

Co-operative Corn Milling: Self-help During the Grain Crises of the Napoleonic Wars¹

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CROP failure was a fact of life in the eighteenth century. Grain crops could be adversely affected not only at harvest time but at sowing and growing seasons too.² But whereas earlier in the century years of dearth — 1709, 1740, 1757, 1765, 1767, and 1768 for example — were followed by adequate harvests, runs of bad harvests occurred in the 1790s and early 1800s, and there was no reserve of home-produced grain to which to resort. From the outbreak of the French wars it was not only a question of high grain prices but also of the actual availability of grain.³ In 1793 it was observed that 'the crop of wheat is more deficient than it has been within the past twenty years, or perhaps in the memory of man'. By 1794 it was pronounced that 'there seldom had been a smaller stock of wheat in the country than when it was succeeded by a scanty crop in 1795 . . . necessity required the immediate use of it and consequently less was left for the supply of 1796. The crop of 1799 . . . was greatly more deficient than that of 1795 and it was the same throughout the North of Europe.'⁴

The relatively inelastic demand for bread grains on the one hand, and the annual variations in the amounts reaching the market, produced great price fluctuations. Between 1750 and 1790 there had been a gradual rise in the price of wheat, but from

1793 there was a sharp increase associated with violent fluctuations. In 1790 the price of wheat was about 48s — 53s per Winchester quarter but this rose in 1794 to between 58s and 63s, and in 1795 from 81s to nearly 100s, an unprecedented level. The price dropped in the next three years, but in 1800 it rose to over 148s in some markets, the average being 113s 10d.⁵ Whereas there was some degree of consumer protection from the baker in the assize of bread, although this was not operative everywhere,⁶ the miller's toll was not effectively regulated until 1796,⁷ and by this date most millers were acting to a large extent as principals, buying their own grain and selling the flour, and their profits were not controlled. Moreover, it was argued, 'the conversion of many corn mills into cotton mills and for other purposes of manufacture, has enabled the millers in many parts of England to establish a monopoly in the most important article of life. How they have used the advantages which they have derived from the number of corn mills being diminished and how the poor have suffered by it, is too well known.'⁸ Mills were, therefore, a reasonable and frequent target for food rioters.⁹

⁵ Chambers and Mingay, *op cit*, pp 110–11.

⁶ In Birmingham, for instance.

⁷ *Act for Better Regulation of Mills*, 36 Geo III c 85, 1796.

⁸ G J Holyoake, *Self Help a Hundred Years Ago*, 1891, p 69, quoting The Society for Bettering the Conditions and Improving the Comforts of the Poor. It was added that 'The Injury to the poor . . . is nearly equal to two-thirds of all the poor's rates collected in England, and considerably exceeds a million a year.' The decline in the number of water corn mills, if such it was, was almost certainly more than made up by an increase in the number of windmills for corn grinding.

⁹ E P Thompson, 'The Moral Economy of the English Crowd in the Eighteenth Century', *Past and Present*, L, 1971; J A Langford, *A Century of Birmingham Life*, II, Birmingham, 1868, pp 104–5.

¹ Versions of this paper were read to a meeting of midlands economic historians and to Professor A H John's seminar. I am grateful to participants at both of these for their constructive criticisms. I am also indebted to Dr S Fairlie for her comments.

² J D Chambers and G E Mingay, *The Agricultural Revolution*, 1966, pp 108–9.

³ W M Stern, 'The Bread Crises in Britain, 1795–96', *Economica*, XXXI, 1964.

⁴ PRO: 30/8/291, Observations on the Corn Laws by Gov Pownall, pp 17, 18, 20.

I

Relief measures were introduced at both national and local level; some were effected by government, some were demonstrations of good intent by a public-spirited minority, while others were expressions of self-help. Wheat imports were encouraged by the government, despite the French wars, by the operation of a bounty scheme; obstruction of the internal grain trade was prohibited, and restrictions were placed on the industrial uses of grain.¹⁰ Pledges to desist from the use of hair powder and to consume only wholemeal bread were signed, while public subscription lists were opened by philanthropists to ease hardship in certain areas. Funds were employed either to purchase grain in bulk or to purchase substitutes, which ranged from other grains, particularly barley and rice, to potatoes and even fish and meat.¹¹

In some instances arrangements were made with local millers and bakers to process the grain for a fixed tariff, thereby cutting out the corn factor's profit.¹² These local measures were generally recognized to be temporary expedients 'until the Return of Harvest shall render further Exertions unnecessary',¹³ but there are several examples of more permanent arrangements. In these cases several of the more affluent inhabitants rented, purchased or erected a wind or water mill, sometimes acting as principals in purchasing grain, at other times grinding grain brought to the mill for a fixed charge. One such public subscription mill was purchased or rented at

Kimbolton, Beds, in 1800 by a local Society for Bettering the Condition of the Poor which subscribed £400 for the venture.¹⁴ A group of eight people each subscribed £40 towards building a wind mill at Barham, Kent, in 1796,¹⁵ and a subscription water mill, costing £800, was built in Snettisham, Norfolk, before the end of the Napoleonic wars.¹⁶ Like the Barham mill this was built for the poor of the district, and the venture was probably financed in much the same way. Other similar schemes were launched in the east midlands and elsewhere between 1792 and 1815 but subscription mills seem to have been short-lived on the whole.

II

At a local level self-help made the greatest contribution towards alleviating distress, many of the schemes being organized by friendly societies in areas where there was a significant labour aristocracy element in the working population: in naval shipyards, sea ports, the east midlands hosiery and lace region, the environs of Sheffield, Birmingham, and the Black Country. As the Masons' Society of Sheffield remarked, 'it is far from our intention to speak disrespectfully of the benevolent exertions of our eminent townsmen but we mean . . . to establish a perpetual and effectual plan to prevent, on every future exigency, the impositions of the different retailers in the useful articles of life.'¹⁷ Flour clubs, co-operative retailing schemes in effect, were established by a number of midland friendly societies. Farey

¹⁰ Stern, *op cit*, pp 176-86.

