Business Enterprise in 18th Century Britain: Toft Moor Colliery, 1770-79

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> I have lived my whole life in a Coal Mine country. I have possessed the means, and have had the opportunity offered me of adventuring in speculations of that nature; I have declined doing so upon this principle; that the average profits resulting from those adventures were inadequate to the employment of so much capital as they required, and to the risk attending them.
>
> Nathaniel Clayton [4, p. 544]

There are few extant business records for small enterprises in 18th century Britain. Upon dissolution or death of the proprietor, account books were often regarded as worthless, if not a nuisance. They were destroyed or forgotten and lost, much to the dismay of the modern business historian. Fortunately, some records have survived [see 1, 2, 12, and 13]. The documents on which this paper is based survived because they were used as evidence in a court case involving one of the proprietors of the business. The case was heard in Chancery Court, and since the documents were never returned, they were deposited in the Public Record Office [7]. The documents consist of the following items: Toft Moor Colliery *Ledger* and *Journal*; *An Account of Coals Led from Toft Moor Colliery to Fatfield Staith*; and *An Account of Coals Delivered at Fatfield Staith*. The records are complete in that they cover the entire life of the colliery. Although they are not unambiguous, the records shed much light on this particular type of business enterprise, and they warrant investigation.

On the 25th day of June 1768 work began on sinking pits in the Houghton-Le-Spring district of the County Durham coal field, some two to three miles north of the River Wear and east of the meridian of Chester-Le-Street. Two pits were eventually won, and Toft Moor Colliery commenced raising and leading coals from the pits on 24 April 1770. The pits tapped two seams of coal, the six-foot "Lowmain" seam at 115 1/2 fathoms and the three-foot-nine-inch "Hutton" seam at 129 1/2 fathoms [5, p. 397]. The coals were led to Fatfield Staith by means of wagonways, where they were transferred to keels and sent to Sunderland for eventual export (primarily to London). The *Journal*, *Ledger*, and accounts cover the period of first working in 1770 until the colliery ended its existence in 1779, at which time the books were closed and balances transferred to the account books of North Birtley Colliery.

Toft Moor Colliery was a partnership, one-half interest belonging to John Stafford, the other half to Richard and Ralph Humble. The accounts survive because of a court case brought against John Stafford in 1789. Since the case did not challenge the integrity of the accounts, they can be considered an accurate reflection of the course of the enterprise. The complainant in the case was William Wilkinson, Coal Factor, of the Coal Exchange, London. Wilkinson was suing Stafford on behalf of James Smithson, Jr., who was indebted to him and who was in jail for his debts and drunkenness. John Stafford was the only surviving trustee of the estate of Smithson's grandfather (who had been concerned in real estate, shipping, and coal fitting, and who owned keels and a colliery jointly with George Humble).[1] In a previous suit the younger Smithson had claimed that Stafford had mismanaged the estate of his grandfather, and demanded one-third of Stafford's share of the profits in Toft Moor Colliery. Stafford settled that suit for Ŀ500, and it is assumed that this action was an attempt to get more funds out of Stafford [8]. The evidence in the case was produced by John Emmerson, who kept the books at Toft Moor Colliery.

The balance of this paper will consist of an analysis of the books of the colliery. The structure of the books will be discussed, production and profits will be examined, an attempt will be made to establish the relationship of Toft Moor to North Birtley Colliery and to the existing coal cartel of the era (the infamous Limitation of the Vend) and, finally, the question of why the colliery ceased operation in 1779 will be addressed.

Entries in the Toft Moor *Journal* were posted to a *Ledger* in double-entry form and were balanced at the end of each year, when a profit distribution was made. The accounts are not without problems, however. As in so many of the surviving accounts of this period, the major flaw can be found in capital accounting procedures. Sidney Pollard has revealed the enormous variety of and range of capital accounting practices used during the period of the industrial revolution and concluded that "there was no clear-cut attempt to adapt accounting practice to the notion of capital as generalized, depersonalized property, seeking the highest return regardless of its concrete embodiment, as postulated by economic theory" [11, p. 144]. In fact, there was no capital account whatsoever in the Toft Moor books, although there were inventories of materials on hand (stores) made in 1773 and 1778. This omission makes a definitive rate of return calculation for the colliery virtually impossible.

