447.
- Apostolides, A., S. Broadberry, B. Campbell, M. Overton, and B. van Leeuwen. 2008. 'English Gross Domestic Product: some preliminary estimates', available at: <http://www2.warwick.ac.uk/fac/soc/economics/staff/faculty/broadberry/wp/pre1700v2.pdf>
- Blaug, Mark. 1964. 'The Poor Law Report reexamined'. *Journal of Economic History*. 24(2): 229-245.
- Botelho, Lynn. 1996. 'Aged and impotent: parish relief of the aged poor in early Modern Suffolk', in Martin Daunton, ed. *Charity, Self-Interest and Welfare in the English Past*. New York, pp. 139-80.
- Botelho, L.A. 2004. *Old Age and the English Poor Law, 1500-1700*. Woodbridge: Boydell & Brewer.
- Boulton, J. 1997. 'Going on the Parish: The Parish Pension and its Meaning in the London Suburbs, 1640-1724', in Tim Hitchcock, Peter King and Pamela Sharpe (eds.), *Chronicling Poverty: The Voices and Strategies of the English Poor, 1640-1840*. London: Macmillan, pp.19-46.
- Boulton, J. 2000. 'The Poor among the Rich: Paupers and the Parish in the West End, 1600-1724', in Paul Griffiths and Mark S.R. Jenner, eds. *Londinopolis: Essays in the Cultural and Social History of Early Modern London*. Manchester, pp.197-225.
- Boyer, George. 1990. *An Economic History of the English Poor Law, 1750-1850*. Cambridge: Cambridge University Press.
- British Parliamentary Papers [BPP]. 1803-4. 'Abstract of answers and returns under Act 43 George 3, relative to the expense of maintaining the poor in England'. [175.] XIII.
- BPP. 1835. 'Poor rate returns: an account of the money expended for the maintenance and relief of the poor...to which is prefixed...estimates of the annual value of real property, assessed April 1815, for the purposes of the property tax'. [444.] XLVII, 185.
- Broad, John. 1999. 'Parish economies of welfare, 1650-1834'. *Historical Journal*. 42(4): 985-1006.
- Broadbridge, Stanley Robertson. 1973. 'The Old Poor Law in the parish of Stone.' *North Staffordshire Journal of Field Studies*, 13: 11-25.

- Campbell, B.M.S. 2008. 'Four famines and a pestilence', unpublished.
- Clark, G. 2001. 'Farm Wages and Living Standards in the Industrial Revolution: England, 1670-1869.' *Economic History Review*, 54(3): 477-505.
- Clark, G. 2007. 'The long march of history: farm wages, population and economic growth, England 1209-1869'. *Economic History Review* 60(1): 97-136.
- Clark, G. and M. Page. 2008. 'Welfare reform, 1834', available at <http://d.repec.org/n?u=RePEc:ecl:ucdeco:08-7&r=his>
- Clark, Peter. 1979. 'Migration in England during the late seventeenth and early eighteenth centuries'. *Past & Present*. 83: 57-90.
- Collins, E.J.T. 1975. 'Dietary change and cereal consumption in Britain in the nineteenth century', *Agricultural History Review*, 23: 97-115.
- Creighton, Charles. 1965 [1894]. *A History of Epidemics in Britain*. London: Frank Cass.
- De Vries, Jan. 2008. *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present*. Cambridge: CUP.
- Dickson, David. 1997. *Arctic Ireland: The Extraordinary Story of the Great Frost and Forgotten Famine of 1740-41*. Belfast: White Row Press.
- Dyson, Richard. 2003. 'The experience of poverty in a rural community: Broughton, North Lincolnshire, 1760-1835', *Local Population Studies*, 70: 11-28.
- Ecclestone, Martin. 1999. 'Mortality of rural landless men before the Black Death: the Glastonbury head-tax lists'. *Local Population Studies*. LXIII: 6-29.
- Eden, F. M. 1797. *The State of the Poor, or a History of the Labouring Classes in England*. 3 vols. London: Davis.
- Emmison, F.G. 1933. 'The relief of the poor at Eaton Socon 1706-1834'. *Publications of the Bedfordshire Historical Record Society* 15: 14-19.
- Evans, C. S. 2000. '"An Echo of the Multitude": the intersection of governmental and private poverty initiatives in early modern Exeter', *Albion* 32:3: 408-28.
- Federico, G. 2008. 'When did European markets integrate?', *European Review of Economic History*, forthcoming.

