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**" 'For Irishmen to Forget?'
Recent Research on the Great Irish Famine"**

by

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"FOR IRISHMEN TO FORGET ?" :
RECENT RESEARCH ON THE GREAT IRISH FAMINE

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To the historian, perhaps the most striking thing about the Great Finnish Famine of 1867-8 is how it is largely 'unknown' outside Finland. In preparing a talk that deals mainly with the Irish famine, I naturally sought out some accessible references on the Finnish, and was surprised at the lack of them. The 'Famine' entries in the better-known encyclopedias in English tell the story : in the Encyclopedia Britannica, Collier's Encyclopedia, and the Encyclopedia Americana, they fail to refer to the Finnish Famine. According to the International Encyclopedia of the Social Sciences, "Europe west of Russia has witnessed no natural famine since the great Irish calamity of the the 1840s".¹ Now as this Conference bears witness, the Finnish famine of 1867-8 was no small affair : on the contrary, it can lay claim to being truly 'the last great subsistence crisis of the western world'. So such ignorance about it is perplexing.

Notoriety has hardly been a problem for the Irish Famine of 1846-50. Secondary references to Ireland's 'Great Hunger' or 'Great Starvation' are ubiquitous. Of course, this has much to do with its political consequences and with the Irish diaspora. In the world history of famines the Great Irish Famine is probably best known and the Great Finnish Famine the worst known of all.

Yet here is a paradox. Given the Irish propensity to be maudlin about the past, a continuous rush of research on the Irish Famine might be expected. It is, after all, the main event in modern Irish history, as important to Ireland as, say, the French Revolution to France or the First Industrial Revolution to England.

¹International Encyclopedia of the Social Sciences vol. 5 (New York, 1968), p. 324. The classic 1931 Encyclopedia of the Social Sciences does not mention the Finnish Famine either.

Yet secondary references to the Famine are out of all proportion to the amount of fresh research published. The demand is there: the paperback edition of Cecil Woodham-Smith's enduring if uneven classic still sells well in Ireland. But Irish historians have tended to shy away from the topic, as a perusal through the main professional journals proves. They have produced no research monograph since that edited by Professors Edwards and Williams over three decades years ago, and very little research in the professional journals either. Ubiquitous amateur local histories, based on a combination of local sources and Woodham-Smith, can hardly be expected to fill the void. This silence, at a time when the research output of Irish historians is considerable, is somewhat puzzling.

Meanwhile, popular understanding of the Famine in Ireland still follows the populist-nationalist paradigm. Half-truths about 'coffin-ships' ferrying emigrants to their doom and about Queen Victoria's miserliness persist.² In other key areas of Irish history - the Land War, mercantilist legislation, the Penal Laws, even the Easter Rising of 1916 - historians have had, by dint of new research, considerable success in exorcizing the nationalist ghost. Not so with the Famine. Yet in their reluctance to look anew at it, Irish historians have not yielded to the nationalist interpretation of events. The academic orthodoxy on the Irish Famine will not be found in journals or research monographs, but in textbook accounts, book reviews, and university lectures. The impression gained from such sources is of a somewhat cautious and apologetic stance, of a very different tone than the vivid accounts of Woodham-Smith or Robert Kee.

My aim in this talk is to provide the basis for some comparative perspectives. I will refer mainly to the Irish Famine, with infrequent asides on some others. Before proceeding to a

²For an expose of the Victoria myth see Thomas P. O'Neill, 'The Queen and the Famine', Threshold, vol 1(2), 1957, 60-3.

review of work done and needing to be done on the Irish Famine, a quick summary of the main themes in the current Irish orthodoxy may be useful :

First, there has been a tendency in lectures and in the secondary literature to 'talk down' the Famine by reporting (though, it must be said, without supporting research) estimates of excess mortality much lower than the traditional figure of about one million. The implication seems to be that the lower the toll, the less the blame. Elsewhere too - in Bengal in the 1940s and in the Soviet Ukraine in the 1930s, for example - one comes across instances of famine mortality being either hushed up or 'talked up' for political reasons. Amartya Sen has argued for a toll of three million in Bengal, against the contemporary official estimate of half that. In the Ukrainian case, contemporary officialdom denied the very existence of a famine, but estimates today range from the less than three million indicated by economic-demographic research to the seven to ten million proposed in ideologically-motivated accounts.³

Second, it is often asserted that massive mortality was inevitable in Ireland in any case, since by the 1840s a malthusian subsistence crisis was overdue. The point being made here is that the backwardness of the Irish economy resulted in the inability of

³ For the controversies between historians and ideologues about excess mortality in the Ukraine in the early 1930s and in Bengal in the early 1940s, see Conquest, 1986; Maksudov, 1986; Wheatcroft, 1984; Lorrimer, 1946 : 133-6; Sen, 1981: 195-216. Wheatcroft accepts Lorrimer's well-known estimate of Soviet excess mortality of 5.5 million from all causes for the 1926-39 period. Ideologue Robert Conquest (1986 : 299-307) proposes 14.5 million as 'a conservative estimate' for 1930-7 alone, almost half of this being due to famine. Conquest (1986: 306) thinks five million a 'conservative' estimate of famine mortality in the Ukraine in 1932-3, while Maksudov's (1986: 38) best guess at total excess mortality in the Ukraine in 1927-38 is 4.4 million. In a recent letter (1 July 1988), Stephen Wheatcroft tells me that he "would be very surprised to discover that mortality in the famine of 1932/3 was as high as that of 1921/2 and over 3 million".

any bureaucracy, no matter how well-meaning, to cope. Sometimes the story has a nationalist twist to it, sometimes it amounts to no more than recounting Irish economic history as malthusian inference. A related, relativist claim is that to expect any mid-nineteenth century government to have behaved like a decent twentieth century social-democratic one is ahistorical or anachronistic.

Third, in Ireland historians have been unkind to, or dismissive of, writers such as Cecil Woodham-Smith who paint an 'emotive' picture of the Irish Famine.⁴ This is matched by an apparent reluctance to describe the sufferings of the Famine years vividly. Nearly a century and a half after the event, the famine is still a sensitive topic, and home-grown accounts such as those by Daly (1986) and Edwards and Williams (1956) are rather bloodless, sanitized affairs.⁵ In their quest for 'objectivity' Irish historians have tended to trade nationalism for caution and conservatism.

Fourth and finally, there is the tendency to remove the Famine from the centre stage of nineteenth-century history. This is being done by arguing that trends traditionally attributed to it were inevitable anyway or already under way. And so it is argued that a whole list of phenomena, ranging from the decline of the Irish language, demographic adjustment through emigration and lower nuptiality, and the shift from tillage to pasture, to the nuclear family household, impartible inheritance, and even the 'devotional revolution' in Irish Catholicism, were already in evidence in 'backward Ireland' before 1845. Though a useful historiographical corrective, this habit of treating the Famine as no more than a 'shock' producing no fundamental long-run economic or social changes seems an over-simplification.

⁴Thus Roy Foster, 'We Are All Revisionists Now', Irish Review, vol. 1 (1986), 3, dismisses Woodham-Smith as a 'zealous convert'.

⁵C.f. Kevin O'Neill's review of Mary Daly's recent monograph in Irish Literary Supplement, Spring 1988, p. 41.

