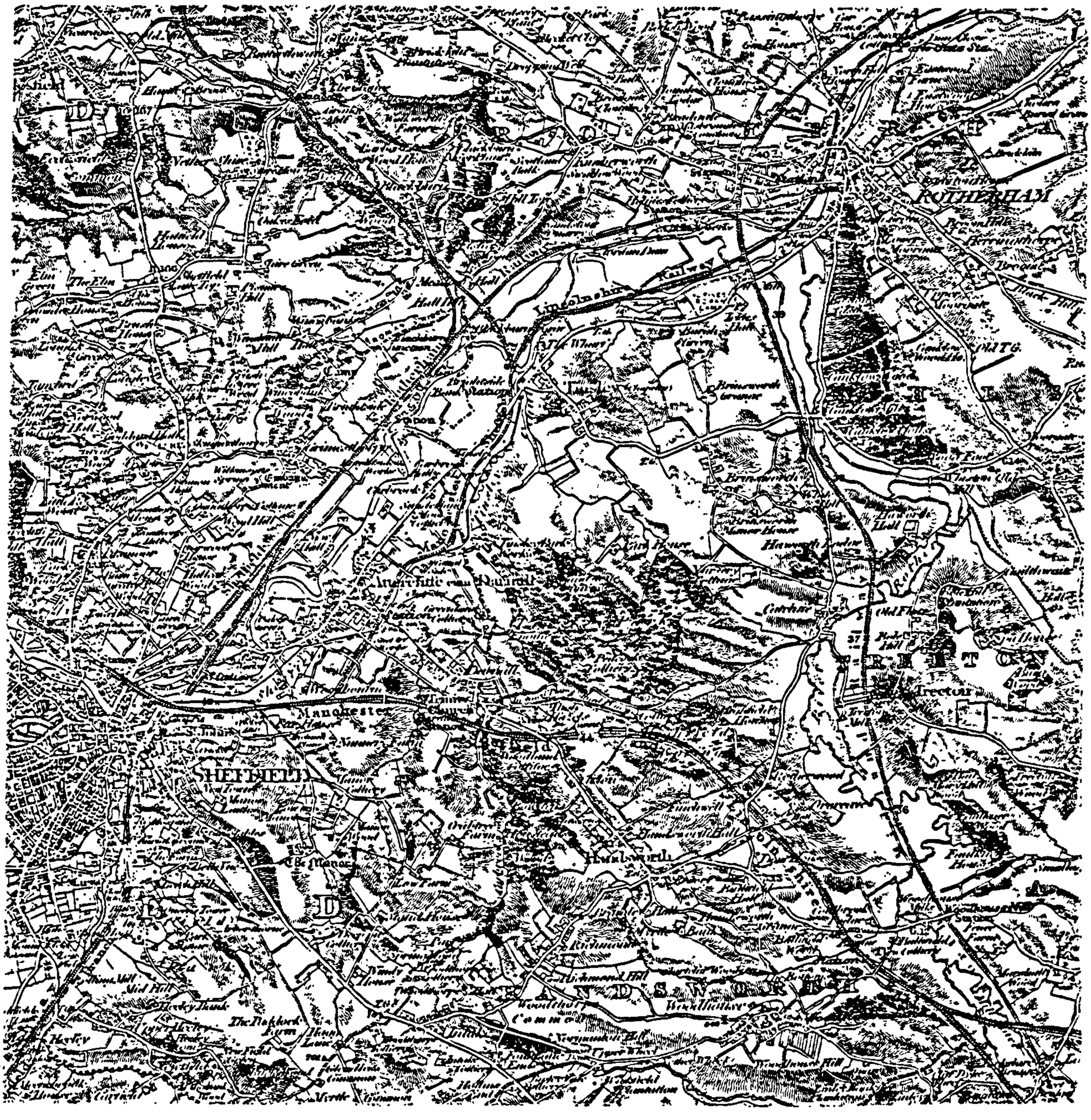
The Finance of Manufacturing Industry in the Sheffield Area c.1850-c.1885



Thesis submitted for the degree of Doctor of Philosophy

at the University of Leicester

by

Lucy Newton

Department of Economic and Social History

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September 1993

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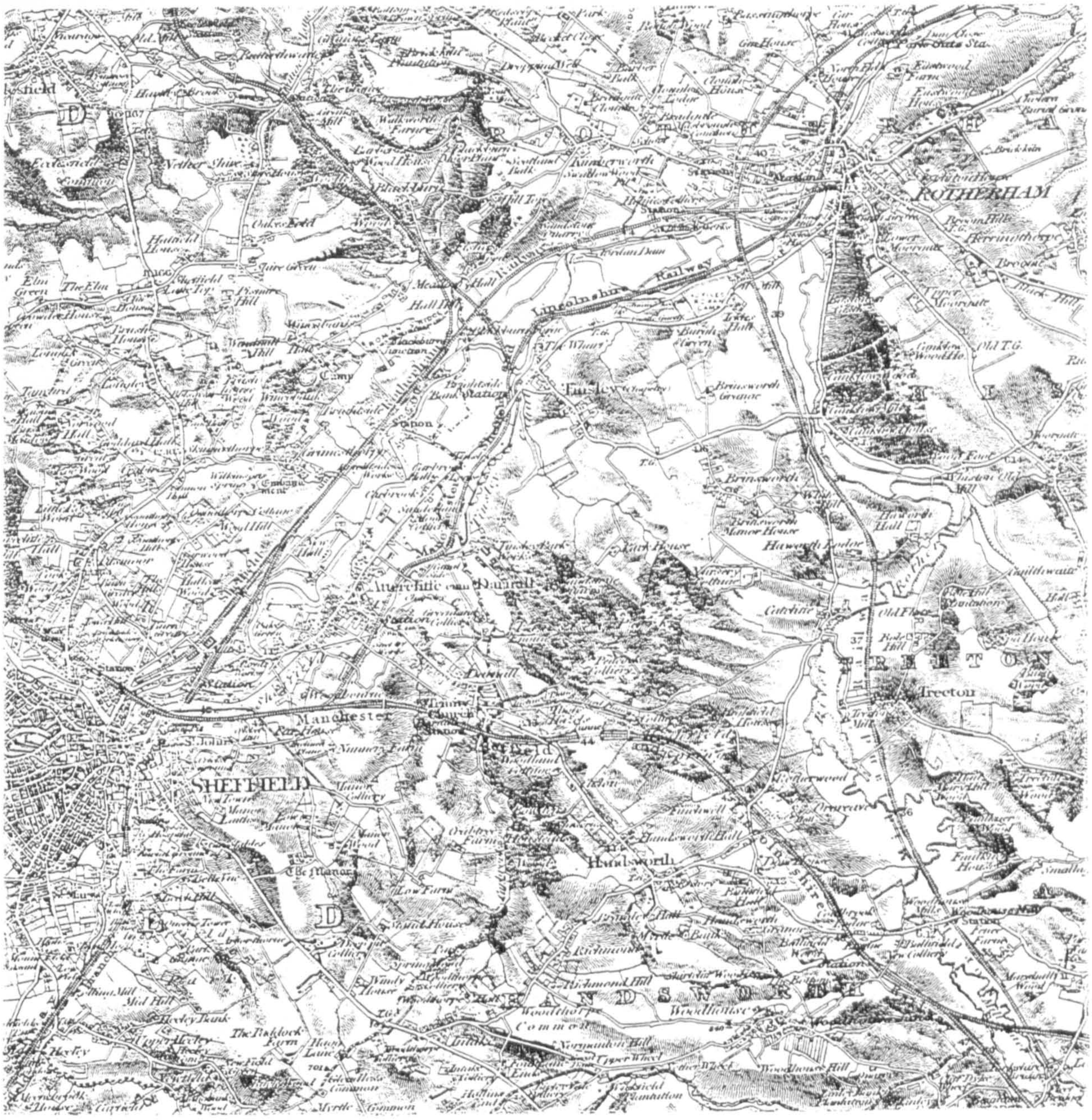
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Station
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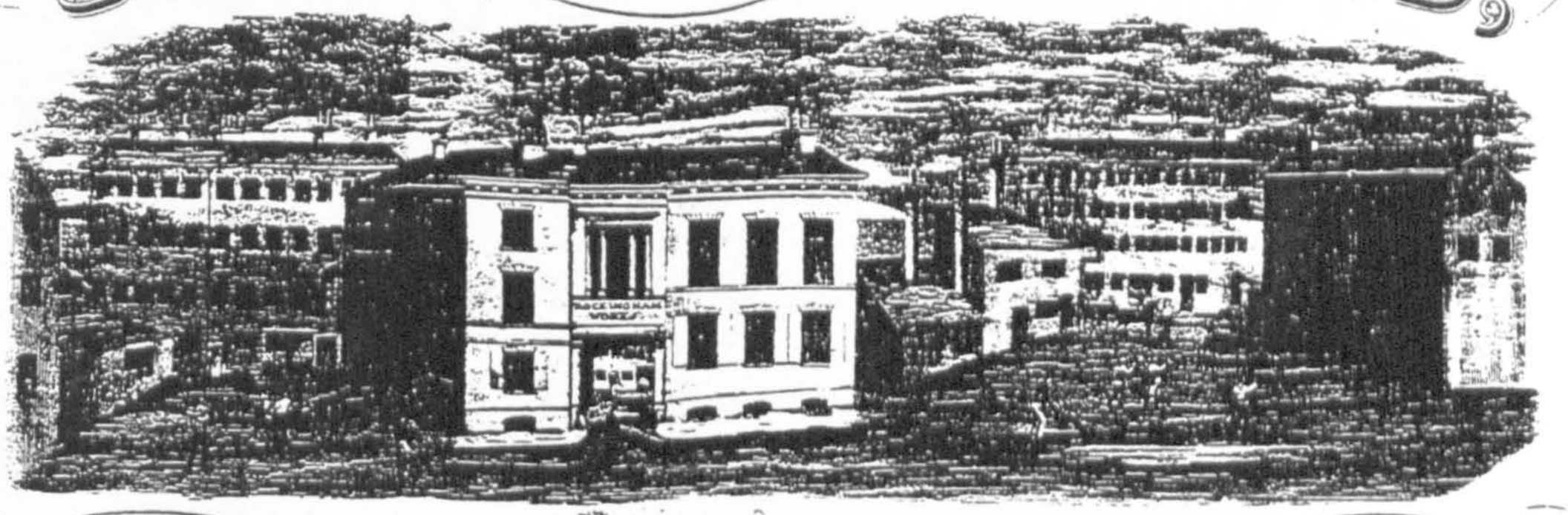
Abstract

The thesis analyses the finance of manufacturing in Sheffield's economic region between 1850 and 1885, concentrating upon its main trades. Industrialists had to cope financially with both national economic fluctuations, especially the early 1870s boom and the depression of 1874-79, and rapid changes in technology. Cyclical expansion, survival during a slump, or the adoption of new techniques, all required financing. Initially, to determine financial demand, the scale and structure of manufacturing was considered and comparisons drawn between 1850 and 1885. The demand for funds has also been reviewed through study of five particular local firms. From the supply side, undertakings which adopted limited liability as a form of organisation and a method of financing were analysed with respect to geographical and social sources of subscriptions, together with provincial banks in terms of their particular provision of funds. The research is empirically based and analysis has involved the extensive use of computer software. The work has revealed a continuing, interrelated pattern of very localised manufacturing, banks and system of finance. Indeed, the financial system mirrored the area's productive structure. Industry remained predominantly small-scale and banks continued to operate at a parochial level. Consequently, a regional financial network has been revealed which, along with the plough-back of profits, generally appears to have provided manufacturing with adequate funds. This system came under strain, however, especially when the banks could not adequately meet the needs of either the few large-scale firms that emerged, or, more generally, demand during the deep cyclical slump of 1874-79. Therefore, the thesis provides a wide ranging analysis of the finance and organisation of industry in the Sheffield region - an area of considerable industrial importance - during the mid-nineteenth century, a period of incomplete transition from the workshop to the factory.

UNWIN & RODGERS,



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CUTLERY MANUFACTURERS.

THE PRIZE MEDAL

for the best Manufactured Articles in Cutlery, was awarded to

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by the ROYAL COMMISSIONERS of the GREAT EXHIBITION of the INDUSTRY OF ALL NATIONS,

and was duly notified in the LONDON GAZETTE *of 17th October, 1851.*

INVENTORS & SOLE MANUFACTURERS of the PATENT SLIDING PENCIL & CIGAR KNIVES.

To imitate which is Felony.

From 20 000 to 30 000 Dozens of the above Articles generally in Stock.

Source: *White's Gazetteer and General Directory of Sheffield* (Sheffield 1852)

Source: *White's General and Commercial Directory of Sheffield* (Sheffield 1879)

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Acknowledgements

Firstly, I would like to thank those institutions which provided the financial support that made this research possible. The University of Leicester granted both an 'Open Research Scholarship' and 'Grants in Aid of Research'. The European Association for Banking History e. V. (Frankfurt) supplied further funding and I am especially grateful to Prof. Manfred Pohl and Prof. Herman Van der Wee. Thanks also go to the Swedish Institute, which awarded me a scholarship to study with the Banking History Unit at the University of Uppsala, and to the Trustees of the Michael Postan Award and the London School of Economics for the granting of the 1992/3 Michael Postan Award.

The task of data collection was made easier by all the staff and archivists I encountered at various record offices, but I would especially like to thank Edwin Green (archivist at the Midland Bank) and Elizabeth Green (ex-archivist at British Steel Northern Region Records Office) for their helpfulness beyond the call of duty.

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Inevitably, there are numerous people that have given their assistance, both in an academic and non-academic sense, whom I would like to acknowledge. The advice and support from the members of the Economic and Social History Department at the University of Leicester during my years of post-graduate study has been invaluable. Special thanks go to Clive Dewey who is responsible for initially suggesting a course of post-graduate study. I would also like to thank the members of the Banking History Project and the Economic History Department at the University of Uppsala for their help and a most enjoyable period of study. Without the help of both Emmett Sullivan and Jean Hosking on the Ingres database a major part of this work would never have been possible: their patience and contribution has been very much appreciated. Thanks are due to Neil Raven and Marjanna Niemi, two of my fellow post-graduates at the University of Leicester, who have provided continuous help and extreme tolerance! I am particularly grateful to all my friends who have endured my complaints and offered their support. These include all those at the P.R.O., especially Klaus, Kath, Roberta and Dan who helped retain my sanity during my months of data collection, together with the Kates, Jackie, Kristina and Martin whose friendship has been so valuable. I am especially grateful to Tom whose patience has been unending and whose help has contributed so much to this thesis.

I owe an enormous debt to all my family, especially my parents, for all their support, without which I would not have survived to complete this work. Thanks must also go to Gillian Austen for her help in preparing this thesis. Finally, my greatest debt is owed to my supervisor, Philip Cottrell, who has offered continuous encouragement, together with constructive criticism, and

who has patiently read endless draft copies of my work. He has helped in ways too numerous to mention and without his support this thesis would not even have been started, let alone completed. It has been a pleasure to study under his guidance. All errors and omissions in this work remain my own.

CHAPTER 1: INTRODUCTION

A major concern in economic and business history is the finance of English manufacturing industry during the second half of the nineteenth century, a period of rapid economic and technological change. Yet, during the late nineteenth century the growth of the British economy slowed and a shortage of funds to finance new investment within the domestic economy has been blamed as a possible responsible factor. It has been generally established that before 1880 most firms relied on internal sources of funds to finance new investment. Despite the relaxation of company law in the mid-century, limited liability as a form of company organisation was little used, although with some take up in cotton, iron and steel, and coal mining. The main surge of conversions to the limited form occurred only from the 1880s and 1890s and even then often did not give rise to public appeals for capital.

There is a considerable literature concerned with several aspects of the relationships between industry, finance and limited liability. Jefferys has written on the character and denomination of shares[1]; Shannon has examined the events leading up to the general introduction of limited liability and the resulting early joint stock companies[2]; Cottrell has produced a general survey of the finance and organisation of industry, but with specific reference to textiles, iron and coal[3]; Thomas has studied both the London and provincial Stock Exchanges[4]; Hudson

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1 Jefferys, J.B. 'The Denomination and Character of Shares, 1855-1885' in E. M. Carus Wilson, ed. *Essays in Economic and Social History* (1946) [hereafter Carus Wilson *Essays*....].

2 Shannon, H. A. 'The Coming of General Limited Liability' (1931) in Carus Wilson, *Essays*....; 'The first five thousand limited companies and their duration', *Economic History, II* 1930-3; 'The Limited Companies of 1866-1883', *Economic History Review, IV*, (1932-3.)

3 Cottrell, P. L. *Industrial Finance 1830-1914: The Finance and Organisation of English Manufacturing Industry* (1980) [Cottrell, hereafter *Industrial Finance*...].

4 Morgan, E. V. and Thomas, W. A. *The Stock Exchange. Its History and Functions* (1962); Thomas, W. A. *The Provincial Stock Exchanges* (1973) [hereafter Thomas, *Provincial Exchanges*....].

has considered the finance of the woollen textile industry in the West Riding[5]; and the cotton sector and its use of limited liability has attracted a number of scholars.[6] However, little work has been carried out addressing the finance of iron and steel - a strategic industry - and, most especially, with respect to Sheffield, the centre of British engineering.

A study concerning industrial finance and business structure in Sheffield is of importance because of very particular local developments from the mid-nineteenth century. Between 1850 and 1880 an almost uniquely large number of companies emerged, financed and organised locally through the adoption of limited liability in the city, contrary to the general national pattern. In only two centres, Sheffield and Oldham, did the formation of joint stock companies, in some number, by manufacturing enterprises occur in these decades; nationally the conversion to limited liability on the part of manufacturing was much slower. Thomas found that 25 limited companies were formed in Sheffield between 1872-73, in addition to 25 concerns established during the years 1863-1871,[7] so that by the mid-1880s Sheffield, with Oldham, was 'one of the two most important centres of joint stock in the country, with 44 companies, with a paid up capital of £12 million'.[8] The adoption of limited liability during the early 1870s was even more rapid in Oldham: during the years 1873-75 70 limited companies were established, which, according to Farnie, 'represented 31 per cent of the total number of companies registered in these years in the English cotton industry'.[9]

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5 Hudson, P. *The Genesis of Industrial Capital. A Study of the West Riding Wool Textile Industry c. 1750-1850* (Cambridge, 1986).

6 For Example: Blaug, M. 'The productivity of capital in the Lancashire cotton industry during the 19th century', *Economic History Review* , Second series, XIII, (1961); Chapman, S. D. 'Financial Restraints on the Growth of Firms in the Cotton Industry', *Economic History Review* ; Farnie, D. A. *The English Cotton industry and the World Market, 1815-1896* (Oxford, 1979) [hereafter *English Cotton...*].

7 Thomas, *Provincial Exchanges.....*, p.123.

8 *Accountant*, quoted in Thomas, *Provincial Exchanges...*, p.124.

9 Farnie, *English Cotton...*, pp.250-51.

Between 1858 and 1896 a total of 154 joint stock companies were formed in the Oldham cotton industry.[10]

A considerable amount of research has been undertaken concerning the emergence and development of joint stock cotton manufacturing companies in Oldham[11] but little with regard to the apparently comparable trends in Sheffield's trades. There have been some general studies of the iron and steel industry in the nineteenth century, for example by Burn, Birch and Payne[12]; of British steel entrepreneurs by Erikson[13]; of the industry in South Wales[14]; and of the new steel processing and production centre in the North East and Scotland.[15] Some aspects of Sheffield and its industry have been reviewed by historians: the technology involved in the processing and production of steel by Barraclough[16]; the city's steel industry in relation to its American counterpart by Tweedale[17]; the

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10 *ibid.*, p.251.

11 For example: Farnie, *English Cotton...*; Smith, R. 'An Oldham Limited Liability Company, 1875-1896', *Business History*, IV, (1961); Taylor, A. J. 'Concentration and specialisation in the Lancashire cotton industry, 1825-50', *Economic History Review*, Second series, I, (1948/9).

12 Burn, D. L. *The Economic History of Steelmaking 1867-1939* (1961); Birch, A. *Economic History of the British Iron & Steel Industry 1748-1879* (1967); Payne, P. L., 'Iron and Steel Manufacturers' in Aldcroft, D. H., (ed.), *The Development of British Industry and Foreign Competition 1875-1914* (1968).

13 Erikson, C., *British Industrialists: Steel and Hosiery, 1850-1950* (Cambridge, 1959).

14 For example: Atkinson, M. and Baber, C. *The Growth and Decline of the South Wales Iron Industry, 1760-1880* (1987); John, A. H. *The Industrial Development of South Wales, 1750-1850* (Cardiff, 1949).

15 Warren, K. *Consett Iron, 1840-1980: a study in industrial location.* (1990); Bell, F. *At the works: a study of a manufacturing town* [Middlesborough] (1969); Payne, P. L., *Colvilles and the Scottish Steel Industry* (Oxford, 1979).

16 Barraclough, K. C. *Steelmaking before Bessemer, Volume 1, Blister Steel: the birth of an industry* (1984); *Volume 2, Crucible Steel: the growth of technology* (1984).

17 Tweedale, G. *Sheffield Steel and America: A Century of Commercial and Technological Interdependence, 1830-1930* (1987).

industry's labour-force by Pollard and Taylor[18]; and specific business histories of Sheffield trades.[19] There have also been studies of the development of Sheffield's industry prior to the nineteenth century by Hey.[20] Moreover, there has been much work carried out concerning banks and their role in financing English manufacturing industry, at both a national and local level.[21] However, analysis of the finance and organisation of the Sheffield's industry in the mid-nineteenth century, a period of transition, has almost been neglected. This thesis aims to research a previously largely unconsidered but important area in financial and business history.

This thesis is concerned with the sources of finance for manufacturing industry in Sheffield over the period c.1855 to 1885, examining in particular firms with limited liability and the provision of resources to industry by local banking institutions. The underlying work for the thesis has concentrated upon the main trades of this local area: steel manufacture, the secondary metal trades, engineering, and coal mining.

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18 Pollard, S. *A History of Labour in Sheffield* (Liverpool, 1959); Taylor, Sally-Ann, Socio-Economic Relations in the Sheffield Cutlery Trades, unpublished PhD. thesis, Sheffield University, 1990.

19 For example: Trebilcock, R. C. *The Vickers Brothers: Armaments and Enter-prise 1854-1914* (1977) [hereafter Trebilcock *Vickers Brothers...*]; Scott, J. D. *Vickers. A History* (1962); Thomas Firth & John Brown Ltd. *100 Years in Steel. Firth Brown Centenary 1837-1937* (1937); Charles Cammell & Co. Ltd. *Cyclops Steel and Iron Works, Sheffield, England* (Sheffield, 1899).

20 Hey, David, *The Fiery Blades of Hallamshire: Sheffield and its neighbourhood, 1660-1740* (Leicester, 1991) and 'The Rural Metalworkers of the Sheffield Region: A study of rural industry before the Industrial Revolution', *Department of English Local History Occasional Papers*, Second Series, No. 5, (Leicester, 1972).

21 Cottrell, *Industrial Finance....*; Collins, M. *Banks and the Finance of British Industry, 1800-1939* (1991); Collins, M. and Hudson, P., 'Provincial Bank Lending: Yorkshire and Merseyside, 1826-60', *Bulletin of Economic Research*, 31, (1979); Hudson, P., ' The Role of Banks in the Finance of the West Yorkshire Wool Textile Industry, c.1780-1850', *Business History Review*, LV (1981).

One important issue has been to what extent was limited liability used as a form of industrial organisation in the area ? The adoption of limited liability provides an indication of both the development of more 'public' capital markets and a lessening of the reliance on 'auto-finance' - the plough back of profits. Another important issue is what role did provincial banks play in the provision of finance to local industry? This, again, provides an indication of the move away from 'auto-finance' and the extent to which the banks succeeded in meeting the demands for financial resources from local industry. In addition, other issues concerning the provision of finance to Sheffield's manufacturing industry have been investigated: the actual size and structure of industry in the Sheffield region during the period; the social and geographical origins of company shareholders; the nature of 'outside' promoters or financiers; and the demand for finance by local firms. At the centre of the analysis is the question of how companies and their bankers coped with the changing requirements for finance brought about by the increased scale of industry and the developments in technology utilised. The result is an empirically based study which has used computing techniques in order to analyse the underlying data involved.