Fissell, M. 1989. ' "The sick and drooping poor" in eighteenth century Bristol and its region', *Social History of Medicine*, IX: 42-64.

Fogel, R.W. 1992. 'Second thoughts on the European escape from hunger: famines, chronic malnutrition, and mortality', in S. R. Osmani, ed., *Nutrition and Poverty*. Oxford: Clarendon Press, pp. 243-86.

Fogel, R.W. 1994. 'Economic Growth, Population Theory, and Physiology: The Bearing of Long-Term Processes on the Making of Economic Policy'. *American Economic Review*, 84(3): 369-395.

Fogel, R. W. 2004. *The Escape from Hunger and Premature Death, 1700-2100*. Cambridge: Cambridge University Press.

Greenberg, Stephen. 2004. 'Plague, the printing press, and public health in seventeenth century'. *The Huntington Library Quarterly*, 67(4): 509-527.

Goode, A. 1972. 'The population crisis of 1727-30 in Warwickshire'. *Midland History*. 1(4): 1-22.

Goose, Nigel. 2006. 'The rise and decline of philanthropy in early modern Colchester: the unacceptable face of mercantilism?' *Social History*, 31(4): 469-487.

Green, David. 2009. *Pauper Capital: London and the Poor Law 1790-1870*. London: Ashgate Press.

Hadwin, J. 1978. 'Philanthropy deflated'. *Economic History Review*. 31(1): 105-117.

Hadwin, J. 1981. 'The problem of poverty in early modern England', in T. Riis (ed.), *Aspects of Poverty in Early Modern Europe*. Florence: EUI.

Hallas, C.S. 2000. 'Poverty and pragmatism in the northern uplands of England: the North Yorkshire Pennines c. 1770-1900'. *Social History*, 25(1) 67-84.

Hampson, E. 1939. *The treatment of poverty in Cambridgeshire*. Cambridge.

Hatcher, J., A.J. Piper, and D. Stone. 2006. 'Monastic mortality: Durham Priory, 1395-1529'. *Economic History Review*. 59(4): 667-87.

Healey, Jonathan. 2008. 'Economic fluctuations and the poor: some Lancashire evidence, 1630-80'.

<http://www.ehs.org.uk/ehs/conference2008/Assets/HealeyNRIC.doc>.

Hindle, S. 1998. 'Power, Poor Relief, and Social Relations in Holland Fen, c. 1600-1800'. *The Historical Journal*, 41(1): 67-96.