Against the somewhat reticent stance of home-grown historiography, there is the increasing interest of outside historians, mainly American social and economic historians to be thankful for. These non-Irish scholars are less inhibited than their Irish colleagues in their assessment of the Famine. Here are two examples. First is Joel Mokyr, who has analyzed government outlays on famine relief explicitly in terms of 'guns' versus 'butter' ; echoing contemporary and later populist criticism, he has matched Treasury spending in Ireland during the Famine against the cost of the Crimean campaign just a few years later (Mokyr, 1985: 292). Mokyr's perspective might be compared to that of Mary Daly who defends Lord John Russell and his ministers thus : "it remains difficult to conclusively argue that greater sympathy with the Irish case would have automatically guaranteed a dramatically reduced mortality" (1986: 114). My second example, James Donnelly, defends instead the reputation of nationalist John Mitchell, whose outrage at official attitudes fail to impress Irish historians (Donnelly, 1988). But more important than the rhetoric is the freshness and innovation of some of this work from outside. Best-known is Joel Mokyr's Why Ireland Starved, the most-widely cited monograph in Irish economic history since Woodham-Smith. Though familiar by now to third-level students, it still has not attracted the careful scrutiny that it deserves in Ireland.⁶

So what have these scholars been telling us ? In what follows, the results of some research on the prefamine economy and on the toll of the Great Famine itself are discussed first (Parts 1 and 2). Part 3 is a re-examination of economic attitudes to Ireland's problems before and during the Famine. Part 4 briefly assesses the Famine in the context of Sen's entitlements model, and Part 5 deals with the Famine's impact on crime. Finally, Part 6 reassesses some recent work on the determinants of Famine mortality.

⁶See, however, Solar (1984) and McGregor (1988).

1. THE PREFAMINE ECONOMY :

During the last decade or so research on the Irish economy before the famine has been plentiful, and it adds to our understanding of the Famine itself. For the first time, the pace has been set by economic historians who are economists, the so-called 'new' economic historians. De-industrialization and structural imbalance are not denied, but they have been linked to the workings of the Industrial Revolution (through 'uneven development' or external economies) rather than to British perfidy (O'Malley, 1981). There is less agreement on other issues. Research on agricultural change has shifted focus somewhat from landed estate accounts and official documents to trade, price, and farm account data. Progress is seen in higher yields per acre, the diffusion of new techniques, and the integration of markets, but its pace is controversial (Solar : 1987; O Grada, 1988, ch. 2). Output per worker in agriculture on the eve of the Famine was low by British standards, but the sector was 'efficient' in terms of the available resources (Solar, 1983).

The extent of pre-famine demographic adjustment is highlighted by comparing growth in 1790-1820 (1.5-1.6 percent), the 1820s (0.9 percent), and 1830-1845 (perhaps 0.6 percent). In the second half of the eighteenth century, Ireland and Finland shared the distinction of being among the fastest-growing populations in Europe, with Ireland having the edge (Anderson, 1988 : 21-3). Yet in Ireland population growth was decelerating even where it was most rapid on the eve of the Famine, and in much of the country was very modest by then. While the claim that population growth had halted entirely before the Famine certainly goes too far, the rollercoaster or lemming-like images implicit in much traditional historiography are even more misleading.

Some falling-off in economic growth might be expected in the circumstances. But did the deceleration exceed the deceleration in population growth? Peter Solar (1988), basing his argument on carefully constructed trade data, has suggested that the economy was indeed grinding to a halt on the eve of the Famine. His

skillfully-drawn canvas of slow productivity growth and sluggish exports supports traditional intuitions. Still, the trends evident in Solar's graphs rule out strong statistical inferences. The levelling-out in the export series occurs in the late 1830s and early 1840s, but this period included a disproportionate number of cold and wet years, which reduced the surplus available for export (Donnelly, 1975 : 31-3).

What of pre-famine living standards ? On the eve of the Famine, the Irish poor were, according to near-universal opinion, among the very poorest in Europe. The paradox, of course, was that they were citizens of one of the richest countries in the world. Mokyr's revised income data (Mokyr, 1985 : 10), coupled with Feinstein's estimates, imply that Irish income per head was perhaps one-third of British on the eve of the Famine. Though the Irish were well fed and lived relatively long (Clarkson and Crawford, 1988; Boyle and O Grada, 1986), the material poverty indicated by the impressions of contemporary travellers is confirmed by other evidence. Besides, recent work on the standard of living confirms the expectation of immiseration for the poor in the prefamine period, but implies a rise for the top half or so of the population (Mokyr and O Grada, 1988). It will take a lot more research to pin down the dimensions of such changes.

2. THE DEMOGRAPHIC TOLL :

The demographic aspects of the Famine have received a good deal of attention, though here much remains to be done. Recent calculations of excess mortality (Mokyr, 1980a ; Boyle and O Grada, 1986) follow the traditional method of calculating it as a residual, with the 1841 and 1851 census totals (8.2 and 6.8 million) and estimates of normal birth and death rates and of net emigration as starting-points. Students of the Finnish famine need not go through this kind of exercise, but estimates of mortality in some other cases (e.g. the Ukraine famine of 1933) must also link pre- and post-famine censuses. It seems fair to say that the Irish estimates are on weaker ground than the Finnish and on firmer

ground than the Ukrainian. Mokyr (1980a: 240) notes the range of estimates suggested by different authors in Edwards and Williams (1956). The recent collection of studies on the Ukrainian Famine edited by Serbyn and Krawchenko (1986) produces a much wider range. Its specialist chapter on the topic (by Maksudov) suggests 4.4 million deaths from famine and terror combined (p. 38) between 1927 and 1938, but does not attempt to factor out famine deaths. However, Maksudov leaves open the possibility of under-estimation by as much as 1.5 million or over-estimation by 2.1 million (p. 40). In the same volume, the more strident James E. Mace asserts that a figure of ten million from famine alone "might well be closer to the truth" (p. 11). Recent estimates by western scholars of excess deaths in China during the Great Leap Forward (1958-62) range from 16.5 to 29.5 million (Peng, 1987 : 648-9).

In order to get a handle on the demography of a counterfactual Ireland without potato blight in the 1840s, Mokyr assumes that the average fertility and mortality levels which he calculated for 1821-41 would have obtained in 1841-51 in the absence of a famine. Boyle and O Grada relax this 'stable' population assumption, but their estimate of excess mortality corroborates Mokyr's. Both confirm the traditional figure of one million excess deaths. If allowance is made for averted births, the toll is considerably more. According to Mokyr (1980a), these were about 0.4 million. Since he puts the famine-induced decline in the birth rate at 8.7 per thousand annually over 1846-51, an average drop of over one-fifth in the normal birth rate of forty per thousand is implied (Mokyr, 1985: 34, 266). In Flanders, the birth rate was about one-fifth below normal in 1846-8 (Jacquemyns, 1928: 370), in the Netherlands about one-tenth in 1846 and one-fifth in 1847.

These numbers, of course, make the Irish Famine a considerably more serious affair than the Finnish. Excess mortality in Finland was less than one hundred thousand out of a population one-fifth the size of Ireland's in 1845. The difference is easily captured in another way : in Finland mortality trebled during one year, 1868, but the toll of the Irish Famine was equivalent to a doubling of

normal mortality for a five-year period (1846-51). But, relatively speaking, the Finnish famine was worse than two others in the late 1840s : that in Flanders which cost fifty thousand lives out of a population of 1.4 million, and that in the Netherlands in which sixty thousand out of three million perished (Jacquemyns, 1928; Bergman, 1967; Mokyr, 1980b).

The age-sex incidence of the Irish famine has also been examined (Boyle and O Grada, 1986). Like the Bengali famine though apparently not the Ukrainian (Sen, 1981: 210-4; Maksudov, 1986, 1988), Irish Famine mortality seems to have been more-or-less a multiple of non-crisis mortality. In Ireland those who died were disproportionately the old and the very young, but that was the case in normal times too. As for the division by sex, the the 'Tables of Death' in the 1851 census suggest that men were harder hit. Between 1846 and 1850, the census lists a total of 527,459 male deaths against 457,809 female (Great Britain, 1856 : 663). The difference is misleading, however ; a comparison with data given in the same source for the early 1840s, and indeed given in the 1841 census for the 1830s, will show that female deaths were generally less well recorded than male. Calculating male and female deaths indirectly from censal and emigration data still implies that male deaths exceed female, but the difference was rather small (Boyle and O Grada, 1986 : 554-5).