The study was initially conceived as encompassing industry strictly located within the boundaries of the city of Sheffield. However, when investigating the number of companies that adopted limited liability between 1855 and 1885, the area was extended to the region immediately surrounding the city of Sheffield, including the towns of Rotherham, Barnsley and Chesterfield, in order to provide a more comprehensive survey. Thus, companies which had their registered offices in these four locations, or any sites adjacent to them, were included in the survey of joint stock companies and this broader definition of the region was retained for the thesis as a whole. The towns of Rotherham and Barnsley are close geographically to Sheffield, all being located in the West Riding of Yorkshire (Barnsley 16 miles north and Rotherham six miles north east of

Sheffield), and, more importantly, were involved in the same manufacturing and mining industries: iron, steel, engineering and coal. Chesterfield is located in a different county - Derbyshire - but was included due to the similarity of the town's industry and associated mining. Thus, what has been developed for the purpose of the thesis is a region based on economic rather than geographical boundaries. This is a financial study and such a definition of the region was considered applicable as commercial, industrial and financial boundaries do not conform to the political geographical delineation traced on an administrative map.

Such a region was therefore considered valid for the topic under consideration and this was confirmed in its contemporary use by local trade directories. The directories used for this work, although having Sheffield as the main location in their titles, all included the surrounding regions towns, villages and hamlets in both the West Riding, Derbyshire and also Nottinghamshire. White's *1852 Gazetteer and General Directory of Sheffield* includes all 'All The Towns, Parishes, Townships, And Villages Within The Distance Of Twenty Miles Round Sheffield.' This embraces 'Eight Hundred Villages And Hamlets In The Counties Of York, Derby And Nottingham.' White's *1862 General and Commercial Directory and Topography of the Borough of Sheffield* used the same criteria as the 1852 directory, whereas White's 1879 version of the directory employed a boundary of 12 miles from Sheffield 'as a centre'.[22] All the directories contained towns and villages located in Nottinghamshire, but these were not incorporated into this study due to the differing nature of trades and industry undertaken in this county.

Having defined the region under consideration, it is important to consider the methodology used when analysing the sources encompassed in this study. The

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22 *White's 1879 General and Commercial Directory of Sheffield, Rotherham, Barnsley, Chesterfield and Worksop* (Sheffield, 1879).

main primary sources were the Board of Trade [hereafter BT] 31 series located at the Public Records Office, Kew, London [hereafter PRO]; the Midland Bank Archives, located at Pepys Street, London [hereafter MBA]; and the records of five companies held by the British Steel Corporation Northern Records Centre, Middlesborough [hereafter BSC, NRRC].

Methodology: Analysis of Company Shareholders and Directors using a relational database

The research began with the examination of files in the Board of Trade papers, file series 31, at the PRO[23] which provided registration documents, share returns, and the winding up documents of joint stock companies. These reveal the start up capital of the company; number, nature and size of shares; names, addresses, and occupations of shareholders; numbers of shares held by each person; directors, solicitors, auditors and bankers of each company; and the dates of company formation and dissolution. The information was collected for 90 companies which adopted limited liability in the Sheffield region between 1855 and 1885.

The data collected concerning the company's shareholders was inputted onto a database in order to analyse the geographical and social patterns of company share ownership, and to discover individuals with shareholdings in several companies in order to identify the existence of a local, or regional, networks of financial capital supply. Inputting this large volume of data was very time consuming: approximately 6,000 shareholders names, addresses, and occupations were inputted and coded for the purposes of analysis. Due to the importance of the resulting sections within the thesis, both in terms of time spent and results gained, it is worth considering in some detail the methodology used in the analysis.

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23 Public Record Office, Kew, London [hereafter PRO]: Board of Trade [hereafter BT] papers, file series 31.

The problem of how to analyse large amounts of information concerning company shareholders was solved by using a computer programme to create a relational database management system, in this case a programme called INGRES. (The standardised nature of the share returns also made the data they contained ideal for computer analysis). INGRES is a relational database management system - in other words, a general purpose computing system for working with large amounts of information. Preparing the information was a time-consuming and monotonous task but, once achieved, a database management system greatly reduced the time needed to retrieve and update it. The system also provided tools that allowed sorting, comparisons and linkage of records with much greater ease and on a much greater scale than would have been feasible by hand. Therefore, the advantages of using a computer arose from its ability to analyse large volumes of data; one of the main functions of a relational database is its ability to link together a variety of information, in this case about shareholders.

Information was stored on a database where it was logically organised into tables. The tables were organised into rows and columns. All the rows in a table have an identical structure. Each column in a table has a name that describes its content - the data in two or more tables can be related. In a relational database, the values in the columns provide natural links between tables. When tables are related in this way, it is possible to examine, print, or update data from two or more tables at one time. The ability to link the information from two or more tables in this way is what makes INGRES a 'relational' database management system.

In order to carry out a comprehensive analysis of a large number of shareholders, the information had to be carefully coded to ensure that the data contained in the various tables could be linked to each other by the columns of data they had in

common. In the database used for this thesis, these common columns consisted of specific identity numbers. In order to allocate these numbers, the core data from the share returns was initially put into one large table. Each row of data was then given a unique identity number (hereafter uid). By sorting this data by surname, individuals were identified and given a personal identity number (hereafter pid). The pid allowed the details of a particular individual to be traced; for example, their shareholdings in various companies and details of their name and occupation. Each company also had a unique company identity number which was used in locating personal shareholdings.[24] The large table was then broken down into several smaller tables, for ease and speed of analysis, and in order to add further information not included in the original data: for example, the county in which an address was located; or the Riding of Yorkshire in which an address was located; or occupational codes, etc. Such additional data were required in order to analyse the sources more thoroughly and comprehensively.

Diagram 1.1 gives an approximate guide to the structure of the database used and illustrates how the tables can be linked by identity numbers. The 'webs' represent the tables in the database and the fields which comprised them. The system of numbers is the most efficient method of *unique* identifiers that can be utilised in a system of coding that involves large amounts of data.

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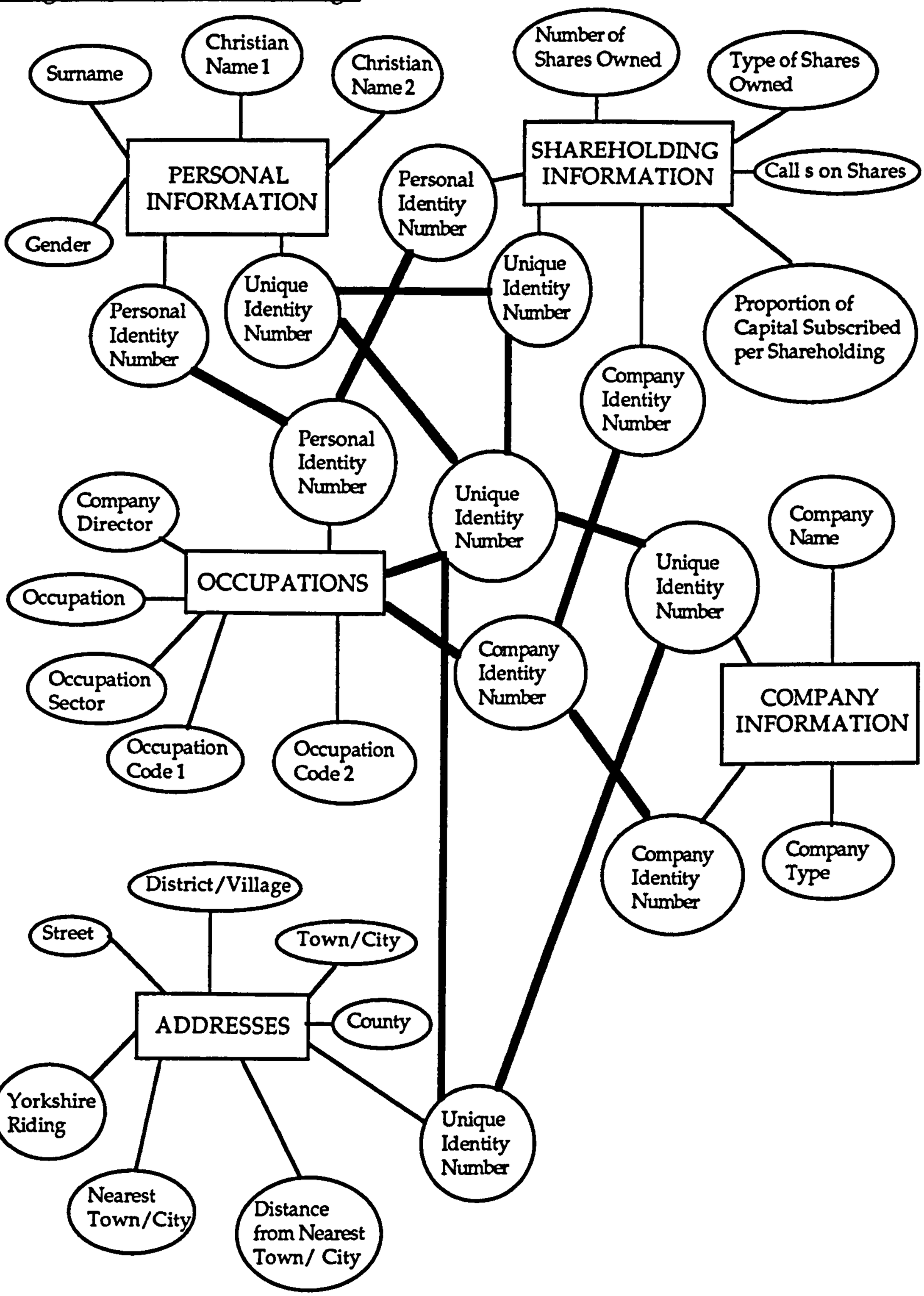
24 The company identity number is identical to the number originally given by the Registrar of Joint Stock Companies.

Diagram 1.1: Database Design



Allocating a pid to an individual was crucial as it allowed shareholding networks to be established. A process called nominal record linkage was used to deter-

mine the identity of an individual and thus designate a pid. Nominal record linkage is a process by which items of information about a particular named individual are associated with each other into a coherent whole. It is often carried out when identifying a named individual from two or more different types of sources but this present work actually uses the same type of source.[25]

Nominal records are those in which individuals are distinguished by name. In this case the records are share returns and the information given for each share-holder (surname, first name, address and occupation) was used. In order to allocate a pid, firstly the information in the original large table was sorted by surname and those shareholders with the same surname and first names and/or initials were identified manually. The occupation and address of the individual was then checked to confirm the identification. However, an exact match for different entries in these categories did not always occur as both occupations and addresses change. Yet, changes in occupation often follow a logical progression (upwards) and local directories were consulted extensively in order to verify the data. Again, this stage of the process can not be done by a computer. Intuitive and informed decisions sometimes had to be made to identify individuals. However, using the same source, or very similar types of sources, and with contemporary reference material to verify decisions, greater confidence could be given to the accuracy of the links established.

Nominal record linkage is not a 'fool-proof' method. As already mentioned, occupations and addresses of individuals change. In addition there is the problem of the accuracy of names. Names are usually the means by which links between historical records are initially made, but names are never unique identifiers: they are frequently abbreviated, modified or changed, and their spelling when written out can be inaccurate. In addition, there can be visual

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25 For details of this methodology see Wrigley, E.A. (ed.) *Identifying people in the past* (1973).

confusion for the historian collecting the data. A set of rules was devised and other sources of information used where possible, in order to confirm or reject links that may be uncertain. Wherever two names could not be completely satisfactorily identified as the same person, they were treated as two different individuals rather than make assumptions about their identity.

Despite drawbacks, nominal record linkage is the best way to identify individuals for the purpose of examining the large amount of shareholding data consulted. Once individuals were identified, and the data properly coded, the information was split into different tables. Information could then be drawn from different tables and linked by using the identity numbers (see Diagram 1.1).

One of the most useful aspects of using a relational database was its ability to identify multiple shareholdings and interlocking directorships. Using the computer query language called SQL, details of multiple share holdings were extracted. SQL can select data by rows or columns and, by specified criteria, from one or more tables. It can be a difficult language to learn and operate, but it allows sophisticated data manipulation. Table 1.2 shows the shareholding information for two individuals with more than one shareholding. Table 1.2 is a secondary table that has been created from three different tables, as can be seen by referring back to the web diagram in Diagram 1.1. It uses data from one table containing shareholders' personal information, another containing shareholding information, and a third containing company information. Table 1.2 has been created by:

a) specifying the columns of information required

b) specifying from which original tables these columns and the data they contain comes from

c) specifying a selection criterion, in this case shareholders with the surname Evans, or by specifying where a pid occurred more than once, thus revealing multiple shareholdings.

Table 1.1: Identifying multiple share holdings

Pid	Uid	Surname	First Name	Company Name	Company Number	Shares Owned
55	288	Evans	John F.	G & J Brown Co. Ltd.	1771/6652	10
55	289	Evans	John F.	James Fairbrother & Co. Ltd	2289/11031	30
56	290	Evans	John	Cardigan Iron Steel & Wire Co. Ltd.	1832/7141	75
56	291	Evans	John	Phoenix Bessemer Steel Co. Ltd.	1763/6597	20
56	292	Evans	John	Sheffield Nickel & Silver Plate Co. Ltd.	1871/7421	20

Information concerning company directorships has also been included in the database. This was contained in the BT 31 files, Memoranda of Association, documents drawn up when a limited company was registered. With this data, those individuals who were directors of several companies could be identified, i.e. interlocking directorships and, in this way, local or regional power/business networks could be established. However, the names and details of directors were not available for all companies so the resulting picture is unfortunately incomplete.

The size, in terms of value, of both multiple and single shareholdings were also identified in order to assess the importance of an individual shareholding. This was achieved by inputting the number of shares held by an individual and the value of the call made by a company on each share type, then multiplying the resultant two columns to calculate the total value of each shareholding. The money value of shareholdings could then be used as a constant 'base' measurement by which following calculations could be made; for example, the geographical or social origins of funds in terms of the percentage of money subscribed.

In addition to finding shareholding and directorship links, the database was used for further types of analysis, for example the geographical and social composition of shareholders. The addresses of shareholders were usually given in some detail in the company share returns. From this information a thorough geographical analysis of shareholders was undertaken. The national distribution of shareholders by county and in major towns and cities can be shown. For a more detailed regional analysis, the Ridings of Yorkshire were used in order to break down the pattern of shareholders' origins into a more precise definition than simply 'Yorkshire' as a whole. Using this method, the local, regional, or national nature of the capital markets in a study could be identified.

The social composition by employment of the shareholders was constructed from the occupational data. The occupation of each shareholder was entered as a logical eight letter code. Further occupation codes were then added in order that the data could be classified and sorted for ease of analysis.[26] The social structure of the shareholders could then be determined, for example establishing how many individuals came from social groups such as the professions, industry or commerce, and even more specifically in which branch of commerce or industry they were employed. However, the nature of the occupational data must be taken into consideration. The shareholders themselves provided the data which means that an 'upward' bias may exist - individuals may have elevated their status in their self-descriptions for reasons of social prestige. Moreover, such self-classification often meant that occupational descriptions were vague: the description of 'gentleman' or 'merchant' were the two most common single occupation titles recorded. Thus, the limitations of the data must be considered when analysing the results.

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26 These occupational codes are listed in the Appendices to Chapter 4.

By using INGRES to analyse limited company shareholders, a detailed picture of linked share holdings, interlocking directorships, and geographical and social composition of shareholders can be achieved. INGRES is a powerful system which has the advantage of being able to manipulate large quantities of data and produce results that would be virtually impossible to achieve by hand. It is ideal for the type of study being conducting and, although time and effort is needed to master its use, its application to this type of work has great benefits.

Methodology: Bank Archives

The records consulted were the Board Minute Books of the Sheffield & Hallamshire Bank (1836-1913) and the Sheffield Union Bank (1843-1901).[27] These are detailed minutes revealing the amount requested on credit by individual businesses; annual financial returns of these businesses; securities required by the bank for granting such credit; acceptance, or rejection, of loan applications, occasionally with reasons for the decision; and comments on bank policy, e.g. the banks' attitude to limited liability, regarding both local banks and industry, revealing contemporary perceptions about the finance of businesses. These minutes are the most complete and comprehensive available for the Sheffield area and information taken from them provides a very detailed, yet wide-ranging, study of the banks' involvement in financing local industry.

The Minutes of the Sheffield Union Bank's Board of Directors' Meetings between 1855 and 1885 are held in four volumes which resulted in the collection of all the credits advanced by the directors to their industrial customers between these dates. The outcome was a comprehensive data set concerning credit relations between a provincial bank and its industrial customers. However, to put this information into context it was necessary to undertake a survey of industrial lending by another bank. The Sheffield & Hallamshire Director's Minute Books

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27 Midland Bank Archives, Pepys Street, London: Board of Directors Minutes, AD 2, 3, 4 and 5, AM 6-15.

proved to be even more fruitful than those of the Sheffield Union - the basic information about the bank's relationship's with its customers between 1855 and 1885 being held in ten volumes. Within the parameters of the research, especially the time available, a survey as detailed as that carried out for the Sheffield Union was clearly not possible. In order to analyse credit relations between the Sheffield & Hallamshire and its industrial customers given time constraints, it has been necessary to take samples. Their foci are new customer accounts opened in both 1851 and 1881 (but then followed through over the subsequent five years) in order to yield some comparisons as between the beginning and the end of the period being studied. The reason for new accounts constituting the basic data arises from the problems with continuity when examining accounts already operating. However, these are not ideal samples, and the nature of the data must be born in mind when analysing the arising results.

These two banks provided a very comprehensive data set but the sources do omit some information that would have been useful for this study. Most importantly the directors' board minutes do not consistently record details concerning the discounting of bills of exchange by the banks and therefore it was not possible to examine this important aspect of financial provision to industry.

Methodology: Company Archives

The Company records from the British Steel Northern Region Records Office provided an opportunity to examine the demand side of the equation of industrial finance. The archives of five companies have been surveyed, all of which adopted limited liability at various times during the third quarter of the nineteenth century.[28] These firms belonged to the group of 'larger' manufacturing establishments located in the Sheffield region and therefore it could be

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28 These archives are located at the British Steel Corporation Northern Records Centre, Middlesborough and I would like to thank the archivist Mrs E. Green, and Mr. Dolphin for all their generous help and assistance.

argued that they form an unrepresentative sample for the area's manufacturing industry as a whole. Unfortunately, as frequently occurs, the primary sources available dictated the nature of research. Company records that have survived, and are available for consultation, generally tend to be those of larger firms. Due to availability and access, five iron and steel companies (later absorbed by British Steel) were chosen to provide case studies for the finance of industry from a demand perspective. With the nature of these particular sources in mind, and the small number of company record collections consulted, it would be dangerous to make overall generalisations about manufacturing firms' financial behaviour in the Sheffield region, but this work aims only to provide an indication of the demand for finance generated by manufacturing industry in the area. Yet, the small number of companies studied has meant that it was possible to examine the relevant material in some detail.

A further reason for consulting the records of these particular companies was that their archives seem not previously to have been consulted extensively. Work has been undertaken on these particular companies, but their surviving board minutes and balance sheets of the firms - records on which this study is based - appear to have been rather neglected. Furthermore, archives exist for other nationally important Sheffield firms, most notably Vickers & Co. Ltd.[29] and Newton Chambers & Co. Ltd.[30], but as much historical work has already been carried out on these companies, these sources have been deliberately avoided. Instead the little used archives of the British Steel Corporation have been consulted, if only in this way to preserve some originality in this study.

This study has naturally been guided by the sources available and affected by their imperfections. However, an attempt has been made to utilise the lists of

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29 Scott, J. D. *Vickers. A History* (1962); Trebilcock, *Vickers Brothers...*

30 See Ashton, T. S. *Iron and Steel in the Industrial Revolution* (Manchester, 1963), pp. 102, 156-161, 180-1, 221.

company share returns and banking records, in conjunction with the data from company records, in order to provide a general analysis of industrial finance in the Sheffield region of both limited companies and partnerships. The analysis begins by examining the size and structure of manufacturing industry in the Sheffield region on the eve of limited liability and the changes that occurred thereafter (Chapter 2). This addresses the central issue of the thesis - how Sheffield's manufacturing industry changed in terms of scale and technology and how it consequently adapted to the arising changing financial requirements. This issue is considered in the context of financial provision by local banking institutions in Chapter 3. An important factor considered here is whether, or not, the banks 'failed' to provide sufficient funds for local manufacturing industry and thereby restrained its development and expansion. Chapter 4 considers the adoption of limited liability by firms in the Sheffield region and the effect this change in company organisation had upon their financing and management. Moreover, a detailed analysis of the social and geographical composition of company shareholders has been undertaken, together with a study of company promoters and their financial links. In this way, the existence of regional or extra-regional capital networks have been identified. The demand for company finance is examined in Chapter 5, undertaken by five company case studies. Finally, in Chapter 6, the size and structure of industry in Sheffield in 1885 is considered and comparisons drawn with the earlier estimates for 1850. Furthermore, conclusions are drawn considering the overall findings of this study.

CHAPTER 2: THE STRUCTURE OF SHEFFIELD'S TRADES ON THE EVE OF LIMITED LIABILITY

By the mid-nineteenth century, Sheffield was a significant centre for the primary production of iron and steel and the manufacture of metal goods. Works in the city and its environs were responsible for 90 per cent of all British steel production and 50 per cent of all European production.[1] The area had the benefit of local deposits of iron ore and coal, the demand for which had increased with the railway building from the 1830s. Steel production was similarly further spurred by both railway construction and the increasing local demand from the traditional metal trades. The completion of the Sheffield & Rotherham railway in 1838, and the opening of the Manchester, Sheffield & Lincolnshire Railway in 1845, gave the town's products wider markets. These new rail connections also aided the import of low phosphorous Swedish iron, the raw material for steel making processes. Steel production was by the crucible process and was characterised by small units of production with low levels of capital required to start up, or sustain, such business.

The other area of specialisation in Sheffield was the secondary metal trades, especially cutlery, tool, saw and file manufacture. Heavy industry was closely linked with these light trades, producing the raw metal for use in final production, and some firms combined steel making with the manufacture of such artefacts. However, in 1850 the characteristic unit of production among these secondary trades was small and craft based, requiring little capital outlay to expand. Production was seldom undertaken under one roof, with the different processes involved being carried out by small workshops and out-workers, but, none the less, as a whole it constituted a major element of business in the town.

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1 Tweedale, G. *Sheffield Steel and America* (Cambridge 1987), p. 2.

Pollard has divided manufacture within the Sheffield region into two categories: the light trades and heavy industry. These broad types form a convenient framework for the analysis of the structure of Sheffield's trades and it will be applied in this study. Table 2.1 displays the general types of industry within each major category and the sub-groups into which they may be further classified.

Table 2.1: Definition of the main Sheffield trades	
Light Trades	**Heavy Industry**
Cutlery*, joiners' tools, files, engineers' tools, saws, skates, pins & needles, agricultural instruments and dealers	Iron and steel manufacturing, iron founders and brass founders
Silver, silver-plate and allied trades	Steel, rolling, converting and refining, wire drawing
Ancillary trades, including manufacture of handles and cabinet cases	Engineering, steel springs, axle tree, railway wagon manufacturers

*'Cutlery' includes a number of trades. In White, F. ed. *White's Gazetteer and General Directory of Sheffield 1852* (Sheffield, 1852) [hereafter *White's Directory of Sheffield 1852*], these were manufacturers of forks, lancet & fleams, pen & pocket knives, razors, scissors, spoons and table, fruit, dessert, bread, butcher, shoe and cooking knives.
Source: Pollard, Sidney *A History of Labour in Sheffield* (Liverpool 1959) [hereafter Pollard, *A History of Labour in Sheffield*], pp. 50, 78.

The industrial structure of Sheffield and its surrounding area in 1850 was characterised by the majority of firms in all sectors being small in size and thereby tending to rely on the 'plough-back' of profits to finance the expansion of operations. There were only a few large-scale undertakings to be found in the iron, steel and engineering trades, such as Naylor, Vickers & Co. and Johnson

Cammell & Co.[2]

An indication of the size of manufacturing concerns in Sheffield in 1850 is necessary at the outset of a discussion of the changing structure and capital requirements of industry in the area. Two methods of measurements will be applied to estimate the size of firms in Sheffield: one employing both the average and total number of people employed per industry type; the other arising from the annual 'financial returns' of a selection of companies.

An attempt has been made to estimate the scale of manufacturing concerns in Sheffield[3] c.1850 in Table 2.2. Firstly the number of people employed in the main Sheffield trades has been listed in column 3, the data having been extracted from the 1851 Census. Alongside, in column 4, are the number of firms in each trade, as listed in the 1852 Trade Directory.[4] The average sizes of firms, column 5, has been calculated by dividing the number of employees in each trade by the number of firms comprising that trade.

There are clearly problems involved in the calculation of these estimates; for example, the classification of trades in the census does not always coincide with

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2 The steel making capacities of the six largest firms in the Sheffield area in 1852 are shown in the table below.