- Hindle, S. 2004. *On the Parish? The Micro-Politics of Poor Relief in Rural England c. 1550-1750*. Oxford: Oxford University Press.
- Hollingsworth, T.W. 1986. 'Review of John D. Post, *Food Shortage, Climatic Variability, and Epidemic Disease in Preindustrial Europe*'. *Economic History Review*. 39(4): 662-663.
- Horrell, Sara, Jane Humphries, and Hans-Joachim Voth. 2001. 'Destined for deprivation? Human capital formation and intergenerational poverty in nineteenth-century England'. *Explorations in Economic History*. 38(3): 339-365.
- Hufton, Olwen H. 1974. *The Poor of Eighteenth-century France*. Oxford: OUP.
- Hunt, E.H. 1986. 'Industrialization and regional inequality: wages in Britain, 1760-1914'. *Journal of Economic History*, 46(4): 935-966.
- Innes, Joanna. 1999. 'The state and the poor: eighteenth-century England in European perspective', in J. Brewer and E. Hellmuth, eds. *Rethinking Leviathan: the Eighteenth Century State in Britain and Germany*. Oxford: OUP, pp. 225-80.
- Kelly, M. and C. Ó Gráda. 2009a. 'Living standards and mortality in England since the Middle Ages: the poor law versus the positive check', Working paper, University College Dublin.
- Kelly, M. and C. Ó Gráda. 2009b. 'Did climate cycles drive western history?' Working paper, University College Dublin.
- Kent, Joan and S.A. King. 2003. 'Changing patterns of poor relief in some English rural parishes circa 1650-1750', *Rural History*, 16: 1-38.
- King, Steven. 2000. *Poverty and Welfare in England 1700-1850. A Regional Perspective*. Manchester: MUP.
- King, S.A. 2004. 'Charity, health and welfare in the English provinces: some reflections', *Journal of Family and Community History*, 7: 33-43. [not in TCD/UCD]
- King, S.A. 2005. '"It is impossible for our vestry to judge his case into perfection from here": managing the distance dimensions of poor relief under the old poor law', *Rural History*, 16(2): 161-189.
- King, S.A. 2006. 'Pauvreté et assistance. La politique locale de la mortalité dans l'Angleterre des XVIII^e et XIX^e siècles', *Annales Histoire, Sciences Sociales*, 61(1): 31-62.

King, S.A. 2003. 'The economy of makeshifts in the early modern north of England', in S.A. King and A. Tomkins (eds), *Coping with the crossroads of life: The economy of makeshifts in early modern England* (Manchester University Press, 2003), 278-314.

King, S.A. and C. Muldrew. 2003. 'Cash, wages and the economy of makeshifts in England 1650-1830', in P. Scholliers and L. Schwartz, eds. *Worlds of wages* (Berghahn Press, 2003), 32-56.

Landers, John. 1993. *Death and the Metropolis: Studies in the Demographic History of London 1670-1830*. Cambridge: CUP.

Lee, Ronald D. 1981. 'Short term variation: vital rates, prices, and weather'. In Wrigley and Schofield, *Population History of England*, pp. 356-401.

Lee, Ronald D. and M. Anderson. 2002. 'Malthus in state space: macro economic-demographic relations in English history, 1540-1870'. *Journal of Population Economics* 15:195-220.

Lindert, Peter H. 2006. 'Poor relief before the welfare state: Britain versus the Continent, 1780-1880'. *European Review of Economic History* 2:101-140.

Maddison, Angus. 2008. *Historical Statistics* [available at <http://www.ggdc.net/maddison/>]

Marshall, J. 1832. *Mortality of the Metropolis, a Statistical View of the Number of Persons Reported to Have Died, 1629-1831*. London: Treuttel, Würtz, and Richter.

Mokyr, J. and C. Ó Gráda. 1996. 'Height and health in the United Kingdom 1815-1860: evidence from the East India Company army'. *Explorations in Economic History*. 33(2): 141-168.

Newman-Brown, W. 1984. 'The receipt of poor relief and family situation: Aldenham, Hertfordshire 1630-90', in Richard M. Smith, ed. *Land, Kinship and Life-Cycle*. Cambridge: CUP.

O'Brien, P.K. 1988. 'The political economy of British taxation, 1660-1815'. *Economic History Review*. 61:1-32.

Ó Gráda, C. 2009. *Famine: A Short History*. Princeton: PUP.

Ottaway, S. 1998. 'Providing for the elderly in eighteenth-century England', *Continuity and Change*, 13: 391-418.

Jones, Peris. 1998. *Making Ends Meet: Poor Relief in 18th Century Mangotsfield*. Downend, Gloucs.: Downend Local History Society.

Mokyr, J. and C. Ó Gráda. 1996. 'Height and Health in the United Kingdom 1815-1860: Evidence from the East India Company Army'. *Explorations in Economic History*, 33(2): 141-168.