An examination of the *Ledger* for the year 1770, the first year of production, is instructive. There were six basic accounts: cash, the Toft Moor Colliery account, the owners' accounts, accounts receivable, accounts payable, and the North Birtley Colliery account. The cash account simply recorded receipts for coal sold on the debit side and payments made for various expenses on the credit side. The remaining accounts are deserving of more attention.

Probably the most important account in the *Ledger* was the Colliery account (Table 1), for it was here that expenses and receipts were recorded and that the yearly profits were calculated as the residual between credits and debits. The Colliery account fully illustrates the major problem associated with accounting practices during this era. As Pollard has stated, "In considering capital in the sense of working assets, most manufacturers of the industrial revolution were apt to confuse fixed investments and current expenditures..." [11, p. 134]. A glance at the debit side of the Colliery account indicates that this is precisely what was done here. The various entries for rails, sleepers, timber, pit props, ropes, and the two whim ginns (a winding apparatus found at the pithead and driven by horses) should have belonged in a capital account and should not have been regarded as a working expenditure for the year 1770. Since these items were not depreciated in subsequent years, the effect of this accounting practice was to understate profit in 1770 and to overstate profit in subsequent years.[2] After the remaining expenses (working and drawing, leading the coals, rents, agents' salaries, wayleaves, taxes, and so on) were added to the debit side, a balance was struck and the difference was recorded as profit and was divided between the owners.

The proprietors' accounts are interesting for several reasons. Besides being credited with their share of the profit in 1770, the Humbles also supplied Toft Moor with a variety of items, including timber and houses. John Stafford was not only a proprietor of the colliery, he was also the major purchaser of coal raised, taking 73 percent of total output in 1770 on his own account. In addition he purchased almost £100 worth of timber and firewood from the colliery. At the end of the year he owed Toft Moor nearly £900 for coal and the other items purchased. The other major purchaser of coal was the Estate of James Smithson, which took the remaining 1,496 chaldrons sold. Since John Stafford was the surviving trustee of the estate, he in fact purchased the entire output of Toft Moor Colliery in its first year of operation.[3]

The accounts payable were of several types. William Peareth, proprietor of an adjacent colliery, was paid over £67 for rails and other supplies. Tentale rents[4] were paid to Mr. Jenison and Partners, Thomas Swinhoe (blacksmith), John Robson (wagonwright),

Table 1

TOFT MOOR COLLIERY ACCOUNT, 1770

Toft Moor Colliery	Dr	Contra	Cr
To William Peareth for rails and sundries	67/12/2	By Sundry accounts for 5560 chaldrons at 10/6	2919/0/0
To North Birtley Colliery for rails and sleepers	40/3/4	By Richard and Ralph Humble ticket money for 695 keels	34/15/0
To Cash for Whim Ginn	41/9/6	By North Birtley Colliery for difference in timber account	13/9/9½
To North Birtley Colliery for Ginn and pit ropes	49/5/6	By Richard and Ralph Humble from pitmen for year's houserent and firecoal	4/10/0
To Cash for William Brown, viewer	22/1/0		2971/14/9½
To Cash for sleepers from Hudson	15/4/6		
To Sundry accounts for various expenses	107/10/9		
To Cash for pit props	16/19/1		
To Sundry accounts for expenses (including working and drawing, timber, etc.)	2159/16/1¾		
To North Birtley Colliery for certain rents, agents salaries, and tentale	163/10/9		
To Richard and Ralph Humble for their share of profit	144/1/½		
To John Stafford for his share of profit	144/1/¼		
	2971/14/9½		

and Sir Ralph Milbanke (colliery owner). Leading charges were paid to twelve individuals, including the executors of the estate of George Humble. Finally, a tax of 1 1/2d. per chaldron (£34 3/4 on 5,560 chaldrons) was paid to the commissioners of the River Wear, whose duty it was to keep the river navigable.

The North Birtley Colliery account hints at, but does not make explicit, the relationship between that colliery and Toft Moor. First, North Birtley supplied Toft Moor with over £120 worth of supplies, for which they were duly charged. But it also appears that the two colliers shared certain expenses. One item credited to the North Birtley account (and debited to the Toft Moor account) was for a "proportion of annual rents, salaries, and tentale," and amounted to over £160, being about 25 percent of total joint expenses. Except for these shared expenses, there are no other payments to North Birtley of a proprietorial nature (such as royalties). There is nothing to indicate that Toft Moor was a direct subsidiary of North Birtley. The relationship may merely have been a convenient way to hold down costs, and most likely arose because of the apparent closeness of the Humble family, the deceased James Smithson, and John Stafford.