¹¹ *Society for Bettering the Conditions and Improving the Comforts of the Poor*, III, 1800, pp 66-84; *ibid*, 1802, pp 43-50. In the summer of 1800 Nottingham Corporation opened a subscription to provide the poor with bread. A number of 'wealthy and humane' inhabitants of the town contributed, and when it was found that there was neither wind nor water to grind the grain Davison and Hawksley ground it at their steam-powered worsted mill. Apart from receiving, as a nineteenth-century antiquarian put it, 'a tribute from thousands of hearts overflowing with the most grateful sensations' Hawksley was given the freedom of the town: *The Nottingham Date Book*, p 232.

¹² *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, I, 1798, pp 267-72; *ibid*, III, 1802, pp 140-6.

¹³ Langford, *op cit*, p 58.

¹⁴ *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, III, 1800, p 72.

¹⁵ Holyoake, *op cit*, pp 66-9. Shortly afterwards a parish mill was built in Chislehurst, Kent, with the subscriptions of ten individuals: *ibid*, pp 70-1.

¹⁶ R. A. Pelham, 'Public Subscription Corn Mills', *Milling*, 1 Nov 1958, p 474, quoting *General View of the Agriculture of Norfolk*. There was some disapproval of these schemes: see F. M. Eden, *The State of the Poor*, 1797, p 519, who suspected that they would end in monopoly.

¹⁷ *The Iris*, 7 Aug 1795. All newspaper references to the activities of the Sheffield friendly societies are quoted from a MS history of The Club Corn Mill in Sheffield Reference Library by kind permission of the author, Mr W. E. Spencer.

noted that 'During the Scarcities of 1795 and 1800 many Associations of Working Men were formed in the southern parts of this County (Derbyshire) and elsewhere, who subscribed to purchase Wheat, and get it ground, selling out the Flour at prime cost, to their Members: these Societies were several of them found so beneficial, that some of them seemed likely to become permanent.'¹⁸ Stocking-knitters at Long Eaton, Notts, founded a flour club,¹⁹ and the Sheffield masons, believing that 'sick societies have the power of effecting something very advantageous towards easing the present almost intolerable burthen', combined with fifteen other local friendly societies 'to procure grain or flour of the best quality and at the lowest prices'.²⁰ Every member received 'for himself one stone of flour per week at prime cost and those who have families half a stone a head for the rest of their family'. In 1795 a friendly society at Rothley, Leics, employed £50 from its funds to purchase corn, have it ground, and sell the flour at cost to members, and similar clubs were founded in Quorndon, Sileby, Mountsorrell, and several other places in Leicestershire.²¹

The saving made by flour club members was usually of the order of 4d — 6d per stone over the retail price of flour; moreover, the establishment of flour clubs frequently led to a general lowering of flour prices as local millers reacted to the competition.²²

In order to reduce the price of flour to their members still further some friendly societies began to rent or build mills, becoming co-operative producers.²³ The earliest known co-operative corn mill was the windmill built

sometime before 1760, probably in the crisis of 1757, by the shipwrights employed in Woolwich dockyard. It was burnt down in 1760, the local bakers being suspected of arson, but was rebuilt in the same year on a larger scale.²⁴ This isolated attempt at co-operative production seems to have been successful, but it was not until the late 1770s that the example of the Woolwich shipwrights was followed by other friendly societies. In 1778, when the prices of provisions were high at the close of the American wars, several friendly societies in Mansfield, Notts, contributed to build a post windmill 'for the benefit of families that belong to the members of the different clubs'. About 1500 people were supplied with best bread flour at 1s 4d per stone and best fine flour at 1s 6d, saving between 3d and 5d per stone.²⁵

In 1782 sixteen sick clubs in Nottingham decided to build or purchase a windmill to be run on the lines of the one at Mansfield,²⁶ and 'Club Mill Terrace' in Chesterfield probably refers to a similar venture in that town.²⁷ A cotton mill workers' friendly society, founded in 1770 at Hucknall Torkard, Notts, jointly led by a local stocking-knitter and an innkeeper, purchased a post windmill for £350 to grind corn during the 1795 crisis.²⁸ And it was probably this crisis which led to the establishment of two friendly society mills in the south of England. By 1797 an Association of Artificers at HM Dockyard,

general use until the 1820s, it was applied to activities similar to those first practised in the late eighteenth century, and described in the present paper. It is not unusual for a descriptive term to post-date by some years the activity to which it applies.

²⁴ This antedated by more than thirty years the mill thought by Holyoake to have been the first to be erected in the interests of the consumer: Holyoake, *op cit*, p 66; W T Vincent, *Records of the Woolwich District*, c 189—, pp 47–8.

²⁵ *St. James Chronicle*, 5 Jan 1779.

²⁶ *Nottingham Journal*, 16 Nov 1782. I am indebted to Dr S D Chapman for this reference.

²⁷ Information kindly supplied by Borough Librarian, Chesterfield.

²⁸ J H Beardsmore, *History of Hucknall Torkard*, Nottingham, 1909, pp 149–50. I am indebted to Dr S D Chapman for this reference.

¹⁸ J Farey, *General View of the Agriculture of Derbyshire*, III, 1811, p 578.

¹⁹ They sent grain to Batch Mill at Toton, Notts, paying the miller 3s per quarter and saving 4d to 6d per stone. *Ibid*, p 578.

²⁰ *The Iris*, 21 Aug 1795.

²¹ *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, II, 1800, pp 60–7.

²² *Ibid*, p 61; *ibid*, pp 140–1.