Company	Converting furnaces	Melting Furnaces (holes)
Johnson, Cammell & Co.	6	40
Naylor, Vickers & Co.	8	90
Sanderson Brothers & Co.	10	110
Thomas Firth & Sons	?	80
Thomas Turton & Sons	11	48
William Jessop & Son	10	120

Source: Pollard, S. *A History of Labour in Sheffield* (Liverpool 1959) [hereafter Pollard *History of Labour*], p.80.

3 The area in the census of the Borough of Sheffield as it stood in 1851; therefore this table does not include the wider Sheffield 'area' as covered in other chapters of the thesis. The trade directory figures are for Sheffield and Rotherham, a close correlation with the basis for the Census data.

4 *Whites Directory of Sheffield 1852.*

the trade directory classifications, thus the method of calculation will not produce a wholly 'accurate' figure. Furthermore, the underlying contemporary sources themselves are notoriously problematic. Many 'outworkers' and small workshops were probably omitted in the collection of census data. In a similar exercise, but using the 1871 Census, Clapham has pointed out that his figures for the average number of workers employed per industry 'must exaggerate the size of the average unit somewhat, because inspectors who seldom missed a factory no doubt failed to learn about many workshops.'[5] He also states that 'inspectors had no oversight of outworkers'.[6] Historians are also frequently warned of the unreliability of trade directories. In attempting to measure the growth of steel making in Sheffield between 1774 and 1856 by using trade directories, Timmins pointed out that the major problems of this source are under- and over-recording, omissions and the 'inadequacies of terminology'.[7] He concluded that 'it is essential, where possible, to use other sources in conjunction with trade directories if any degree of accuracy is to be obtained'.[8] Shaw has written comprehensively on trade directories as a historical source and also highlights the problems involved. However, he concluded that, if the nature and scale of such problems are recognised, 'then directory material can be both useful and to a good degree reliable'.[9]

It is also important to note that in these calculations, firms involved in more than one trade have been included more than once, as each firm recorded in a trade classification in the directory has been treated as a separate entity. Therefore, if a

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5 Clapham, Sir John *An Economic History of Modern Britain: Free Trade and Steel, 1850-1886* (Cambridge 1963) [hereafter Clapham, *Economic History: Free Trade and Steel*], p.117.

6 *ibid.*, p. 116.

7 Timmins, Geoffrey, 'Measuring industrial growth from trade directories', *Local Historian*, XIII, (1978-79), p.352.

8 *ibid.*

9 Shaw, Gareth 'British Directories as Sources in Historical Geography', *Historical Geography Series* No.8, (April 1982), p.53.

firm produced both steel and files it has been included in both of these industrial branches. In this way, the data from trade directories has been employed very literally, with the use of more intricate classifications being deemed unnecessarily time consuming.

The figures are presented in order to provide a rough estimate. Moreover, this method of measurement has been utilised by others, such as Armstrong, who employed the 1841 Census for his study of York in the early nineteenth century, and Clapham, who undertook a similar approach with the 1871 Census.[10]

A glance at Table 2.2 reveals that the major employers of labour by trade in Sheffield were tool, cutlery, and file manufacturers and those firms processing, manufacturing or producing goods from iron, steel, plated metals, precious metals, horn and bone. That producers of metals and metal goods as a group were the dominant employers in Sheffield is unsurprising, but the importance of trades concerning horn, bone and related products might be less expected. The manufacture of horn and bone articles had developed as a result of the cutlery trades, horn being utilised for razor and knife handles and the waste products from this process went into button and comb making.[11] Pearl, ivory and bone were also used to provide handles. The cutting and preparation of these materials led to the development of several even more specialist trades by the mid-nineteenth century: in the 1852 trade directory there are five separate trades concerning the cutting of horn, bone and ivory hafts and scales.[12]

In total, more were employed in Sheffield's light trades in 1851 than in the heavy industries: 13,796 workers in the light trades as against 11,709 in the heavy industries. The amount of labour in light industries would probably be even

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10 Armstrong, Alan *Stability and Change in an English County Town, A social study of York 1801-51* (Cambridge 1974), p.19, and Clapham, *Economic History: Free Trade and Steel.*

11 Pollard *History of Labour*, p.53.

12 *Ibid.* and *White's Trade Directory 1852.*

higher, if the number of employees, categorised by the census as occupied in 'iron & steel-other', were classified more specifically.

Table 2.2: The major manufacturing industries of Sheffield, 1851

Class	Trade	Number of persons	Number of firms	Average size of firm
XI 11	Other implement makers	24	28	1
XI 9	Watch & philosophical instrument makers	102	70	1
XIV 13	Braziers & Tinners	39	32	1
XI 12	Others connected with carriage making	10	6	2
XII 2	Soap boilers	7	3	2
VI 3	Umbrella (frame etc.) makers	34	11	3
XI 11	Tools	1080	38	3
XI 16	Wheelwrights	81	31	3
XI 17	Engaged in the mfr of chemicals	30	11	3
XI 4	Engravers & copper plate printers	109	39	3
XI 10	Gun & rifle makers	12	3	4
XIV 14	Nail manufacturers	85	21	4
XIV 14	Cutlery	5428	906	6
XII 2	Others dealing in grease & bones	1005	137	7
XIV 14	Iron manufacturers	356	51	7
XII 2	Comb (horn) manufacturers	524	63	8
XIV 13	Brass founders	395	47	8
XIV 13	Wire manufacturers	46	6	8
XIV 14	Blacksmiths	423	53	8
XIV 14	Needle manufacturers	31	4	8
XIV 14	Steam Engine Boiler makers	35	4	9
XIV 13	Button manufacturers	204	21	10
XI 12	Coach maker	118	11	11
XIV 13	Wire workers	34	3	11
XIV 8	Goldsmiths, Silversmiths & platers	1112	93	15
XIV 14	File manufacturers	3343	145	23
XI 11	Machine mfrs, millwrights, engineers	390	16	24
XIV 12	Lead manufacturers	24	1	24
XIV 13	Other workers & dealers in mixed metals	200	14	25
XIV 13	Whitesmiths & bellhangers	374	10	37
XIV 14	Iron & Steel other*	9824	259	38

Source: 1851 Census; *Whites Directory of Sheffield 1852*. *The Census does not differentiate steel manufacturers.

The trades comprised of the greatest number of firms were cutlery and file

manufacturers, those dealing in grease and bones, and manufacturers and processors of iron, steel and iron and metal goods.

The estimates for the average size of firms, as listed in Table 2.2, show that very small-scale producers, those employing an average of one to five persons, usually undertook the manufacture of metal articles, such as nails, watches, tools, guns, etc., i.e. the light trades of Sheffield. The majority of those working in these trades were independent workmen, employing themselves or only a few people at most, and requiring only a small amount of either start-up or working capital. When manufacturers in light trades expanded and operated on a larger scale, they often used a system of 'outworkers', whereby piece work was undertaken by individuals from outside the firm, who also carried out their own small-scale production.[13] As Pollard has stated,

> The concept of a self-contained factory, where each operation was subject to the control of any single guiding hand, was alien to local light industry.[14]

Consequently the scale of industry in the majority of the light trades remained small and craft based, with an emphasis on manual labour rather than machines.[15]

Those firms, with an average of six to 15 workers per enterprise, were of a more 'mixed' nature. They included members of the light trades, such as cutlery, comb, needle and button manufacturers plus goldsmiths, silversmiths and metal-platers, but also those involved in activities classed by Pollard as heavy industries, such as iron founders, brass founders, and steam engine boiler makers. These latter activities might have been expected to have been larger scale operations, employing a greater number of workers, especially the labour intensive production of wrought iron. However, the varied nature of the

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13 Pollard *History of Labour*,. p.55.

14 *ibid.*

15 *ibid.*, p.50.

economic structure of industry in Sheffield at the mid-century may explain such differing employment patterns. The majority of firms in the heavy industries were not strongly differentiated from those in the light trades in 1850, as large scale operations and mechanisation were not widespread even in heavy trades. Indeed Pollard has stated that: 'They were often considered mere adjuncts of the predominant steel-consuming cutlery and tools industries.'[16] Many steel manufacturers and processors combined steel making with the production of files, tools or cutlery. Moreover, several steel and engineering firms, which were to expand into operations of considerable size by 1885, actually began production in the light trades: Charles Cammell, John Brown, Thomas Firth and Samuel Fox all started by manufacturing tools and/or cutlery, either solely, or in conjunction with steel production.[17]

However, Table 2.2 reveals that the largest firms, in terms of average numbers of employees, were mainly those involved in heavy industries: iron and steel manufacturers and processors, whitesmiths and bellhangers, workers and dealers of mixed metals and mixed metal goods, lead manufacturers, machine manufacturers and engineers, and file manufacturers. The average number employed by these types of producers was between 23 and 38 men, women and children. These enterprises, apart from file manufacturers, can be described as being involved in the heavy industries. In the mid-nineteenth century some of the undertakings in these industrial branches were relatively large operations, by comparative standards, in a city where many trades were still craft based and small-scale. Many firms within the heavy industries would also be heavily reliant on technology, involving a degree of capital intensiveness, especially steel processors and engineering firms, but mechanisation was not widespread in 1850 and even these enterprises employed a relatively higher number of workers. The

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16 *ibid.*, p.78.

17 *ibid.*, p.79; Birch, A. *The Economic History of the British Iron and Steel Industry, 1784-1879* (1967) p.310.

production of wrought iron - puddling - was a particularly labour intensive operation.

The only type of firm that appears not to readily fit into the list of larger scale employers is that of file manufacturer. Like tool manufacturers (average number of people employed three), the production of files was considered a 'light trade' and in 1850 such trades, as stated above, were conducted on a small scale. However, some undertakings included in this particular category would also probably have been steel, as well as file manufacturers. Thus, the average size of file making firms contains an upward bias, due to the inclusion within the category of some larger scale firms which also produced steel. This clearly illustrates the problems of treating each firm in the trade directory as a separate entry in each of the different industrial branches in which it was involved.

Overall, from the rough estimates of size measured by the average number of workers employed, displayed in Table 2.2, it appears that firms in the light trades employed fewer people than those in the heavy industries. The figures suggest that the light trades operated on a very small-scale. Furthermore, although enterprises in heavy industry tended to employ more workers, firms in these trades appear not to have operated on a very large-scale basis: the highest average number of people employed is 38 in the iron and steel trades. Although this figure is only a rough calculation, it does indicate that, while some large scale iron and steel producers existed in mid-nineteenth century Sheffield, many small scale manufacturers in the same field co-existed alongside such concerns. Thus this 'mixed' structure reduces the average number of workers employed by such manufacturers.

The 1851 census also provides a summary table for the whole of Yorkshire (i.e. all three Ridings) which lists employers and the number of men they employed. The data from the census should be treated with caution, as there were

inadequacies in its collection, for example the omission, or under-recording of out-workers and small workshops, as already mentioned. Furthermore, the geographical area is not specific, being the whole county, rather than just the Borough of Sheffield. However, it is worthwhile examining the census employment figures for the main Sheffield trades but on a county basis in order to provide a further indication of the size of firms in 1851, in terms of the number employed.[18]

Table 2.3 shows that the types of industrial firms listed by the census as the largest employers of men, that is above 50, were coal merchants, engine and machine makers and iron manufacturers. Indeed, there were four 'engineering' firms which employed 100 or more men. Again, the industries, which prove to have the firms which had the largest workforces were the 'heavy' trades, confirming the results found in Table 2.2. However, it is surprising that one cutlery enterprises should be represented in the categories of employer with 50 to 99 men, and 100 men or more. These inclusions could be due to these cutlery firms also being involved in the production of steel, or that they were very notable exceptions in a trade dominated by small-scale, handicraft production. Pollard has cited the example of Messrs. Greaves, a company that opened what is claimed to be the first cutlery factory in Sheffield - the Sheaf works - in 1823. Referring to the light trades, he also stated that 'by 1850 there were perhaps half a dozen firms which could count the number of their workmen by the hundred'.[19] The census provides evidence that, although the majority of operations in these trades were small-scale, exceptions existed.

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18 Clapham also used this data: Clapham, *Economic History: Free Trade and Steel*, p.117.

19 *ibid.*, p.55.

Table 2.3: Number of employers, by number of employees, in Yorkshire, 1851								
Trade	1 - 2 men	3-9 men	10-19 men	20-49 men	50-99 men	100 +	No men, or no data	Total number of Employers
Tool maker	4	7	2	2	0	0	3	18
Coach maker	3	12	8	3	0	0	18	44
Watchmaker	21	6	1	0	0	0	30	58
Agricultural implement maker	8	2	0	1	0	0	5	16
Millwright	89	42	8	1	0	0	77	217
Engraver	5	7	0	0	0	0	2	14
Comb maker	1	3	0	0	0	0	2	6
Cabinet maker	64	647	8	1	0	0	66	206
Carver, Gilder	4	9	0	0	0	0	6	19
Tinman	19	9	0	0	0	0	30	58
Tinplate worker	12	7	0	0	0	0	5	24
Blacksmith	266	37	0	0	0	0	261	564
Whitesmith	5	6	0	0	0	0	1	12
Nail manufacturer	11	13	3	3	0	0	13	43
Ironmonger	10	16	3	1	0	0	6	36
Needle mfr	0	0	0	0	0	1	0	1
Gunsmith	2	3	0	0	1	0	5	11
Goldsmith	3	7	1	0	1	0	2	14
Brazier	12	9	5	1	1	0	11	39
Cutler	29	42	17	2	1	1	27	119
White metal mfrs	22	13	3	3	2	0	22	65
Iron mfr	6	11	11	3	5	1	24	61
Engine & machine maker	16	36	20	14	7	4	16	113
Coal merchant	20	13	8	3	10	1	28	86

Source: 1851 Census

The trades in which firms tended to employ only small numbers of men were watch makers, cabinet makers, blacksmiths and millwrights. Many cutlery manufacturers and engineers also only had between one and nine men but, in both these trades firms also existed which employed medium (10-49) and large (50 and upwards) numbers of workers, which indicates the diversity within these trades in terms of both size, and probably also the type of company involved.

The average size of firms in the Sheffield trades c.1850 has also been estimated from the data included in the Minutes of the Board of Directors of the Sheffield Union Banking Company.[20] When a company opened an account with this bank the details of its operations were sometimes recorded. Between 1855 and 1885 there were 91 instances where the annual 'returns' of new customers from the main Sheffield trades were noted by the bank. There are problems with these data, especially as the sample is so small. The data are fragmentary as annual returns of new industrial customers of the bank were not consistently recorded. Furthermore, the figures are those provided by firms that were often attempting to apply for credit from the bank and therefore may have exaggerated annual returns in order to prove their credit-worthiness. Yet, the extent of such over-estimations should not have been too large, as the directors of the Sheffield Union Bank were mainly industrialists themselves, astute enough to identify serious miscalculations and, more importantly, known by manufacturers in the area. It would have been unwise to deceive such men to any great degree.

Despite the shortcomings of the annual returns data, even this small sample provides some indication of the size of firms engaged in the main Sheffield trades and is a useful supplement to the census and trade directory information. The average annual returns of the 91 companies have been collated in Table 2.4.

The size of firms, as measured by average annual returns, conforms closely with the results arising when firms' sizes were measured by average numbers of employees. Those with the smallest annual returns are in the 'light trades': tool, cutlery and metal goods manufacturers plus metal platers. The annual returns for these companies was between £2,000 and £6,000. Firms with the largest annual returns were those in the heavy industrial sector: coal, iron, steel, and engineering. The average annual returns of coal, iron and steel companies in the

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20 Midland Bank Archives, Pepys Street, London: Sheffield Union Bank, Directors Board Minutes, AD 2, 3, 4 and 5.

sample ranged from £10,000 to £14,000 and three two engineering companies had the highest average annual returns of £120,000/£130,000.

Table 2.4: Average annual returns of 91 manufacturing customers of the Sheffield Union Banking Company, 1855-85

Class	Company Type	Number of Companies	Average Annual Returns (£)
XI 11	Tools	10	2,100
XIV 8	Metal platers	12	3,014
XI 9	Surgical instrument maker	1	5,000
XIV 14	Ironmonger	1	5,000
XIV 13	Metal goods manufacturer	1	6,000
XIV 14	Cutlery	16	6,094
XIV 14	File manufacturers	8	8,813
XIV 13	Wire manufacturer	1	10,000
XIV 14	Iron founders	6	12,083
	Coal owners/masters	7	13,500
XIV 14	Iron & steel manufacturers - other	22	14,182
XI 11	Engineers	1	120,000
XI 12	Railway wagon builders & tyre mfrs	2	130,000

Source: Midland Bank Archives, Pepys Street, London: Sheffield Union Banking Company, Board Directors Minutes, AD 2, 3, 4 and 5.

However, these annual returns have been gathered across the whole of the period covered in this study, 1855 to 1885. To give some indication of a comparison between the beginning and end of this period, the data have been divided at 1870. The results are shown in Table 2.5.

Unfortunately the sample is not large enough to show any clear trends when the data are divided at 1870. The annual returns of manufacturing companies opening an account after 1870 were recorded on only 18 occasions, therefore Table 2.5 does not prove to be very informative. However, where substantial numbers of companies are recorded in both of the sub-periods - as with iron and steel manufacturers - the results show an increase in the average annual returns from £7,933 to £27,571. Furthermore, the sample figures for coal owners increase from £4,300 to £36,500. These indicate a growth in the scale of business for iron,

steel and coal companies after 1870. Increased production of coal, iron and steel after 1870 usually required larger plants and the use of new more capital intensive technology. Therefore, the figures also suggest that investment expanded, modernising companies in these particular industrial sectors.

Table 2.5: Average Annual returns of 91 manufacturing customers of the Sheffield Union Banking Company, 1855-69 and 1870-85

Company Type	Average Annual Returns (£)		Number of Companies	
	1855-69	1870-85	1855-69	1870-85
Tools	2,222	1,000	9	1
Metal platers	2,850	4,000	12	2
Surgical instrument maker	5,000	0	1	0
Ironmonger	5,000	0	1	0
Metal Goods manufacturer	6,000	0	1	0
Cutlery	6,750	1,150	14	2
File manufacturers	8,813	0	8	0
Wire manufacturer	0	10,000	0	1
Iron founders	16,625	3,000	4	2
Coal Owners/Masters	4,300	36,500	5	2
Iron & steel mfrs - other	7,933	27,571	15	7
Engineers	0	120,000	0	1
Railway Wagon Builders	130,000	0	2	0

Source: Midland Bank Archives, Pepys Street, London: Sheffield Union Banking Company, Board Directors Minutes, AD 2, 3, 4 and 5.

By surveying census returns, trade directories and the annual returns of companies submitted to a bank, an attempt has been made to estimate the structure of industry in Sheffield in 1850. The weaknesses of each of the data sets have been identified, but by utilising several sources the results, although only a rough guide, will be of more value than those produced from just one source. The results are estimates, but the figures from each set of calculations appear to confirm the findings of the others. The firms in the light trades were generally very small in scale, whilst those in the heavy industries, although not yet very large in size, operated on a greater scale than the former. These findings correspond to the conclusions of writers, such as Pollard, Birch, Tweedale,

Clapham and Burn.[21]

How did the size and structure of Sheffield's main industries in 1850 compare with other regions involved in similar types of production? The obvious area for comparison in England is Birmingham and the Black Country, where iron manufacturing and the secondary metal trades dominated local industry, as in Sheffield. In his study of the British iron and steel industry, Warren has stated that in the mid-nineteenth century 'The typical Black Country iron making enterprise was small.'[22] There were, as always, exceptions, but Warren has commented that South Staffordshire steel manufacturing 'was characterised by numerous smallish concerns' which would sometimes have to 'join together to command the necessary capacity' when competing for large contracts.[23] A study of Birmingham as a manufacturing town before 1840 by Eric Hopkins has revealed a similar picture. He stated that:

> On the whole, it seems that over the period 1760-1840 the size of the industrial unit in heavy industry was relatively large ... but that in the small metal trades only the most successful manufacturers had 200 hands or more. Most employed far fewer, and in the metal trades the economies of large-scale production were far less attractive than in the textiles or in the primary iron industry.[24]

Hopkins has emphasised that there were exceptions to the rule, but still the increase in demand for goods produced in Birmingham over the first half of the nineteenth century "resulted not solely in the concentration of industry into bigger and bigger factories, but also in the multiplication of small workshops'.[25]

Therefore, a review of secondary literature provides evidence that the size of iron and secondary metal manufacturers in the West Midlands corresponded closely

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21 Burn, D. *The Economic History of Steelmaking, 1867-1939* (Cambridge 1961).

22 Warren, Kenneth *The British Iron & Steel Sheet Industry since 1840: An Economic Geography* (1970), p.16.

23 *ibid.*

24 Hopkins, Eric *Birmingham: The First Manufacturing Town in the World, 1760-1840* (London 1989), p.57.

25 *ibid.*

with those that existed in Sheffield at the mid century: small-scale production in the light trades and larger-scale in the heavy industries.

What of the structure of industry in other manufacturing areas? The process of industrialisation has been traditionally associated with a growth in the scale of production, especially the rise of the factory system. The classic example of this development was cotton manufacture in Manchester and the North West. However, the nineteenth century did not necessarily see the proliferation of the factory system in all types of trades and industries. The case of Sheffield has been discussed in detail above and illustrates that even by the later stages of the century, small-scale production units still existed alongside large-scale factories. The iron and secondary metal trades of the West Midlands confirms this pattern of 'mixed' industry within a region. The industrial structure of other cities and regions will now be explored in order to examine the organisation of manufacture in sectors other than iron steel and secondary metal production.

When analysing the size of cotton firms in Manchester between 1815 and 1841, Lloyd-Jones and Le Roux found that by the end of this period small and large labour-force firms had decreased in relative importance and medium-size labour force firms had increased in relative importance.[26] Their findings indicated that:

> A comparison of the industrial profile between 1815 and 1841 indicates in Manchester both a weakening of concentration of the top firms and a sharp decline in the predominance of small-scale units.[27]

On examining the rate-assessment books of Manchester, Lloyd-Jones and Le Roux came to the same conclusions: medium-sized firms increased in importance at the expense of large- and small-scale manufacturers.[28] Therefore,

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26 Lloyd-Jones, R. and Le Roux, A. A. 'The Size of firms in the Cotton Industry: Manchester, 1815-41' *Economic History Review*, Second Series, Vol.XXXIII, No.1 (February 1980), pp.74-5.

27 *ibid.*, pp.76-7.

28 *ibid.*, p.77.

even in the Manchester cotton industry, where the factory system originated and was the focus of much attention, the industrial structure was more complex and varied than had previously been thought.

In his thesis concerning the structure of industry in Leicester between 1844 and 1914, Head found that here too there was a mixture of both large- and small-scale industry. The factory system was slow to develop in the region and, when factories were constructed, they did not necessarily operate on a large-scale[29] The main trades in the area were hosiery and boot and shoe manufacture and will be discussed in detail below.

At the mid-century hosiery manufacture had not been affected by major technological change. The transition to factory production was slow, one important reason being the well established, complex and successful system of 'putting-out'. Other important factors responsible for this slow movement were technical difficulties encountered in hosiery manufacture; a reluctance by employers to innovate, exacerbated by the entrenched and elaborate 'putting-out' system; stagnant demand at this time; and an excess of labour to meet this demand. In addition, due to the physical nature of its product, hosiery manufacture did not necessarily lend itself naturally to large-scale production, whereas the extreme diversity of hosiery products necessarily meant that firms developed at different rates. Head points out that access to capital was not a problem for larger manufacturers and therefore a shortage of funds could not be blamed for the failure to innovate. He concluded that at the mid-century the pre-factory system was adequate for the demands placed upon it.

By the 1860s he found that there was a mixture of factory and 'putting-out'

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29 Head, P., 'Industrial Organisation in Leicester, 1844-1914: a study in changing technology, innovation and conditions of employment', Unpublished PhD. Thesis (University of Leicester 1960) [hereafter, Head, Industrial Organisation in Leicester].

production within hosiery. From the 1870s the movement to factory production accelerated but even until the 1890s, small-scale production continued to be of importance. This was due to small-scale enterprises being still able to compete with larger-scale operations because of their low capital requirements, and due to the de-centralised nature of the hosiery industry - factories existing in the county as well as the city.