The timing of famine mortality demands more attention than it has received. In terms of the duration of major demographic losses, the Finnish famine of 1868 and the Ukraine famine of 1932-3 both seem to have been relatively brief affairs.⁷ Like the Great Bengali Famine studied by Sen (1981: 195 et seq.), the Irish Famine was much longer drawn out. In India over half the deaths due to the famine occurred after its official ending (Sen, 1981: 215). In

⁷Conquest (1986: 243, 262) suggests that mass mortality in the Ukraine was limited to the period from early March to late May in 1933. The impression that the proportion of excess deaths due to starvation rather than to dysentery or typhoid fever was higher in the Ukraine than in the other cases mentioned is consistent with this.

Ireland, the famine was declared over in the summer of 1847, but excess mortality seems to have lasted until 1850, and was substantial in parts of the west. The absence of civil registration data has prompted Irish historians to deal with Famine mortality en bloc, taking 1846-51 as a unit. Little has been written about the timing of deaths during this five-year period, other than noting the high incidence in 1849. Was the long drawn-out character of the Irish Famine due to the inevitable aftershock of fever deaths, or would less stinting relief have reduced it? The evidence is not yet in but, in the west at least, in 1849 starvation was apparently still a problem (O Grada, 1988: Ch. 3).

The classification of Famine deaths by cause highlights the unimportance of literal starvation. In Ireland such nosology is based largely on the assessments of survivors in the 1851 census. This lends a bias to the results, since those who starved alone or entire families who starved left no survivors to record them, and shame may have inhibited some survivors from telling the truth about others. Yet the implication that famine-induced fever and diseases killed far more than straightforward starvation is supported by medical opinion (McArthur in Edwards and Williams, 1956). The same held in Finland, where only 2.6 percent of deaths in 1868 were put down to 'hunger' but over sixty percent to typhoid fever (Kaukiainen, 1986: 241 ; Lefgren, 1973). In Flanders hunger and starvation in 1845-1847 gave way to typhus and cholera in 1847-9 (Jacquemyms, 1928: ch. 4). But massive disasters such as these are hardly promising material for pronouncing on the controversy between supporters of 'hunger' and 'epidemic' theories of pre-industrial mortality crises, for as the eminent Dublin medical man, Dominick Corrigan, was fond of quipping, "no famine, no fever". In Ireland, the proportion of deaths attributable to literal starvation was probably higher in the early stages, though the 1851 census 'Tables of Death' fail to corroborate this. They provide little support either for McArthur's claim that "dysentery was rampant before fever had begun to spread" (McArthur, 1957 : 286 ; 1851 Census, 'Tables of Death', vol. 2, pp. 660-3).

Some details about the regional breakdown of the Irish famine have also have also been added. Joel Mokyr has shown the pioneering estimates of Cousens (1960, 1963) to have been quite flawed. Cousens' numbers are certainly too low in aggregate ; but Mokyr also argues that, in relative terms, they over-estimate deaths in the east and underestimate them in the west. Now, here the verdict is less clearcut. Mokyr's own county estimates must also be regarded as tentative, based as they are on guesses about the county shares of emigration during the Famine. Mokyr's measures of county emigration rates rely largely on extrapolations from official data beginning in 1851. These data have been shown to under-represent southern and western migrants in the wake of the Famine.⁸ But such problems aside, it not clear why county migration during the Famine should have been so closely correlated with migration after 1850. Indeed a case could be made for an inverse correlation.

Mokyr's results are quite sensitive to the assumptions made about migration. For instance, assuming county rates "derived from the shares in 1851 extrapolated back on the basis of trends 1851-55" produces an estimate of sixty-six thousand excess deaths for the province of Leinster, while assuming rates "derived from the shares of 1851-55 and the prefamine shares" yields 105 thousand (Mokyr, 1980a : Tables 3 and 4). Leinster mortality, admittedly, is most sensitive to the emigration assumptions : Mokyr's estimates of Leinster's share range from six to ten percent of the total. The estimates for Ulster are surprisingly high, typically 20-25 percent of the total (Mokyr, 1980a: 248-9). This seems implausibly high, since it implies that the Famine's relative impact in Ulster was only a fraction less than in Munster. That runs against the impressions gained from workhouse deaths and from the 1851 census, and conflicts with folk memory. Another feature of Mokyr's estimate

⁸C. O. Grada, 'Some Aspects of Nineteenth-century Irish Emigration', in L.M. Cullen and T.C. Smout (eds.), Comparative Aspects of Irish and Scottish Economic and Social History Edinburgh : John Donald, 1977, pp. 68-71.

is the truly massive Connacht mortality. All his estimates imply that between 25 and 27 percent of Connacht's 1846 population died of famine-related causes.

Mokyr has no trouble showing that the 1851 census commissioners' tally, based on retrospective reports by survivors, is biased downward. Deaths in workhouses and fever hospitals, though but a fraction of total deaths, are another potential guide to relative mortality. The 1851 census lists over 340,000 such deaths between 1841-1851, the bulk of them occurring during the Famine. Cousens' estimate of county mortality (Cousens, 1960) combines data provided by the census enumerators and institutions. This undoubtedly involves some double-counting. Cousens' adjustments for under-recording and normal mortality are also open to criticism. Still, taken separately, his census and institutional mortality data provide two further guides to county shares. As Table 1 shows, they tell a story remarkably different from Mokyr's. Not surprisingly, perhaps, the institution-based estimate underrepresents Connacht ; both alternative estimates revise Leinster and Munster upward. And the 1851 figures reduce excess mortality in Connacht from 27 percent to about twenty percent. There is room for more work here : I return to some implications of the different estimates later.

Table 1 : Estimates of Famine Mortality By Province
(Percentage of total)

	Leinster	Munster	Ulster	Connacht
Mokyr Version 1(iii)	6.0	28.9	26.6	38.4
Mokyr Version 2(ii)	10.4	31.4	17.8	40.4
Workhouses, etc.	21.3	44.0	16.8	17.9
1851 Census	18.3	35.4	19.3	27.1

Source : Mokyr (1980a: 248-9) and Cousens (1960)

Even Mokyr's most conservative Leinster estimate makes it

difficult to sustain the view that "the Famine was less a national disaster than a social and regional one" (Cullen, 1966: 132). No county in Ireland escaped excess mortality, though the Famine's impact was very uneven regionally. Still, both Cousens and Mokyr show that mortality was highest in the extreme west, high in Munster and south Ulster, and very low in Dublin and in east Ulster (Cousens, 1963; Mokyr, 1980a: 251). Marked regional variation in mortality was a feature of the Finnish famine too. There mortality hardly rose at all in the north, but reached four times the norm in some provinces in 1868.

3. THE FAMINE AND POLITICAL ECONOMY :

It is natural to refer to Malthus, for whom famine was "the last, the most dreadful resource of nature". Was the Irish Famine "the ultimate malthusian catastrophe", then, as pre-famine Ireland was the "the classic case-study in malthusian economics" ? Malthus concluded from his only visit there in 1817 that "a population greatly in excess of the demand for labour ... is the predominant evil of Ireland". Ironically, though, he had earlier explicitly ruled out a disaster such as the Great Famine in Ireland, predicting instead a greater recourse to moral restraint over time (O Grada, 1984).

Analytically, it makes sense to separate the "malthean" link between population and poverty from predictions about famine. Considering poverty first, in time-series there can be little no doubt but that as population was growing, living standards were falling (Mokyr and O Grada, 1988). Yet - insofar as may be judged from poor data - crisis mortality was low in pre-famine Ireland, and the economy was showing some signs of coping with its many problems. The only rigorous test so far of the malthusian model to Ireland has been Mokyr's Why Ireland Starved, which returns a sceptical verdict on Malthus. According to Mokyr, Ireland suffered because it was vulnerable to a disaster such as potato failure, but this vulnerability was not linked to over-population. Mokyr's test, which treats Ireland's thirty-two counties as hypothetical time-

series observations, relates the land-labour ratio to income per capita. The focus on the land-labour ratio is correct : after his 1817 trip, Malthus stressed that "the Land in Ireland is infinitely more peopled than in England". But against his own firm expectations, Mokyr failed to find evidence for the positive association between population pressure and poverty predicted by the Malthusian model (Mokyr, 1985: ch. 3). Surprisingly, this finding - the most revisionist finding in Why Ireland Starved - has been subjected to little close scrutiny so far. Perhaps McGregor's recent 'Mokyr After Malthus', which claims to turn Mokyr's results round by adjusting the land variable for quality, marks a beginning (McGregor, 1988).