²³ Co-operative corn mills, as distinct from subscription corn mills, were established and run by the consumers. Although the term 'co-operation' did not come into

Portsmouth, had built a windmill in Portsea, valued at £1300,²⁹ and by the following year the Unity and Amity Society of Brixham Quay, Devon, had built a windmill for approximately £300.³⁰ The friendly societies of Sheffield, led by the Masons, although acting as co-operative wholesalers and retailers at first, aimed from the outset to build their own mill, and eventually forty-three societies subscribed to the Club Flour Mill.³¹ This was the most ambitious of all the friendly society flour milling schemes. Not only were many more clubs involved than in other co-operative corn mills, but the Club Flour Mill was much larger and more costly than other mills. In 1795 a site was taken on a twenty-one-year lease, and a mill containing two water wheels and eight pairs of stones was built. This was the equivalent of half the effective capacity of Albion Mill at Blackfriars, and its capacity was probably greater than that of any other late eighteenth-century steam flour mill.³² There is little evidence of eminent townfolk or manufacturers taking an interest in the corn milling ventures of local friendly societies. But Davison and Hawksley of Arnold, Notts, were an exception. Some time before 1798, probably in 1795, they gave their employees the lease of some land near their textile factory on which to build a flour mill, probably a windmill.³³

A number of the friendly societies' co-operative mills were successful, due mainly to the fact that the enterprises were small. The clubs had few assets,³⁴ they built cheap timber windmills that could be easily repaired by their own members, and they ground only modest amounts of corn. In this way, without the financial means, management experience or indeed the need to expand, they performed a valuable service to the members in grinding cheaply the small amounts of members' own grain that large, highly-capitalized concerns would have found uneconomic to handle, besides acting as principals and selling at cost.

Others were less successful. The Sheffield mill had failed by 1816, and the Nottingham societies did not survive long enough to build a mill. Management posed new and difficult problems for all early consumer-orientated co-operative producers, for, as a Sheffield observer commented: 'the combined selfishness of five hundred individuals was by the mere magic of words to be transformed into the purest personal disinterestedness.'³⁵ Having no right to recover funds and sue for debt, the Sheffield members were 'constantly losing more at the hopper than they saved in the bag'. It is unlikely that any members of the managing committee had experience in grain buying or milling, and where a mill was operated by as many as forty-three friendly societies, as at Sheffield, these were likely to be problems of vested interests. Their naïvety is well illustrated by the fact that the Club mill was built on leasehold land held only for a term of twenty-one years. It was almost inevitable that the mill would be 'ultimately clutched by a party who found all the considerations of a charitable object too feeble to withstand the temptation to accept as

²⁹ Guildhall Library, London, Sun Insurance Register 11937/22/672962. The valuation was: mill £500, machinery £800, stock and utensils £500, two tenements in tenure of miller and baker £100, bakehouse £200, stock and utensils £100, stable and carthouse £70, sundries £30: total £2300. I am indebted to Dr J Orbell for this reference. Dockyard workers at Devonport met to form a milling society in 1815; their water mill was built by 1817.

³⁰ H L Douch, *Cornish Wind mills*, Truro, 1962, p 60; Sun Insurance Register 11937/21/678047. The valuation was: mill £100, machinery £200, stock and utensils £300: total £600. I am indebted to Dr J Orbell for this reference.

³¹ *An Accurate Account of the Proceedings on the Occasion of Laying the Foundation Stone of the New Corn Mill*, quoted by Spencer, op cit.

³² Birmingham Reference Library, Boulton MSS (formerly in Assay Office), Albion Mill Box.

³³ Handbill *To those Inhabitants of Arnold who have aided or abetted the late Riotous Proceedings*, 18 July 1798. I am indebted to Mrs G Palmer for a copy of the original in her possession.

³⁴ See, eg valuation of Brixham mill, note 29 above. The moveable assets of Mansfield Club Mill were recorded in 1786. Stock was valued at £42 8s. 5d, book debts at £25 16s 3½d, and balance due to the society £70 14s 7½d, a total of £138 19s 4d: Notts RO, Portland MSS, DD4P 79/60-1.

³⁵ John Holland, *Tour of the Don*, Sheffield, 1836, pp 188-9.

welcome the falling in of a lease with such property upon it'.³⁶

III

During the grain crises of the later 1790s a new form of consumers' co-operative production emerged in which capital was raised by the sale of shares to the public, augmented in some cases by donations from local benefactors. These organizations were, in effect, unincorporated joint-stock companies; although wishing, perhaps, to avoid drawing attention to their non-corporate status, their promoters generally styled them societies rather than companies. Indeed several of the more successful were later to be cited by opponents of the Bubble Act as proof that a company need not necessarily involve monopoly. They did, however, arouse considerable opposition (see below). It would seem that in clinging to the banner of public utility, these union mill societies, as they were often called, were benefiting from some aspects of corporate status without, apparently, suffering from the constraints such as a limit on capital.³⁷

The first venture, appropriately named the Anti Mill Society, was founded in 1795 by 'the poor inhabitants' of Hull, who sought both approval and financial assistance from the mayor and aldermen of the town. A large seven-storey windmill with adjoining granaries and mill house was built in 1796, by which time the Society had 1435 members, and production commenced the following year.³⁸ Support for co-operative milling grew in Hull, and a second society was founded in 1799. A windmill of similar proportions to the Anti Mill was built and production

commenced in 1801.³⁹ The Whitby Union Mill Society was founded in 1800, and a seven-storey windmill was completed in 1801.⁴⁰ A similar venture was launched in Bridlington. A union windmill was built in Shardlow, Derbyshire, probably in the crisis of 1800–1801,⁴¹ and there were undoubtedly many others.

The first co-operative mill societies all employed wind power, a system well suited to a small-scale venture but less well adapted to more capital-intensive projects, such as those at Hull and Whitby where mills of factory proportions were erected. The Boulton and Watt experimental corn mill at Soho had demonstrated the suitability of steam power for milling in the early 1780s,⁴² and Pickard's steam corn mill was one of the objects of attack in the Birmingham bread riots.⁴³

There was a steam flour mill in Bristol in the 1780s, and Albion Mill in London was well known.⁴⁴ But while wind and water corn mills were not necessarily cheap, a steam corn mill could not be made fully operational under about £2000 at a conservative estimate. For this reason few societies considered steam power, and when they did the labour aristocrat shareholders were joined by radicals from the middle ranks of society: merchants, manufacturers and occasionally bankers.

