

Harvest Fluctuations in Pre-Famine Ireland: Evidence from Belfast and Waterford Newspapers*

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Abstract

The monthly agricultural reports published in the *Waterford Mirror* (1819-42) and Belfast's *Northern Whig* (1824-42) are described, then used to derive qualitative indicators of harvest outcomes in pre-famine Ireland. Contemporary descriptions of the wheat, oats, barley, potatoes, flax, and hay harvests were scaled in order to analyze their covariations. The wheat, potato and hay crops tended to show similar fluctuations in the two regions; outcomes of the barley and oats harvests were not systematically related. Among crops within the same region covariation was much less pronounced than across regions, except for the inverse relationship between the wheat and hay crops in the south-east and for a tendency for the oats and potato crops to move together in the north-east and inversely in the south-east. The results suggest that mixed farming should have helped to stabilize farm incomes; that the potato may have been better suited to the south-east than the north-east; and that it may have been less unreliable than has often been argued.

IRISH provincial newspapers are a valuable source of information about the pre-famine rural economy. Though most of their columns were filled with articles reprinted from London and Dublin papers, local affairs came to occupy more space in the 1820s and 1830s. Accounts of Irish markets and fairs became more numerous and more detailed, as did reports on weather and harvest conditions in Ireland and England. There were more articles on agricultural technique, some of them locally written, and on the activities of local agricultural societies. Nonetheless, systematic reporting of local agricultural affairs was rare. Two notable exceptions were the series of monthly agricultural reports written for the *Waterford Mirror* and for Belfast's *Northern Whig*.¹ These sources

deserve wider use by Irish agricultural historians. This article provides a general introduction to them, though the principal concern will be to see what they can say about harvest fluctuations before the famine of the late 1840s. Qualitative indicators of harvest outcomes in the north-east and south-east of Ireland will be developed and the variations across regions and across crops analyzed.

Our knowledge of harvest fluctuations before the famine is at best sketchy and indirect. The Irish agricultural statistics begin only in 1847 and thus refer to an agriculture much transformed by the potato blight and its economic and social effects. For want of direct quantitative evidence on yields, agricultural fluctuations in pre-famine Ireland have generally been inferred from movements in prices or exports.² Prices are likely to be a particularly unreliable indicator of harvest conditions in early nineteenth-century Ireland. Free trade between Britain and Ireland

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¹ There were other local agricultural reports published at one time or another in the early nineteenth century, but few were sustained as long as these two. One worth mentioning is that for County Dublin published by the *Dublin Morning Post* in the 1820s.

² R D Crotty, *Irish Agricultural Production*, Cork, 1966, ch 2; L M Cullen, *An Economic History of Ireland since 1660*, 1972, chs 3, 5.

meant that prices were essentially determined in the larger British economy, that is, by British consumption and production, as well as British commercial policy. Irish exports of agricultural products are, perhaps, the more promising indicator, though they reflect changes not only in yields, but in the sown acreage and in Irish consumption. Serial evidence on any of these elements is virtually nonexistent. Qualitative indicators of crop yields, such as those developed here, might thus contribute to a better appreciation of the fluctuations in trade, as well as being of interest in their own right.

The yield of the potato crop was of central importance to Irish farmers and labourers and its variability has figured prominently in historians' judgements on the pre-famine economy. It has been widely suggested that the potato was becoming an increasingly unreliable crop and that it was, in any case, more subject to failure than were cereals.³ There is little Irish evidence for the latter proposition; Mokyr has used French yield statistics to suggest its plausibility.⁴ The former contention, that the potato was becoming more subject to failure after 1815, thus bringing an end to a long 'gap in famines', draws heavily on a compilation of information on previous harvests made for the 1851 Census by Sir William Wilde.⁵ But, as Connell observed: 'the usefulness of Wilde's work is diminished both by his reticence on the sources from which he derived his information and by his omission, in many cases, of any indication of the location of a particular failure'.⁶ Wilde

made extensive use of harvest reports similar to those published in the *Waterford Mirror* and the *Northern Whig*. A more systematic analysis of the information in these sources may overcome some of the deficiencies in Wilde's work.