Turning to 'gigantic, inevitable famine', it makes more sense to treat the Famine as unpredictable than as 'inevitable'. This sheer statistical improbability has been stressed in recent work by myself (O Grada, 1984) and by Peter Solar (Solar, 1988). Pre-famine famines, treated since William Wilde's time as ever more menacing malthusian warning shots, turn out to have been trivial compared to the Famine, and hardly intensifying over time. Here, I think, Irish and Finnish histories have much in common.

The potato, of course, is the villain of the piece. Traditional historiography echoes Ricardo's worries about it being "uncertain and liable to peculiar accidents". Recent work, based on inferences from pre-blight crop yield data are indirect and must not be pushed too far. Still, pre-1845 French data show that while the potato was a slightly riskier crop than grain, (a) the trade-off was not huge and, (b) a two-time failure was so unlikely as not to be worth worrying about (Mokyr, 1983a; Solar, 1988). The partial failure of the potato in 1845 - about forty percent - was at the limit of contemporary experience or memory, but it produced very little or any excess mortality. This explains why previous failures in Ireland did not result in hundreds of thousands dead. The rural economy could cope, not without hardship but certainly without massive mortality, with a poor potato crop. One reason for this is

that potato-eating pigs, who consumed one-third or more of the normal crop, provided a buffer in bad years. The point is important, if only because it has been overlooked too often. In Finland, after all, a once-off fifty percent loss in the rye crop was enough to produce a famine : how much worse, one wonders, would the story have been had the harvest failed again there in 1868 ? In Ireland, the failure of 1846 was of a different order than anything ever before witnessed. Data collected by the police put it at a fraction of normal. After a canvas of contemporary yield data, Solar pronounces it "far out of the range of actual or likely western European experience" (Solar, 1988).

Was Ireland just 'unlucky', then ? Focusing on yield variability and pre-famine famines may suggest as much, but there is more to the story. Though historiography has traditionally been unduly tough on the potato, we must be careful not to err in the other direction. After all, potato failure could have more serious repercussions than a grain failure of the same dimensions since the potato was more expensive to store (in the form of pigs), and more difficult to transport (Hoffman and Mokyr, 1983). However, there is some evidence that markets were more integrated than this suggests. The notion that Ireland was just 'unlucky' can be also be criticized by noting that Mother Nature saves her cruelest tricks for those least prepared for them. Thus the potato failure would not have mattered had Ireland been richer or more industrialized.

Recently some authors (e.g. Watkins and Menken, 1985) have questioned the role of famine as an effective positive check in the past. Not only, argue Watkins and Menken, did famines typically fail to make a dramatic dent in population, they left a vacuum which was quickly filled. The Finnish famine seems to fit this model : though the age pyramid continued to bear the scar of the famine for decades (Lefgren, 1973: 25), aggregate population began to rise immediately again, and had made good its losses within a four or five years. Indeed, Finland's natural increase was higher after the famine than before (nearly 1.5 percent in 1869-1874 against 0.84 percent in 1857-66), and nuptiality also rose in the

wake of the crisis (Mitchell, 1975: 20, 85). Finland's population rose by somewhat over a quarter in the three decades before the famine, and by a half in the three decades after it. Ireland is the exception to Watkins and Menken's claim, it seems. Some contemporary intellectuals defended the famine for teaching the Irish the need for 'moral restraint'. Economist Nassau Senior could see - though he may not have looked very hard - neither poverty nor overpopulation while on tour in 1852 (Senior, 1868: II, 12) ; and luminaries such as Harriet Martineau and William Wilde also regarded the famine as both awful and necessary. True, the effect on population was both dramatic in the short run and enduring. However, there is the problem of exogeneity. Arguably much of the decline would have occurred in any case in the long run, through emigration and preventive check mechanisms. Another problem for those malthusians who saw the famine as a 'cure' is that for some decades population decline was lowest in those parts of Ireland where, in malthusian terms, the message from the famine should have been driven home most firmly.

Contrary to common belief, age at marriage in Ireland was not affected much by the Famine, but the proportion ever-marrying was. The marriage-shyness of the post-famine Irish has been linked to the Famine : it taught them the malthusian preventive check (Connell, 1968). Guinnane interprets the latter in a non-Malthusian way : low nuptiality was the sign of higher living standards, not a preventive check reaction (Guinnane, 1988).

Establishment views on what could or should be done during famines have evolved since the mid-nineteenth century. Today, for instance, the notion that feeding the hungry during a famine can only make matters worse would find few supporters,³ but

³See, however, the feature by John Noble Wulford on Garrett Hardin, 'A tough-minded ecologist comes to the defence of Malthus: he believes that gifts of food to Ethiopia were harmful', New York Times, June 30 1987. Hardin's ideas are also discussed in 'Feeding the world's hungry only makes the hunger

it was the belief of the youthful but already articulate Economist in 1846-9. This fear that relief might prove counter-productive on moral hazard grounds can be traced back to Malthus, but perhaps finds its most apocalyptic expression in Nassau Senior during the Great Famine (1868 : I, 264) :

For we may be sure that, if we allow the cancer of pauperism to complete the destruction of Ireland, and then to throw fresh venom into the already predisposed body of England, the ruin of all that makes England worth living in is a question only of time.

A key feature of economic thought during the Famine was that free markets could achieve more than any government agency ; it is said that some of those who crossed the Irish Sea to plead the case for public charity were wont to return "not with relief ... but with excerpts from the fifth chapter of the fourth book of Adam Smith's Wealth of Nations" (quoted in O Grada, 1988: 112). In Ireland, as in Belgium and the Netherlands, this belief in the power of markets led to the relaxation or complete removal of tariffs on grain imports (Bergman, 1967 : 417-9; Jacquemyns, 1928 : 406). That was not a bad thing. But on balance, economic orthodoxy rationalized inaction and death. R.D.C. Black's classic Economic Thought and the Irish Question (1960) has argued for a more benign view, but the interventionist and enlightened theories which Black attributes to economists were far less influential than the doctrinaire version which emphasized the dangers of relief. That version was aired repeatedly in parliament, and by influential journals such as The Economist and The Edinburgh Review. It was also applied with even greater rigour in the Netherlands in these years (Bergman, 1967).

Other aspects of Irish relief policy found echoes elsewhere too, notably the fear that over-generosity might breach the principle of 'less eligibility'. Stories of individuals who were thriving on the works conditioned official attitudes :

At present (the task work system) is one entire system

worse', Los Angeles Times, November 3 1985.

of abuse ; thus in 'breaking of stones' the stones are frequently measured several times .. The consequence of this is that men are sometimes receiving L1 4s. per week; I say receiving for it is quite impossible that they could earn that amount by such kind of labour. Mr. Stackpole .. who is in the habit of employing fifty men at this time of year is tilling his land as best he can with girls; one family here obtained L4 10s. in the week, and it is most difficult to prevent such (I.U.P. vol. 7, p. 576, Captain Fishbourne to Trevelyan, March 6 1847).