At the close of business on 31 December 1770, Toft Moor Colliery appeared to be in good shape. They had an accounting profit of over £288 on sales of 5,560 chaldrons (a Newcastle chaldron being approximately 53 1/2 hundred weight) of coal, a remarkable feat considering that many of the expenditures that year were actually capital expenditures. The colliery was owed almost £900 by John Stafford. In turn, the colliery owed its other proprietors, the Humbles, over £425, owed North Birtley colliery over £320, and owed other creditors over £150.

There were few major changes in the structure of the accounts over the remaining life of the concern. By mid-1771 Toft Moor had picked up one additional customer, James Galley, who took about 12 percent of total sales in that year, and continued to purchase coal through 1776. Small sales were made in 1775 and 1776 to Richard Pemberton and John Biss. Most of the output continued to be purchased by James Smithson. In 1772 the joint account of Richard and Ralph Humble was separated, each subsequently taking one-fourth of the profit. In 1773 an important managerial change was made. The task of working, drawing, and leading coals to Fatfield Staith was given over to Robert Wade, who carried out that function for the remaining life of the colliery. He was usually paid over £3,000 per year, from which he presumably had to deduct expenses.

The favorable prospects of 1770 were apparently realized during subsequent years. Table 2 presents the price of coal, sales, revenues, and accounting profits for the years of operation. Price gradually rose from 10 shillings 6 pence per chaldron to 13 shillings per chaldron, an increase of 23.8 percent.[5] Sales

Table 2

PRICE, SALES, REVENUES, AND PROFITS FOR TOFT MOOR COLLIERY, 1770-1779

Year	Price (s./chaldron)	Sales (chaldrons)	Revenues from coal sales	Profit	Profit as % of Rev. from coal sales
1770	10/6	5,560 ch.	2919/0/0	288/2/3/4	9.9%
1771	10/6	10,678	5614/19/0[a]	1352/1/½	24.1
1772	10/6; 11/6[b]	9,834	5474/11/0	1440/16/5 3/4	26.3
1773	11/6[b]	8,312½	4772/6/9	1583/3/5 3/4	33.2
1774	11/6[b]	8,894½	5112/18/9	1834/12/10½	35.9
1775	11/6; 12/6	8,857½	5504/14/9	1838/8/7	33.4
1776	12/6	8,176	5110/0/0	1970/2/6 3/4	38.6
1777	13/0	5,484	2914/12/0	978/18/6½	33.6
1778	13/0	256	166/8/0	139/13/9	84.2
1779	-	0	-	216/6/5[c]	-

[a] There is a slight discrepancy between price times sales and revenue from sales this year.
[b] A few chaldrons of coal were sold at 8s. in these years.
[c] Value of stores on hand.

reached a peak in 1771 and then leveled off between 8,000 and 9,000 chaldrons per year, until 1777-78 when they dropped off considerably.[6] Profits increased in every year up to 1777, and profits as a proportion of revenues stayed above the 30 percent figure for most of the period. Production abruptly ceased at the end of 1777 and in 1779 the books were closed and the balances (a little over Ŀ220) were transferred to the books of North Birtley colliery, as already mentioned.

Although it is not possible to make an explicit rate of return calculation for the colliery, a piece of independent evidence for another Durham colliery, used in conjunction with a 1773 Toft Moor inventory, may be of some help in determining capital invested and the probable rate of return in the enterprise. On 19 March 1800, Mr. Francis Thompson, secretary to the coal owners' association in 1771 was examined by the House of Commons committee appointed to investigate the coal trade. When asked what he believed the general average profit of the coal owner was during that time, Thompson answered that he was only familiar with the situation of Washington Colliery (also near the River Wear). He noted that for Washington profit "was better than 15 percent upon the capital of Ŀ15,000, expended on that Colliery" [4, p. 542]. Toft Moor was clearly a much smaller operation than Washington Colliery. It is known, for example, that Washington had at least one steam engine, whereas Toft Moor appeared to have none. But what if Toft Moor were as profitable as Washington? Using a rate of return of 15 percent and applying it to the average profits of the colliery between 1770 and 1777, gives an implied capital investment of Ŀ9,407. It appears that the proprietors of Toft Moor had nowhere near that amount invested in their business. Based on the 1773 inventory of stores and materials on hand (rope, timber, whim ginns, and so on, and including the value of the wagonways) the colliery had a little over Ŀ530 worth of working capital. Even if sinking charges were added to this, the figure would not approach Ŀ9,407. It appears that the enterprise was either fantastically profitable or, more likely, the accounting practices of the business led to seriously overstated profits.