I

The *Waterford Mirror* first printed a 'Monthly Agricultural Report for the Counties of Waterford, Kilkenny, Tipperary and Wexford' for September 1819.⁷ These reports continued to appear each month, with few lapses, until the *Mirror* folded in September 1843. They varied in length, but generally occupied 5-10 column-inches. They were unsigned and few clues exist concerning the identity of their author (or authors). Whoever wrote them was clearly familiar with local farming practices and with the literature of agricultural improvement, as the reports indicated, explicitly or by implication, what farmers had done during the previous month and often prescribed what they ought to be doing next.

Much the same may be said of the 'Agricultural Reports' that appeared in the *Northern Whig* from May 1827 until September 1842.⁸ Somewhat longer and more descriptive than those in the *Mirror*, these articles were datelined Belfast and probably referred to the town's immediate agricultural hinterland in counties Antrim, Armagh and Down. Agricultural markets and prices received relatively more space and farming techniques less than in the *Waterford* reports. The author, who

³ R N Salaman, *The History and Social Influence of the Potato*, Cambridge, 1949, pp 603-8; R D Crotty, *op cit*, p 39; K H Connell, *The Population of Ireland*, Oxford, 1950, pp 144-6; J Mokyr, 'Uncertainty and Prefamine Irish Agriculture', in T M Devine and D Dickson (eds), *Ireland and Scotland 1600-1850*, Edinburgh, 1983, pp 92-4.

⁴ J Mokyr, *ibid*.

⁵ BPP 1856, XXIX, pp 423-99, 623-8, *Census of Ireland for the Year 1851, Report on the Tables of Deaths*.

⁶ K H Connell, *op cit*, p 146.

⁷ *Waterford Mirror*, 2 October 1819. The agricultural reports generally appear in the last week of the month to which they refer or in the first week of the following month. In the remainder of this article footnote references will be made only in cases where the relevant report is not clear from the context. The *Waterford Public Library* has a set of the *Mirror* (hereafter *WM*) which is complete except for a few gaps, most of which may be filled by reference to the British Library's holdings.

⁸ The Linenhall Library in Belfast holds a complete set of the *Northern Whig* (hereafter *NW*) for this period. The *NW* published scattered reports of harvests in the north-east from its founding in late 1823. Evidence from these has also been used in this paper.

signed himself 'R', often displayed sympathies for farmers and manufacturers, as against landed proprietors, a stance consistent with that of the *Northern Whig*.

Both series of reports provide a detailed picture of the agricultural year in pre-famine Ireland. The sowing and harvesting of the various crops were duly noted, as were a variety of other agricultural and non-agricultural activities: paring and burning pastures; preparing lime for application to the land; and cutting and stacking peat. The timing and success of these farm operations depended on the weather, so most reports began with a summary of the past month's weather. These impressionistic comments would be of relatively little interest to the scientific historian of climate, but they occasionally reveal features of Irish agricultural practice. Wet weather at the beginning of June 1823 retarded the burning of ground that had already been hoed in preparation for potato planting. The cool summer of 1823 was said, in February 1824, to have led to a large proportion of 'strippers', that is, cows which had not conceived.

Other aspects of the Irish rural economy were revealed incidentally in the monthly reports. The state of the linen trade may be followed in discussions of the flax crop. The period from 1828 to 1831 seems to have been particularly dismal. In July 1829 it was noted that 'the depreciation of the article [flax], however, occasioned by the low state of the linen trade, renders this at best but a doubtful crop . . .' Reduced sowing of flax was reported in 1830 and 1831. By 1834 and 1835, however, cultivation of this crop was increasing, only to fall off again in 1837 and 1838.⁹

While there is much of value in the monthly agricultural reports, it must be admitted that they are often repetitive or tedious. It may be suggested, however, that their greatest value lies precisely in the

continuity and the very routineness of the reporting. They show how the Irish rural economy operated year in, year out. It is this feature that makes possible a sustained analysis of harvest fluctuations.