The precedents for steam milling having been set in Birmingham, it is not surprising that the first steam co-operative mill in

³⁶ Ibid: 'Thus was exhibited at the outset a most egregious want of foresight in regard to the legal position of the property.'

³⁷ B C Hunt, *The Development of the Business Corporation in England 1800–1867*, New York, 1936, pp 25, 41. In 1800 a milling concern, The London Company for the Manufacture of Flour, Meal and Bread, was granted a Charter. It had a nominal capital of £150,000.

³⁸ (Revised) *Rules of the Hull Anti Mill Industrial Society*, Hull, 1856.

³⁹ (Revised) *Rules for the Government of the Subscription Mill Society*, Hull, 1853.

⁴⁰ *Rules for the Government of the Union Mill Society Instituted at Whitby*, Whitby, 1801. I am indebted to Mr P Burnett for the loan of his copy. For the later history of this Society see Jennifer Tann, 'The Whitby Union Mill Company — a Case of Early Co-operative Production', *Business Archives*, XXXIX, 1973.

⁴¹ *Nottingham Journal*, 13 July 1805. I am indebted to Dr J Orbell for this reference.

⁴² Birmingham Reference Library: Boulton MSS, J Buchanan to M Boulton, 9 Oct 1783, 5 July 1784.

⁴³ *Aris's Gazette*, 29 June 1795.

⁴⁴ Jennifer Tann, *The Development of the Factory*, 1970, p 79. £60,000 was invested in Albion Mill; for Albion Mill see Birmingham Reference Library, Boulton and Watt MSS, portf 152.

Britain was the Union Mill built by the Birmingham Bread and Flour Company in 1796–97.⁴⁵ The three-storey mill, 60 ft by 30 ft with an adjoining bakehouse, was designed by Boulton and Watt who also supplied the 16 hp steam engine.⁴⁶ The mill went into production in 1797 with 1360⁴⁷ shareholders, and the success of the venture led to a co-operative steam corn mill being built in Wolverhampton towards the end of the crisis of 1809–12⁴⁸ (Table 1). The role of Boulton and Watt in designing the Birmingham Union Mill led to their being consulted by interested parties in several other large industrial towns. The first enquiry was made by a society in London in 1798,⁴⁹ and this was followed in 1799 by a detailed questionnaire from Bristol's Society for the Poor.⁵⁰ In the same year the borough Reeve of Manchester asked Boulton whether the mill fulfilled its promoters' expectations since some of the leading citizens of Manchester had thoughts of starting a similar venture there,⁵¹ and in 1800 Benjamin Gott, in his capacity as mayor of Leeds, requested details of the financial structure and management of the Union Mill.⁵² The Hereford Subscription

Flour Company was founded in 1800,⁵³ and a Boulton and Watt engine ordered. But in 1801 the order was countermanded, and it is doubtful if the Society ever went into production.⁵⁴ Such was the interest aroused by the flourishing Birmingham Union Mill that the Privy Council set up a committee to examine the concern in 1800,⁵⁵ and in the event 'that their Lordships shall be satisfied that this Institution has been of great benefit to the inhabitants of Birmingham, they may possibly think of some proper method to recommend a similar institution to other great and populous cities and towns of the Kingdom'.⁵⁶ An attempt was made to establish a co-operative steam flour mill in Nottingham in 1807,⁵⁷ and the society appears to have begun building in that year but a poor response to advertisements for shareholders seems to have prevented completion.⁵⁸ A similar fate probably attended the Brentford Good Intent Society, which launched an ambitious mill and bakery building programme in 1802.⁵⁹

IV

Articles for the government of co-operative milling societies were drawn up at an early stage, specifying such matters as the price of individual shares, the maximum share capital to be raised, the maximum number of shares

⁴⁵ *Articles of the Birmingham Flour and Bread Co.*, Birmingham, 1796.

⁴⁶ Boulton and Watt MSS, portf 141.

⁴⁷ Birmingham Reference Library: *Examination Taken on the 4th March 1800 before the Lords of His Majesty's Most Honourable Privy Council Respecting the Institution called the Birmingham Flour and Bread Company, or Union Mills*.

⁴⁸ G P Mander, *A History of Wolverhampton*, Wolverhampton, 1960, p 152.

⁴⁹ Birmingham Reference Library: Boulton MSS, memo of M Boulton, Jan 1798.

⁵⁰ Birm Ref Lib: Boulton MSS, Birmingham Box 1: questions from Bristol to Union Mill and answers to T Clifford, Clerk, thereto.

⁵¹ *Ibid*, C F Brandt to M Boulton, 30 Nov 1799; M Boulton to C F Brandt, Dec 1799; PRO PC 2/154, p 283. Brandt investigated the possibility of obtaining a charter for a union mill. The Privy Council saw 'no objection to the plan'. Nothing seems to have materialized for some years but by 1820 there was a steam-driven Union Mill in Manchester containing eight pairs of stones and valued at £4000: Sun Insurance Register 11937/127/963633. I am indebted to Dr J Orbell for this reference.

⁵² Boulton and Watt MSS, Boulton and Watt to B Gott, 18 Aug 1800.

⁵³ *Articles of the Hereford Subscription Flour Company*, Hereford, 1801.

⁵⁴ Boulton MSS, W Symonds to M Boulton, 21 April 1801.

⁵⁵ *Examination taken on the 4th March 1800*, op cit.

⁵⁶ PRO: PC2/154, p 376, letter to Mr Clifford, Union Mill, Birmingham.

⁵⁷ *Nottingham Journal*, 11 April 1807.

⁵⁸ *Ibid*, 22 Oct 1808.