Of course, had the rates indicated here been typical, there would have been no famine. In the same vein is Nassau Senior's use in the Edinburgh Review of "somewhat detailed statistics of the electoral division(s) of Belmullet, ... Binghamstown, and Kilrush". According to Senior, so corrupted by relief had the local population become that in 1848 there were only "2,375 acres producing food consumable by man .. (in) a district containing a larger area than the county of Middlesex, and a larger population than the county of Rutland" (Senior, 1868 : 218-9). No hint here that the bulk of the land in these districts consisted of bogs and barren hills ! This is a good example of Senior's penchant for drawing apocalyptic (and mischievous) inferences from irrelevant case-studies.¹⁰

The truth about wages and work effort during the Famine was probably very different, but has not been studied. The typical farm worker in pre-famine Ireland was paid a potato wage not much above subsistence. Either he spent most of the work-year clearing the cost of renting a plot of manured potato-ground (or conacre), or else he was paid a money wage so low that the only subsistence he could afford was potatoes. In nutritional terms, however, his diet was a wholesome one (Clarkson and Crawford, 1988). The potato wage

¹⁰Arguing the dire consequences of over-generous poor relief from the example of Cholesbury, a hamlet of two families, is a famous example of "Senior's vice". See Brian Inglis, Poverty and the Industrial Revolution (London, 1971), pp. 380-1, 400-1, and S.G. and O. Checkland (eds.), The New Poor Law (Harmondsworth, 1974), pp. 141-4.

pay therefore have been an 'efficiency wage'.¹¹

The conacre system was very severely dented by the potato blight, as labourers sought to renegotiate (or simply reneged on) their contracts for labour in return for diseased potatoes. Farmers tended to let workers go. This is reflected in the precipitous drop in the potato acreage after 1846. But the deals that farmers made with those they retained have not been studied in the Irish context (see Ravallion, 1987, for discussion of the Bangladeshi famine of 1972). During the Famine, there is some presumption that farmers would pay their workers - the minority they retained - more money or more land for a substitute crop in order to keep them efficient.

At the height of the Famine, the public sector through the Board of Works was the main employer of labour : at the peak in March 1847 it employed over seven hundred thousand people. These were overwhelmingly adult males. However, the Board was not concerned with paying an efficiency wage, and failed to pay a subsistence wage either. Its records contain some telling material. One report tells of how in February 1847 a Kerry(?) gentleman-farmer who was prepared to offer workers sixteen pence (or 1s 4d) a day failed to lure any from the public works which were paying only ten pence, though "they were wretchedly off for provisions for themselves and their families". What could explain this "most incomprehensible extent of vicious propensity" ? A senior official explained to Trevelyan :

It is now beyond a spirit of idleness and unwillingness to work ; there is a physical incapability. An engineer in Kerry reports, that with the wretched objects who come to the works, he is ashamed as an engineer of the smallness of the task he gives them, and as a man, viewing the condition of the labourers, of the largeness of the task. .. I have not a doubt that the poor wretches are incapable of doing the work for the 1s 4d, although by appearing and remaining through the day, they can gain their 10d.

¹¹Yet though Irish wages were low - Irish farm labourers were paid less than half their British counterparts - this does not necessarily mean that Irish labour before the Famine was a bargain (Mokyr, 1988).

This physical inability to work hard had a drastic implication for the system of task-work devised by the Board of Works : it meant that the most needy were least likely to benefit. Officials realized this, but clearly were unhappy with the implication that it made more sense to pay the weak for doing nothing than have them wielding shovels and axes on the roadside :

We are not now paying for labour, but paying money to enable people to feed themselves. The prostration of strength in many incapacitates them from earning a fair day's pay, and the consequence is that they are only entitled to a small sum, or else they are paid subsistence without a return for it. The task-work system, or the one nominally so styled, must soon be exploded.¹²

Some stressed the abuse and the potentially high wages obtainable on the task-work system. Abuse there must have been : but that was not the main point. The Board's accounts reveal that in late 1846 and early 1847 the it paid its workers on average twelve to thirteen pence per day. Though this exceeded the pre-famine norm for unskilled rural workers, by now it was a starvation wage. Mere subsistence for a family of four or five during the winter of 1846-47 cost at least two or three shillings a day, before making any allowance for clothes or lodging :

¹²Burgoyne to Trevelyan, 23 February 1847, IUP VIII 537; Jones to Trevelyan, 27 February 1847, vik, 7, 192. Finally, from Sligo in the north-west :

There is a population of 30,000; of these 24,000 are destitute; and, in the whole locality, the proprietors together do not afford employment of any kind to more than 100 to 110 men; and this is the position of a great portion of the country. There is also a great disinclination to work on the land, or rather, perhaps, to leave the Public Works. Here, at Sligo last week, the principal proprietor applied to the Board of Works for a number of men, to whom he would have given 1s. per day. These have nearly all returned to their 8d wages on the public roads; and Captain Gilbert tells me he is obliged to take them. (Deputy Commissary-General Dombree to Trevelyan, 1 March 1847)

8d per diem is unquestionably the usual rate of wages of this part of the country in ordinary seasons, though many persons, and perhaps all of the better classes, are now paying at higher rates. (Roscommon, 3 Sept 1846, IUP, vol. 6, 74).

A County Roscommon inspecting officer (ibid. p. 81) wondered "what was a man to do on eight pence with a large family, and he the only one to work out of it ... a question I would earnestly call the attention of the Government to". It is only fair to say that 'the Government' never faced this problem: the average wage paid on the public works during 1846-7 was a starvation wage, and most families had no resources to supplement it.

The decision taken in March 1847 to replace public works by direct, in effect non-transferable, food grants, anticipates modern discussion of the choice between rationing by price or by quantity. In this instance consumer choice was not trusted, and the soup was thought to minimize cheating since it was not easy to transport and re-sell. The price was increased by making people queue. At its peak in the summer of 1847 the scheme was doling out over three million meals daily, yet another reminder of the capacity of the bureaucracy to reach the needy. The bureaucratic apparatus erected during the Famine was indeed a marvel. Soup kitchens and public works reached the remotest pockets. The point deserves emphasizing, because it means that poor transport or a weak bureaucracy thus cannot be blamed for the famine: given the political will, the relief framework erected could have been marshalled to distribute more aid.

Historians rate the soup scheme highly, but (like Treasury undersecretary Trevelyan at the time) they may have been too eager to do so. The drop in deaths during the soup-kitchen period had a strong seasonal component to it. Nor has the food content of the diet been properly analyzed, though dieticians claim that liquid food is bad for people already weakened by malnutrition.

A final point about Irish famine relief. Public policy attempted to ensure that private charity would not be crowded out. Private charity was not equal to the task of preventing famine, as

initial enthusiasm gave way to 'donor fatigue' or 'compassion fatigue'. Thus the Society of Friends, whose famine relief efforts in Ireland were highly publicized, conceded early on that "government alone could raise the funds, (and) carry out the measures necessary in many districts to save the lives of the people." The message failed to strike home, and in 1849 the Prime Minister urged the Quakers, unsuccessfully, to begin another Irish relief campaign.¹³ Experience with private charity in today's Third World mirrors the Irish example : despite continued hardship in Africa, most European relief agencies saw a fall-off in their incomes in 1986 after the bumper years of 1984-5.¹⁴ Private charity, it seems, may cope with a short crisis, but not a prolonged one. In Ireland, however, official anxiety to declare victory over the Famine in mid-1847 may have added to the problem, by giving the wrong signals to some remaining potential donors.

In terms of abstract theory, these moral hazard and 'crowding out' considerations were worth something, but contemporary bureaucrats were obsessed by them, without attempting to quantify them. They may have been correct about the direction of the responses but they seemed unconcerned about their sizes. Now it is the historian's task to ponder them anew.

4. FOOD ENTITLEMENTS :

Amartya Sen has drawn attention to recent famines where "people starved to death without there being a substantial rise in food prices" (Sen, 1981: 96, 111 ; but also Baulch, 1986). Price rises, of course, are the norm. In Bengal in the 1940s foodgrain prices reached four to five times the prefamine norm for some

¹³See Transactions of the Central Relief Committee of the Society of Friends During the Famine in Ireland in 1846 and 1847 (Dublin, 1852), pp. 68-9, 453-4.