Boot and shoe manufacture became established in Leicester by the 1860s. The industry was dominated by small-scale production in workshops, but with partial factory production also present. The sewing machine had been introduced and by 1867 the adaptation of the Blake-McKay machine led to the adoption of steam power. Head stated that by this decade boot and shoe manufacturers had the necessary machinery for the adoption of steam power and, therefore, factory production was, in theory, a practical possibility. By the 1870s out-work and workshop were still present in the industry and even by 1891 this type of small-scale production remained dominant in boot and shoe manufacturing in Leicester. The introduction and domination of the factory system was delayed due to the proliferation of cheap labour; the fact that 'putting-out' was considered a more economic method of production; and the industry was relatively 'new' to the city, as compared with other areas such as Northampton. Moreover it was possible for small-scale workshops to compete successfully alongside the large-scale industry that did exist as there were no over-riding economies of scale. The manufacture of footwear, due to techno-logical and production requirements, did not necessarily have to be large-scale. Head again emphasised that capital was available for manufacturers to expand and adopt new technology but, for the reasons stated above, they chose not to. Thus, Head considered the movement towards large-scale, factory production of boots and shoes in Leicester to have been gradual. Factory production was finally adopted in the early twentieth century due to increases in productivity and increased competition from abroad.

Head's study concluded that 'the factory system took half a century to become a reality in Leicester' and, even then, 'it did not necessarily involve large-scale production'.[30] During this half century factory production co-existed with small-scale workshop production. Factories eventually became the dominant method of production in Leicester in the early twentieth century, mainly due to an increase in prosperity in the city and its region, accompanied by general economic expansion and an increase in consumer demand for the products which the city manufactured.

Therefore, at the mid-century the majority of firms in iron, steel and the secondary metal trades in the Sheffield region and the West Midlands operated on a small-scale. Indeed, the example of Leicester shows that this phenomenon was not confined to the metal trades but also existed in hosiery and boot and shoe manufacture. Even in Manchester, where large-scale cotton firms were once thought to have been supreme, evidence has shown that by the mid-century medium-sized firms were relatively more important than both large- and small-scale concerns. Thus, by 1850, even though the environment existed for large-scale industry to develop in Sheffield, it was not inevitable that it should do so.

Having examined the structure and size of Sheffield's industry on the eve of limited liability, it is important to stress the changes that then took place in manufacturing industry. During the 1860s and 1870s the increasing pressure of domestic and foreign demand from the railways, engineering, shipbuilding and the military was met by the development of the Bessemer and Open Hearth processes for mass steel making. These methods facilitated the cheaper, large-scale production of steel and led to wrought iron being rapidly replaced as the principal metal produced in the area. Furthermore, in 1879 the Gilchrist Thomas

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30 *ibid.*

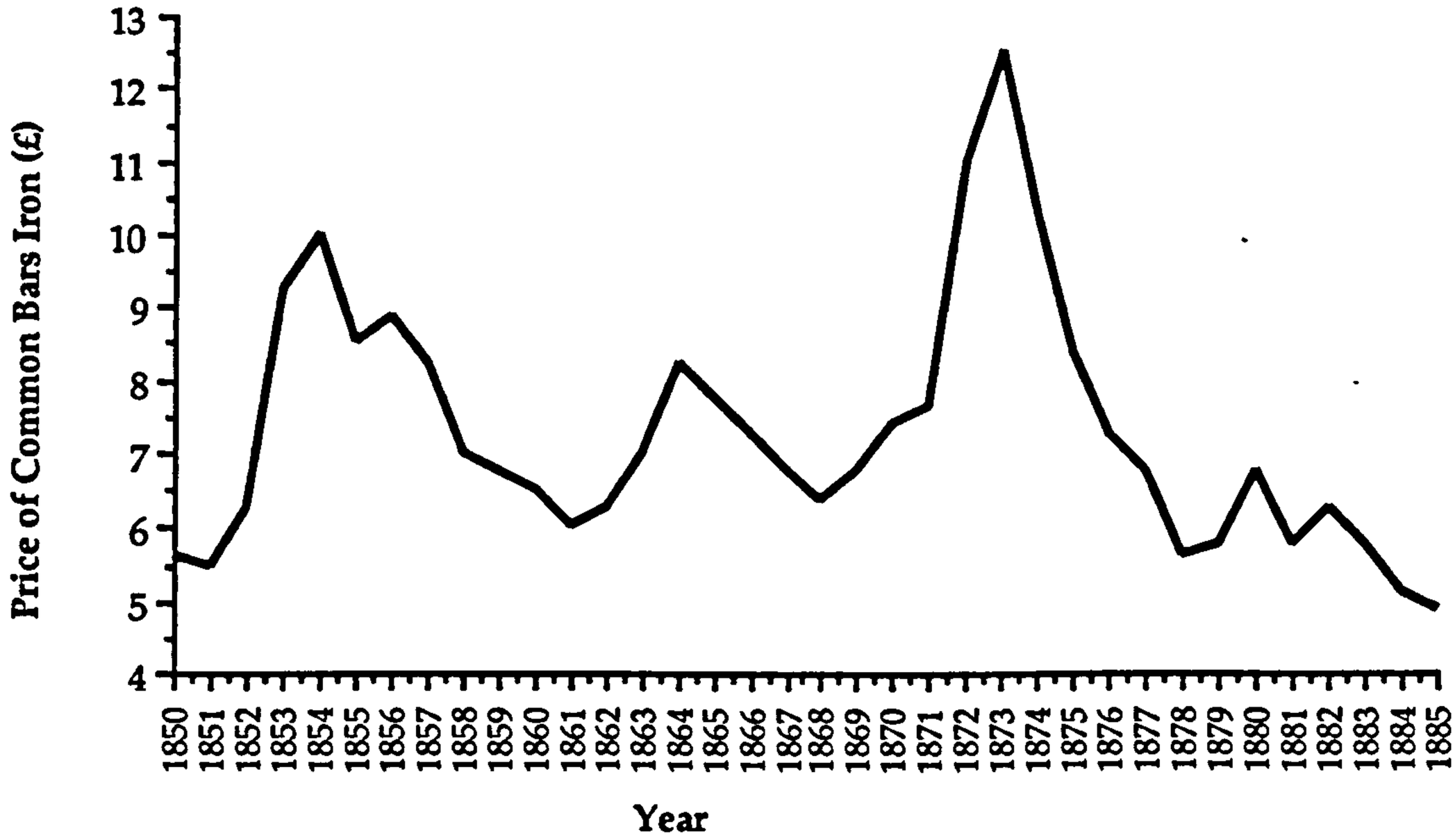
Basic method permitted the use of high phosphorous iron and became the dominant local method in steel making. Previously steel makers in Sheffield had made their steel from Swedish iron as home-produced iron was too impure. The Basic process resulted in a shift of large-scale steel making away from the Sheffield area towards the ore fields, especially in Cleveland and Scotland. However, it also meant that the increased amount of general-purpose, bulk steel produced elsewhere in Britain required more tools to machine it, and Sheffield's steel making capacity provided quality products for this purpose. The area became the centre for specialised steel and steel products.

By 1885 a number of firms in the steel sector were large in terms of physical size and the capital employed. Technological development had meant that the equipment needed was expensive and quickly became obsolete. However, very high profits could be made, especially before 1873, and this often allowed the 'plough- back' of profits to fund expansion. Some large companies in this sector adopted limited liability, but public capital and participation in these concerns was small, as existing partners usually retained the majority of the shares and continued to control the management of the business.

The light trades prospered during the 1860s and dominated international markets. During the 1870s, the sector was threatened by increased tariffs and growing foreign competition, especially from the USA, but other new markets, both domestic and foreign, allowed the light trades to flourish. By 1885, although machines were indispensable in the secondary metal trades, the traditional craft basis remained and the small firm still dominated. Larger units developed in silver-plating, file manufacture and heavy tool manufacture, the latter two often being undertaken by large steel firms. Typically the firm in this sector was family run and even the few limited liability companies that existed remained in control of families, or individuals, and did not make public calls for capital.

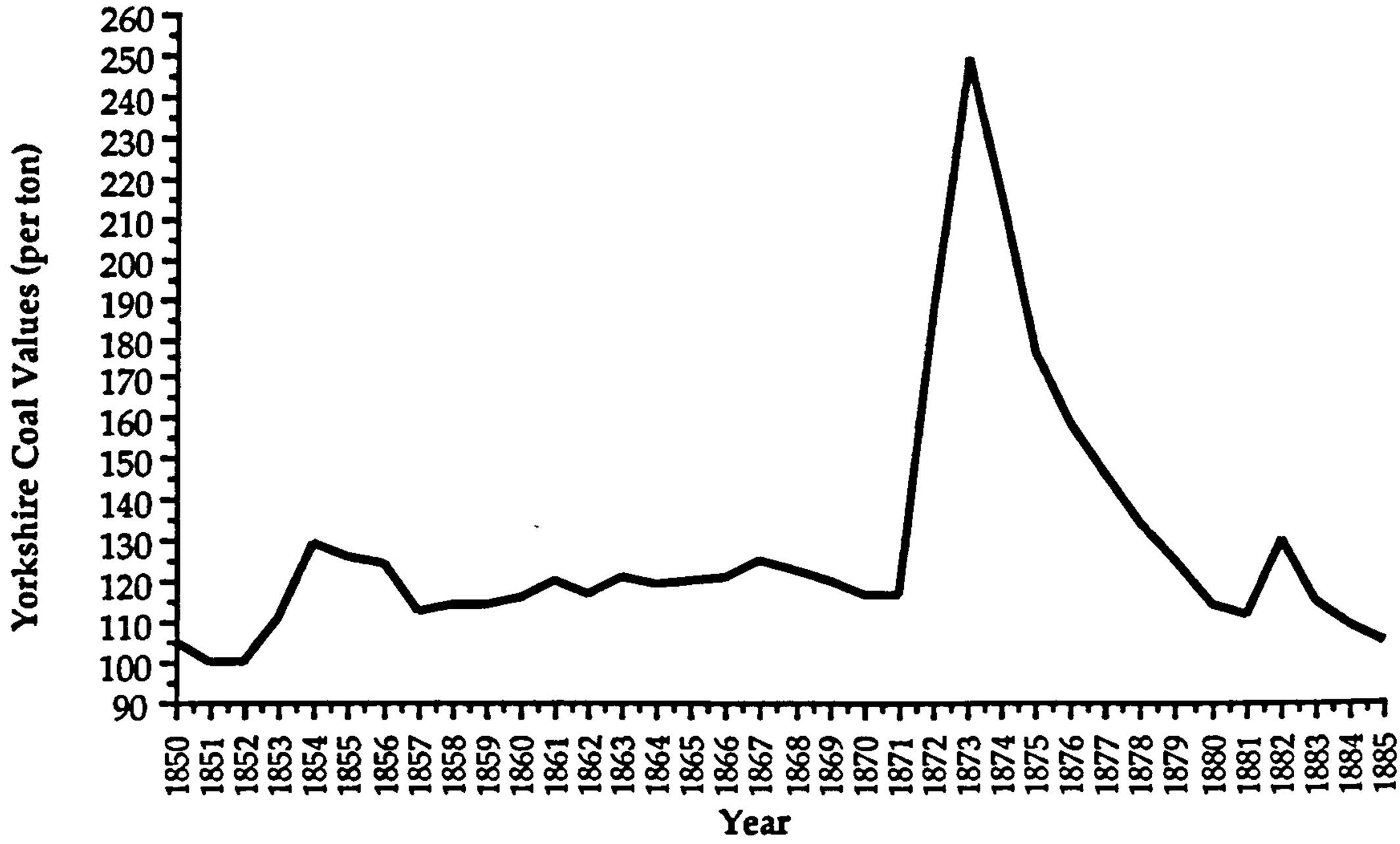
In order to illustrate more clearly the growth, but also the cyclical trade movements, in demand that affected Sheffield's trades between 1850 an 1885, the accompanying graphs display price and output movements. The forces for change that underlie these movements were the growth and development of technology and the competition between the iron and steel. Graph 2.1 shows the price of common iron bars and Graph 2.2 shows the value of coal at the pit head in Yorkshire, both products being basic to Sheffield's trades. The peaks and troughs that occurred in the trade cycle during this period are shown most clearly in Graph 2.1: the boom of the mid 1850s, slump in the early 1860s, and again around 1868, followed by the peak of the early 1870s and depression from 1874 to 1879. The peak of the trade cycle in the early 1870s is more dramatically illustrated in Graph 2.2, showing the 'coal famine' that occurred in both the region and the country as a whole at this time. Demand, therefore, expanded in a series of 'fits and starts'. It is also important to remember that, with the development of mass produced steel, iron was increasingly being superseded by steel and iron prices were forced down accordingly. Graphs 2.3 and 2.4 show, respectively, United Kingdom iron and steel exports and the mileage of British railways, in an attempt to illustrate generally the volume of demand for metals and products that were processed and manufactured in Sheffield. Graph 2.3 again shows the peaks and troughs of the trade cycle very clearly, but shows a marked recovery in the volume of iron and steel exports in the early 1880s, a contrast to the slump in the price of common iron bars which continued beyond the 1874-9 depression, apart from a slight recovery in 1880. Foreign demand for iron and steel expanded from 1879 to the mid-1880s but had little effect upon prices. Graph 2.4 illustrates the dramatic increase in railway track mileage throughout the period 1850-85, a development which played a significant part in the increase in demand for goods produced in the Sheffield region: in the production of rails but more particularly engineering and other associated railway hardware - springs, buffers, chain and axles.

Graph 2.1: Price of Common Bar Iron, 1850-85



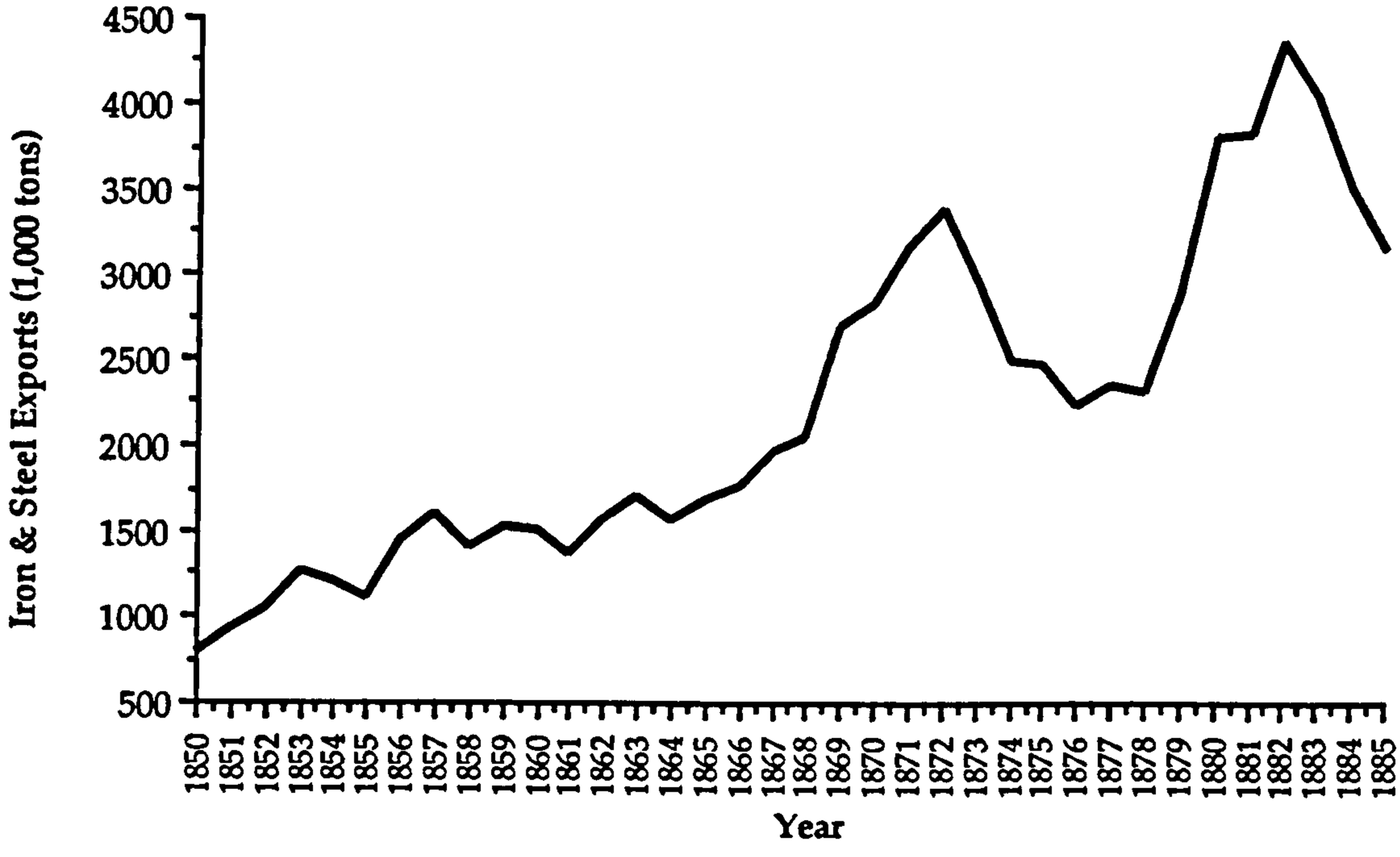
Source: Mitchell, B. R. *British Historical Statistics* (Cambridge 1988) p.763.

Graph 2.2: Index of the average value of coal in Yorkshire at the pithead, 1850-85



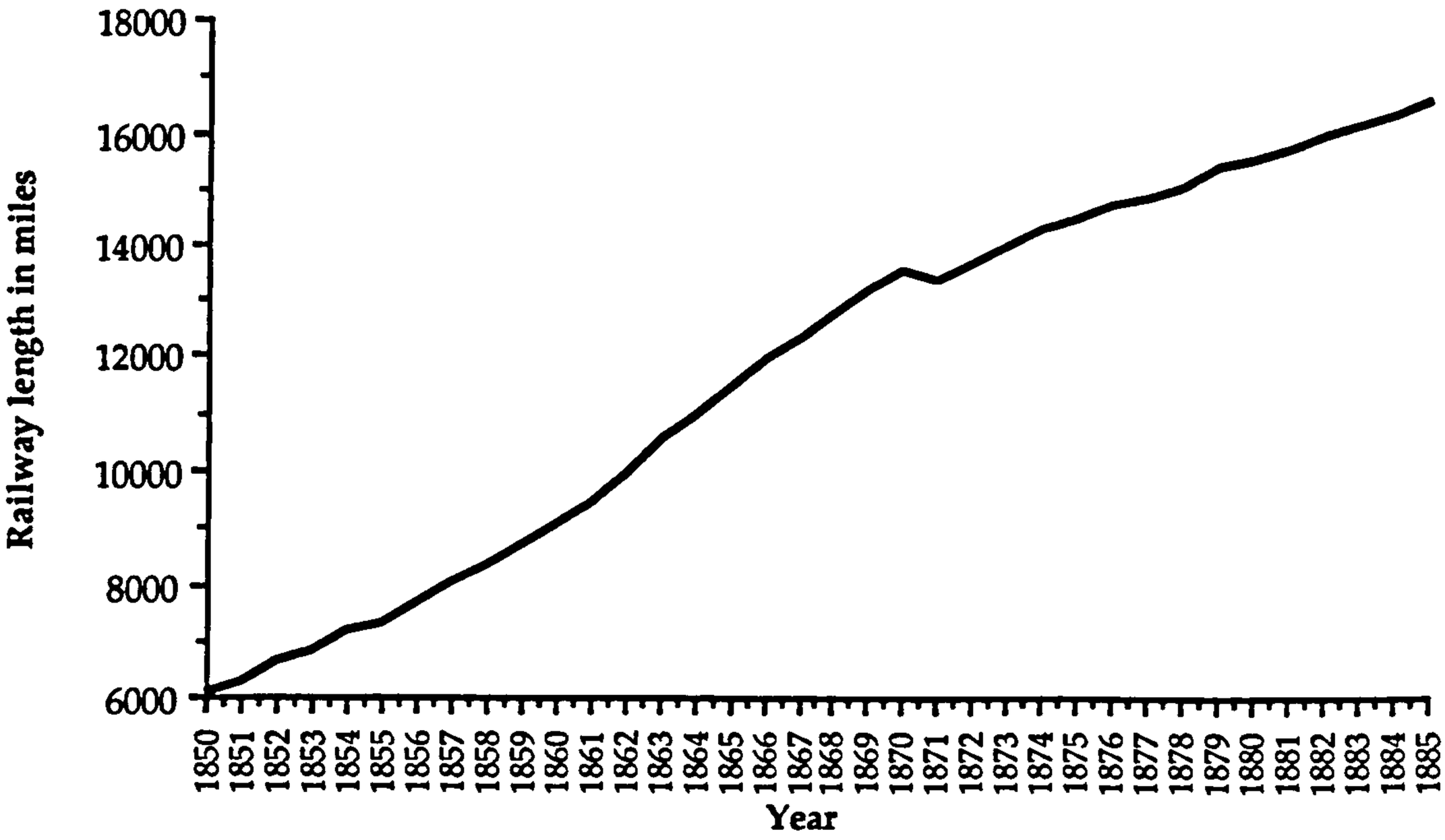
Source: Mitchell, B. R. *Economic development of the British coal industry, 1800-1914* (Cambridge 1984) pp.277-8

Graph 2.3: Volume of United Kingdom iron and steel exports, 1850-85



Source: Mitchell, B. R. *British Historical Statistics* (Cambridge 1988) pp.300-1.

Graph 2.4: Railway length in miles, Great Britain 1850-85



Source: Mitchell, B. R. *British Historical Statistics* (Cambridge 1988) p.541.

Therefore, the industrial structure in Sheffield and its surrounding area changed during the period under consideration in response to new technology and fluctuations in demand. In 1850 the majority of firms in all sectors were small and tended to rely on the 'plough-back' of profits to expand operations. There was a tendency for firms in heavy industries to be larger than those in the light trades, but very few large-scale factories had become established in any sector. However, by 1885 a complex structure had developed, whereby some large joint stock concerns in heavy industry, requiring large capital outlays, existed alongside small, family run firms requiring only small amounts of capital investment. The pressure of increased demand for the metals and goods manufactured in the Sheffield region resulted in an increase in the scale of some firms in the heavy industries and also led to the adoption of new technologies by which large-scale production of steel and steel goods could be undertaken. This, in turn, led to an increase in the requirements of finance for these branches of industry. These preliminary generalisations will be refined and developed in the concluding chapter of this study.

How manufacturing industry in Sheffield adapted to changes in financial requirements between 1850 and 1885 is the central issue of this thesis. An important and much debated question in the study of industrial finance is whether or not the companies that existed in the 1850s were subsequently inhibited from expanding and adopting new technologies by lack of finance. The institutions that have received much of this criticism, concerning this 'failure' in financial provision, are the banks. The next Chapter will examine the extent of the demand from industrial undertakings for finance from banks in Sheffield and the degree to which these institutions met such demands.

CHAPTER 3: CREDIT RELATIONS BETWEEN BANKS AND INDUSTRY IN SHEFFIELD, 1850-1885

This chapter aims to analyse the credit relations between banks and their industrial customers in the Sheffield region. It will initially examine bank/industry links from a case study approach, the directors of the banks being studied, together with their connections with industry, which will include a detailed study of the firms in which bank directors' were involved and their credit relations with the banks'. Thereafter, all industrial lending undertaken by the banks will be examined in order to provide a more general picture of the relationship between banks and manufacturing industry. This includes analysing the industrial activity of the companies which formed the bank's clientele; the type of accommodation that they received; the conditions upon which credit was granted; and the reasons for loan applications. The loans themselves are examined in detail - their temporal distribution over the period, their size, and duration. The patterns that emerge from the banks' lending policies are analysed within the context of local and national trends. The analysis uses a combination of both quantitative and qualitative data, with qualitative illustrations being given for those areas which cannot be quantified.

Banking Institutions in Sheffield

At the beginning of the nineteenth century provincial banking was dominated by private institutions but in 1826, and 1833, legislation was passed permitting the creation of 'joint stock' banks. By 1850 there were 99 joint stock banks which had in aggregate nearly 600 offices and by 1875 122 joint stock banks with 1,364 offices.[1] Private banking continued, although

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1 Collins, Michael *Banks and Industrial Finance in Britain 1800-1939* (1991) [hereafter Collins, *Banks and Industrial Finance.* ...], p.27.

undergoing a gradual demise. Two types of joint stock banks developed: during the mid-nineteenth century there were a few large joint stock banks with branch systems which covered relatively wide areas and the local joint stock bank, with a business concentrated within a particular town and its immediate neighbourhood. The latter were more typical and, of which, the Sheffield & Hallamshire Bank and the Sheffield Union Banking Company are representative. A local base avoided the still significant problems of transport and communications and was also encouraged by prevailing attitudes of parochialism and personal business. Consequently, close links between banks and local industry developed during the mid-century, with directors of the 'unit' banks often being actively involved in local industry.

Well established industry in the Sheffield and its environs provided both private and joint stock banks with a business base. Iron, steel, and coal, as well as the secondary metal trades, dominated the area and their output grew during the first half of the century as both domestic and foreign demand for their products increased. From 1850 the structure of industry changed as units of production moved from domestic to factory organisation. This structural change provided a new basis for the extension of banking in the area.