II

The results of the year's harvest were generally summarized in the report for September. This was, of course, premature for the potato crop, concerning which a final assessment was sometimes not made until January. Sometimes, too, the reports for October or November revised earlier assessments of the cereal crops as more grain came onto the market. In 1835, for example, the *Northern Whig* reported in September that the produce of wheat was 'tolerably good', but in November noted that the grain crops had yielded less than previously thought. The harvest summaries occasionally overlooked the hay and flax crops, which were harvested earlier than the cereals and had been dealt with in the June or July report.

The harvest evaluations took into account not only yield, but often the acreage sown and the likely demand for the crop. From 1834 to 1837, for example, the reports for both the south-east and north-east of Ireland indicate a major shift from wheat to oats and barley.¹⁰ In general, it is fairly easy to distinguish comments referring to the yield from those concerning other factors. It is more difficult to deal with comments which involve both the quantity and the quality of the crop. In 1827 the wheat crop in the south-east was described as of 'tolerable plenty', but as inferior in quality. Was this, on balance, an average or a deficient crop? In the analysis which follows the emphasis has been placed on the quantity dimension because comments on quality were less frequent

⁹ NW, 1 May 1830, 2 June 1831, 30 June 1834, 2 April 1835, 1 August 1837, 1 July 1838.

¹⁰ NW, 2 July 1835, 1 September 1836; WM, 29 September 1834, 1 October 1836, 28 September 1837.

and are more difficult to summarize, but the latter have been used to modify the quantitative assessment. The 1827 wheat crop was thus classified as below average, but not deficient.

The reports put a number on the crop yield or on its deviation from an average result in only a handful of cases. The authors seem to have had an idea of the normal yield and often described results with reference to it – 'a good average crop', 'at best an average crop', 'short of the usual quantity'. In other cases the comparisons were implicit: particularly good crops were abundant, heavy, plentiful in produce, very good or excellent. Bad ones were very light, very defective or deficient. Occasionally the current harvest was explicitly compared to previous ones.

The consistency of the language used to describe harvests has led us to allocate them to five categories: very poor, poor, average, good, very good. Very good and very poor harvests were usually quite easy to classify, since they attracted more, or more vivid, comment. Other harvests have been classified as good (those described in the reports as good, tolerably abundant, good average), average (tolerably good, pretty fair, fair) and poor (middling, light, below average). The boundaries between these intermediate categories are somewhat arbitrary and ought not to be over-emphasized. As an alternative, these three categories might be collapsed into one to produce a three-way classification of harvest outcomes.

The results of applying this five-way classification to the harvest descriptions in the *Waterford Mirror* and the *Northern Whig* are shown in Tables 1 and 2. Each crop has been rated from 1 (very poor) to 5 (very good). For the south-east the series for wheat, oats, barley, potatoes and hay are complete from 1819 to 1842. For the north-east there are some gaps in the series, notably for potatoes and flax in the mid-1820s. Cases in which classification was

TABLE 1
Harvest results in south-eastern Ireland,
1819-42

	Wheat	Oats	Barley	Potatoes	Hay
1819	1	1	3	5	4
1820	5	3	5	5	2
	4	4	2*	1	2
	4	2	1	5	4
	2*	5	3	2*	4
	5	5	5	3	4
1825	5	2	3	3	2
	3	1	1	3	1
	2*	5	4	5	5
	1	1	3	5	5
	2	3	4	3*	2
1830	2	5	4	5	4
	5	2	4	5	3
	5	1	5	5	3
	4	4	4	1	5
	2*	1	4	5	5
1835	2*	5	5	5	5
	3	4	4	3	2
	2	5	3	5	4
	1	5	5	3	3
	1	1	3	5	3
1840	4	5	4	5	1
	2	3*	3	1	3
	5	4	4	5	2
Average	3.0	3.2	3.6	3.9	3.2

Key: (1) very poor, (2) poor, (3) average, (4) good, (5) very good, (*) difficult to classify

Source: *Waterford Mirror*

particularly difficult, because information was sparse or ambiguous, have been indicated by an asterisk.