¹⁴In Ireland private donations to the Catholic relief agency, Trocaire, rose from L2.4 million in 1983 and L2.8 million in 1984 to L10.8 million in 1985, but fell off then to L4.0 million in 1986 and to L3.4 million in 1987. I am grateful to Mary Sutton of Trocaire for this information.

months ; in Bangladesh in 1974 they doubled (Sen, 1981: 54-5, 149). In Ireland the prices of all potato varieties rose fourfold between 1845 and 1847, though the price of grain only doubled. In Finland the price of rye and barley rose by less than one-third (Kuakiainen, 238-40). Now such rises bespeak a supply-side shock. Yet several scholars have raised the relevance of Sen's 'exchange entitlements' hypothesis (Sen, 1981) to the Great Irish Famine (Solar, 1988; O Grada, 1988).¹⁵ This approach to famine analysis argues that past concentration on the most plausible reason for famines - food supply - overlooks the evidence from many case-studies elsewhere of mass starvation in the midst of plenty. Thus according to Sen, in Bengal in the 1940s there was enough food in the strict arithmetical sense for everyone, yet three million died. His less detailed studies of recent famines in Ethiopia and the Sahel argue in the same direction, and others have pointed to more examples. The argument has caused controversy : Sen replies that his gripe with what he terms the Food Availability Doctrine (or FAD) is not that food shortages can cause famines, but that they are far from being the only cause. But given the crude facts of the Irish case - most of the normal potato crop of fifteen million tons wrecked for several years in succession - the prima facie case for the FAD criticized by Sen is strong. Yet Sen's point receives support in the following sense : though the potato crop was way down, Ireland was normally produced a food surplus, and there was enough food produced in Ireland in each of the famine years to feed everybody. Instead of exporting food Ireland imported on an unprecedented scale after 1846.

Peter Solar's calculations of food availability before and during the Famine seem to support Sen. His Table 3 (reproduced below) suggests that the food shortfall was undramatic. Indeed had horses remained unfed during the famine period, there would have been more food to hand in 1846-51. The numbers show the danger of

¹⁵Indeed Barbara Solow has taken Mokyr to task for not dealing with it. See her review of Why Ireland Starved in Journal of Economic History, XLIV (1984), 839-40.

dealing with the period 1846-51 as a block, something mentioned by Solar himself. They may also mean that Solar's pre-famine totals are too low relative to the Famine period.

Table 2 : Irish Food Supplies, 1840-5 and 1846-50
(in 1000 m. kcal/day)

	1840-5	1846-50
Irish Production(less seed and horses)	32.1	15.7
Less Exports, non-food uses	-11.8	-3.1
Net domestic supplies	20.3	12.6
Plus Imports	+0.2	+5.5
Total Consumption	20.5	18.1

Source : Solar (1988)

A problem with this kind of political arithmetic is that it ignores the dynamic consequences of redistribution : but redistribution in one year may induce farmers to reduce output in the next. However, the strongest argument in favour of Sen's approach is that the unit of analysis matters: treating Ireland as a fully-fledged part of the United Kingdom supports the thesis that entitlements were more important than FAD. This recalls the old nationalist chesnut that the the threat of famine in Devon or Yorkshire in the 1840s would have been handled differently from Westminster.

In another sense, the Irish Famine differed from the famines described by Sen. Implicit in Sen's scenario is a zero-sum game. Since resource supplies are not affected much, what those affected lose, others gain. But few can have gained in Ireland from the Famine. The most obvious losers were the poor who perished and the landlords who were bankrupted. But few landlords escaped unscathed. More complex is the farmers' case. Most farmers relied on some hired labour, and what they gained in terms of cheaper land was almost certainly outweighed by what they lost in cheap labour. Only

heavily land-intensive farmers - dubbed graziers in Ireland - remained. Most ancillary trades were hurt too. The potato blight meant that, unlike other famines, the Irish Famine left a long-lasting mark on the landscape. A salutary feature of Sen's approach is that it focuses on class and distributional considerations too often ignored in Irish historiography. One suspects that had the poor been given more generous allowances on the public works, markets would have worked well enough to induce an inflow of the necessary food.

5. CRIME DURING THE FAMINE :

One traditional explanation for mass mortality in Ireland is that the people did not resist enough. Radical nationalist Michael Davitt accused them of this, as if like in Flanders "la population, croyante et sobre, se montra le plus souvent resignee" (Jacquemyns, 1928 : 407, 442). The crime statistics show that though they may not have resisted enough, they did resist. The resistance was for the most part spontaneous and unorganized, by individuals or small groups against other individuals, such as labourers against farmers and traders. The number of crimes outside Dublin rose from eight thousand in 1845 to over twenty thousand in 1847. Data on committals show a similar rise, and the details show that the upsurge was due more to desperation than pathological criminality. Contemporary police and prison records convey the nature of the typical crime during 1847-9 better than printed statistics. Petty theft of items such as sheep, pigs, potatoes, turnips, flour, bread, cloaks dominate. The same sources show that many of those arrested died before being brought to trial or while serving their terms. Among the hundreds charged and committed for theft before the Cork spring assizes of 1847 were five members of the Keeffe family. Two of them died before their six weeks terms were up. Others who died included forty-eight year old Patrick Sexton, convicted of turf-stealing ; and fifty-year old John Guinee (sic), convicted for stealing and killing a sheep. Denis Lane was found dead in his cell after being brought in for "forcibly taking meal

from carmen".¹⁶

Thieving and robbery without violence surged after 1845, but the numbers of those charged with serious violent crimes (e.g. murder and rape) changed by much less (see Table 3). The higher share of illiterates and married people among Famine criminals and the higher average age of those committed, makes the point.¹⁷ The law dealt harshly with the guilty.

In Flanders and in the Netherlands too, crime increased during the the 1840s, if to a lesser extent. There too resistance was largely poorly planned, and harshly dealt with (Bergman, 1967 : 404-13).

Table 3 : Crimes Reported During the Famine

(1844 = 100)

Year	1845	1846	1847	1848	1849	1850	1851
All Crime	128	196	332	223	236	168	145
Burglary	97	269	561	279	134	73	141
Robbery	124	257	559	588	460	409	319
Rape	89	92	31	52	34	65	43
Homicide	95	116	145	117	139	95	108
Cattle- and Sheep-Stealing	79	368	1223	821	993	585	448

Source : State Papers Office, Dublin, Return of Outrages.
The data exclude the Dublin Metropolitan Area.

¹⁶National Archives (Dublin), Prison Records, V16-2-18 and V16-1-32.

¹⁷The average age of 593 males sentenced to be transported in Dublin in 1843-4 was 26.3 years, and of 572 sentenced in 1847-9 26.8 years. Thirty-four percent of the former were ever-married, thirty-seven percent of the latter. The results are based on National Archives, Prison Records (Dublin Kilmainham Male Convicts), V16-6-19.

6. THE REGIONAL DIMENSION ONCE AGAIN :

We refer to the Irish, Finnish, Bengali famines, but in all cases the famines had a very marked regional dimension (Sen, 1981: 103-6; Mokyr, 1981; O Grada, 1988 : 86-7; Lefgren, 1973). In Finland, where the data are good, there was a strong correlation across regions between the harvest shortfall and excess mortality ; inland regions were particularly hurt (Kaukiainen, 1986 : 245-6). As we have seen, the incidence of the Famine was also highly uneven regionally, though no county in Ireland was spared (Mokyr, 1981; O Grada, 1988, ch. 3).