⁵⁹ The mill was to serve a large area. Shares were to be allocated to six divisions consisting of Isleworth, Brentford, Twickenham, Richmond, Hounslow, and Heston: *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, III, 1802, pp 49–54. Two steam flour mills erected in Scotland in the early nineteenth century had certain features of co-operation in their organization, but they were producers', not consumers', co-operatives. The Glasgow Corporation of Bakers built a mill in 1800–01, and the Paisley Corporation of Bakers one in 1808. Both required members to grind all their grain at the mills: Boulton and Watt MSS, portfs 209, 402; Paisley Reference Library, *Articles of the Bakers' Society*.

TABLE 1
Summary details of co-operative corn milling societies

(b)	Share capital	Initial share price	Foundation date	Limit of shares per person	Cash dividend	Shares in instalments
Sheffield	—	£1	1795	—	—	yes
Hull Anti Mill	£2500 ^(a)	6/4d/£1 ^(a)	1795	5 ^(a)	5% ^(a)	yes
Birmingham	£20,000	£1	1796	20	yes	yes
Hull Sub Mill	£2000 ^(b)	14/2d	1799	—	—	yes
Hereford	£6000	£1	1800	50	—	yes
Whitby	£2200 ^(c)	£2 ^(c)	1800	1	—	—
Brentford	£2104	£2 2s	c 1802	3	—	yes
Nottingham	£4000	£2	1808	—	—	—
Wolverhampton	£10,000 ^(d) £15,000	£1	1812	20/40 ^(d)	yes	yes

Source: text.

Notes: (a) under the revised rules of the Anti Mill Society;

(b) under the revised rules of the Hull Subscription Mill Society;

(c) initially £1430 max capital (£1 7s per share including entrance fee) almost immediately raised to the figure in the table;

(d) raised at AGM 1813.

allowed per person, the voting power of shareholders, the composition of the mill management committee, and people to be debarred from membership.⁶⁰ Share prices could be as low as 6s 4d in the Hull Anti Mill Society, or 14s 2d in the Hull Subscription Mill Society, rising to £1 in the Birmingham, Wolverhampton and Hereford Societies. At Whitby the initial price was £1 7s but a call was made almost immediately for an additional 13s per share. Shares in the proposed Nottingham Society were to be £2, and at Brentford 2 gns each.

Provision was made by all societies for the purchase of shares in instalments, the rules of the Hull Subscription Mill Society emphasizing that the object was 'to make it convenient for the lowest capacity'. Subscribers to the Hull Anti Mill were to pay 1s 1d for four weeks and then 6d per week for four weeks. After payment of an entrance fee of 1s 2d, 1s per week was payable for thirteen weeks in the Subscription Mill Society. Shares in the Whitby Society could be paid for either at 1s,

6d or 3d per week. Shares in the Birmingham, Wolverhampton and Hereford Societies were to be purchased in instalments 'so as no such call shall exceed ten per cent on each share, and so as a Call is made at less distance of time than one month from the preceding Call'. Shares were transferable in all societies with the exception of the Hull Anti Mill Society.

In most societies there was an upper limit on the number of shares that could be held by one person. The Whitby Society was the most democratic in this respect, limiting its shares to one per person. Under the revised rules of the Anti Mill Society five was the maximum, but no limit was apparently set by the Subscription Mill Society. Twenty shares was the limit set by the Birmingham and Wolverhampton Societies (the latter being raised to forty in 1813), and fifty was the maximum any individual could hold in the Hereford Subscription Flour Co.

The maximum share capital set for a society building a windmill was around £2000—£2200 at Whitby to £2000 and £2500 under the revised rules of the two Hull societies (Table 1). Societies building steam mills

⁶⁰ See 'Rules' and 'Articles' previously cited. The section which follows is based on these.

realized that it was necessary to raise considerably more capital at the outset. Four thousand pounds was the proposed limit for the Nottingham mill, £6000 was the maximum set at Hereford, £10,000 (raised to £15,000 in 1813) at Wolverhampton, and £20,000 at the Birmingham Bread and Flour Co (Table 2). There is less evidence of the initial paid-up capital or of the number of shareholders for these societies. Hull Anti Mill had 1435 members in 1796, representing

TABLE 2
The Birmingham Bread and Flour Co, 1797

<i>Fixed Assets</i>	£	s	d
Buildings (mill, bakehouse, warehouse, pig-sties, cart shed, engine house, dwelling house)	2753	12	9½
Millwork, stones, dressing machine	622	12	11
Engine	900	0	0
Erection of engine	243	1	5
Bags	118	17	5
Live and dead stock	124	10	2
Furniture	32	12	3
Wharf and buildings	350	0	0
	£5145	6	11½
<i>Recurrent costs per annum excluding grain purchase</i>			
<i>Labour</i>	£	s	d
Clerks	205	0	0
Millers	119	12	0
'Engineer'	36	8	0
Bakers	124	16	0
Carters	75	18	0
Flour weigher	41	12	0
		603	6 0
<i>Fuel consumption</i>			
393 tons coal	204	4	7
Wood for bake-house	13	6	0
		217	10 7
Ground rent		50	6 8
		£871	3 3
<i>Approximate annual output (grinding 20 hrs per day, estimated 6-day week, 50 weeks per year): 108,000 Winchester bushels of corn ground.</i>			

Source: Examination taken on the 4th March, 1800.

at one share per member a paid-up capital of about £454. When the subscription book of the Birmingham Society was closed in June 1796, the Society had 1360 members holding 6279 shares, a large number of them owning only one share. A new subscription list was opened in September 1799 in order to raise a further £3000, and by March 1800 £2100 had been subscribed.⁶¹ By this time Boulton was convinced of the viability of the scheme, and purchased 400 shares for himself and his workmen. In Wolverhampton shares to the value of £9273 had been purchased within six months of the list being opened, again a number of shareholders owning a single share.⁶²

A high proportion, sometimes all, of the initial paid-up capital was invested in fixed assets, and where the initial paid-up capital was low, as in the two Hull societies, the sum subscribed was insufficient to pay for the mill. Hull Anti Mill cost £2200 to build, while subscribed share capital and donations together only amounted to about £798.⁶³ Hull Subscription Mill Society, too, did not raise sufficient capital initially, for although the share price was higher there were fewer shareholders, and the Society began a recruiting drive aiming to raise the number of shareholders to 1000. Even if this number was achieved, the share capital, together with donations, would only have produced about £779. The Society found a builder who was prepared to erect a mill, allowing the society four years in which to pay for it. Additional payments of 6d per week or per month, depending on the means of the shareholder, had to be made until the capital loan plus interest had been paid off.⁶⁴ The Whitby Society had to raise its share prices from £1 7s to £2 'as the first subscription was insufficient for the building of the Mill, granaries etc.',

⁶¹ Examination taken on the 4th March 1800 . . . , op cit.