At the foot of each column can be found the average score for the crop over the period. This is less an indicator of the general level of yields than of the reporter's optimism or pessimism about particular crops. The *Waterford Mirror*'s reporter seems to have been neither too sanguine nor too cheerless, except in the case of potatoes and, perhaps, barley. The high average for barley, which was not usually discussed in much detail, was due to the description of many crops simply as 'good', taken here to mean above average,

TABLE 2
Harvest results in north-eastern Ireland,
1824-42

	Wheat	Oats	Barley	Potatoes	Hay	Flax
1824	4	4	4	5	1	
1825	5	4	4		2	
	3	3			1	
	5	5	5	5	5	1
	3	1	3	5	4	5
	2	3	4	1	1	5
1830	3*	2	3	1	3	4
	4	4	3	5	1	4
	3	5	4*	4	4	4
	2	3	4	1	4	4
	3	4	4	4	3	4
1835	3	2	3	2	4	5
	3	2	2	1	1	3
	3*	5	5	1	5	2
	1	4	3	3	2	2
	1	5	4		3	2
1840	5	5	5	3*	1	3*
	2*	2		1	1	3
	4	1	5	3	1	5
Average	3.1	3.4	3.8	2.8	2.5	3.5

Key: (1) very poor, (2) poor, (3) average, (4) good, (5) very good, (*) difficult to classify.

Source: *Northern Whig*

though it may have meant only average. The very high average for potatoes arose because many crops were described as 'abundant' or 'excellent'. Fully fifteen of the twenty-four years were rated as very good and only three as very poor. It is possible that potatoes may have thrived in the south-east, but it seems more likely that concern for the subsistence of the poor may have led the *Mirror's* reporter to view some average crops in a particularly favourable light.

The results for the *Northern Whig* also show averages near three, except for barley, flax and hay. As was the case in the south-east, the barley crop was often described only as 'good', thus producing a high average. Flax harvests received much

greater attention, so the somewhat high average may not be a statistical artifact, but a reflection of either the observer's optimism or of particularly good harvests. The low average for hay seems to correspond to chronic difficulties with the crop, as the large number of very poor harvests indicates.

III

Affixing numbers to the various descriptions of harvest outcomes does not bring any additional credibility or precision to this source. It is just a convenient way of summarizing the information so that the covariation across crops and across regions may be investigated more systematically. The harvest reports do *not* permit us to compare the variability of one crop with that of another. That is, we cannot say that the potato crop was more likely than the wheat crop to fall short of its average yield by 10 per cent or 30 per cent or 50 per cent. But the harvest reports do permit us to inquire whether the wheat and potato crops were likely to fail or to prosper in the same year. Representing them as scores from 1 to 5 makes this easier than a long and tedious recitation of cases.

We shall compare only two series of harvest scores at a time: either the same crop in two regions or two different crops in the same region. The way in which we shall summarize their tendency to vary together is as follows: for each year we subtract the harvest score of one crop from that of the other, then square this difference. We then add up these squared differences for all the years, divide by the number of years, and take the square root of the result. This measure is analogous to the calculation of a covariance.

The most important feature of this summary statistic is that we have squared the difference in harvest scores (an alternative would have been to work with the absolute value of the difference). This means that

the more obvious divergences in harvest outcomes are given greater weight. For example, a case in which the potato crop was abundant in one region and a failure in the other is given much more weight than one in which one crop was average and the other only somewhat above or below average. The sources are likely to be less ambiguous about the former case than about the latter, so that the use of this summary statistic to detect differences in harvest fluctuations should not lead to conclusions which rely too heavily on the accuracy with which harvest descriptions have been scored.