By 1850 a number of banking institutions, or their branches, existed in Sheffield leading to, outwardly, a local competitive environment. The banks, with head offices in Sheffield between 1850 and 1885, were the Sheffield & Hallamshire Bank, the Sheffield Union Banking Company, the Sheffield & Rotherham Bank, and the Sheffield Banking Company. During the third quarter of the nineteenth century, other banks, with head offices in other towns and cities, also opened branches in Sheffield.

Tables 3.1 and 3.2 give an indication of the comparative size of the four main Sheffield banks.[2] Of the four local banks, the Sheffield Union Banking Company and the Sheffield & Hallamshire Bank will be examined in detail. Both had localised spheres of activity, but none the less built up growing businesses. The Sheffield & Hallamshire had a larger business, with its volume of deposits, and of advances, increasing nearly three fold between 1850 and 1880. The Sheffield Union's advances also increased three fold, but this banks' deposits grew more substantially - five times. Therefore, both the Sheffield & Hallamshire and the Sheffield Union appear to have contended successfully with apparently strong competition from other local institutions and branches of 'extra-regional banks' over the mid-nineteenth century.

Table 3.1: Banks in Sheffield, 1850

Bank	Capital Paid Up	Reserve Fund	Deposits	Advances & Bills	Branches
			(£ 000's)		
Sheffield & Rotherham	27	12	?	?	1
Sheffield Union	121	22	97	208	2
Sheffield & Hallamshire	125	15	179	344	0
Sheffield Banking Company	125	126	?	?	1

Source: Crick, W. F. and Wadsworth, J. E. *A Hundred Years of Joint Stock Banking,* (1936) p.240

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2 *Banking Almanac,* 1850 and 1880; and Crick , W. F. and Wadsworth, J. E. *A Hundred Years of Joint Stock Banking* (1936) [hereafter *Hundred Years...*], p.240.

Table 3.2: Banks in Sheffield, 1880					
Bank	**Capital Paid Up**	**Reserve Fund**	**Deposits**	**Advances & Bills**	**Branches**
			(£ 000's)		
Sheffield & Rotherham	161	90	?	?	5
Sheffield Union	180	25	446	650	6
Sheffield & Hallamshire	210	86	632	946	0
Sheffield Banking Company	293	115	?	?	3

Source: Crick, W. F. and Wadsworth, J. E. *A Hundred Years of Joint Stock Banking* (1936) p.240

Tables 3.3 and 3.4 show the business of the Sheffield & Hallamshire and Sheffield Union in more detail and illustrate the extent to which the banks were involved in providing advances, the majority of which went to industry in the case of the Sheffield Union. The banks' main source of funds was deposits, potentially subject to short notice withdrawal. Therefore, in order to match such liabilities, lending to industry tended to take the form of short-term loans and this resulted in long- and medium-term credit being provided by the renewal of short-term advances. First, the development of both these banks will be considered in order to provide a developmental context.

The older bank was the Sheffield & Hallamshire, established in 1836 as a joint stock concern with a paid-up capital of £124,000. It was founded during a boom year for such promotions as 59 joint stock banks were established nationally and, while many of these ventures failed, the Sheffield & Hallamshire was to enjoy a long and successful 'life'. The bank was formed primarily by directors and shareholders of the Huddersfield Banking Company, a bank with experience in joint stock banking since 1827.[3] The

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3 'The Sheffield & Hallamshire Bank 1836-1913: the 150th anniversary of Midland Bank's forerunners at Church Street, Sheffield', *Midland Bank Group Publications.*

bank began without branches and made no effort to establish any until the 1890s. Together with the Sheffield Banking Company, it was the largest bank in the area, but, despite its size and the increase in scale of many firms within the area during the period, the Sheffield & Hallamshire began with, and continued, a policy of encouraging small accounts. It was able to do this as small-scale manufacturing remained an important aspect of business within the Sheffield area, especially in cutlery manufacture. None the less, the Sheffield & Hallamshire had some large industrial accounts, such as that of the iron and coal firm Newton Chambers & Co. Ltd., steel makers John Brown & Co. Ltd. and Henry Bessemer & Co., but such customers were not dominant within the business of the bank. The directors maintained a broad base of industrial and non-industrial customers.

Table 3.3 shows the business of the Sheffield & Hallamshire in 1850 and 1884, as displayed by its balance sheets. Its ratio of advances plus bills to deposits in both 1850 and 1884 was over 100 per cent and therefore illustrates that the Sheffield & Hallamshire was 'overlent'. This was common for banks in industrial areas, such institutions being able to sustain such high ratios by re-discounting bills in the London money market.[4] By 1884 the bank had become more liquid, with its ratio of advances plus discounts to deposits having decreased to 122 per cent, yet the ratio was still above 100 per cent and therefore bank remained 'overlent'. The increase in liquidity was gained by an increase in deposits as, although bills and advances increased by 42 per cent between 1850 and 1884, deposits increased by 279 per cent. Analysing the timing of the banks' increased liquidity is difficult as data are only available for these two dates. However, it is likely that the City of Glasgow Bank failure

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4 Cottrell, P.L. *Industrial Finance 1830-1914: The Finance and Organisation of English Manufacturing Industry* (1979) [hereafter *Industrial Finance* ...], p.200.

in 1878 probably had some influence upon this trend.[5] Nishimura's work on English and Welsh banks confirms the general downward tendency of the ratio of advances plus discounts to deposits for banks in industrial districts.[6] However, he concludes that, although ratios were in excess of 100 per cent for banks in industrial districts before 1870, in many such areas the ratio then decreased and did not exceed 100 per cent after 1880. He describes the trend as a 'positive decline' in the lending business of industrial banks, caused by a decrease in the re-discounting of the inland bill of exchange in conjunction with a less pronounced increase in the volume of loans and advances. The ratio for the Sheffield & Hallamshire, therefore, fails to conform to this national trend. Yet the more rapid increase of this bank's deposits as compared with advances and discounts does conform with the Nishimura data. Moreover, rising deposits were the result of an increase in bank branches, which, in turn, increased the broad money supply (and lessened the need for inventory financing which had necessitated the use of bills of exchange).[7] In examining the Cumberland Union Bank, Cottrell also found the bank to be 'overlent', with a ratio of advances and discounts to deposits over 100 per cent in the late 1870s and early 1880s. This he ascribes to the bank having probably provided 'substantial overdraft accommodation to local iron and steel firms during this depressed period'.[8] Indeed, the same could be true of the Sheffield & Hallamshire Bank, also operating in an area dominated by the iron and steel trades.

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5 Collins, Michael, 'The Banking Crisis of 1878', *Economic History Review*, Second Series, Vol.XLII, No.4 (1989).

6 Nishimura, S. *The Decline of Inland Bills of Exchange in the London Money Market 1855-1913* (Cambridge 1971) p.61.

7 *ibid.*, pp. 62-64, 78.

8 Cottrell, *Industrial Finance* ..., p.223.

Table 3.3: Sheffield & Hallamshire Bank Balance Sheets		
(£ 000's)		
Assets	**1850**	**1884**
Bills & advances	344	816
Cash in bank & agents hands		116
Consols, railway debentures & other investments		128
Bank Premises & Fixtures	3	16
Total	346	1,076
Liabilities	**1850**	**1884**
Capital	125	210
Deposits & Balances due by Bank	201	762
Dividend	3	16
Surplus Fund	17	89
Total	346	1,076
% advances & bills to deposits	171.40	122.35

Source: *Bankers Magazine*: X (1850) p.620; XLIV (1884) p.907.[9]

The Sheffield Union Banking Company developed in a different manner. In 1843 the old-established private bank, Parker, Shore & Company, suspended payment with liabilities of over £0.5m., but, although losses subsequently proved not to be heavy, confidence was lost in the bank. The Yorkshire District Bank collapsed at the same time with the consequence that its Sheffield branch closed. These events opened up an opportunity for further development in the local system and in 1843 the Sheffield Union Banking Company was formed with an initial capital of £16,000. This local opportunity for expansion contrasted with national banking developments where there was a 'pause' from the late 1830s to the late 1850s. Initially the bank took over the 'good' business of the Yorkshire District Bank: progress was slow at first but business gradually expanded, with the bank taking advantage of further opportunities. Another local bank, the Sheffield &

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9 Balance Sheets were not recorded in the Directors Minute Books, and the only available balance sheets found were in the *Bankers Magazine*.

Retford, ran into difficulties in 1846: heavy involvement in large loans to a small number of debtors and the collapse of a closely associated bank in Leeds had led to its demise. The Sheffield Union seized this opportunity to expand and purchased the Retford part of the business. A few months later the Sheffield & Retford Bank ceased trading and the 'good' accounts were taken over by the Sheffield Union. In addition, the business of Parker, Shore & Company was finalised in 1846 and the bank never re-opened. The Sheffield Union took over the premises and probably a large amount of the private bank's old business.[10]

In contrast to the Sheffield & Hallamshire Bank, the Sheffield Union operated on a relatively small scale. Also, unlike the Sheffield and Hallamshire, it opened branches: by 1879 the Sheffield Union had six branches - Attercliffe, Pennistone, Sheffield Moor, Retford, Rotherham and Chesterfield. Table 3.4 shows the business of the Sheffield Union between 1850 and 1880.

Like the Sheffield & Hallamshire, as the amount of advances and bills was greater than deposits in 1850, and in 1880, this indicates that the Sheffield Union was 'overlent'. However, unlike the Sheffield & Hallamshire, the ratio remained constantly high throughout the period, decreasing only slightly to its lowest level, 146 per cent, in 1880. As this ratio failed to fall below this level in the years examined, the Sheffield Union does not conform to Nishimura's thesis of nationally increasing liquidity levels after 1870. The Sheffield Union was involved in providing substantial, and renewed, overdrafts and loans to local iron and steel companies, as was the Cumberland Union Bank. These loans were highly illiquid assets and, as Cottrell discovered in the case of the Cumberland Union, the provision of

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10 Crick & Wadsworth, *Hundred Years...*, pp.215-217.

such medium- and long-term finance was a potentially dangerous path to follow as they could weaken a bank. Indeed, the Sheffield Union suffered serious financial difficulties in the 1850s, and in the 1870s, through its support of certain industrial customers with large, medium-term advances. This is explored further below.

Table 3.4: Sheffield Union Balance Sheets, 1850-1880							
(£ 000's)							
Assets	**1850**	**1855**	**1860**	**1865**	**1870**	**1875**	**1880**
Cash & Bills in Hand	51	52	57				
Balances due to Bank	79	174	208	328	402	711	650
Bank Premises & Fixtures				4	4	5	15
Total	131	226	266	332	405	716	666
Liabilities	**1850**	**1855**	**1860**	**1865**	**1870**	**1875**	**1880**
Capital	41	61	82	83	120	180	180
Deposits & Balances due by Bank	86	151	161	213	248	463	446
Profits & Loss	3	8	11	8	15	23	14
Surplus Fund	1	6	10	18	23	50	25
Fund for bad debts			3	10			
Total	131	226	266	332	405	712	666
Ratio advances & bills: deposits	151.87	149.53	165.36	154.05	162.30	153.53	145.73

Source: Midland Bank Archives, London [hereafter MBA]: Sheffield Union Banking Company [hereafter SUB], Board Directors Minutes [hereafter BDM], AD 2,3,4, and 5. Balance sheets were provided with details of the banks Annual General Meeting, held in July.[11]

Credit Relations Between the Banks and their Industrial Customers

The aim of this chapter is to analyse the credit relations between banks and their industrial customers in the Sheffield region. The basis for this was established by surveying the material available within the Midland Bank's Archives - the Board of Directors' Minute Books of the Sheffield Union

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11 I am very grateful for the help and assistance of Edwin Green, archivist at the Midland Bank.

Banking Company, and of the Sheffield & Hallamshire Bank[12]. The archives of the Sheffield & Rotherham Bank, now held by the Royal Bank of Scotland, were unavailable during 1991 when data collection was taking place.[13] Firstly, the directors of the banks and their relationships with industry will be examined. Secondly, a detailed analysis will be provided of the advances provided by the Sheffield Union and the Sheffield & Hallamshire.

Directors of the Banks

From a survey of the lending of the Sheffield Union Banking Company and the Sheffield & Hallamshire Bank between 1855 and 1885, it is evident that the two banks provided financing, to a certain degree, for capital investment undertaken by local manufacturing industry. Therefore, a study of the men dictating the banks' policies concerning lending to local industry, the bank directors, is necessary.

In his study of country banks in the Industrial Revolution, Pressnell stated that:

> The first group of bankers consisted of entrepreneurs, whose approach to banking was strongly influenced by the need to provide a local means of payment, and was sometimes aided by the wealth already accumulated in business.[14]

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12 All references are from the MBA: SUB, BDM, AD 2,3,4, and 5 and Sheffield & Hallamshire Bank [hereafter SHB], BDM, AM 6 to AM 15.

13 This has been particularly regrettable as I was able to consult the company archives of three industrial customers of the Sheffield & Rotherham Bank and thus a parallel study of both bank and company archives was prevented. Unfortunately, when the Royal Bank of Scotland records became available there was no longer time enough in which to consult them. This omission will be remedied in future research. I was also unable to consult the archives of the Sheffield Banking Co. Ltd., held by the National Westminster Bank, due to the constraints of time.

14 Pressnell, Leslie *Country Banking in the Industrial Revolution* (Oxford 1956) [hereafter *Country Banking* ...], p.14.

However, as the nineteenth century progressed the nature of banking in England changed. The number of joint stock banks increased, and as banks grew in size and amalgamated with others, especially from the late 1880s, they became less local and more national in outlook. Local knowledge may have become less important and links between local industry and directors of the banks may have declined. This trend has been blamed by some for causing a decrease in the provision of finance to local industry, as they have maintained that national banks were too far removed from local operations, often with their head office based in London, and thus became more conservative in their lending policies to industry.[15]

Some of the provincial banks in the third quarter of the nineteenth century developed from the 'private lending clubs' of local entrepreneurs described by Pressnell, but had not yet achieved the national identity which became increasingly common after 1890. However, little previous work has been undertaken on the links between the directors of provincial banks in England and Wales and their industrial customers in the mid-nineteenth century. Research has been carried out in this area in countries, such as Sweden and Austria, where strong links between directors of banks and industry existed.[16] However, in England, where banks have been criticised for their 'failure' to

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15 Cottrell, *Industrial Finance* ..., pp.197-8.

16 See, for example, Ottosson, Jan, 'Network analysis and interlocking directorships: inter-war Sweden', in Cottrell, P.L., Lindgren, H., Teichova, A. (eds.) *European Industry and Banking Between the Wars: A Review of Bank-Industry Relations* (Leicester 1992). Inter-locking directorships between banks and industry have been analysed using a technique called network analysis, a rapidly developing area in which specific computer programmes are used to measure the strength of linkages existing in networks. John Scott has worked extensively using this technique to analyse social and financial networks. His publications include, *Directors of Industry: the British Corporate Network, 1904-1976* (1984); Stokman, Ziegler, Scott, (eds.) *Networks of Corporate Power: a Comparative Analysis of Ten Countries* (1985); Scott, (ed.) *The Sociology of Elites* (1990); *Social Network Analysis: a Handbook* (1991).

provide finance for domestic industry, the area has been largely neglected.[17] A paper by Isabelle Lescent on the iron industry in the West Midlands between 1815 and 1880 offers some interesting insights on the topic.[18] She found that a close relationship existed between bankers and industrialists in the West Midlands, stating that:

> Most bankers also had the ability to judge the credit worthiness of each firm, and could rely on a first class network of industrial information. Such networks were the product of the special relationship that existed between bankers and industrialists in the nineteenth century.[19]

Lescent found that these networks had arisen as a result of several factors. The nascent banking network established in the eighteenth century by industrialists, in order to provide finance for their ventures, continued into the nineteenth century. Furthermore, in the West Midlands, directors of nineteenth-century banks 'had almost always been trained in trade and industry rather than in banking ' and that 'the country banker's first quality was not so much his knowledge of banking but his detailed knowledge of industry'.[20] This was found to be especially true of the banks' lending to industry in South Wales, Shropshire, and the Black Country, where 'at least one member or director ... belonged to an iron-making family'. Such close ties with industry, Lescent argues, were advantageous in the assessment of a clients' credit-worthiness and in attracting new customers. However, the close links could also be a disadvantage to the bank as: 'Ironmasters could sometimes obtain larger loans than their financial situation merited thanks

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17 New work is being produced, for example, Brown, Jonathan & Rose, Mary B. (eds.) *Entrepreneurship, networks and modern business* (Manchester 1993).

18 Isabelle Lescent, 'Financing the XIXth Century Iron Industry: A Re-evaluation of the Role of British Banks Between 1815 and 1880'. N.W. Posthumus Centre European Post-Graduate Training Programme in Social and Economic History : Seminar on The History of Banking and Finance, Odense, Denmark, Nov. 1991.

19 *ibid.*, p.9.

20 *ibid.*

to family ties and the patronage of a leading ironmaster' and thereby become heavily indebted to the bank. Such a situation would be highly undesirable for a provincial bank, resulting in illiquidity and instability.

In examining the directors of the Sheffield Union Banking Company and the Sheffield & Hallamshire Bank, the aim has been to identify whether these banks retained their local industrial connections. Furthermore, if bank/ industry links existed, it is important to discover their impact upon the industrial lending policies of both banks.

There is very little information in the banks' Minutes regarding the men who determined the banks' lending policies - the members of the banks' boards themselves. Appointments, retirements and deaths of directors are recorded, but little else. However, in 1876, a letter of resignation, due to 'age and infirmity', from the Chairman of the Board of the Sheffield Union revealed that 'My idea is that in the present derangement of trade all directors should be vigilant and have a good knowledge of the business of the town and neighbourhood'.[21]

This letter was written during a time of depression, but knowledge of the local trade and business methods would presumably have been desirable for directors of both the banks during all phases of the 'cycle' of business activity.

The directors have been examined in closer detail in order to identify the men who actually formulated the lending policies of the two banks and, by listing their occupations, the extent of their business knowledge. Table 3.5 lists the directors of the Sheffield Union Bank during the period under consideration.

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21 MBA: AD 4, SUB, BDM, 16 May 1876, f.120.

Table 3.5: Directors of the Sheffield Union Banking Company		
Name	**Date joined the Bank**	**Date left the Bank**
William Smith	1 June 1843	Retired 23 May 1876
John Hall	1 June 1843	Died January 1864
Richard Sorby	1 June 1843	Retired 16 September 1846
Richard Sorby	22 June 1843	Died August 1862
Edward Vickers	27 December 1843	Retired November 1857
John Brown	2 December 1846	Died 25 May 1882
Hugh Wood	9 June 1858	Retired July 1865
William Parker	13 May 1863	Retired July 1872
John Hall junior	24 February 1864	Retired July 1866
Francis E. Smith	26 July 1865	In office 1885
George Bassett	2 August 1866	Retired 25 January 1883
Francis Patrick Smith	30 May 1876	In office 1885
Richard Groves Holland	15 June 1882	In office 1885
Samuel Meggitt Johnson	8 February 1883	In office 1885

Source: MBA: SUB, BDM, AD 4, Front Cover.

The Minute Books only provide the names of these men, therefore it is very difficult to identify them by cross-referencing with other sources without further information, such as addresses and occupations. Trade directories provide the best source for identifying individuals, and five of the directors can be positively identified as there is only one entry for their name. These are listed in Table 3.6.

Edward Vickers, a member of the local business family, can be found in a 1862 Trade Directory[22] where he is described as a merchant and manufacturer at Naylor Vickers & Co., residing at Tapton Hall, Sheffield. Naylor Vickers was a very important company in the Sheffield area, a large concern, which was later incorporated as Vickers Sons & Co. Ltd. in 1867 with a nominal capital of

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22 *White's General and Commercial Directory and Topography of the Borough of Sheffield* (Sheffield 1862) [hereafter *White's Directory 1862*].

£155,000 (and is still in existence today).[23] Richard Groves Holland was an iron and steel merchant, being the proprietor of the Sussex steel works in Sheffield, and George Bassett owned a confectionery manufacturing company, George Bassett & Co., again in Sheffield, for which Samuel Meggitt Johnson also worked.[24] There were also two members of the professions on the Sheffield Union board during this period: Hugh Wood was a surgeon from Sheffield, and Francis Ebenezer Smith was the founder of F. E. Smith & Sons, stock and share brokers, accountants, and insurance agents in Sheffield.[25]

Table 3.6: Occupations directors of the Sheffield Union Banking Company

Name	Occupation	Company
Richard Groves Holland	Iron & Steel merchant	R. G. Holland
George Bassett	Manufacturing Confectioner	George Basset & Co.
Samuel Meggitt Johnson	Manufacturing Confectioner	George Basset & Co.
Francis E. Smith	Share broker	F. E. Smith & Sons
Francis Patrick Smith	Solicitor	Smith, Hinde, Smith & Elliott
Edward Vickers	Steel merchant and manufacturer	Naylor Vickers & Co.
William Smith	Steel merchant and manufacturer	Hallamshire Steel & File Co. Ltd.
Hugh Wood	Surgeon	

Source: MBA: SUB, BDM, AD 2, 3, 4, and 5 (occupation stated at time of election to office); *White's Directory 1852; White's Directory 1862; White's Directory 1879; Kelly's Directory 1881.*

The other directors are more difficult to trace as there are 10 entries under the name of John Hall in the 1862 Trade Directory, 10 entries for John Brown and

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23 Companies House, London [hereafter CH]: Board of Trade papers [hereafter BT], Returns to the Registrar of Joint Stock Companies, company number 3543, Vickers Sons & Co. Ltd., Memorandum of Association.

24 *White's Gazetteer and General Directory of Sheffield* (Sheffield 1852) [hereafter *White's Directory 1852*], *White's Directory 1862*, *White's General and Commercial Directory of Sheffield* (Sheffield 1879) [hereafter *White's Directory 1879*], *Kelly's Directory of West Riding* (1881) [hereafter *Kelly's Directory 1881*].

25 *ibid.*

27 under the name of William Smith. Sorby and Parker were not found in any trade directory. I have made assumptions about the identity of William Smith due to information contained in the company records of the Hallamshire Steel & File Co. Ltd.[26] Upon the death of William Smith, the Chairman of the Hallamshire Steel & File, Francis Patrick Smith led the board. William Smith had founded Hallamshire Steel & File and, presumably, the appointment of Francis Patrick Smith as the new Chairman of the company could indicate that he was a relation of William: that both these men were also present on the Board of the Sheffield Union Bank led to the presumption that they were probably the same individuals.[27]

As Table 3.6 shows, the directors of the Sheffield Union Bank were usually members of the local business community, involved either in manufacturing or commerce: three (23%) were iron/steel manufacturers, three (23%) were professionals, two (15%) were involved in none-metal manufacturing, but five (39%) have remained unidentified. Therefore, a near majority of the board of the Sheffield Union Bank, 46 per cent, consisted of manufacturers of one type or another. This implies that members of the Sheffield Union Bank Board were in a position to make knowledgeable judgements concerning the credit worthiness of the manufacturing firms to which they lent money, in terms of both their own experience and a network of industrial information that would have existed at least implicitly amongst manufacturers in an industrial city such as Sheffield. Indeed, in the course of running their own

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26 British Steel Corporation, Northern Region Records Centre, Middlesborough [hereafter BSC, NRRC]: Hallamshire Steel & File Co. Ltd. [hereafter HSF], 1406/1, Box Number 3, Location Number 24220, BDM, 1873-1885.

27 I also suspect that the Sheffield Union Director John Brown was the prominent entrepreneur, who, later knighted, owned the firm John Brown & Co., the large Sheffield steel merchants and manufacturers. However, no supplementary evidence has been found to confirm this, so I have not included this information as a certainty.

businesses, the bank's directors probably came into contact with many of the bank's manufacturing and commercial clients.

In 1872 the Sheffield Union Bank directors took steps to improve the knowledge base on which they made decisions regarding their manufacturing customers, despite their experience. They appointed Dennis Davy to take on the task of "processing more fuller information respecting the premises, plant and stock, and also the modes of doing business" of the bank's customers. Davy was qualified 'to advise the Manager and Board on most points relating to the conducting of Sheffield trades' due to 'his long connection with the Engineering business in Sheffield and the ready access he enjoys to most of the factories in this town'. Davy was paid, though the amount of his salary is not stated. Dennis Davy is listed in the 1879 *White's Directory* as a 'gentleman', but the bank's reference to his experience in the engineering industry would link him to the firm of Davy Bros. Ltd., engineers and steel manufacturers. This firm adopted limited liability in 1872 with a nominal capital of £100,000 (and is still in existence today). However, both Dennis Davy and Davy Bros. held their accounts with the Sheffield & Hallamshire Bank, circumstances probably ensuring greater impartiality when giving advice to the Sheffield Union. The appointment of Dennis Davy as 'industrial adviser' illustrates the importance that the Sheffield Union Bank placed upon gaining reliable information concerning their industrial customers.