⁶² William Salt Library, Stafford: *Rex v. B. Mander and Eight Others. The Trial at Large of the Committee of the Wolverhampton Flour and Bread Co. at Stafford Summer Assizes*, Wolverhampton, 1814.

⁶³ Rules of the Hull Anti Mill . . . , op cit.

⁶⁴ Rules for the Government of the Subscription Mill . . . , op cit.

and mention is made of 'those Gentlemen and Societies who have so liberally come forward to lend sums of money, for a time, without interest'.⁶⁵

Unless they also received interest-free loans, both the Hull societies must have made grain purchases on credit at the outset. The necessity for adequate circulating capital was recognized by the Whitby Society for the rules state that at every quarterly meeting 'each member shall pay to the fund one shilling until a sufficient sum is advanced for carrying on the Business'. Of the initial capital of £6279 raised by the Birmingham Bread and Flour Co, £5145 5s 11½d was absorbed by buildings and machinery, leaving £1133 14s 0¼d for circulating capital. Out of this sum had to come ground rent at £50 6s 8d, the rent of additional buildings at £50, fuel bills of about £217 10s 7d, and labour costs of £603 6s, leaving little over for the purchase of corn⁶⁶ (Table 2). When replying to enquiries from Bristol in 1799, Boulton explained that no dividend had been given by the Society because it had been necessary to plough back profits 'as the capital in the first instance was barely enough to carry on the business'.⁶⁷ The buildings at Wolverhampton cost £6673, leaving a balance of £2600 in hand.⁶⁸

The capacity of few of the mills is known. The two Hull mills and the Whitby mill are likely to have contained four pairs of stones, Birmingham Union Mill had four pairs, and three to four pairs were generally employed at Wolverhampton.⁶⁹ A well-dressed pair of corn stones driven by a regular source of power could grind up to eight Winchester bushels of wheat per hour.⁷⁰ Allowing for the fact that at any given time one pair of stones

was generally out of action for dressing, these co-operative mills were capable of grinding between 1700 and 1750 bushels of wheat per week, and were of a comparable size to the newly-established merchant flour mills in some ports and large market centres. The Nottingham Union Mill Society estimated, probably on some statistics obtained from Hull, that it would produce 616,000 stones of flour per annum.⁷¹ The Birmingham mill ground about 18 bushels of wheat per hour and operated for 20 hours per day.⁷² The annual output therefore, would have been in the region of 108,000 Winchester bushels. Both the Birmingham and Wolverhampton Societies baked some of their flour into bread. Approximately 38 sacks of flour were baked each week at Birmingham, and the Wolverhampton Society distributed about 500 bushels of flour and 770 quartern loaves per week.⁷³

The day-to-day management of a co-operative corn milling society was supervised by a committee elected at the annual general meeting. The poorer members were prevented from playing much part in some societies by a proviso in the rules stipulating that committee members must hold more than a certain number of shares; five in the case of Birmingham, and twenty at Hereford. Moreover, the one share one vote system which operated in Birmingham lessened the influence they could have in the election of committee members. This was further reduced in the Hereford Society by a ruling that no person holding fewer than ten shares could vote for a member of the committee. The elected officers of the societies were expected to perform their duties in an honorary capacity, although under the revised rules of the Anti Mill Society it was agreed that officers 'shall receive such remuneration for their services as shall be agreed upon at any general half yearly meeting'. But there were clearly militant voices amongst the single

⁶⁵ *Rules for the Government of the Union Mill Society* . . . (Whitby), op cit.

⁶⁶ *Examination taken on the 4th March 1800* . . . , op cit.

⁶⁷ Questions from Bristol to Union Mill, op cit.

⁶⁸ *Rex v. Mander and Eight Others* . . . , op cit.

⁶⁹ Boulton and Watt MSS, pf 141; *Rex v. Mander*, op cit. The Wolverhampton Mill contained more, but rarely seems to have worked to capacity.

⁷⁰ Boulton and Watt MSS, Boulton and Watt to Birmingham Corn Mill, 16 April 1795.

⁷¹ *Nottingham Journal*, 19 Nov 1808.

⁷² *Examination taken on the 4th March 1800* . . . , op cit.

⁷³ *Ibid: Rex v. Mander*, op cit.

shareholders in the successful societies: Matthew Boulton received an urgent letter in June 1801,

Unless those subscribers to the Union Mill who hold the majority of shares exert themselves I fear the whole will be thrown into confusion. A most violent party has arisen chiefly amongst the working men whose minds have been so inflamed by false reports that they have determined to turn out the old committee altogether. They have held private meetings which have been numerous attended and they have chosen twenty-one fresh names for whom they are canvassing the subscribers.⁷⁴

In Whitby 'At the beginning of 1815 a revolution took place in the society attended with circumstances over which the historian would wish to throw a veil', and all the old committee members were ousted.⁷⁵ There may have been similar events in the Hull societies, which account for the revised rules made in the nineteenth century.