Munro, John. 2006. 'Real Wages and the 'Malthusian Problem' in Antwerp and South-Eastern England, 1400 -1700: a regional comparison of levels and trends in real wages for building craftsmen', Paper presented to the Second Dutch-Flemish Conference on The Economy and Society of the Low Countries in the Pre-Industrial Period, Universiteit Antwerp, 20 April.

Poos, L.R. and R.M. Smith. 1984. 'Legal windows onto historical populations'? Recent research on demography and the manor court in medieval England'. *Law and History Review*, 2(1): 128-152.

Post, J.D. 1984. 'Climatic variability and the European mortality wave of the early 1740s'. *Journal of Interdisciplinary History*, 15(): 1-30.

Post, J.D. 1985. *Food Shortage, Climatic Variability, and Epidemic Disease in Preindustrial Europe: The Mortality Peak in the Early 1740s*. Ithaca: Cornell University Press.

Postan, M.M. and J.Z. Titow. 1959. 'Heriots and prices on Winchester manors', *Economic History Review*, 2nd series 11: 392-411.

Poynter. J.R. 1969. *Society and Pauperism; English Ideas on Poor Relief, 1795-1834*. London: Routledge & Kegan Paul.

Razi, Zvi. 1980. *Life, Marriage & Death in a Medieval Parish*. Cambridge: CUP.

Rushton, Peter. 1989. 'The poor law, the parish and the community in north-east England, 1600-1800'. *Northern History*. 25: 135-52.

Rutty, John. 1770. *Chronological History of the Weather and Seasons and of Prevailing Diseases in Dublin*. Dublin.

Schellekens, J. 1996. 'Irish famines and mortality in the eighteenth century'. *Journal of Interdisciplinary History* 27:29-42.

Schofield, Roger. 1998. *Parish Register Aggregate Analyses: the Population History of England database and introductory guide*. Colchester: Local Population History Society.

Schofield, R. 1965. 'The geographical distribution of wealth in England, 1334-1649', *Economic History Review* 18, 483-510.

Sheail, J. 1968. 'The regional distribution of wealth in England as indicated by the 1524/5 Lay Subsidy Returns' (PhD London); published under the same title in 1998, edited by R.W. Hoyle.

Slack, Paul. 1989. *Poverty and Policy in Tudor and Stuart England*. London: Longman.

Slack, Paul. 1990. *The Impact of Plague in Tudor and Stuart England*. 2nd edition. Oxford: Clarendon Press.

Smith, Richard M. 1996. 'Charity, self-interest and welfare: reflections from demographic and family history'. In M. Daunton, ed. *Charity, Self-interest and Welfare: 1500 to the Present*. London: Routledge, pp. 23-50.

Smith, Richard M. 2001. 'Welfare of the individual and the group: Malthus and externalities', *Proceedings of the American Philosophical Society*, 145: 402-414.

Smith, Richard M. 2002. 'Social institutions and demographic regimes in non-industrial societies: a comparative approach', in H. Macbeth and D. Collinson, eds. *Human Population Dynamics*. Cambridge: Cambridge University Press, pp. 112-131.

Smith, Richard M. 2007. 'Periods, structures and regimes in early modern demographic history'. *History Workshop Journal*, 63(1): 202-218.

Smith, Richard M. 2008. 'Social security as a developmental institution? Extending the Solar case for the relative efficacy of poor relief provisions under the English Old Poor Law', Paper prepared for the History and Development Workshop, University of Manchester, 7-8 April.

Snell, K.D.M. 1985. *Annals of the Labouring Poor: Social Change and Agrarian England 1600-1900*. Cambridge: CUP.

Solar, P. M. 1995. 'Poor relief and English economic development before the industrial revolution'. *Economic History Review* 1:1-22.