That the majority of the Sheffield Union Banking Company's directors had a background in industry may have made them more inclined to provide credit to local industry; indeed, the Sheffield Union advanced considerable sums to Sheffield's manufacturing firms, often to the detriment of the bank (see below). This conforms with the findings of Lescent concerning bank lending patterns to industry in the West Midlands.

The directors of the Sheffield & Hallamshire Bank are shown in Table 3.7 in order to assess the type of men on this bank's board. These directors proved easier to identify as their full names, addresses and occupations were provided in the bank's Minute Books.

The Sheffield & Hallamshire appears to have had five directors on its board at any one time, with those listed in Table 3.7 rotating their positions every five years[28]. New members were added to the board upon the retirement or death of an existing member.

All the directors of the Sheffield & Hallamshire came from Sheffield and the majority of them were involved in manufacturing industry. Of the 19 directors, 11 (58%) were in iron, steel or the secondary metal trades; two (11%) were involved in coal mining or merchanting; two (11%) were owners of other types of manufacturing enterprises; and there were four (21%) non-manufacturing directors (members of the professions, including one 'gentleman'). Furthermore, a majority (58%) of the directors of the Sheffield & Hallamshire were in steel and iron manufacturing or secondary metals trades, industries dominant within the Sheffield area. Some of these industrialists were owners of important Sheffield firms: for example, Arthur Marshall Chambers, elected in 1885, was the Managing Director of Newton Chambers & Co. Ltd., a large and successful iron and coal concern, incorporated in 1881 with a nominal capital of £65,000.[29] Charles Peace was a member of the family firm Joseph Peace & Co., which was converted into a

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28 MBA: AM 6, SHB, BDM, f. 375.

29 *ibid.*, AM15, f. 245 and CH: Company Number 15997, Newton Chambers & Co. Ltd., Memorandum of Association.

Table 3.7: Directors of the Sheffield & Hallamshire Bank, 1855-85			
Directors name	**Occupation**	**Company owned/employee**	**Dates with the Bank**
Benjamin Burdekin	J. P.		pre-1850-
Francis. R. Appleby	Steel merchant & manufacturer	John Kenyon & Co.	pre-1850-
John Marsh	Steel merchant & manufacturer	Marsh Bros.	pre-1850-
Joseph Ward	Coal dealer		pre-1850-60
William Cockayne junior	Draper	Thomas Bagshawe, Cockayne & Co.	pre-1850-81
John Bower Brown	J. P.		1851-
Thomas Blake	Type founder	Stephenson, Blake & Co.	1852-54
John Carr	Surgeon & coal owner		1855-
Joshua Smith	Cutlery & tool manufacturer	Thomas Turner & Co.	1860-
Charles Peace	File manufacturer	Joseph Peace & Co.	1861-
Francis Colley	Currier & leather cutter	Francis Colley & Sons	1863-72
Theophilus Marsh	Steel, tool, & cutlery manufacturer	Marsh Bros.	1872-81
John William Hawksley	Gentleman		1872-
John Yeomans Cowlishaw	Electro-plater, gilder, and pearl merchant	John Yeomans Cowlishaw	1873-
William Howson	Cutlery merchant & manufacturer	Harrison Bros. & Howson	1874-84
David Ward	Tool merchant & manufacturer	Ward & Payne	1882-
William Harman	Cutlery merchant & manufacturer	William Harman & Co.	1883-
Samuel Henry Burrows	Iron master	S. H. Burrows & Son	1883-
Arthur Marshall Chambers	Coal & iron master	Newton Chambers & Co.	1885-

Source: MBA: SUB, BDM, AD 2, 3, 4 and 5.

limited company in 1868 with a nominal capital of £50,000.[30] Theophilus Marsh was a partner in Marsh Bros., steel, tool and cutlery merchants and manufacturers with estimated annual returns of £60,000.[31] Therefore, like the Sheffield Union Bank, many of the Sheffield & Hallamshire Bank directors had an intimate knowledge of local industry and would have been part of a network of industrial information (see Diagram 3.1 below).

The policies that the Sheffield & Hallamshire directors formulated are difficult to ascertain. Occasionally details of their decisions are recorded: in 1855 the directors decided that it was 'desirable that a sub committee of two directors residing in the Town should be formed so that the Manager, in such cases as he may think necessary, shall have the opportunity of calling this Committee together in order that he may consult the same and act by its instructions'.[32] Benjamin Burdekin and William Cockayne constituted this committee which appears to have been an attempt to construct closer ties with the bank's Manager and, therefore, closer control of the application of bank policy. This was a feasible strategy for the Sheffield & Hallamshire Bank as it had no branches.

Comments made by the directors concerning the actual policies they applied in running the Sheffield & Hallamshire Bank can be found in 1851. The half yearly balance and report for the bank of 31 December 1850 contained some very satisfying results. Profits and deposits had increased as compared with the previous year, business had 'more than doubled when compared with 8 years ago', the surplus fund had risen by £10,000 in eight years and the bank

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30 Public Record Office, Kew, London, [hereafter PRO]: BT, Returns to the Registrar of Joint Stock Companies, series 31, box no. 1426, company no. 4162, Joseph Peace & Co. Ltd., Memorandum of Association.

31 MBA: AM12, SHB, f.145.

32 *ibid.*, AM 7, 2 May 1855, f.28.

had no bad debts, as in the three previous half yearly balance sheets. The Manager was very proud of the latter achievement, stating in his report that 'Such a fact is unprecedented in the history of the bank and, it may be added, of most others'.[33] The directors were extremely pleased by these results and added the reason that they believed was behind such improved figures:

> This difference they ascribe to the conservative Policy since deemed upon which was sanctioned and supported by the Shareholders as well as by the Board and has been efficiently and successfully carried out by the Manager. They also take occasion to record their belief that the same line of Policy must in course of a few years realise the most sanguine wishes of all parties interested, by raising the requisite Surplus Fund, and by enabling the directors at the no very distant day, to declare a Dividend which will be satisfactory to the Shareholders and gratifying alike to themselves and to the Manager.[34]

A policy of 'conservatism' was therefore hailed as the reason for the bank's success. Just how this was defined by the directors is not clearly stated and it would be dangerous to apply current assumptions to nineteenth-century men. The figures contained within the half year report may help to define their policies, especially as these were compared by the Manager to those of 1842, as reproduced in Table 3.8.

Table 3.8: Results of the Sheffield & Hallamshire Bank for 1842 and 1850

	1842	1850
	£'s	£'s
Bills held	29,702	104,114
Credits accounts	34,189	108,616
Debits accounts	195,950	165,495
Surplus Fund	7,866	17,283

Source: MBA: AM 6, SHB, BDM, 22 Jan. 1851.

The table indicates that the policies followed by the directors over the eight-year period had the apparent outcome of the number of accounts in credit increasing dramatically, whilst the number of accounts in debit decreased,

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33 MBA: AM 6, SHB, BDM, 22 Jan. 1851, f.6, Managers report, by William Waterfall.

34 *ibid.*, 22 Jan. 1851, f.6.

though not by the same margin. Moreover, the surplus fund was increased and the amount of bills held also rose very significantly. The Manager also commented that the bank, in 1850, held £134,114 in securities 'which might, in a brief period, be converted into cash' and £20,000 in cash. From this it seems that over the eight year period the bank actively pursued, and successfully gained, greater liquidity.

The knowledge used by the directors of the Sheffield & Hallamshire to formulate such a policy for the bank was drawn mainly from the manufacturing sector, as shown by Table 3.7. This is confirmed by the comments made after the unexpected death of Theophilus Marsh, steel manufacturer and director of the bank for nine years. His fellow directors paid tribute to 'his long experience in business', which 'constituted him a most valuable colleague and the directors greatly regret his loss.'[35] The experience of these men in the manufacturing sector could have resulted in a generous policy being applied towards the provision of credit to manufacturing customers. However, conversely, their experience may have brought to bear a cautious policy due to their prior knowledge of the pitfalls existing in this sector. The latter outcome is certainly true of the Sheffield & Hallamshire Bank and is discussed in more detail below, along with figures illustrating the amount of finance provided to industry by the bank.

In addition to examining the industrial expertise of the directors of both banks, it is important to investigate the links between these men and the banks' manufacturing customers - both the manufacturing concerns in which the bank directors were involved and also other firms in the area. The aim is to identify any interlocking networks that existed between these banks and

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35 *ibid.*, AM 14, 23 Nov. 1881, f.342.

industry in the Sheffield region, including the existence of interlocking directorships between banks and industry.

Firstly, the case of the Sheffield Union Bank will be examined. Some of the directors of the Sheffield Union chose to use the services of the bank for their business accounts (see Table 3.6). George Bassett & Co. is referred to on 22 February 1877 in a discussion concerning the amount of commission charged on the accounts of customers with large returns. The bank agreed to charge the standard rate of 2s. 6d. per £100 commission on such accounts 'up to a certain turn-over, & a charge of 1/6% on all the returns beyond that amount: the reduction rate of Commission to begin at ... £50,000 with George Bassett & Co., regard being had in all cases to the fact that in the main the balances are credit balance.'[36] Therefore, the confectionery manufacturing company of bank director George Bassett appears to have been both a large and valued customer of the bank, with an account mainly in credit. That no more references to this company could be found in the Minutes consulted probably testifies to the fact that it was a customer not requiring loans or overdrafts - banking services that normally necessitated discussion by the Board.

The Hallamshire Steel & File Co., of which the Sheffield Union Bank Director William Smith was founder, also enjoyed a smooth relationship with the Sheffield Union. In 1877 the company requested and was granted an overdraft of £750 for 12 months on the security of 50 shares in the company, with a nominal value of £1,000 and a paid up value of £750.[37] The next application for credit came a year later when the company was granted an overdraft of £5,000 for six months, the duration to be reconsidered after this time. No new security was offered, the directors seemingly granting £5,000

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36 MBA: SUB, BDM, AD 4, f.193.

37 *ibid.*, AD 4, f.205 and BSC, NRRC: HSF, 1406/1, Box 1, 24218, AGM Minute Books.

credit on the security of shares worth £750 and reliability of their fellow director, William Smith.[38]

The case of Naylor Vickers & Co. constituted a somewhat less happy experience for the bank and is discussed in detail below, focusing on the role of Edward Vickers, director on the Sheffield Union Board and member of Naylor Vickers & Co.[39] Edward Vickers was much involved in Naylor Vickers & Co. during the 1850s, a decade during which the company experienced grave financial difficulties and the bank, as a major creditor of the company, became very dangerously involved. Edward Vickers was a member of the Sheffield Union's board at a time when the bank advanced Naylor Vickers & Co. £60,000 and his presence may have been very influential in what proved to be an unwise policy of lending so heavily to just one firm. Edward Vickers retired from the Sheffield Union Board in 1857 when his company failed. His decision to leave the bank's board may have been due to the time required to tackle the financial difficulties of his company, but it could also have been caused by the compromising position in which he was put, by simultaneously being a director of, and a major debtor to, the same institution.

Another Sheffield Union director placed the account of his business at the bank: F. E. Smith & Sons were a firm of share brokers founded by the bank director of that name. As a non-industrial customer, the details of this account are excluded from the discussion here. However, both the business and private accounts of F. E. Smith were handled with a high degree of

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38 *ibid.*, f.299.

39 See below pp.119-120 and *ibid.* AD 3, ff.17, 18, 37, 80, 122, 126, 132, 133, 145, 148, 149, 172.

leniency, suggesting that, as customers, directors of the bank may have received privileged treatment from the rest of the board.

The directors of the Sheffield Union Bank were also involved in manufacturing concerns beside their own. Using data from the Memoranda of Association and share returns of companies that adopted limited liability in the Sheffield region between 1855 and 1885 (analysed in detail in Chapter Four), the companies in which the Sheffield Union Bank directors held shares have been identified. Also, company directorships have been traced in order to identify inter-locking board relationships between banks and industry. The results are displayed in Tables 3.9 and 3.10 below and they illustrate that a close relationship between those that ran the banks and local manufacturing industry.

There was only one occurrence of an inter-locking directorship between the bank and industry in the case of the Sheffield Union and the limited companies surveyed - William Smith, founder and Chairmen of Hallamshire Steel & File Co. Ltd., mentioned above.[40]

A more important involvement in local industry by the Sheffield Union Bank's directors occurred in the form of investments in shares of local limited liability companies. Table 3.9 shows the companies in which Sheffield Union Bank directors were initial subscribers: such an initial subscription to a company involved signing the memorandum of association in order for the company to attain limited liability status. Seven of these signatures were required by law and the signatories could be considered to be

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40 CH: 7399, HSF, Memorandum of Association.

the 'promoters' of a limited company,[41] although their involvement in the subsequent running of a firm can not be gauged without consulting the company archives. However, the signatories were important in promoting a new joint stock concern.

Table 3.9: Limited companies in which Sheffield Union directors were initial subscribers

Name	Company	Share Type	No. of Shares
George Bassett	Albion Steel & Wire Co. Ltd.*	Initial subscription	300
Edward Vickers	Clogau Co. Ltd.	Initial subscription	2
Francis Patrick Smith	Hallamshire Steel & File Co. Ltd.*	Initial subscription	100
William Smith	Hallamshire Steel & File Co. Ltd.*	Initial subscription	600
Francis Ebenezer Smith	Neepsend Rolling Mills Co. Ltd.	Initial subscription	75
Francis Ebenezer Smith	Sheffield Steel & Manufacturing Co. Ltd.	Initial subscription	100
Edward Vickers	Vickers Sons & Co. Ltd.*	Initial subscription	1

(The companies in the table marked by an asterisk were customers of the Sheffield Union Bank.)
Source: PRO: BT31/1779/6713 Albion Steel & Wire Co. Ltd.; BT31/1980/8462 Clogau Co. Ltd.; BT31/1824/7071 Neepsend Rolling Mills Co. Ltd.; BT31/1824/7070 Sheffield Steel & Manufacturing Co. Ltd.; CH: BT/7399 Hallamshire Steel & File Co. Ltd.; and CH: BT/3543 Vickers & Sons & Co. Ltd. All references from the Memoranda of Association.

Firstly, it should be noted that Francis Ebenezer Smith was a share broker by profession and therefore was likely to have had a range of investments in the form of share holdings. Overall, five out of the 13 bank directors were initial subscribers to six Sheffield limited companies and three of these companies were also customers of the bank. This not only implies an active

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41 PRO: BT31/49/201, Brightside Coal Co. Ltd. included pre-registration documents from 1853, before the 1855 Companies Act, which actually refers to the promoters of the company, later referred to as the initial subscribers.

Table 3.10: Companies in the Sheffield region in which the Sheffield Union Bank directors were shareholders

Name	Company	Share Type	No. of Shares
William Smith	Albion Steel & Wire Co. Ltd.*	Ordinary	50
John Brown	Albion Steel & Wire Co. Ltd.*	Ordinary	10
Francis E. Smith	Albion Steel & Wire Co. Ltd.*	Ordinary	92
George Bassett	Albion Steel & Wire Co. Ltd.*	Ordinary	5
Francis E. Smith	Cardigan Iron & Steel Co. Ltd.	Ordinary	75
Samuel Meggitt Johnson	Charles Cammell & Co. Ltd.	Ordinary	3
Francis Patrick Smith	Charles Cammell & Co. Ltd..	Ordinary	10
Francis E. Smith	Charlton Iron Co. Ltd.	Ordinary	14
Edward Vickers	Clogau Co. Ltd.	Ordinary	111
William Smith	Davy Bros. Ltd.	Ordinary	10
Francis E. Smith	Davy Bros. Ltd.	Ordinary	30
Francis Patrick Smith	Hallamshire Steel & File Ltd.*	Ordinary	100
William Smith	Hallamshire Steel & File Ltd.*	Vendors	600
Samuel Meggitt Johnson	Kelham Rolling Mill Ltd.	Ordinary	75
Francis E. Smith	Kelham Rolling Mills Co. Ltd.	Ordinary	115
George Bassett	Midland Mining Co. Ltd.	Ordinary	30
Samuel Meggitt Johnson	Neepsend Rolling Mills Co. Ltd.	Ordinary	50
George Bassett	New Midland Mining Co. Ltd.	Ordinary	120
Francis E. Smith	Northfield Iron & Tyre Co. Ltd.*	Ordinary	212
John Brown	Phoenix Bessemer Co. Ltd.	Ordinary	10
Francis E. Smith	Phoenix Bessemer Co. Ltd.	Ordinary	15
William Smith	Sheffield High Moor Colliery Ltd.	Ordinary	10
Edward Vickers	Vickers Sons & Co. Ltd. *	Ordinary	272
Richard Groves Holland	William Cooke & Co. Ltd.		
John Brown	William Cooke Co. Ltd.	Ordinary	10

(The companies in the table marked by an asterisk were customers of the Sheffield Union Bank.)
Source: PRO: BT31 series (see Appendix 4.1 to Chapter 4 for details of company names and numbers)

participation in local industry by members of the board, but may also have had implications for the treatment received by these customers of the bank in which bank directors were involved as promoters. This aspect is explored further in Table 3.10, which both illustrates the share holdings of Sheffield Union directors in local limited companies subsequent to their incorporation, and also examines the credit relations between the bank and these customers in which its directors had purchased shares. There are four companies in which the Sheffield Union directors purchased shares and which were also customers of the bank (those marked by an asterisk in Table 3.10).[42]

Albion Steel & Wire Co. Ltd. was an important customer of the bank and shares in this company were held by four bank directors. It borrowed heavily from the bank during the 1870s, thereby accumulating a debt totalling £92,000 by the time the company was forced to be wound up in 1876. The bank suffered substantial losses through supporting one industrial concern to such a large extent[43] (see below). Shares in the company were originally purchased by directors of the bank in 1873, these being the first to be issued after the conversion of the firm to limited liability in 1872.[44] Thus, the shares were

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42 The bankers for some of the other companies in which the Sheffield Union Directors owned shares are listed below:

Cardigan Steel & Wire Co. Ltd.	Midland Bank
Charlton Iron Co. Ltd.	Sheffield & Hallamshire Bank
Davy Bros. Ltd.	Sheffield & Hallamshire Bank
William Cooke & Co. Ltd.	Sheffield & Hallamshire Bank
Charles Cammell & Co. Ltd.	Sheffield Banking Co.
Neepsend Rolling Mills Co. Ltd.	Sheffield Banking Co.
Kelham Rolling Mills Co. Ltd.	Sheffield Banking Co.
Phoenix Bessemer Steel Co. Ltd.	Sheffield Banking Co.

43 MBA: AD 4, SUB, BDM, f.157-8.

44 PRO: BT31/1779/6713, Albion Steel & Wire Co. Ltd., Summary of Capital and Shares.

not bought by the directors in attempt to inject capital into an ailing enterprise in which they had a substantial interest in keeping afloat; rather, the shares were purchased at approximately the time when Albion Steel & Wire opened an account with the bank. The interest of the bank directors in the shares of this customer may be explained by two connections between the Sheffield Union and the Albion Steel & Wire. Firstly, the new limited company arose from the merger of two unlimited companies - a firm of the same name and George Gray & Co. The latter had been a customer of the Sheffield Union, opening an account in 1863 maintained until 1874, after the creation of Albion Steel & Wire Co. Ltd., although by 1872, George Gray & Sons owed £47,531. This debt was taken on by the new limited company, Albion Steel & Wire Co. Ltd. It is therefore unsurprising that the bank continued to supply credit to Albion Steel & Wire Co., thereby attempting to safeguard its already heavy investment in one of its progenitors. This may also give the reason for the directors being so ready to invest personally in the new limited company - they may have had the interest of the bank in mind, when attempting to ensure the success of the new venture by purchasing shares in it. A second reason may also account for the willingness of the directors to purchase shares in Albion Steel & Wire Co. Ltd. One of the initial subscribers to the memorandum of association, the effective 'promoters' of the company, was George Bassett, also a director of the Sheffield Union Bank (see Table 3.9). Bassett may have used his influence on the board of the Sheffield Union to encourage the purchase of shares in the company but, more importantly, to encourage the provision of credit to a company in which he was an initial subscriber and shareholder.

Substantial share holdings were also held by F. P. Smith, William Smith, and Edward Vickers in three companies which were customers of the Sheffield Union Bank - Hallamshire Steel & File Co. Ltd. Northfield Iron & Tyre Co. Ltd. and Vickers Sons & Co. Ltd. (previously Naylor, Vickers & Co.). The

credit relations between the Sheffield Union on the one hand and both Hallamshire Steel & File and Vickers & Sons on the other have been discussed above. The case of Northfield Iron & Tyre remains to be analysed.

Northfield Iron & Tyre Co. Ltd. opened an account with the Sheffield Union in December 1872, when the company was incorporated. Details of the capital, and shares of the new limited concern, were included in the bank's Minutes namely, a nominal capital of £40,000, divided into 4,000 shares of £10 each, with £6 called on each share, resulting in a paid up capital of £18,000 and £10,000 considered paid on 1,000 vendors shares. The company was a sizeable concern, with the expected returns on the bank account running at £100-£120,000 per annum. The bank's board agreed to allow the company an accommodation of £3,000 and, although no security is explicitly mentioned, the reference to the £12,000 uncalled capital could be an indication of the collateral the board were willing to view as security.[45] Northfield Iron & Tyre borrowed continuously from the bank, after the opening of its account in 1872 until 1877, when a petition was filed to wind up the company. The overdraft limit of the company varied between £2,000 and a maximum of £12,000, now secured by acceptances and promissory notes, but the main type of security appears to have been guarantees and written bonds from the directors of the company. However, Northfield Iron & Tyre was ultimately unsuccessful, despite further calls on its shares, and the final wind-up meeting was eventually held in 1886. The directors of the Sheffield Union appear to have realised the difficulties the company was facing, as in 1876 they stipulated that the overdraft, just agreed for £10,000, was granted on condition that the uncalled capital of the company was not to be mortgaged 'or anticipated in any way', until the bank loan was paid off.[46] The implication of this policy

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45 MBA: AD 3, SUB, BDM, 17 Dec. 1872.

46 *ibid.*, 26 Oct. 1876.

was that, although the uncalled capital was not stated as security for the accommodation granted, it was considered as such by the bank. This is confirmed the following year, when the Sheffield Union Board recorded that additional calls on shares had left an uncalled capital of only £1.10s per share, or £4,500 in total, and therefore the bank requested formal security for the full £10,00 overdraft. Despite such precautions, the bank still suffered financially from the failure of this customer.

However, not all the companies in which Sheffield Union directors chose to invest in were unsuccessful. Davy Bros. Ltd., Hallamshire Steel & File Co. Ltd., and Vickers Sons & Co. Ltd. all remain in existence today. Charles Cammell & Co. Ltd. was wound up in 1898 but was reconstructed thereafter, later changing its name to Cammell Laird & Co. Ltd. which carried on trading into the 1990s. Thus, if success is measured in term of longevity, the Sheffield Union directors frequently made a good choice of investment. However, the success of these investments in terms of profitability would have to be measured by the annual dividend received on the shares, which has not proved possible to undertake in this research.

Table 3.9 displays very clearly that the men formulating the lending policies of the Sheffield Union Bank often invested personally in local industry and, therefore, had an active role in the promoting manufacturing in the Sheffield region. Of the cases discussed, both Albion Steel & Wire Co. Ltd. and Naylor Vickers & Co. appear to have enjoyed, on their part, a very lucrative/preferential relationship with the bank. This may have been influenced by the directors on the Sheffield Union's board, who were actively involved in these firms, either by ownership or through personal investments. The Sheffield Union Bank suffered financially from the close relationships with these two companies, a case for the argument against close bank/industry ties. However, the other two companies in which bank

directors invested and/or owned - Hallamshire Steel & File and Northfield Iron & Tyre - seem not to have received any special treatment from the bank, in terms of generous, or unwise, lending with insufficient security. Thus, only two exceptional cases caused the bank to suffer through a close involvement between its directors and manufacturing clients. Overall, the advantages of members of the bank's board possessing a good knowledge of local industry have to be weighed against the dangerous policies pursued in the cases of Albion Steel & Wire and Naylor Vickers. Furthermore, personal investments and one interlocking company/bank director can not be blamed entirely for the mistakes by the firms involved and the bank's board as a whole.

The relationship of the Sheffield & Hallamshire Bank's directors as business customers of their bank will be now analysed, as well as their own links with industry in the form of directorships and investments, in order to asses the extent of their involvement in local, limited companies.