The committee was responsible for the hiring and discharging of all company employees. This was fairly straightforward in such cases as the dismissal of the clerk of the Birmingham Flour and Bread Co on a charge of embezzlement,⁷⁶ but more difficult in the crucial appointment of head miller and corn buyer when members of the committee were likely to have little or no knowledge of milling. A flour dresser was usually required, and at least one flour seller. At the Birmingham mill a foreman, two assistants, an engineer, two carters, and a weigher were employed in the bakery alone. Weekly committee meetings were held at which samples of grain were inspected and market prices considered. The Birmingham Society sent an agent to markets within a twenty-mile radius of the town. The officers claimed that the Birmingham market was unable to supply all the company's requirements, and that even if this were not so it would have been unwise to make all the grain purchases in one

market.⁷⁷ On being asked in the Privy Council investigation whether it had ever speculated in purchasing grain, the society replied that this had been done once when prices were low but that it had insufficient circulating capital to speculate. Three weeks supply of grain was generally kept, but 'if our capital was sufficient it would be better for us to have Four weeks Consumption in our warehouses, for, if the Flour was kept as long as Three Months, it would be the better for it.' However, the granary was not large enough for speculative buying, and some members considered speculation 'improper for poor men'.⁷⁸

Flour was carried from the mills to several points in the towns for sale. At this remove from the mills supervision became well-nigh impossible, and company rules begin to read like medieval gild regulations:

Any flour seller detected adulterating or selling flour to any person or persons not being members, or selling flour short of weight, or altering his or her scales, beams, or weights, so as to defraud the Members of this Society, shall . . . be discharged and excluded from all the benefits accruing from this Society.⁷⁹

Flour sellers appointed by the Hull Subscription Mill Company received £5 pa for shop rent and $\frac{1}{2}d$ per stone for selling flour. The Wolverhampton company supplied about fifty shops in the area whence members could buy their flour or bread.⁸⁰ In Birmingham holders of five or more shares had their flour and bread delivered to their houses, and 'for convenience of subscribers under five shares delivery homes are appointed in different parts of the town whence these subscribers fetch their shares'. Cash sales, an important feature of co-operation, were demanded by all companies, a condition which, as a Wolverhampton man observed, 'no trader, no individual can insist upon'.⁸¹ He added 'They turn their whole capital at least 6 or 7 times a year so

⁷⁴ Boulton MSS, G Simcox to M Boulton, 8 June 1801.

⁷⁵ New Rules were drawn up which were said to be 'partly tyrannical and partly puerile'. Rev G Young, *A History of Whitby and Streonashall Abbey* . . . , Whitby, 1817.

⁷⁶ Birm Ref Lib: Union Mills, Record of the Proceedings of the Committee (fragment), 17 Aug — 21 Sept 1798.

⁷⁷ Examination taken on the 4th March 1800 . . . , op cit.

⁷⁸ Boulton MSS, M Boulton to C F Brandt, Dec 1799.

⁷⁹ Rules for the Government of the Subscription Mill . . . , op cit.

⁸⁰ *Rex v. Mander*, op cit.

⁸¹ Ibid.

that small profits of each return make good profits on the whole.' Most of the companies would sell flour and bread only to shareholders, but shareholders in the Wolverhampton society were permitted to re-sell theirs at a fixed rate of profit. The Birmingham company supplied several local charities,⁸² besides the troops in the nearby barracks, and the projected Brentford Society intended using its spare capacity to mill for hire at competitive prices in order to increase its circulating capital.⁸³

In attempting to assess the achievements of co-operative corn milling during the Napoleonic wars it is important to consider the question of whom the mills were intended to serve. In their original petitions the promoters of the two Hull societies called themselves the 'poor inhabitants' of the town. The Nottingham Society hoped to recruit the 'poorer and middling classes', whilst the Brentford Society was founded for 'industrious mechanics labourers etc.', and its organization intended to be 'intelligible by the lowest capacity'.⁸⁴ The Birmingham company, on being asked if the 'poorer classes' subscribed to the company, replied 'A great number of them did.' Indeed, Matthew Boulton strongly resented a suggestion from Manchester that the Birmingham Union Mill was a philanthropic venture: 'This mill was not erected by the opulent for the benefit of the poor labouring workman, but it was erected principally by the latter class for the benefit of themselves.'⁸⁵ Nevertheless, the committee members of the Birmingham Flour and Bread Company included such people as William Whitmore, the engineer, and the Wolverhampton company was led by Richard Fryer, a banker, and Benjamin Mander, a japanner, as well as a screw maker, coal master, auctioneer, tax collector, printer,

grocer, and two 'gentlemen'.⁸⁶ The instalments on shares, even in the Hull societies, would have been too large and too frequently demanded for the very poor to have become shareholders.

The purpose of a co-operative flour milling society being to produce flour more cheaply than the local miller, most of the profits were distributed in kind. Each shareholder was usually required to take so much flour or bread a week per share at a price fixed by the committee. At Hereford shareholders were to have the option of sending their own grain to the mill to be ground or to purchase a similar quantity of flour each week, but this procedure would only have led to confusion. Each shareholder in the Birmingham company was required to take flour or bread equal to half a peck per week per share. Since both the Birmingham and Wolverhampton companies were bakers as well as millers from the outset, they were able to pass on the additional saving in the form of cheaper bread, for as the clerk to the Birmingham company said: 'we have an advantage over the baker by buying with ready money and by not giving credit for what we sell. Our sale is also more extensive and as we grind and dress our own wheat we can perform the whole operation of converting wheat into bread cheaper than others for we have the whole profit of the miller and the baker.'⁸⁷

Because the initial capital of a company was often little enough on which to build and run a mill, the question of cash dividends did not usually arise at first. Interest rates, however, were stipulated in some of the company rules. The revised rules of the Hull Anti Mill Society allowed for members to receive 5 per cent, the Nottingham Union Society envisaged a dividend of £1 14s being paid annually per share, that is, something over 75 per cent. And in 1800 a sum of £625,

⁸² The Asylum, General Hospital, Soup Shop and Blue Coat School: *Examination taken on the 4th March 1800* . . ., op cit.