The regional variation in Irish famine mortality cries out for analysis. So far only Joel Mokyr has used this variation to discover "to what extent the impact of the famine was related to pre-famine poverty, to the degree of dependence on potatoes, to occupational structure, and so on" (Mokyr, 1980a: 238). Critics of the ploy in Why Ireland Starved of using the country's thirty-two counties as also time-series observations can hardly object to the use of cross-section analysis in attempting to pinpoint factors associated with high mortality during the Famine. But Mokyr's econometric analysis has thrown up some surprises. Most baffling of all is that his own revised estimates of potato acreage per head on the eve of the Famine (or, alternatively, the percentage of all agricultural land under potatoes) "fail to show any significance in any specification" (Mokyr, 1980a: 268). Mokyr surmises that this puzzling outcome may be due to how extensive dependence on the potato was all over Ireland (1980a: 268). Yet in parts of Ulster at least, it is widely believed that lower dependence on the potato meant lower excess mortality. Perhaps part of the problem is that potato production is a poor proxy for potato consumption, since it ignores the extent to which potatoes were traded across counties. Counties such as Down and Louth exported considerable quantities of potatoes even before the Famine and, probably more important, Dublin was a substantial net importer of potatoes. Kaukiainen's analysis of regional mortality in Finland is instructive here :

relative harvest failure explains more of the excess mortality than harvest per capita (Kaukiainen, 1986: 245-6). That point must not be pressed too far, because of all agricultural commodities in Ireland in the 1840s potatoes were perhaps the most expensive to transport (See Hoffman and Mokyr, 1983). Still, for this reason and others,¹⁸ there is a case for either including a Dublin dummy variable, or omitting County Dublin from the analysis altogether.

Another variable without predictive punch is rent per head. Mokyr gives two reasons for including it. First, following Cousens and Eric Almquist, he suggests that it reflects population pressure. This is so, however, only if the variation in rents reflects demand for land; the variation might equally reflect land quality and accessibility.¹⁹ Second, since Irish landlords bore much of the brunt of relief during the Famine, he proposes rent as a proxy for taxable capacity during the Famine. However, a glance at Mokyr's data suggests a problem here; they put rent per head on the eve of the Famine at L3.5 in Meath and L2.3 in Carlow, both eastern counties, but at only L1.1 in Clare and L0.9 in Mayo. Other likely explanatory variables produce surprises too. The degree of urbanization, for example, turns out to be positively associated with excess mortality, though most students of nineteenth-century Ireland would associate urbanization with higher living standards and reduced dependence on the potato, both as a source of income and the staple food. Rural industry is quite sensitive to the county estimates of mortality chosen. Farm size does not work well either (Mokyr, 1980a: 268). Income per head, however, has the correct sign, as do other variables such as literacy, livestock per head, and housing quality, which might be expected to be close

¹⁸Probably a substantial proportion of those who died in Dublin had moved there during the crisis. In institutional terms, Dublin was better served than rural areas, and institutional deaths there are likely to inflate Dublin's share of excess mortality.

¹⁹And Liam Kennedy and Patrick McGregor argue, in an unpublished paper, that rent per acre, adjusted for land quality, varied little across counties on the eve of the Famine.

proxies for income per head.

Faith in Mokyr's approach, tinged with some bemusement at these results, prompts another look.²⁰ Reverting to our earlier discussion of mortality, perhaps one reason for some of these puzzling results is poor county estimates of excess mortality? In the following econometric exercise, instead of Mokyr's county estimates of famine mortality, I try two that draw on Cousens' work (1960, 67): first, one based on the evidence of the 1851 census commissioners (Revised Excess Mortality 1, or REM1), and second, one based on deaths in institutions (REM2). Both use Cousens' data (Cousens, 1960) divided by 1841 population. Now Mokyr effectively demolishes the 1851 census as a source for aggregate mortality. Still, I believe that as a measure of county shares the results are less easily dismissed. True, Cousens makes no allowance for variation in normal mortality rates across counties, but such variation was too small to affect the outcome much.²¹ The main advantage of Cousens' numbers is that do not rely on (defective) emigration data. At the very least, REM1 and REM2 seem worth trying, though results based on them must be regarded as tentative. I will also use Mokyr's revised income per head data (Mokyr, 1985: 10) instead of those used in Mokyr (1980a), and add a few more explanatory variables as candidates. Percentage population growth on the eve of the Famine (or 1821-41) and the land-labour ratio may be interpreted as population pressure variables: the latter is highlighted in Why Ireland Starved. A related potential influence on mortality variation is the trend on living standards on the eve of the Famine. A variable created by Mokyr, a Subjective Impoverishment Index (SII) derived from data assembled by the Poor Inquiry assistant commissioners, is worth trying in this context (Mokyr, 1985: 12). (Note, however, that this variable is scaled

²⁰My thanks to Joel Mokyr for giving me a copy of his data and showing me how to use it the easy way.

²¹The coefficient of variation across counties is only 0.09 (mean = 22.5, standard deviation = 2.0).

inversely.) Finally, I try a potato consumption variable that makes some allowance for potatoes fed to pigs : where the coefficient on the potato consumption variable in Table 3 is asterisked, one-tenth of an acre per pig enumerated in 1841 has been deducted from Mokyr's county totals.

As Mokyr (1980a: 255) notes, weighted least squares should be used to avoid a heteroskedastic error structure. All observations here have been weighted by county population totals in 1841. Unless otherwise noted, all variables are as defined in Mokyr's 'Deadly Fungus' study.

The results are presented in Table 4. Regressions 1-4 show that the first of revised Cousens-based estimates of county mortality, REM1, responds better to Mokyr's independent variables than his own mortality estimates. Since REM1 quickly emerged as a more consistent variable than REM2, the results presented rely mainly on REM1. Overall, they 'make more sense' than those in Mokyr (1980a). In particular, the degree of potato dependence on the eve of the Famine (POTPC) now makes a difference. In general its coefficient is both statistically significant and sizeable. Besides, as Regressions 7 and 14 show, netting out for pig consumption improves the goodness of fit. Regressions 5-8 show that including a dummy variable for Dublin (Dublin = 1, else = 0) solves another puzzle : urbanization now no longer counts. Reassuringly, the revised income estimates used in Mokyr (1985) work fine throughout. As in Mokyr (1980a), domestic industry (defined here as Z2) shielded people from death during the Famine. Domestic industry played a different role in contemporary Flanders ; there a crisis in the linen industry intensified the problems caused by the failure of the potato crop (Jacquemyms, 1928).

There are still some surprises. For example, the positive sign on SII's coefficient (Equations 12-14) suggests that counties suffering a greater decline in living standards before the Famine suffered less during the Famine itself. The apparent paradox here is resolved by noting that the variation in SII is largely a reflection of the decline of domestic industry hitting much of

Ireland after 1815 or so (Mokyr and O Grada, 1988). More disappointing is the failure of income proxies, the literacy rate and housing quality, to perform as effectively as the income variable (Eqs. 16-17). Not only do they explain less of the mortality variation, they reduce considerably the potato acreage coefficient. The land-labour ratio, here (Eqs. 10-11, 13-4) defined crudely as total area divided by total population, explains hardly any of the excess mortality either. A more 'careful' definition in terms of area adjusted for quality by multiplying by rent per acre, worked no better. Finally, the results (Eqs. 19, 21-23) suggest that faster population growth before the Famine was not associated with proportionately greater excess mortality during the crisis.

Table 5 gives some idea of the impact of the most important variables. The numbers are elasticities of REM1 with respect to potato dependence (defined as potato acreage per capita), income per capita (as defined in Mokyr, 1985), and Z2 (defined as the proportion of total rural male and female workers employed in textile production in 1841). The most striking elasticities are those with respect to income ; they imply that, holding other measurable factors constant, a one percent difference in income between counties produced a difference of two percent or more in excess mortality. The other elasticities may be interpreted analogously.

The tentative nature of the results in Tables 3 and 4 need not be laboured. Still, it is clear that an estimate of county mortality based on responses to the 1851 census performs 'better' on several counts than one that relies on estimates of county emigration. But it also implies a story subtler than the usual 'vulgar' malthusian version. In particular, neither the land-labour ratio nor previous population growth explain much of the mortality variation across counties during the Famine.