The firms, in which Sheffield & Hallamshire directors were partners, were also sometimes customers of the bank (see Table 3.7 and Diagram 3.1). Francis Colley & Son, curriers, opened an account with the bank in 1872 by paying in £1,546 and Marsh Bros. also opened an account in 1872. Newton Chambers & Co. held an account with the bank and by 1851, when the study begins, had an overdraft of £7,000.[47] The latter company will be discussed in more detail below. The bank directors' roles in these companies may have influenced the way in which the bank's board treated these accounts and there appears to have been an awareness of this potential conflict of interest in the case of Joseph Peace & Co. Ltd. In 1868 when the new limited company applied for an account with the Sheffield & Hallamshire, the Minutes state that 'Charles

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47 MBA: AM 6, SHB, BDM, 26 Jan. 1851, f.19.

Peace retired from the room during the consideration of this application.'[48] Charles Peace was not a director of the limited company, but was obviously personally involved, probably as a relative of the Managing Director, Joseph Peace. On this occasion the company was not satisfied with the terms on which the bank offered to operate its account, despite having held an account with the Sheffield & Hallamshire before conversion, and the company turned to the Midland Banking Co. Ltd.[49]

In 1871 Joseph Peace & Co. Ltd. applied once more to open an account with the Sheffield & Hallamshire. The company requested an account with a credit of £5,000, offering as security the joint guarantees of the directors of the company for £2,500. The bank's Minutes noted that the returns of the company were £40,000 per annum and bills to the extent of £4,000 to £5,000 a year would be offered for discount. The account was declined, probably due to the company still conducting its banking business with the Midland Bank. Again, Charles Peace was noted as being absent from the board meeting while the matter was discussed.

Diagram 3.1 illustrates the companies in which the Sheffield & Hallamshire Bank directors were involved and also shows if these companies held accounts with the bank.

Inter-locking directorships between Sheffield & Hallamshire board members and the limited liability companies surveyed occurred in three cases. Arthur Marshall Chambers, managing director of Newton Chambers & Co. Ltd., has already been mentioned.[50] However, another of the Sheffield &

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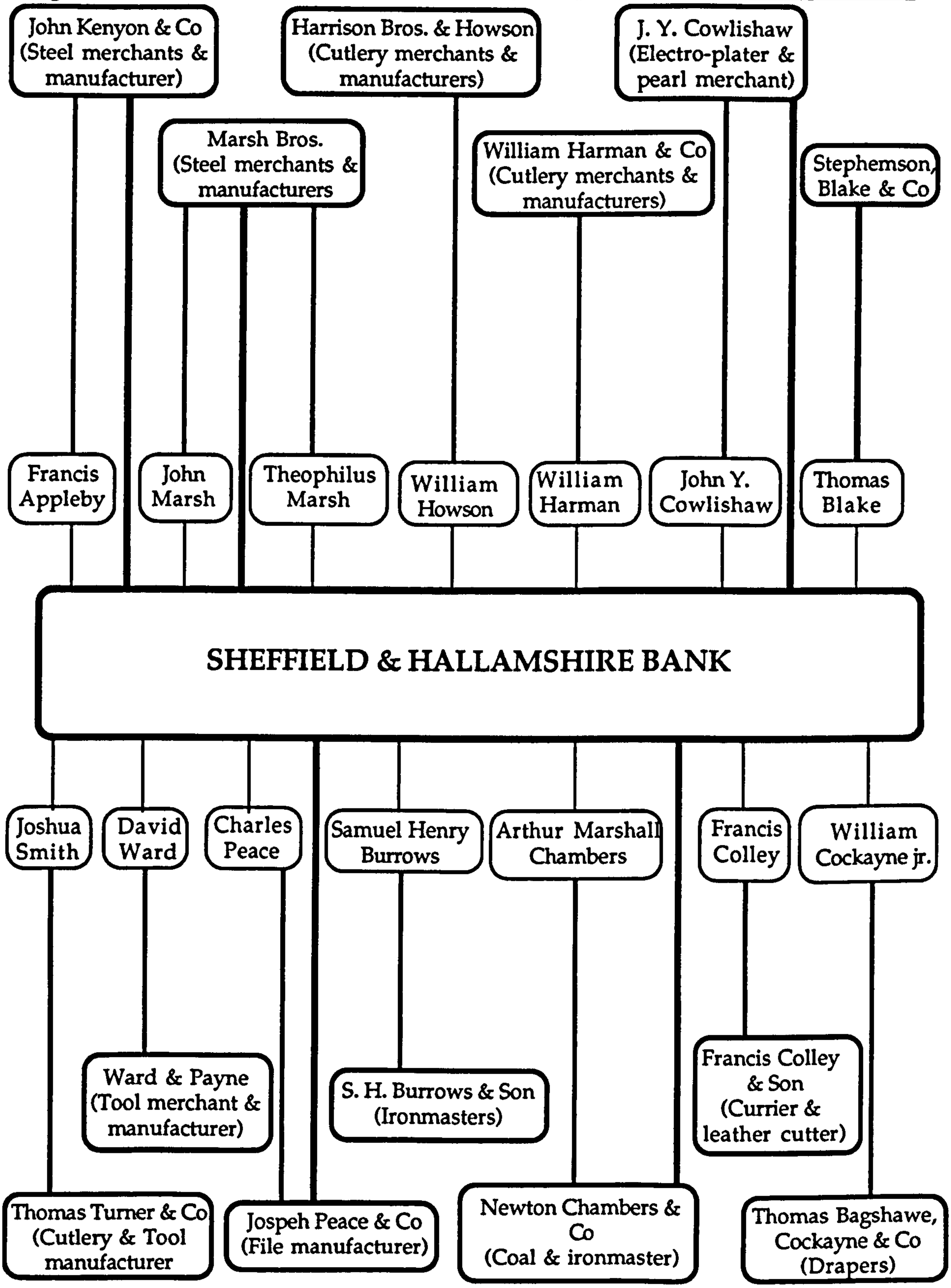
48 *ibid.*, AM 11, f.13.

49 *ibid.*, f.16.

50 CH: 15997, Newton Chambers & Co. Ltd., Memorandum of Association.

Diagram 3.1: The industrial network of the Sheffield & Hallamshire directors



Source: MBA: SHB, BDM, AM 6-15; *White's Directory 1852; White's Directory 1862; White's Directory 1879; Kelly's Directory 1881.*

Hallamshire directors was also on the board of Newton Chambers & Co. Ltd. - John Yeomans Cowlishaw - the plater and pearl merchant.[51] The connection between Cowlishaw and the Chambers may have arisen through contact in the metal trades, or on the board of the bank. Furthermore, John Bower Brown, Justice of the Peace, (see Table 3.7, page 62) was a director of James Fairbrother & Co. Ltd.[52] Thus, the Sheffield & Hallamshire's board had strong and active links with local manufacturing industry in the form of directorships. In making decisions concerning loans to industry, therefore, it would appear that the Sheffield & Hallamshire board was well equipped with the requisite knowledge.

Such links may also have led to preferential treatment of the business accounts with the bank where the bank's board members had such a personal involvement. As James Fairbrother & Co. Ltd. did not bank with the Sheffield & Hallamshire, an analysis of the relations between the bank and Newton Chambers & Co. has been undertaken in order to identify any preference that this company may have received due to two inter-locking directorships.

Newton Chambers & Co. had an agreed overdraft of £4,500 with the bank in 1851, which was increased to £10,000 within a year. This subsequent extension was allowed by the directors after an examination of the company's balance sheet gave them reassurance that the affairs of the company were 'of a favourable nature'.[53] However, the bank preferred to have some collateral security for the debit account when it reached £10,000. Despite constant requests from the directors to decrease the debt, or produce satisfactory

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51 *ibid.*

52 PRO: BT31/2289/11031, Memorandum of Association.

53 MBA: SUB, BDM, AM 6, f.89.

security for half the debt, £5,000, the company's overdraft remained around the £10,000 level and no security was offered on this sum. In 1855 the bank's directors announced that they were 'disappointed and dissatisfied' that the company's account had been kept at the maximum credit allowed and that the 'account must now be worked in accordance with the general practise of the Bank and caused to fluctuate more'.[54] The directors believed that the credit was too large for the company, whereas they expected a company to do business with the bank of about £100,000 per annum if it was to have an overdraft of £10,000.[55] Despite harsh words and demands for security from the directors, and apparently none having been given on the account thus far, the debt of Newton Chambers gradually increased to £12,000 by 1857. The overdraft remained at around this level until 1861, when the bank's directors demanded yet again to examine the company's balance sheet. After the company's accounts were viewed, and explanations received from one of the partners in the company, the bank's board were 'induced to believe that the advance to this firm is safe'.[56]

Four years later, the overdraft limit was further increased to £20,000 for a period of one year in order for the company to purchase 52 acres of land near its works so as to secure water rights necessary for production.[57] In practice the overdraft did not exceed £15,000 for the next four years until, in July 1869, the bank's board insisted that this level of overdraft must be reduced, or security given for the amount beyond £10,000.[58] By this time Thomas Chambers was the only surviving partner in the firm and he complained that the directors 'were not acting with their usual liberty towards the firm and

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54 *ibid.*, AM 7, f.38.

55 *ibid.*

56 *ibid.*, AM 8, f.271.

57 *ibid.*, AM 9, f.356.

58 *ibid.*, AM 11, 14 Jul. 1869, f.156.

wished to know the reasons for such a change in policy'.[59] The leniency shown towards Newton Chambers was, therefore, freely acknowledged by both company and bank. However, the Sheffield & Hallamshire's directors were quick to point out that three out of four partners were dead and the surviving one (Thomas Chambers) was 72 years old. In such circumstances the bank was understandably concerned about the state of this account and stated clearly that it did not wish to become involved in 'complications' that might arise in the event of Thomas Chamber's death and therefore requested security 'distinct from the general assets of the firm'.[60] The situation was complicated by problems of trust moneys and, therefore, the debt of £14,000 was left to stand on the company's old account and a new working account was opened which the bank directors required to remain in credit.[61] The situation was complicated still further when Thomas Chambers died in November 1869, after which the ownership of the company comprised of a variety of trustees and two new partners - Thomas Chambers Newton and George Dawson.

Despite the determination of the bank for the new account of Newton Chambers not to be overdrawn, by July 1870 a debt of £2,000 had developed, the reason for which the company stated was 'ground lost during the strike'.[62] A few months later the company applied for an overdraft of £6,000, which would bring the total debt on both accounts to £20,000. One of the reasons given for this application was to enable the company to build a new blast furnace, costing £,6450, which would, the company assured the bank directors, increase its profits by at least £100 per week and be expected to pay

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59 *ibid.*, 18 Aug. 1869, f.176.

60 *ibid.*, 15 Sep. 1869, f.187.

61 *ibid.*

62 *ibid.*, 27 Jul. 1870, f.322.

for itself after 12 months in operation.[63] The bank's directors initially declined the application, but agreed to it two months later when deeds of several properties worth £6,000 were offered and accepted as security for credit of the same amount.[64]

In 1872 the debt of £14,000 on Newton Chambers' old account and £6,000 on the new account was confirmed in addition to the current partnership details of the company. George Dawson was admitted as a partner for one share of the company with capital of £40,000, Thomas Newton was admitted for four shares, paying in £16,000, and William Newton for three shares, paying in £12,000.[65] Shares of the company and the corresponding capital still remained with executors of previous partners, a matter which concerned the bank. However, new partners and capital had been injected into the company and the bank appeared satisfied by this development. The following year the bank agreed to close the old Newton Chambers' account and transfer the debt of £14,000 to the working account of the firm, currently standing at £3,899 overdrawn. [66] Yet despite the total debt on the working account of nearly £18,000, the deeds held by the bank as security on this company's account were returned and no new security mentioned. Thus, Newton Chambers came to be allowed a considerable overdraft by the Sheffield & Hallamshire without security being held against the debt.

Thus far in the relationship between Newton Chambers and the Sheffield and Hallamshire Bank, the bank's directors appear to have been very generous in their provision of credit, which was often extended without security. However, from 1876, the degree of generosity displayed by the bank

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63 *ibid.*, 14 Sep. 1870, f.348.

64 *ibid.*, 9 Nov. 1870, f.373.

65 *ibid.*, AM 12, 7 Feb. 1872, f.87.

66 *ibid.*, 29 Jan. 1873, f.218.

increased considerably. After the merging of Newton Chambers' two accounts, the company debt was not referred to in the bank's Board Minutes for another three years, when the overdraft on the working account had reached £68,098, an increase of £50,000.[67] Such a large amount of credit does not seem to have worried the bank - the bank's board examined the company's balance sheets, declared its position as 'satisfactory' and, furthermore, inquired if further credit was required on the account. By 1877 the account stood at almost £73,000 overdrawn and only then did the bank decide that this 'large advance' should be reduced, stating:

> Sometime ago when the overdraft exceeded £20,000 the advance was looked upon as excessive and now the account is more than three times that sum.[68]

The response of Newton Chambers ran as follows:

> Whilst cordially acknowledging the good feeling and liberality which has actuated your Directors towards us during a business intercourse extending over many years we regret that reasons exist which induce them to seek for a contraction of the a/c which altho' of considerable amount, is not we submit large in comparison with the existing Security as represented by our Balance Sheet to which you have had access.[69]

This provides evidence that security was held by the bank for the account. But was this security merely the interests of current partners in the firm plus its works and generated profits? The company's reasons for the overdraft being so high was the low price of coal during the Winter of 1876/1877[70] but, more importantly, the expenditure of £80,000 on a new colliery at Rockingham, without which Thomas C. Newton claimed the company would not have been in debt to the bank. He continued by reassuring the bank's directors that the purchase of the colliery 'has been made most

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67 *ibid.*, AM 13, 9 Aug. 1876, f.198.

68 *ibid.*, 7 Feb. 1877, f.261 and 21 Mar. 1877, f.272.

69 *ibid.*, 28 Mar. 1877, f.273.

70 See above, Graph 2.2, p.40 which displays coal prices.

judiciously'.[71] This reveals that the overdraft extended by the Sheffield & Hallamshire was used primarily to expand the operations of Newton Chambers & Co., rather than providing working capital for an ailing company. The apparent viability of the company may be a reason for the bank allowing it such a large amount of credit.

The viability of Newton Chambers was confirmed the following year when the bank, concerned about the liability of the company's partners, examined the balance sheet of the firm and consulted its solicitors. The capital of the respective partners in the firm (which still included trustees of the late partners) amounted to £128,000, and the current account credit amounted to £165,743, together being £293,743.[72] Furthermore, a letter from the solicitors of Newton Chambers confirmed that the firm was in 'an exceptionally strong position' having secured the colliery at Rockingham, 'which the late Mr. Blackburn always considered rendered their position as he termed 'impregnable' in the district'.[73]

From such evidence it appears that the Sheffield & Hallamshire was not unwise to grant such a considerable amount of credit to just one customer. The bank appears to have considered the investment a relatively safe one. In addition the bank had a considerable number of smaller industrial and non-industrial clients which did not require support to the same degree as Newton Chambers. Yet the faith of the bank in the company and its consequent leniency towards the concern does seem to have been almost unshakeable as by 1879 the overdraft of Newton Chambers had risen to £97,510.[74] However, at this point the bank's directors decided that the debt

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71 MBA: AM 13, SHB, BDM, 28 Mar. 1877, f.273.

72 *ibid.*, 7 Aug. 1878, f.439.

73 *ibid.*, 28 Aug. 1878, f.445.

74 *ibid.*, AM 14, 15 Jan. 1879, f.27.

should not be increased any further, instead efforts to reduce it should be undertaken immediately. The Minute states that the bank's directors allowed the account to be overdrawn beyond agreed limits 'believing as they did, and still continue to believe, that the business is a sound one' and continued to allow the account to increase 'as they hoped better results would come'.[75] The overdraft reached its highest point, £100,008, in August of this year, gradually declining thereafter.

The account of Newton Chambers & Co. was handled with a high degree of flexibility and leniency by the Sheffield & Hallamshire, especially given the lack of collateral. However, this treatment appears not to have stemmed from bank's directors having interests in the manufacturing company, rather the faith held by the bank's directors in the firms' ability to succeed and the sound financial base retained by the company's partners. The bank's Board Minutes reveal that the four initial partners of Newton Chambers & Co. - Thomas Chambers, Thomas Newton, John Chambers and Matthew Chambers - all had substantial amounts of capital invested in the company. Further capital was also introduced by subsequent partners. This was probably one reason for the bank's liberal treatment of the company's account. Moreover, the discussions between the bank and the company mainly involved Thomas Chambers and Matthew Chambers - Arthur Marshall Chambers or John Yeomans Cowlishaw are not mentioned. Indeed, Arthur Marshall Chambers only joined the board of the bank in 1885, whereas John Yeomans Cowlishaw was a director of Newton Chambers from its incorporation in 1881. Therefore, over the majority of the time that the account of this firm was with the Sheffield & Hallamshire, the two bank directors were not involved in the company. Consequently, the lenient

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75 *ibid.*, 15 Jan. 1879, f.27.

treatment of Newton Chambers & Co.'s account appears not to have been a result of inter-locking directorships.

The problems that arose between the Sheffield Union and Naylor, Vickers & Co. did not occur as a result of inter-locking directorships existing between the Sheffield & Hallamshire and its manufacturing clients. The levels of credit provided by the two banks to their large industrial customers were similar - £100,000 granted to Newton Chambers Ltd. and £60,000 to Vickers Sons & Co. Ltd. - even though the former was not as large a concern as the latter (nominal capital of £65,000 in 1881 as compared with a nominal capital of £155,000 in 1865). Yet the customer base and the size of the two banks was very different. The majority of the customers of the Sheffield Union were industrial and the bank itself was not as large as the Sheffield & Hallamshire. Thus, when it became so heavily involved with one industrial client it had fewer resources to draw upon and was consequently de-stabilised. The Sheffield & Hallamshire, in contrast, was a larger bank with a wide variety of both industrial and non-industrial customers, the latter usually not requiring such a high degree of accommodation as the former. When one client in particular, in this case Newton Chambers, relied heavily on the bank, the bank was not put under as great a strain as the Sheffield Union due to its larger size and broader base of customers which endowed the Sheffield & Hallamshire with a considerable volume of deposits on which it could draw.

Table 3.11 shows the limited companies in which Sheffield & Hallamshire directors were initial subscribers and Table 3.12 shows the companies in which they were shareholders.

Only two Sheffield & Hallamshire directors were involved in the promotion of local limited companies - in terms of signing the requisite Memorandum of Association. Arthur Marshall Chambers was a signatory to Newton

Chambers & Co. Ltd. and his involvement with the company has already been indicated. John Bower Brown was not only an initial subscriber to James Fairbrother & Co. Ltd., but he also became a director of the company in 1887, filling a vacancy on the board. In addition, he was a shareholder in the company (Table 3.12).

Table 3.11: Limited companies in which Sheffield & Hallamshire directors were initial subscribers

Name	Company	Share Type	No. of Share
John Bower Brown	James Fairbrother & Co. Ltd.	Initial subscription	1
Arthur Marshall Chambers	Newton Chambers & Co. Ltd.	Initial subscription	1

Source: PRO: BT31/2289/11031, James Fairbrother & Co. Ltd., Memorandum of Association; CH: BT/15997, Newton Chambers & Co. Ltd., Memorandum of Association.

Four Sheffield & Hallamshire directors held shares in William Cooke & Co. Ltd., incorporated in May 1873 with a nominal capital of £160,000.[76] A second account held by the company with the bank before incorporation was closed only a few days before: the debit balance of £3,975 was paid off by a cheque from the company, implying that some of the newly raised capital was used to repay debts of the old company.[77] In November 1874 the bank agreed to extend the company's overdraft on its main account from £10,000 to £15,000. William Cooke & Co. Ltd. required this increase in accommodation to pay for furnaces, already erected, the only alternative being a call of £5 on its shares. The company did not wish to make a call payable before February 1875, but was prepared to raise funds from its shareholders thereafter in order to reduce its overdraft with the bank.[78]

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76 PRO: BT 31/1859/7320, William Cooke & Co. Ltd., Memorandum of Association and Summary of Capital and Shares, 20 Aug. 1873.

77 MBA: SHB, BDM, AM 12, f.268.

78 *ibid.*, AM 13, f.11.

Table 3.12: Companies in the Sheffield region in which the Sheffield & Hallamshire directors were shareholders

Name	Company	Share Type	No. of Share
Samuel Burrows	Albion Steel & Wire Co. Ltd.	Ordinary	5
Samuel Burrows	Brown Bayley & Dixon Ltd.	Ordinary	4
John Bower Brown	Charlton Iron Co. Ltd.	Ordinary	10
William Howson	Charlton Iron Co. Ltd.	Ordinary	15
John Yeomans Cowlishaw	Charlton Iron Co. Ltd.	Ordinary	20
David Ward	Charlton Iron Co. Ltd.	Ordinary	10
Benjamin Burdekin	Cocker Bros. Ltd.	Ordinary	5
Samuel Burrows	Henry Wilkinson & Co. Ltd.	Ordinary	5
John Bower Brown	James Fairbrother & Co. Ltd.	Ordinary	100
Charles Peace	Joseph Peace & Co. Ltd.*	Ordinary	
Francis Appleby	Midland Iron Co. Ltd.	Ordinary	10
John Yeomans Cowlishaw	New Midland Mining Co. Ltd.	Ordinary	40
John Yeomans Cowlishaw	Newton Chamber Co. Ltd.*	Preference	5
John Yeomans Cowlishaw	Newton Chamber Co. Ltd.*	Ordinary	25
Arthur Marshall Chambers	Newton Chamber Co. Ltd.*	Ordinary	1450
John Bower Brown	Sheffield Steel & Manufacturing Co. Ltd.	Ordinary	40
John Bower Brown	William Cooke & Co. Ltd.*	Ordinary	10
Joshua Smith	William Cooke & Co. Ltd.*	Ordinary	50
William Howson	William Cooke & Co. Ltd.*	Ordinary	20
David Ward	William Cooke & Co. Ltd.*	Ordinary	15

(The companies marked with asterisk were customers of the Sheffield & Hallamshire Bank).
Source: PRO: BT31 series (see Appendix to Chapter 3 for details of company names and numbers)

An application made by the same company in September 1875 was not treated so favourably by the bank. William Cooke wished to raise £25,000 upon the security of the mortgage of its works but the board refused, stating that they 'consider any operation which tends to lock up permanently the funds of the Bank is objectionable'.[79] Therefore, the ownership of shares in William

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79 *ibid.*, f.92.

Cooke & Co. Ltd. appears not to have influenced the decisions of the bank's directors, a cautious policy towards the company being adopted despite its size and turnover. The bank agreed to advance the company £25,000 in November 1875, but the security accepted included 'a mortgage on the uncalled capital of the company to the extent of £10 per share calculated to realise £26,000 and deposit of the deeds of the Tinsley Steel & Iron Works'.[80] Again, personal investments seem not to have clouded the judgement of the bank directors, as they demanded security in excess of the value of the advance. The overdraft was allowed to increase to £30,000 the following year without extra security, but as with Newton Chambers & Co., the commitment of the Sheffield & Hallamshire's lending to clients, in which its directors were involved, was clearly not as substantial, and, therefore, not as de-stabilising, as was that of the Sheffield Union.

Advances provided by the Sheffield Union Banking Company and the Sheffield & Hallamshire Bank to industry in the Sheffield region

A common form of short-term lending by banks in the mid-nineteenth century consisted of discounting bills of exchange. However, the sources consulted fail to provide adequate material allowing this type of credit to be analysed. Loans and overdrafts represent the other major forms of credit extended by the banks and these will be analysed in detail for both institutions. The data used reveals that the banks' set credit limits were frequently exceeded by the companies receiving accommodation. However, in the analysis here the credit limits determined by the two Boards of Directors have been used, as values over these were not consistently recorded.