⁸³ *Society for Bettering the Conditions and Improving the Comforts of the Poor*, III, 1802, p 50.

⁸⁴ Ibid: *Nottingham Journal*, 22 Oct 1808.

⁸⁵ Boulton MSS, M Boulton to C F Brandt, Dec 1799.

⁸⁶ *Rex v. Mander*, op cit. And by the mid-nineteenth century it was said that 'the shares are now held only by the middle class': S Timmins, ed, *Birmingham and the Midland Hardware District*, Birmingham, 1866, p 687.

⁸⁷ *Examination taken on the 4th March 1800* . . ., op cit.

amounting to almost 10 per cent, was set aside to be divided amongst the original subscribers of the Birmingham Flour and Bread Co.⁸⁸

The scale economies of purchasing wheat in large quantities and from different markets, in addition to the fact that flour was sold at cost to members, meant that flour was cheaper to shareholders of co-operative mills than for the general public who purchased from common millers. And a double saving was made in those societies which baked bread, prices being reduced by about one-quarter. The competition eventually forced some of the smaller local millers and bakers out of the market altogether, and forced others to reduce their prices, thereby ultimately benefiting non-shareholders. As a Wolverhampton baker said, 'There is no profit now got by the sale of flour or bread, the mill company sell it at such a low price.'⁸⁹ Although during much of the period 1797-1800 the price of wheat was higher in Warwickshire than in London, the price of the quartern loaf in Birmingham was consistently lower, often by as much as 3d. In December 1797 the quartern loaf sold in London for 8½d and in Birmingham for 6¼d. In 1799 the price began to rise sharply but remained lower in Birmingham, reaching 12d in London and 9d in Birmingham in October of that year. In February 1800 the quartern loaf was sold for 16½d in London and 13½d in Birmingham (Table 3).

That the larger co-operative corn mills were successful enough to pose a serious threat to other smaller milling and baking businesses is indicated by the fact that indictments were filed against the Hull Anti Mill Society (1811)⁹⁰ and both the Birmingham and Wolverhampton Flour and Bread Cos (1809 and 1814)⁹¹ by local millers and bakers,

TABLE 3
Prices of wheat (per quarter) and the Quartern loaf in Birmingham and London 1797-1800^(a)

Date	Birmingham		London	
	Wheat ^(b) s d	Bread d	Wheat s d	Bread d
1797 June	51 1	—	51 2	—
Sept	67 10	6¼	72 0	10½
Dec	53 11	6¼	47 8	8½
1798 March	54 6	6¼	51 10	8½
June	50 7	6¼	49 9	8½
Sept	51 4	6¼	48 0	8½
Dec	45 11	5¾	48 9	8
1799 March	51 2	5¾	50 10	8½
June	62 5	6¾	61 8	9¼
Sept	87 4	9	72 2	11
Dec	100 0	11	97 6	14
1800 Jan	104 11	11½	108 3	15½

Source: Examination taken on the 4th March, 1800.

Notes: (a) Price in the third week of the month;

(b) Average of the prices in markets of Birmingham, Warwick and Coventry (Birmingham Flour & Bread Co purchased wheat within a 20-mile radius of Birmingham).

first in the assizes, and (in the case of the Birmingham Co) subsequently in the King's Bench. The main point at issue was the claim that by raising a transferable stock to a large number of shareholders these societies contravened the Bubble Act. In each case judgement was found for the defendants, for while acknowledging that these societies were 'prejudicial to certain individuals', they had been instituted 'from laudable motives' and still were 'beneficial to the inhabitants at large'.⁹²

Central to the philosophy of co-operative production is the equitable division of profits between worker, capitalist, and consumer in the undertaking. In the early co-operative milling enterprises the consumer was the capitalist: as an inhabitant of Wolverhampton

⁸⁸ Ibid.

⁸⁹ Rex v. Mander, op cit.

⁹⁰ Rex v. Fearn and Others, *York Chronicle*, 8 Aug 1811.

⁹¹ Rex v. Webb, Barber, Townshend, Parkes, Ledsham, Warner, Pritchett, and Goddington, *Warwick and Warwickshire Advertiser*, 15 April 1809, 5 Aug 1809; *Reports of Cases Argued and Determined in the Court of the King's Bench*, XIV, 1812, pp 406-22.

⁹² Ibid.

commented, 'This Company went into market 15,000 strong, that is the market itself formed the company.'⁹³ The co-operative milling societies of the Napoleonic period, with their classic co-operative features of no credit, no debt, and fixed interest rates, should not be viewed as forerunners of the Owenite ideal, nor was there any obvious link with political activity. They were a spirited, rational, but only partial solution to a problem that affected all ranks of society, but particularly the lower orders. While some of these milling societies were short-lived, the majority survived into the 1830s and some into the full flowering of co-operative production of the 1860s.⁹⁴ As Marshall

pointed out in his address to the Co-operative Congress in the 1880s, 'the independent productive societies which we find now scattered over the whole of Great Britain are representatives of a very ancient race.'⁹⁵

amongst the descendents of the founders; the partnership between the Mansfield friendly societies and the Greyhound Benefit Society of Mansfield Woodhouse continued until 1820. The mill was sold in 1821. Hucknall Torkard mill, on the other hand, remained in operation until the 1880s, when a small steam mill was built in the mill yard 'to grind corn when there was no wind astir'. The two Hull mills and the Whitby mill were at work in the 1880s (augmented by steam power), as were the Birmingham and Wolverhampton steam mills (although not run as co-operative ventures). By this date many new co-operative flour mills had been built: *C.W.S. Annual*, 1883. See also Benjamin Jones, *Co-operative Production*, Oxford, 1894.

⁹⁵ Quoted in *ibid*, p 38.

⁹³ Rex v. Mander, *op cit*.

⁹⁴ The Woolwich shipwrights' mill remained at work until the 1830s, when it was sold and the proceeds divided