The summary statistic must lie somewhere in the range from zero to four. If the outcomes for the two crops were in each year identical, then it would be zero. If in each year an abundant harvest for one crop was always matched by the failure of the other, then it would be four. These cases are obvious and extreme. In general, the summary statistic depends not only on whether there is a systematic relationship between the results for the two crops but also on the degree to which the outcomes for each of the crops vary from year to year. Thus it is necessary to arrive at a standard against which to judge the covariation in each case.

The standard to be used here is the value of the summary statistic that would be expected if there existed no systematic relationship between the harvest outcomes of the two crops. This value can be calculated analytically for each comparison and is the 'expected' covariation shown in Table 3. If the observed covariation is less than the expected, then the harvest outcomes of the two crops tend to be similar. If the observed covariation is greater than the expected, then good harvests of one crop tend to be matched by poor ones of the other.

These expected values are not sufficient to interpret the results in a sensible way. Even if there were, in fact, no systematic

TABLE 3
'Covariation' of Harvest Results

Number of Cases	Summary Statistics for Covariation					
	Observed	Expected	Bootstrap Mean	Standard Deviation	Distribution 90% Interval	
<i>Across Regions</i>						
Wheat	19	1.23	1.88	1.80	0.21	1.43–2.14
Oats	19	2.15	2.13	2.15	0.23	1.75–2.53
Barley	17	1.21	1.11	1.10	0.13	0.87–1.31
Potatoes	16	1.98	2.46	2.45	0.24	2.05–2.86
Hay	19	1.27	2.13	2.08	0.23	1.67–2.44
<i>Across Crops</i>						
South-east:						
Oats/ Wheat	24	2.17	2.19	2.16	0.22	1.79–2.51
Oats/ Potatoes	24	2.48	2.27	2.23	0.21	1.87–2.57
Oats/ Hay	24	1.97	2.05	2.04	0.22	1.70–2.39
Wheat/ Hay	24	2.31	1.96	1.98	0.17	1.68–2.27
North-east:						
Oats/ Wheat	19	1.67	1.80	1.85	0.18	1.54–2.11
Oats/ Potatoes	16	1.85	2.19	2.20	0.23	1.82–2.56
Oats/ Hay	19	1.96	2.18	2.08	0.20	1.76–2.37
Wheat/ Hay	19	2.03	1.97	1.99	0.20	1.65–2.29

Notes:

$$\text{Observed} = \sqrt{\frac{\sum_{i=1}^n (S_{1i} - S_{2i})^2}{n}}$$

where S_{1i} and S_{2i} are the harvest scores of crops 1 and 2 for year i from Tables 1 and 2 and n is the number of years shown in column (1) above.

$$\text{Expected} = \sqrt{\frac{\sum_{j=1}^n \sum_{i=1}^n (S_{1i} - S_{2j})^2}{n^2}}$$

where S_{1i} and S_{2j} are the harvest scores for crop 1 in year i and crop 2 in year j from Tables 1 and 2.

Bootstrap Distribution: one set of harvest scores was randomly reordered then the formula for the actual 'covariation' was applied. This was repeated 500 times for each relationship. The mean, standard deviation, and 90 per cent confidence interval for the resulting distribution are shown.

relationship between the results of two crops, it is still possible, though perhaps unlikely, that the results for any particular set of years would give that impression. What we need is some notion of how unlikely such a result might be. Or, to put it another way, how much credence ought we to give an observed covariation that deviates from its expected value by, say, 20 per cent?