A more detailed examination of the structure of costs for Toft Moor Colliery may be instructive. In Table 3 total cost for the year 1771 is divided into its constituent parts, and the proportion of each in the total is calculated. The various costs can be recombined into four basic ones: labor, stores (timber, rails, and so on), royalties (rents and wayleaves), and taxes.[7] Working, drawing, and leading the coal would be predominantly labor costs, although the leading charges may contain some element of capital cost (for the "wagons"). If half of the "other expenses" are allocated to binding money for the pitmen,[8] labor costs constituted about 67 percent of the total. This is

Table 3

STATEMENT OF COSTS AND PROFIT FOR TOFT MOOR COLLIERY, 1771

Costs		% of total cost	
Working and drawing coal	1939/ 4/ 1	44.7	
Other expenses incurred in getting coal (binding money for pitmen, staith rent, etc.)	514/12/ 9½	11.9	
Leading charges	712/ 7/ 2	16.4	
Tentale rents and wayleaves	255/19/ 4	5.9	
North Birtley for % of annual rents and salaries	240/ 8/ 2¾	5.5	
House rents	39/15/ 0	0.9	
Port duty	66/11/ 9	1.5	
John Stafford for sundries	414/ 4/ 9	9.5	
Estate of James Smithson for sundries (timber, keel hire, etc.)	73/11/ 4½	1.7	
James Galley for sundries	54/ 0/ 6½	1.2	
Thomas Harvey, attorney, for business done	27/ 0/ 2	0.6	
For keeping boats and preventing the stealing of coals	2/ 1/ 7¾	0.0	
Total			4339/16/10
Revenues			
From sale of coals	5614/19/ 0		
From Richard and Ralph Humble for sundries	76/18/10½		
Total			5691/17/10½
Profit			1352/ 1/ ½

consistent with what R. H. Walters found for three collieries in South Wales in the late 19th century [14, pp. 258-59]. If it is assumed that "sundries" were primarily materials such as timber, rope, rails, and so on, stores costs made up about 12 percent of the total. Depending upon the proportion of the payments to North Birtley that were rents, something on the order of 6 percent to 9 percent of total cost could be attributed to royalties, leaving 1.5 percent for port duty, and about 10 percent to 12 percent unallocated. All of these figures are consistent with Walters's findings for South Wales. The missing element is, of course, explicit capital cost or depreciation. The real return on capital invested remains a mystery.

In addition to the cost side, it is possible to extend the analysis of production because of the existence of a separate piece of evidence, *An Account of Coals Led from Toft Moor Colliery to Fatfield Staith*, which contains the weekly and semiannual production figures for each pit operated by the colliery. The summarized data are presented in Table 4. While scanning the table one can almost visualize pits being opened up, worked, and finally flooded or exhausted and closed. It was unusual for a pit to be reopened once it had been closed. Only at the Betty pit was there more than a year's lull between working. The normal number of pits worked per year was three, and for only one year, 1774, were more than three pits worked. Only during the final year of production were fewer than three worked. This guaranteed a rather steady flow of output without spectacular growth.

The opening of pits was a time-consuming process (perhaps not accurately reflected in the profit figures). It has already been noted that it took approximately two years to win the first pits. Although the Chance pit was not producing until 1776 (in which year the colliery paid Thomas Humble £25 1/2 for sinking charges), there were materials at the pit as early as 1773. Furthermore, success was not always guaranteed. Although there were over £15 worth of materials at the Peggy pit ("the shaft in good repair") in 1773, no production was subsequently forthcoming.