Purists may well object that the unit of analysis used in the above regression analysis, the county, is too large. Counties, after all, are administrative units, and their boundaries were not determined by economics or the intensity of potato cultivation. It

ould be nice to be able to run regressions on baronial data, or to assign afresh convenient county units. But few of the comparative microstudies implied by such objections have been carried out so far.²² Local, largely non-quantitative, studies of the Famine are plentiful, but they have been carried out in vacuo. Aimed largely at local non-specialist audiences, they lack comparative perspective and analytical sophistication. County-level comparisons, it is true, gloss over potentially telling local variations. Thus even though western areas suffered most, folk memory (sometimes complemented by censal data) points to pockets of parishes, districts, even townlands) in the west where mortality was light. One striking case in point is the remote Aran Islands, another example is the Poor Law Union (an administrative district) of Killarney (O Grada, 1988: 118-22 ; Foley, 1987). Aran's relatively easy passage during the Famine is somewhat baffling, though plentiful fish, an isolation that spared it from typhoid fever, and an escape from the worst ravages of potato blight may all be part of the answer. Public charity counted for little in Aran, but in Foley's useful study of Killarney Poor Law Union, the local poor law guardians and their officials have been given most of the credit for the relatively low mortality there. They may well deserve the accolade, but only comparative work can tell us how typical they were, and how much their industry mattered in saving lives. James Grant's study of relief in Ulster²³ uses the contrasting experiences of badly-hit Cavan and Donegal, which escaped lightly, to argue for "the ability of competent leadership to counteract a serious famine crisis". Still, as Grant points out, focusing on local relief as the deus ex machina begs the question,

²²Patrick Hickey's 'A Study of Four Peninsular Parishes in Cork, 1796-1855' (M.A. dissertation, National University of Ireland, 1980) is a rare example.

²³James Grant, 'The Great Famine in the Province of Ulster-The Mechanism of Relief' (unpublished Ph.D. thesis, Queen's University Belfast, 1986), abstract in Irish Economic and Social History, XIV (1987), 85-6.

Table 4 : Explaining County Mortality Rates :
Regression Results (t-statistics in parentheses)

	(1)	(2)	(3)	(4)	
Dependent Variable	REM1	REM2	EDF7	EDF8	
Constant	0.124 (5.80)	0.021 (1.26)	0.078 (5.50)	0.078 (5.39)	
Income Per Head	-0.010 (-4.83)	-0.001 (-0.60)	-0.007 (-5.20)	-0.007 (-5.07)	
Potato Acr. Per Head	0.069 (1.37)	0.060 (1.55)	0.009 (0.27)	0.010 (0.29)	
R ²	.479/.433	.172/.115	.444/.406	.440/.40	
	(5)	(6)	(7)	(8)	(9)
Dependent Variable	REM1	REM1	REM1	REM1	EDF7
Constant	0.131 (6.13)	0.121 (5.97)	0.174 (7.18)	0.124 (6.49)	0.070 (4.85)
Income Per Head	-0.012 (-4.96)	-0.012 (-5.43)	-0.015 (-7.59)	-0.013 (-6.11)	-0.006 (-3.89)
Potatoes Per Head	0.087 (1.73)	0.160 (2.86)	0.114(*) (2.09)	0.152 (2.84)	0.035 (0.86)
Urban	0.052 (1.53)	-0.026 (-0.57)			-0.062 (-1.89)
Dublin Dummy		0.089 (2.37)	0.63 (2.83)	0.073 (2.87)	0.042 (1.57)
R ²	.520/.468	.602/.544	.705/.661	.598/.555	.510/.438

Table 4, continued : Explaining County Mortality Rates :

	(10)	(11)	(12)	(13)	(14)
Dependent Variable	REM1	EDF7	REM1	REM1	REM1
Constant	0.183 (8.69)	0.097 (4.90)	0.190 (7.83)	0.193 (9.23)	0.192 (9.29)
Income Per Head	-0.18 (-9.39)	-0.009 (-5.44)	-0.017 (-8.12)	-0.019 (-9.93)	-0.018 (-10.00)
Potatoes Per Head	0.076 (1.74)	-0.011 (-0.28)	0.101 (2.07)	0.084 (1.98)	0.098(*) (2.15)
Dublin Dummy	0.069 (3.52)	0.007 (0.41)	0.072 (3.21)	0.077 (3.98)	0.077 (4.10)
Land-Labour Ratio (*)	0.16x10 ⁷ (3.34)	0.10x10 ⁷ (2.31)		0.15x10 ⁷ (3.16)	0.1410 ⁷ (3.04)
Z2	-0.092 (-3.28)	-0.023 (-0.88)	-0.075 (-2.31)	-0.076 (-2.70)	-0.078 (-2.85)
SII			0.013 (2.04)	0.013 (1.84)	0.013 (1.90)
R ²	.787/.746	.554/.468	.737/.686	.812/.767	.816/.772

Table 4, continued : Explaining County Mortality Rates :

	(15)	(16)	(17)	(18)
Dependent Variable	REM	REM	REM	REM
Constant	0.184 (7.52)	-0.009 (-0.41)	0.110 (3.69)	0.174 (7.18)
Income Per Head	-0.022 (-6.92)			-0.021 (-5.02)
Literacy Rate			-0.207 (-3.81)	
Percentage Small Farms	-0.008 (-0.25)			
Potato Acreage Per capita	0.113 (2.31)	0.046 (0.74)	0.038 (0.59)	0.147 (2.34)
Rural Industry	-0.047 (-1.32)	-0.019 (-0.53)	-0.023 (-0.54)	-0.061 (-1.51)
Dublin dummy	0.105 (3.90)	0.040 (1.47)	0.049 (1.49)	0.078 (3.07)
Livestock Per Acre (L)	0.013 (2.52)			
Housing Quality		0.172 (5.42)		
Rent Per Head				0.014 (1.43)
R ²	.761/.703	.551/.485	.391/.300	.717/.663

Table 4, continued : Explaining County Mortality Rates :

	(19)	(20)	(21)	(22)	(23)
Dependent Variable	REM	REM	REM	REM	REM
Constant	0.173 (6.92)	0.177 (7.16)	0.190 (8.80)	0.187 (7.45)	0.201 (8.51)
Income Per Head	-0.015 (-6.92)	-0.015 (-7.16)	-0.018 (-8.80)	-0.017 (-7.45)	-0.20 (-8.51)
Potato Acreage Per capita	0.102 (1.96)	0.094 (1.82)	0.089 (2.05)	0.106 (2.12)	0.099 (2.18)
Rural Industry	-0.089 (-2.66)	-0.096 (-2.93)	-0.73 (-2.54)	-0.73 (-2.18)	-0.070 (-2.28)
Dublin dummy	0.063 (2.72)	0.061 (2.67)	0.077 (3.95)	0.072 (3.17)	0.083 (3.91)
SII			0.012 (1.63)	0.015 (1.84)	0.015 (1.96)
Land-Labour Ratio			0.15x10 ⁷ (3.14)		0.17x10 ⁷ (2.44)
Pop Change 1821-1841	-0.008 (-0.97)		-0.0005 (-0.74)	-0.0005 (-0.61)	-0.0004 (-0.56)
R ²	.706/.649	.695/.650	.816/.763	.741/.678	.792/.732

since the efficacy of relief depended on local funds, and those funds were inversely correlated with need.

TABLE 5 : SOME EXCESS MORTALITY ELASTICITIES

Elasticity /	Eq.(12)	Eq.(14)	Eq.(15)	Eq.(7)
Income	-2.6	-2.5	-2.9	-2.0
Potatoes	0.4	0.4	0.6	0.5
Z2	-0.2	-0.2	-0.2	-

6. AFTERMATH :

The Irish Famine surpassed the Finnish in its intensity, in its duration, and in its long-term impact. In Finland, about one hundred thousand out of 1.6 million died, in Ireland one million out of 8.5 million. In Finland, the crisis was limited to one bad year, in Ireland excess mortality was substantial for four years. In Finland, the cereal crops failed badly once ; in Ireland, the main root crop, the potato, failed disastrously several times, and took half a century to regain its pre-famine vigour. In the historiography, politics and relief policy seem to loom much larger in Ireland. Politicians and bureaucrats have been blamed, and rightly so, for acting in a doctrinaire and ungenerous fashion. In Finland, this aspect is not discussed at all in the few accounts I have come across. In other ways, there are obvious parallels : the regional impact, nosology, deaths by age and sex, the functioning of markets and communications networks.

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