One way to tackle this problem is by use of what statisticians call a 'bootstrap resampling procedure'.¹¹ All the information that we have about the variability of harvest outcomes for these crops is contained in our two sets of observations. We can investigate the possible variations in our summary statistic by holding the set of observations for one crop fixed and calculating the covariation for repeated, random reorderings of the second set. The resulting bootstrap distribution generally gives a reasonable idea of the variability of the summary statistic on the supposition that there is no systematic relation between the series.

Statistics for bootstrap distributions based in each case on 500 iterations are given in Table 3. It is reassuring that the means of the bootstrap distributions are almost always very close to the expected values. The '90 per cent intervals' show the range that contains 90 per cent of the simulated values: five per cent lie outside at each end of the distribution. We shall take this range as our criterion for belief that two series are systematically related. If the observed covariation lies outside this range, then we shall conclude that it is unlikely that we have been misled by a particular set of observations into thinking that a systematic relationship exists where in fact it does not.

What the results in Table 3 show is, first, that across regions harvest results tend to be similar. For wheat, hay and

potatoes the actual values of the summary statistics are well below their respective expected values, far enough so for the hypothesis that regional yields were unrelated to be rejected easily. For oats, however, it appears that harvests in the north and the south were not systematically related.¹² The oats crop may have been less vulnerable than the wheat crop to major variations in weather that affected both regions.¹³ Moreover, oats cultivation played rather different roles in the agricultural systems of the two regions. In the north-east it was the principal cereal crop. In the south-east, by contrast, higher-value wheat and barley were relatively more important. The oats crop was likely to appear later in the rotation, hence farther from the application of manure, and to receive less attention from the farmer than it did than in the north-east. These regional differences in agricultural structure may have been sufficient to counterbalance the forces which produced similar harvest results across regions for other crops.

Within each region the covariation among crops tended to be much less pronounced than the covariation across regions. Indeed, in most cases it must be concluded that harvest results for different crops were not systematically related. The major exception concerns the wheat and hay crops in the south-east, which appear to have varied inversely.¹⁴ This would suggest that the combination of cereal cultivation with dairying or grazing, which was prevalent in the south-east before the

¹² Analysis of average yields in the north-east (Counties Antrim, Armagh and Down) and in the south-east (Counties Kilkenny, Tipperary, Waterford and Wexford) after the famine gives similar results. The simple correlations across regions for the years 1856-73 were: wheat, 0.78; oats, 0.21; barley, 0.39; potatoes, 0.80; hay, 0.50.

¹³ W G R Paterson (ed), *Farm Crops*, 1, 1925, pp 156-7.

¹⁴ Again the post-famine yield statistics are broadly consistent with these conclusions. The simple correlations for 1856-73 (see note 12 above) were:

	South-east	North-east
Oats-wheat	0.48	0.50
Oats-potatoes	0.27	0.32
Oats-hay	0.48	0.28
Wheat-hay	-0.18	0.16

¹¹ P Diaconis and B Efron, 'Computer-Intensive Methods in Statistics', *Scientific American*, 248, 1983, 116-30.

famine, had the effect of reducing the variations in farmers' incomes arising from yield fluctuations.

The results for the covariation between oats and potato harvests are weaker, but quite interesting.¹⁵ It appears that oats and potato yields moved together in the north-east, but inversely in the south-east. This suggests that by adding the potato to his crop portfolio the farmer in the south-east may have secured a large reduction in the variation of his income. His counterpart in east Ulster may have also gained from this diversification, but apparently not to the same extent. This may be another factor which might help to account for the more rapid and widespread diffusion of potato cultivation in the south of Ireland.