Toft Moor was only one of many mining operations of the area, and it is desirable to place the colliery within the context of the entire northeastern coal industry. Although basically competitive, the trade was not free from repeated attempts to curtail output by means of a cartel. Toft Moor commenced operation one year before the establishment of the strongest and most comprehensive 18th century agreement among the coal owners of the area. In 1771 a cartel, known as the Limitation of the Vend, attempted to control strictly the production of coal in the area surrounding the Tyne and Wear Rivers. It was not the first such attempt during the century, but it was certainly the most ambitious.[9] As the aforementioned

Table 4

QUANTITY OF COALS (WAGONS) LED FROM TOFT MOOR COLLIERY PITS, 1770-1777

	Hedge	Betty	Well	Tofthill	Prosperous	Good Luck	Chance	Total	Yearly total
April - June 1770	272	1338						1610	
July - Dec. 1770	551	3686	2288					6525	8135
Jan. - June 1771		3325	2015					5340	
July - Dec. 1771		3934	4863	2				8799	14139
Jan. - June 1772	33		3320	642				3995	
July - Dec. 1772	1499		5040	1895				8434	12429
Jan. - June 1773			1243	1770	1028			4041	
July - Dec. 1773			339	2914	3022			6275	10316
Jan. - June 1774			1221	2110	821			4152	
July - Dec. 1774			1407	2819	1168	1274		6668	10820
Jan. - June 1775			90		2668	912		3670	
July - Dec. 1775			64		3261	3883		7208	10878
Jan. - June 1776						2760	1823	4583	
July - Dec. 1776					644	2711	1960	5315	9898
Jan. - June 1777							2292	2292	
July - Dec. 1777		1362					1347	2709	5001

Francis Thompson stated to the 1800 coal committee investigators,

> In August, September, and October 1771, I found great irregularities in the Coal Trade, especially with respect to the measure. I communicated my sentiments on that head to two of the most respected agents for the Owners, and we said it was a pity but the Coal Owners had a meeting to regulate those abuses;... upon which it was agreed that a meeting should be had of the Coal Owners belonging to Sunderland, to be convened by me, and the Coal Owners at Newcastle, to be convened by a Mr. Gibson and Mr. Morrison, which was done; and we had three or four meetings, and I was appointed Secretary. At one of those meetings, the prices were fixed, some at 12s., some at 13s., 14s. and 15s. per Newcastle chaldron,...viz. Walls End, Walker, Willington, Hebburn, and Heyton, are permitted to send the greatest proportion, and at the best price: after that there is a second class, which sells one shilling per chaldron lower, being Coals of an inferior quality, and also less in proportion as to quantity; there is likewise a third class... [4, p. 541].

The Limitation was not always successful in its efforts to proportion the vend. In some years the regulations broke down entirely, but they were periodically renewed. When asked how the vend was proportioned on the River Wear, John Martindale, clerk to the coal owners, answered as follows:

> With regard to the limitation of quantities it was not a fixed limitation, but depended upon the demand for coals at market; the first limitation is the establishment of the proportion which may be shipped from the Wear compared with that which may be shipped from the Tyne, and the proportions are three for the Tyne, and two for the Collieries on the Wear, or nearly so. If any agreement is made for the limitation of the monthly vend on the Tyne, the same rule is adopted by the Coal Owners on the Wear.... Notice is given by the meeting of Coal Owners to the Particular owners of Collieries, of the quantity which may be shipped in each month at each colliery. [4, p. 557]

In order to assure success, the cartel would have needed either the elimination or the cooperation of collieries such as North Birtley and Toft Moor.[10] There is direct evidence that Toft Moor at least participated in the discussions among the area coal owners. Under the North Birtley Colliery account for

1777 there was the following notation: "32/19/0 to John Morrison for attending to several meetings of the coal trade." In no other year was any such payment made explicit.

It remains to be determined whether or not the cartel was successful in restricting aggregate supply. Most of the witnesses called before the 1800 Parliamentary inquiry thought not (of course, most of them had a vested interest in making such an argument). Nathaniel Clayton stated, "I believe, in point of fact, that the general vend was as great, if not greater, after the agreement than it was before" [4, p. 544]. Whatever the overall impact, the cartel was not successful in saving Toft Moor Colliery from extinction.