Soltow, Lee. 1993. 'Review of Donald E. Ginter, *A Measure of Wealth: The English Land Tax In Historical Analysis*'. *Journal of Economic History*, 53(1): 166-68.

Steckel, R. H. 2004. 'New light on the "dark ages": the remarkably tall stature of Northern European men during the medieval era'. *Social Science History*. 28[2]: 211-228.

Steckel, R. H. 2005. 'Health and nutrition in the pre-industrial era: insights from a millennium of average heights in northern Europe'. In R. C. Allen, T. Bengtsson, and M. Dribe, eds. *Living Standards in the Past: New Perspectives on Well-Being in Asia and Europe*. Oxford: Oxford University Press, pp. 227-53.

- Stapleton, Barry. 1993. 'Inherited poverty and life-cycle poverty: Odiham, Hampshire, 1650-1850'. *Social History*, 18(3): 339-355.
- Sweetman, John. 2004. *A History of Poor Law and Charity Relief in Banstead*. Banstead, Surrey: Banstead History Research Group.
- Timmins, Geoff. 2005. 'Dying in droves: history mysteries and parish records' [<http://www.bbc.co.uk/cgi-bin/education/betsie/parser.pl>, published 31 January 2005].
- Wales, Tim. 1984. , 'Poverty, poor relief and the life-cycle: some evidence from seventeenth-century Norfolk', in Richard M. Smith, ed. *Land, Kinship and Life-Cycle*. Cambridge: CUP, pp. 351-404.
- Walter, John. 1989. 'The social economy of dearth in early modern England'. In John Walter and Roger Schofield, eds. *Famine, Disease and Social Order in Early Modern Society*. Cambridge: Cambridge University Press, pp. 75-128.
- Weir, D. R. 1984. 'Life under pressure: England and France, 1670-1870'. *Journal of Economic History*. 44: 27-47.
- Wilkins, Henry J. 1910. *Transactions of the 'Poor Book' of the Tithings of Westbury on Trym, Stoke Bishop & Shirehampton from A.D. 1656-1698 with Introduction and Notes*.
- Williams, Samantha. 2005. 'Poor relief, labourers' households and living standards in rural England c. 1770-1834: a Bedfordshire case study'. *Economic History Review*. LVIII(3): 485-519.
- Wrightson, Keith and David Levine. 1995. *Poverty & Piety in an English Village: Terling, 1525-1700* (2nd edition) Oxford: OUP.
- Wrigley, E.A. 2007. 'English county populations in the later eighteenth century'. *Economic History Review*. 60(1): 35-69.
- Wrigley, E. A. and R. Schofield. 1981. *The Population History of England, 1541-1871: A Reconstitution*. London: Edward Arnold.
- Wrigley, E. A., R.S. Davies, J.E. Oeppen, and R. Schofield. 1997. *English Population History from Family Reconstitution*. Cambridge: Cambridge University Press.
- Young, Arthur. 1770. *A Six Months' Tour through the North of England*. 3 vols. Dublin: Wilson.

APPENDIX A: Parishes used in 'North-South' comparison

'Southern' parishes:

Beds: Ampthill, Blunham, Campton with Shefford, Clophill, Cranfield, Kempston, Maulden, Northill, Risely, Sandy, Southill, Studham, Toddington, Woburn, Wootton
Berkshire: Sonning, Winkfield
Bucks: Aylesbury, Princes Risborough, Wing
Hants: Boldre, Odiham, Ringwood, Romsey
Oxford: Banbury, Chipping Norton, Standlake, Wootton
Surrey: Beddington, Carshalton, Cobham, Limpsfield, Nutfield, Reigate
Sussex: Bolney, Brede, Cowfold, East Grinstead, Frant, Hailsham, Harting, Hurstpierpoint, Northiam, Salehurst, Worth
Wilts: Bromham, Wishford Magna

'Northwestern' parishes:

Cumberland: Bridekirk, Crosthwaite, Dalston, Greystoke, Wigton
Lancs: Ashton, Chorley, Deane, Hawkshead, North Meols, Radcliffe, Rochdale, Warton
Yorks WR: Addingham, Adel, Almondbury, Burnshall, Carlton, Dewsbury, Emley, Farnham, Gisburne, Guisely, Hartshead, Horbury, Ilkley, Kippax, Ledsham, Otley, Skipton, Thornhill, Thornton

APPENDIX B. RELIEF AS REFLECTED IN LOCAL STUDIES

<i>County</i>	<i>Parish/Area</i>	<i>Source</i>	<i>Period</i>	<i>Observations</i>
Staffs	Stone	Broadbridge (1973)	C18	<i>About 100 pensioners in a population of 2,000 relieved c. 1700</i>
Beds	Eaton Socon	Emmison (1933)	C18	<i>Spending responsive to crisis of 1727-30</i>
Hunts	Great Staughton	Kent and King	c. 1650-1750	<i>All parishes saw peaks in spending in 1727-30 and 1740-1; in non-crisis years pensions accounted for the bulk of outlays. Spending rose in all parishes c. 1650-1750.</i>
Norfolk	Shelton	Kent and King		
Norfolk	Gissing	Kent and King		
Staffs	Pattingham	Kent and King		
Herts	Ashwell	Kent and King		
Staffs	Alrewas	Kent and King		
Herts	Little Munden	Kent and King		
Beds	Campton	Williams (2005)	Late C18	<i>'Up to a third...received regular poor relief at some point in their lives'</i>
Beds	Shefford	Williams (2005)		
Herts	Aldenham	Newman-Brown (1984)	C17	<i>Law 'benevolent and sympathetic' in its treatment of recipients</i>
Norfolk	Several parishes	Wales (1984)	C17	<i>Maximum weekly dole doubled during century; the elderly relied increasingly on formal relief</i>
Suffolk	Cratfield	Botelho (1996)	C17	<i>'extremely sensitive, humane and flexible' combination of pensions and other relief</i>
Suffolk	Poslingford	Botelho (1996)	C17	<i>far less generous than Cratfield but 'simply could not afford to support more individuals than they did'</i>
Dorset	Puddletown	Ottaway (1998)	C18	<i>Proportion of elderly dependent on PL rose from 15-20% in early C18 to >25% in 1750s</i>
Essex	Terling	Wrightson and Levine (1979: 183)	C17	<i>Duties performed 'conscientiously and well'; admin costs 'small'</i>
Essex	Terling	Ottaway (1998)	C18	<i>Proportion of elderly dependent on PL rose from one-tenth c. 1700 to one-third in 1790s</i>
Essex	Colchester	Goose	C16-C17	<i>Three times in real terms available to the poor in c17 as in C16</i>

Bucks	Brill	Broad (1999)	Post-1650	<i>Rise in relief spending in 1690-1710 prompted 'punitive measures' such as badging and forced apprenticeships. Parishes used a combination of higher poor rates and flexibility to cope with crises due to harvest failures or epidemics. Workhouses catering for orphaned and homeless humanely run.</i>
Bucks	Middle Clayton	Broad (1999)		
Herts	Ashwell	Broad (1999)		
Lincs	Broughton	Dyson (2003)	c. 1760-1835	<i>Barebones subsistence relief to single adults and childless couples. Family groups fared better.</i>
Lincs	Frampton	Hindle (1998)		<i>Relief per capita up from £0.02 in the 1660s to £0.11 in 1660s, £0.21 in 1720s, and £0.35 in 1760s</i>
Hants	Odiham	Stapleton (1993)	Late C17	<i>'About 31% of the population' listed as charity recipients at some point</i>
Gloucs	Abson and Wick	Fissell (1989)	Late c18	<i>'catchall for various sorts of relief...flexible and even responsive institution'</i>
Yorks (WR)	Caverley	King (1997)	C18	<i>One-in-ten relieved at some point in year</i>
Gloucs	Westbury-on-Trym	Wilkins (1910)	C17	<i>3s. per head of population by 1690s</i>
Gloucs	Bristol	Fissell (1989)	1784-1814	<i>Burial register of SS. Philip and Jacob shows two-fifths of those buried receiving aid when they died</i>

ENDNOTES

¹ The Munro-Allen series combines data from Munro (2006) and Allen's preferred series which measures 'average labouring earnings using agricultural wages to proxy farmers' income' (private communication, 19 February 2009).