More broadly, the general absence of significant covariation in harvest results across crops suggests that mixed farming in pre-famine Ireland helped to stabilize farm incomes. (The inverse relationship between the wheat and hay harvests in the south-east only strengthens this conclusion.) The move toward more specialized farming after the famine may thus have led to a greater variability in incomes.¹⁶

IV

The harvest evaluations may also be used to pick out the particularly difficult years faced by the two regions. These may then be compared with Wilde's compilation. This is easiest to do for the potato crop, to which Wilde was particularly attentive. Only three distinct failures (1821, 1833 and 1841) and one poor crop (1823) were recorded in the south-east. This may be

contrasted with the four failures (1821, 1829, 1830 and 1839) and six partial failures (1825, 1826, 1833, 1834, 1836 and 1841) reported by Wilde for the same period. Three of the failures and four of the partial failures, by which Wilde often meant regional failures, were not apparent in the south-east. The potato crop was perhaps not nearly so unreliable as it has been suggested, though it must be remembered that the evaluations of potato harvests in the *Waterford Mirror* were perhaps overly optimistic.

Results for potato harvests in the north-east are available for fewer years, but do tend to conform better to Wilde's list. Failures were reported in six years (1829, 1830, 1833, 1836, 1837 and 1841), all of which, except 1837, figure among Wilde's failures or partial failures. Only the partial failure of 1834 does not seem to have touched the north-east. On the other hand, the poor potato crop which occurred there in 1835 was not listed by Wilde. It is tempting to see the relatively high number of potato crop failures in the north-east as yet another reason for lesser reliance on the crop there.

The monthly agricultural reports do not really permit the comparison of failures across different crops. The harvest assessments were subjective, so that the variation in yield which corresponded to a poor harvest for one crop may have been significantly less than that for another crop. It is nonetheless important to note that crops other than potatoes failed frequently in pre-famine Ireland. In the south-east the wheat crop was reported as deficient four times in the space of twenty-four years, the oats crop six times, and the barley and hay crops twice each. Three reported failures of the potato crop do not seem so extraordinary in this context. In the north-east the wheat and oats crops were each said to have been deficient twice in nineteen years, and the hay crop no less than eight times in the same period. Potatoes

¹⁵ The actual values for the covariation of the oats and potato crops do not fall in the five per cent tails of their respective simulated distributions, but they do lie in the ten per cent tails (greater than 2.48 for the south-east and less than 1.89 for the north-east).

¹⁶ L. Kennedy, 'Regional Specialization, Railway Development, and Irish Agriculture in the Nineteenth Century', in L. A. Clarkson and J. M. Goldstrom (eds), *Irish Population, Economy, and Society*, Oxford, 1981, pp. 173-93.

were reported to have been deficient six times in sixteen years.

A look across the crop results shows that each region underwent several very difficult years, though rarely the same ones. In the south-east 1826 and 1841 stand out as years of generally poor harvests, with 1821, 1829 and 1839 as other candidates. In the north-east 1829, 1830, 1836, 1841 and 1842 appear to have been particularly difficult years. Both the oats and potato crops were reported as poor or deficient in 1830, 1836 and 1841, and in 1836 conditions near Belfast were made all the worse by a hay harvest said to have been 'not more than half a crop'.¹⁷ It is thus not surprising that emigration from Ireland peaked sharply in 1837, particularly when the problems in northern agriculture were compounded by an abrupt downturn in the linen industry.

V

This article has used the monthly agricultural reports in two Irish provincial newspapers, a rich, but little-known source,

to investigate harvest fluctuations in the quarter-century before the famine. The assessments of harvest outcomes made in these reports have obvious weaknesses, but some tentative conclusions may be drawn from them. First, the variations across region suggest that the discussion of harvest fluctuations at the national level must be conducted with care. Though there was covariation in the results for some crops, generally poor years in one region were not necessarily poor in the other. Second, the apparent independence of harvest results across crops within each region suggests that mixed farming may have stabilized farm incomes and that the diversification of the diet across potatoes and oats, in so far as it was possible, may have reduced the risks of distress arising from harvest failures (particularly in the south-east). Third, the potato may not have been so unreliable a staple in the immediate pre-famine years as some authors have suggested. The potato does not seem to have been noticeably more likely to fail than other crops in the south-east, though it may have been relatively more risky in the north-east.

¹⁷ *NW*, 4 July 1836.