In the face of rising prices, apparent substantial profits, and a vigorous coal owners' association, why did Toft Moor Colliery cease operation? One possibility is that defective accounting practices led to a serious overstatement of profits. If it were possible to restructure the accounts of the colliery, putting them on a modern accounting basis with a proper capital account, it is likely that the apparent profits would have been reduced, perhaps even extinguished. There are other potential causes for the failure. Although there is no evidence of a mine disaster at Toft Moor in late 1777,[11] mine exhaustion is a possibility. Yet this seems unlikely. Both the Lowmain and Hutton seams were still being successfully worked in the same district in 1836 [6], and the Betty pit had recently been reopened and was producting. Yet another possibility for the failure of Toft Moor lies in the fact that it may have been producing coals of an inferior quality. The price obtained by the proprietors was on the lowest end of the scale established by the Limitation in 1772; it may simply have been a marginal operation. One of the major facts supporting this conclusion is that Toft Moor had no steam engines. The use of steam power to raise water from the collieries was quite common by 1770. Engines had already been erected in the district at South Biddick, Fatfield, North Biddick, Beamish, Oxclose, Washington, Ouston, Newbottle, Pensher, Morton Hill, Black Fell, and Chestern Burn [3, pp. 272-73]. Absence of access to the best technology would have put Toft Moor at a serious disadvantage relative to its competitors. Outside influence may also have created conditions in the trade not conducive to the success of marginal operations. The American war of independence would have had a profound impact on the trade. Although the demand for war material was stimulated (creating a derived demand for coal), the carrying trade was severely disrupted. War usually signaled depression in the coal trade, and could have forced the weakest collieries below the margin [9, Ch. IV]. For whatever reason, or for all of these reasons, Toft Moor Colliery ceased production in late 1777 and its books were closed in 1779.

The fate of the proprietors, Richard and Ralph Humble, is not known for certain. In 1777 their accounts were each debited £277, the proceeds used to purchase part of Liefield Colliery. It is likely that they remained in the business in a small way. The following comment probably refers to the John Stafford of Toft Moor: "In 1797 a new colliery was opened at Höganäs, near Helsingborg, owned by a Swedish company, but managed by a native of Newcastle, John Stafford" [10, p. 347]. If he was indeed the John Stafford of Toft Moor, the Swedish Colliery must have been his last venture, for the "Executors of John Stafford" are listed in "An Account of the Coal Fitters of Sunderland on the River Wear" in December 1799 [4, p. 632].

It was with the hope of gaining insight into small business enterprise in 18th century Britain that this project was undertaken. The Toft Moor Colliery *Ledger*, *Journal*, and various other accounts proved to be rich but flawed sources of information concerning one such enterprise. Although an attempt was made to evaluate the profitability of the enterprise and to place it within the context of the whole of the northeastern coal trade, the precise reason for its ultimate failure must remain a mystery. The enterprise appeared successful, almost fantastically successful, on paper, but was in reality a marginal operation. Perhaps the proprietors should have heeded the advice of Nathaniel Clayton, presented at the head of this paper.

NOTES

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1. The precise relationship between George Humble and Richard and Ralph Humble is not known.
2. Of course, additional capital expenditures were erroneously debited to the years in which they were incurred.
3. Stafford was apparently acting as his own "fitter" or coal factor. Since it was unusual for coal owners to sell directly on the London market, he most likely sold the coal to ship owners at Sunderland, the common practice of the day.
4. Tentale rents took several forms. They could have been royalties paid on coal raised from pits situated on the lands owned by others. It is more likely here that they were wayleaves, or fees paid to transport coal over the property of land owners situated between the pits and the staith.

5. This was much faster than the 8.5 percent increase in the Schumpeter-Gilboy producers' goods index. In 1773 the wholesale price of coal in London averaged about 56 shillings per Newcastle chaldron (28 shillings per London chaldron) [4, pp. 578-81].

6. Between 1772 and 1776 the output of Toft Moor would have been between 3.1 percent and 3.8 percent of total output of all River Wear collieries [4, p. 591].

7. These are the same categories used by R. H. Walters in his analysis of the South Wales steam coal industry in the 19th century [14, pp. 258-59].

8. Binding money was a flat fee paid to the pitmen at the beginning of each year. The pitmen agreed to work for a particular colliery for the entire year in return for the fee.

9. For a discussion of the earlier attempts at cartelization see [9, Ch. II].

10. North Birtley was about twice the size of Toft Moor, so that their combined share of the total vend from the River Wear was probably around 10 percent.

11. Such disasters were not uncommon. Explosions occurred at North Biddick Colliery in 1773 and at Fatfield Colliery in 1763 and 1767 with the loss of a total of 66 lives [3, p. 273].

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