² While sixteenth century parliaments routinely passed laws to enact such a system, culminating in the famous statutes of 1598, little action was taken to implement them until the 1620s.

³ Central government taxation rose from about 3.5 per cent of national income at the Restoration to 7 per cent in the 1690s and 12 per cent by 1790 (O'Brien 1988).

⁴ Frederick Eden's parish reports confirm this, although in towns where bastardy was on the rise the share of young women and their children was significant (see Eden 1797: III, 823-25 on Halifax in the West Riding).

⁵ The distinction may be traced back to Eden (1797: I, vii).

⁶ The averages were about 8s 4d and 6s 6d, indicating a gap of thirty per cent. The gap was wider earlier, however: Clark (2001: 485) indicates that wages in the north were only half those in the south east c. 1700.

⁷ Arthur Young, admittedly no friend of the OPL, claimed that 'poor rates are never nicely proportioned to the prices of provisions and the necessities of the poor; but depend on the temper of individuals, the caprice of parish officers and justices of the peace: they are as often raised by clamour, as by real necessity' (1770: III, 311).

⁸ The correlation between spending per head of population in 1784 and 1813 was 0.874.

⁹ County population data are given in Wrigley (2007); county wage data in Hunt (1986); real property data in BPP (1815).

¹⁰ Using the county-level data given in Marshall (1832).

¹¹ The average of intra-county coefficients of variation—after excluding three counties with only one observation—was 0.43.

¹² Dividing his data into northern and southern blocks, and taking averages from parishes with the relevant data, suggests that beef, mutton, bacon, milk, and butter cost about 15 per cent more in the northern block; veal, pork, and eggs about 30 per cent more; and coal almost twice as much (derived from data in Eden 1797: vols. II and III). For the purpose of this calculation the southern block includes Middlesex, Essex, Kent, Surrey, Sussex, Hants, Berkshire, Buckinghamshire, Hertfordshire, Bedfordshire, Cambridge, Huntingdon, Suffolk, Norfolk, Wilts, Somerset, Dorset, Devon, Cornwall; the northern block contained the remainder.

¹³ Running *EXP* on *NORTH* and *SOUTH* alone accounts for over one-quarter of the variation in *EXP*, but the coefficients on the dummy variables are much higher (-0.100 and 0.071, respectively).

¹⁴ Compare Botelho's study of two Suffolk parishes, in which the smaller and poorer was the less 'sensitive, humane and flexible', because it 'simply could not afford to support more individuals than [it] did' (1984: 104-8).

¹⁵ The correlations between data on the poor rate (*PRATE*), the cost of provisions (*COL*), wages, and farm earnings in seventy locations reported Arthur Young's Northern and Eastern tours are as follows:

	<i>PRATE</i>	<i>COL</i>	<i>WAGE</i>	<i>EARNINGS</i>
<i>PRATE</i>	1.0000			
<i>COL</i>	0.6109	1.0000		
<i>WAGE</i>	0.2160	0.3693	1.0000	
<i>EARNING</i>	0.0015	0.0580	0.6508	1.0000

¹⁶ Soltow (1993: 168) reports a correlation of 0.8 ('or an R^2 of .64') between per capita 1815 property values and per capita 1798 land tax values across 54 counties of England and Wales. The correlation between *SOL* and *WAGE* is -0.113.

¹⁷ The trends are three- and four-degree polynomials, respectively.

¹⁸ Ongoing work by Leigh Shaw-Taylor and Sir Tony Wrigley shows that two-thirds of more of male workers were employed in the secondary sector in Lancashire and Yorkshire (WR) by the 1750s. See <http://www.geog.cam.ac.uk/research/projects/occupations/introduction/summary.pdf>.

¹⁹ This claim is confirmed by the parish data reproduced in the second and third volume of Eden's inquiry. Bread hardly features in the accounts of northern parishes.

²⁰ Compare Mokyr and Ó Gráda (1996). Heights data are unavailable before the late eighteenth century. However, northerners were clearly taller than southerners at that juncture.

²¹ On the basis of an analysis of nine parishes in Northamptonshire, King (2006: 52-53) suggests that mortality was influenced by the *differing shares* of outlays devoted to paying for medical relief in the form of personnel and hospitals. Certainly, the crude correlations between the proportion of all spending devoted to non-medical relief and various measures of mortality in the nine parishes are striking. However, the study refers to the late eighteenth century only; in earlier decades the distinction between medical and non-medical care was much fuzzier.

²² Perhaps this is why these crises go undetected in time series econometric studies of the impact of the real wage or living standards on mortality (e.g. Kelly and Ó Gráda 2009a).

²³ The two crises, unduly neglected in the literature, are highlighted in Campbell (2008).

²⁴ County averages derived from averaging parish data in the Cambridge Group database offer an admittedly crude sense of the regional intensity of these crises. They imply that the worst-affected counties in 1727-30 were Warwick, Staffordshire, Cheshire, Huntingdonshire, and Gloucestershire; in 1740-42 they were Salop, Dorset, Huntingdonshire, Worcestershire, and Warwick. By the same criterion, the least affected in 1727-30 were Kent, Dorset, Cumberland, Sussex, and Devon; in 1740-42 they were Rutland, Cumberland, Sussex, Lincolnshire, and Durham. Note that these counties are not the same as those used for Figures 4a and 4b.

The London bills of mortality indicate that the earlier crisis was milder than the later in the metropolis (Marshall 1832).

²⁵ 1727-28 and 1740-41 were the only years in which Britain imported grain. Alternatively, whereas net exports averaged 20,000 quarters in those years, they averaged 260,000 quarters in the rest of the 1700-45 period. We are grateful to Richard Hoyle for alerting me to this point.

²⁶ Or -0.452 (N=39) using the county median values. This estimates the changes in births and deaths as total number of births/deaths in 1727-30 as a proportion of the 1730-39 average.

²⁷ This argues against Schellekens' (1996) claim that England's greatest eighteenth-century mortality crisis was the product of immigration from Ireland.

²⁸ The male share of all deaths was 0.491 in 1737-9, 0.491 in 1740-2, and 0.490 in 1743-5 (Marshall 1832). On the relative female advantage during famines see Ó Gráda (2009: ch. 4).

²⁹ To which might be added the positive correlation across counties between the changes in birth and deaths in 1740-42, using median county values of the Cambridge Group parishes (+0.098, N=394).

³⁰ In Ireland in the 1740s, in France in the 1690s and 1700s, and in Finland in the 1860s, the annual peaks in mortality and prices coincided, or nearly so, while in France in 1709-10 there was a one-year lag between the peak in prices and that in deaths. On the other hand, England in the 1550s also witnessed a mortality peak two years after the peak in prices. In this case a great influenza pandemic prolonged a crisis that began as a subsistence crisis in 1556. Creighton describes 'a new sickness' and 'strange agues and fevers', from which the wealthy were not immune, raging in 1557 and 1558 (Creighton 1965: 401-8).

³¹ Alternatively, while Allen's labourers' wage index registers no increase between 1500 and 1700, Angus Maddison (2008) imply a rise of three-fifths in GDP per head.

³² For contrasting analyses of its impact on population growth later see Boyer (1990) and Clark and Page (2008).