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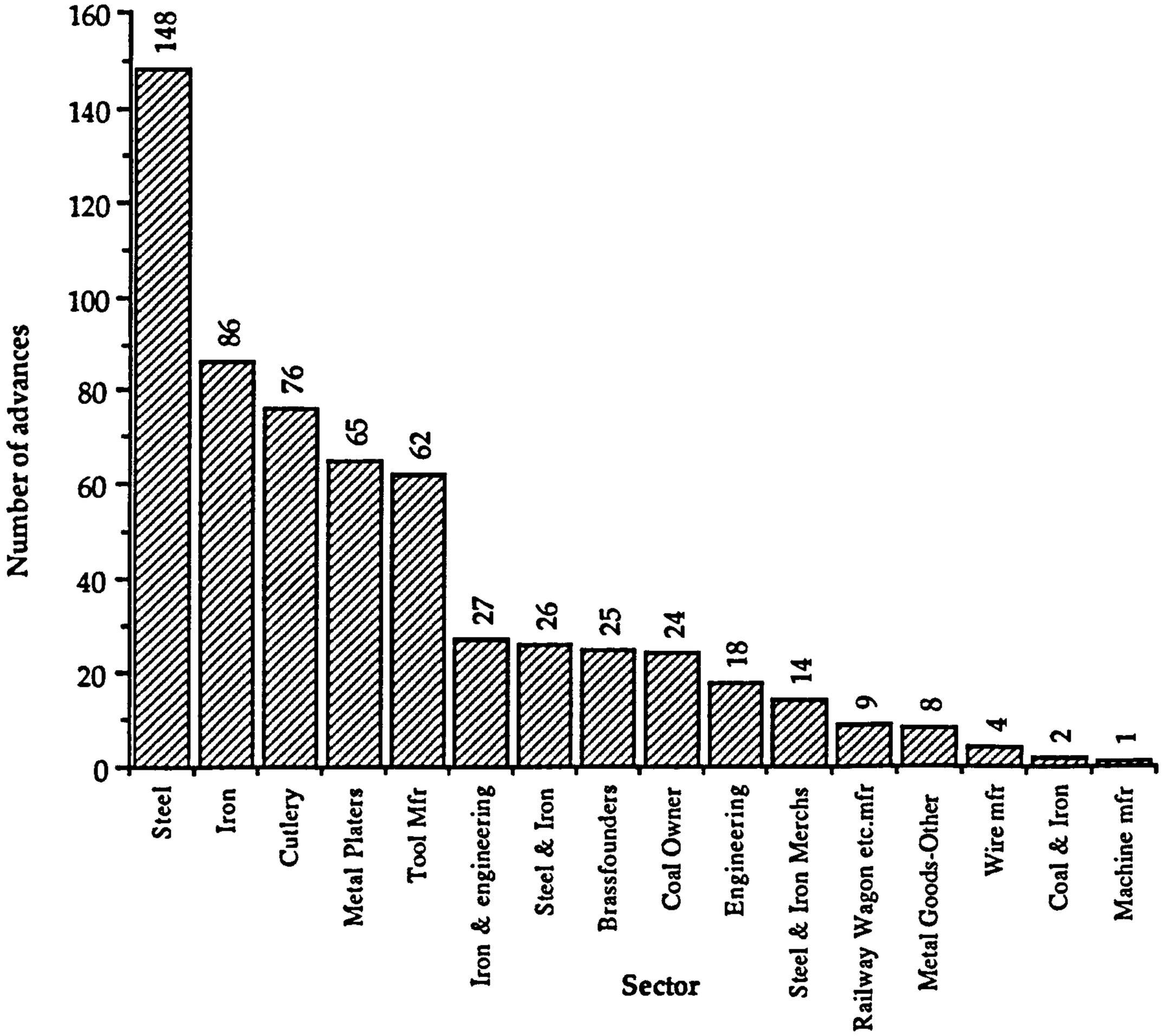
80 *ibid.*, f.122.

The Companies which received credit from the Sheffield Union Banking Company and the conditions on which it was granted

The credit relations of the Sheffield Union Banking Company will be considered initially. A total of 572 loans/credits provided by the Sheffield Union Banking Company have been examined with a total value of approximately £940,000. The data collected from the banks' Board Minutes (1855-85) relates to some 264 companies to which credit was extended, mostly in the form of overdrafts. The business activity of these companies is portrayed in Chart 3.1, with the production of steel and steel goods and the manufacture of cutlery and tools proving to be the dominant type of business undertaken by the bank's borrowing customers.

Chart 3.1: The number of firms receiving advances from the Sheffield Union Banking Company 1855-85, by industrial trade



Source: MBA: SUB, BDM, AD 2-5.

The usual way in which the Sheffield Union provided credit to local manufacturing concerns was by offering overdraft facilities. This involved the agreement of the bank's board for a set limit, up to which the customers were allowed to overdraw on their current (working) accounts. For example, the Hansley Coal Company opened an account with the bank on which an £800 overdraft was agreed against the security of a second charge on the applicant's property.[81] This constituted a flexible lending system, whereby customers could borrow various amounts at various times, providing they kept within their overdraft limit. In this way the bank provided loans from as low as £10 up to £60,000.

The conditions on which these overdrafts were granted by the Sheffield Union were also flexible and varied. The bank usually required the sum lent to be covered by security to the same value and often more, especially on large amounts. The directors' response to the Grange Colliery's application for an overdraft in 1878, with no collateral security offered, was that they would only agree to a credit limit of £2000, if security for the same amount was provided.[82] However, some credits were completely unsecured. For example, in 1873 Daniel Doncaster, an iron and steel manufacturer, was granted a credit of £5,000 with no collateral security required.[83] Charts 3.2 and 3.3 show the type of security accepted by the Sheffield Union from its manufacturing customers for credit advances and the value of these advances by security type.

Charts 3.2 and 3.3 reveal that the second most frequently occurring type of security was the customer's 'own responsibility' (24.12 per cent) and the total

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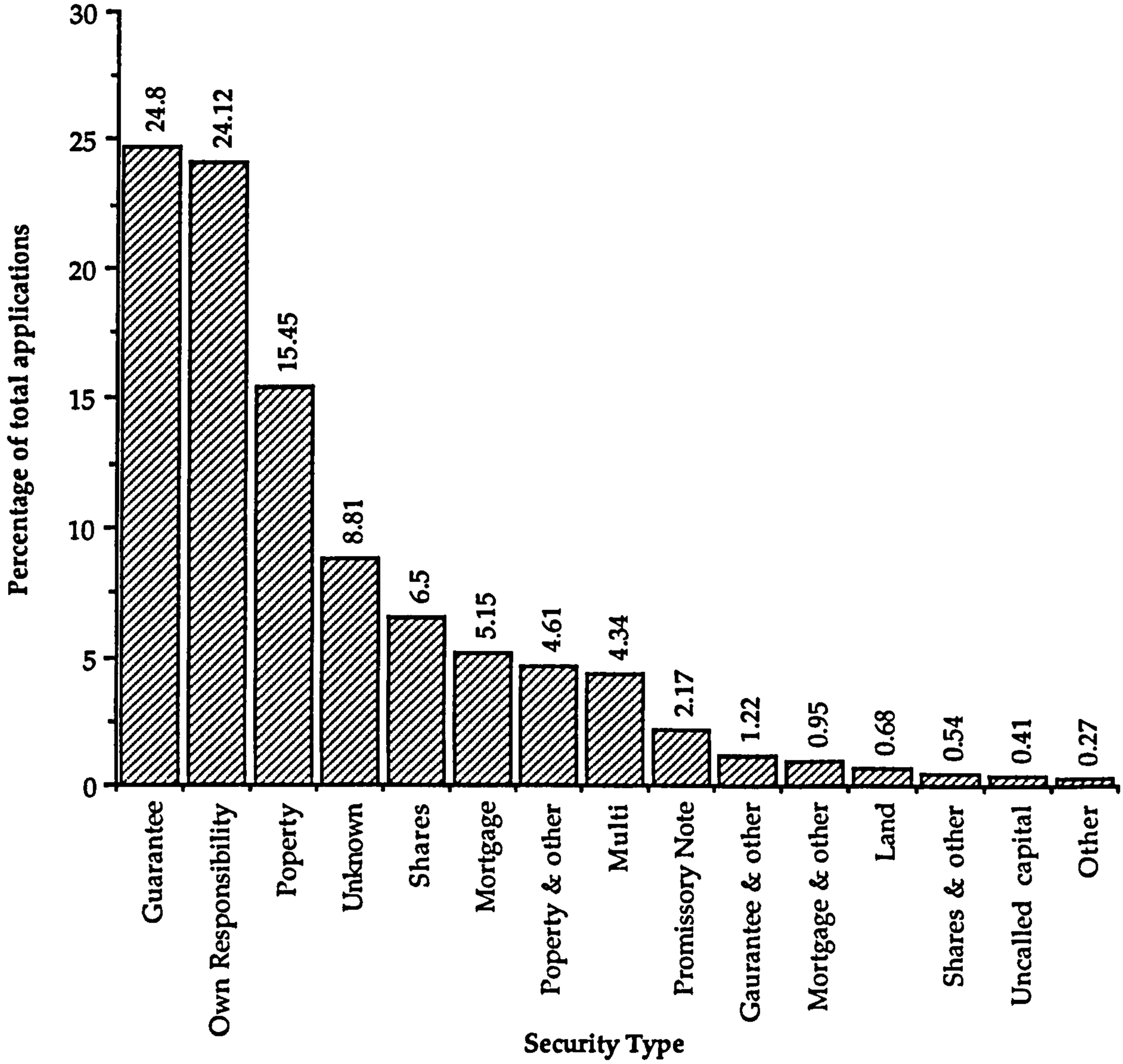
81 MBA: AD 4, SUB, BDM, 20 Jun. 1876.

82 *ibid.*, 8 Aug. 1878.

83 *ibid.*, AD 3, 14 Oct. 1873.

value of advances made on this collateral was £96,140. This indicates that no security was received, rather the firm was responsible for repayment of the credit extended. Such a proportion, especially in terms of the value of credits

Chart 3.2: Security type on all applications for credit to Sheffield Union Banking Company

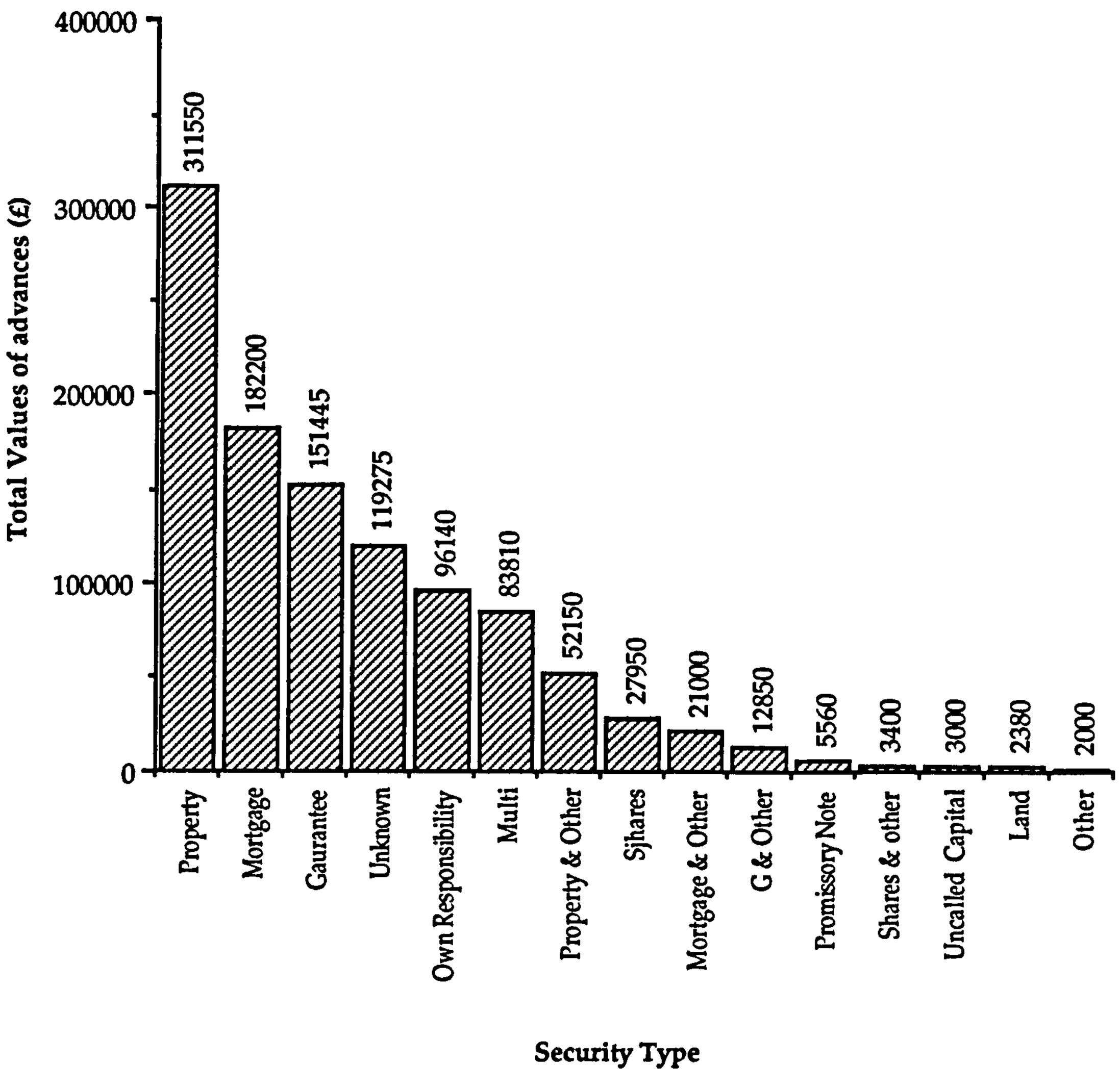


Source: MBA: SUB, BDM, AD 2-5.

granted on these terms, suggests that the bank often granted accommodation solely on the basis of good faith to the customers involved and the business

that they ran. Customers who were allowed credit on their own responsibility would, presumably, have either been well known and trusted

Chart 3.3: Total value of advances from the Sheffield Union Bank by security type



Source: MBA: SUB, BDM, AD 2-5.

clients of the bank, or known to be reliable businessmen by members of the board. For example, in 1864 James and Benjamin Makin took over their father's steel manufacturing business, William Makin & Sons, and were

granted a £2,000 overdraft on their own responsibility.[84] William Tyler, a Britannia metal manufacturer, was granted a £50 credit in 1869 on his 'own responsibility', the board commenting that this was the same credit that had been allowed to his father.[85] When William Wostenholme took over the Britannia metal manufacturing business of his father in 1858, he was allowed £500 credit on his 'own responsibility'. In such cases reliable family connections were obviously important for accommodation to be gained without collateral security. These examples are of advances of relatively small amounts, but numerous other accounts with comparable sums involved had to provide security in order to receive credit, with the cutlery manufacturers, William Swift & Company, having to provide the deeds of land as security for a credit of merely £30 in 1883.[86]

The distribution of credits granted by the Sheffield Union Bank on a customers' 'own responsibility' by size is shown in Chart 3.4. This illustrates that the majority of advances agreed by the Sheffield Union on the security of customers' 'own responsibility' were small in size, most being between £100 and £500.

When collateral security was physically required by the Sheffield Union for the provision of an overdraft, the most common form was a Letter of Guarantee - 26.1 per cent (Chart 3.2) - which constituted the security on advances totalling in aggregate £151,445 (Chart 3.3). Such collateral frequently came from members of the customer's family, or sometimes from well known local businessman. Thomas Bolsover, sickle maker, was granted a credit of £100 in 1859 on the guarantee of his father[87] and there are many

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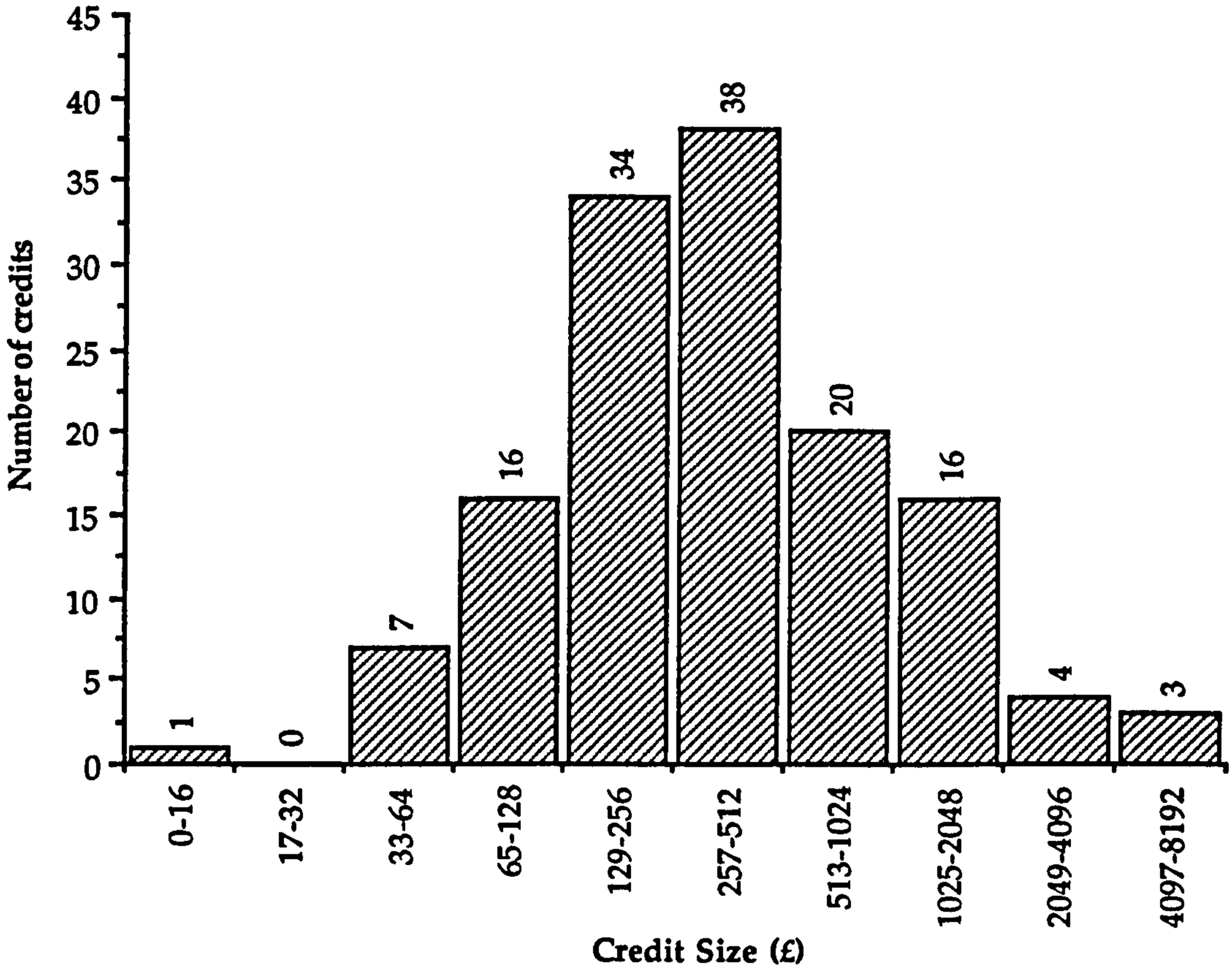
84 *ibid.*, AD 2, 20 Apr. 1864.

85 *ibid.*, AD 3, 3 Mar. 1873.

86 *ibid.*, AD 5, 26 Apr. 1883.

87 *ibid.*, AD 2, 4 May 1859.

Chart 3.4: Number of credits granted by the Sheffield Union secured by the customers' 'own responsibility', distributed by size



Source: MBA: SUB, BDM, AD 2-5.

more such examples to be found in the Minutes. In 1855 it was agreed by the board that Skinner & Co., electro-plate manufacturers, were to have a £500 credit on the guarantee of Charles Branson, a well known local solicitor, who was also a shareholder in several Sheffield firms.[88]

The most important type of collateral, in terms of the total aggregate value of advances which were secured, was the deposit of deeds of property (freehold and leasehold) with the bank. A total of £311,550 was advanced to

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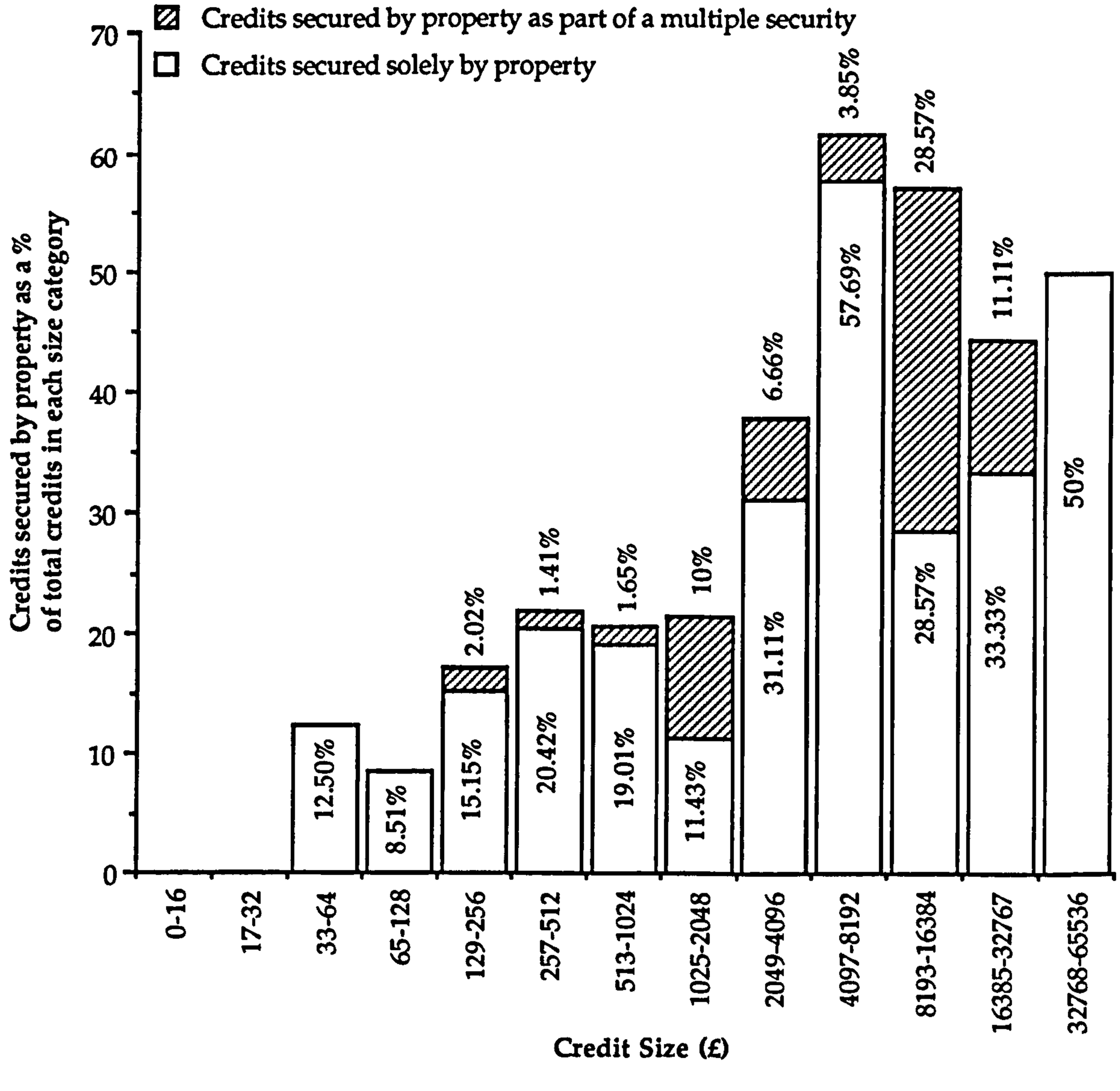
88 *ibid.*, 14 Jun. 1855 and PRO: BT31/1859/7319, Kelham Rolling Mills Ltd.; BT31/1824/7070, Neepsend Rolling Mills Co. Ltd.; BT31/911/1065C, Silkstone Coal Co. Ltd.; BT31/1779/6713, Albion Steel & Wire Co. Ltd.; all shareholding details contained in the Summary of Capital and Shares.

manufacturing customers by the Sheffield Union on the security of property and 15.45 per cent of all credit applications were made with property offered as

Chart 3.5: Applications for credit to the Sheffield Union with property offered, wholly or partly, as security distributed by credit size



Source: MBA: SUB, BDM, AD 2-5.

collateral. A company's industrial premises were often used for this purpose, usually in the granting of large amounts of credit. Sheffield Forge & Rolling Mills Company Ltd. opened an account in 1873 with a credit of £30,000 on the

security of their industrial property.[89] The account of Joseph Armstrong & Co. of the Brinsworth Iron Works was accepted in 1873 with a credit allowance of £8,000 on the security of the works valued at £15-20,000.[90] In this case the amount of collateral security proved to be prudent, as the business went bankrupt in 1882 and the bank took steps to 'release the security as a going concern'.[91] Therefore, it appears that property was used as security on large advances and this is illustrated in Chart 3.5.

Chart 3.5 shows the percentage of credits in each size category that were secured by property either wholly, or as part of differing ('multiple') types of security. It clearly illustrates that large advances were often secured by this form of collateral; indeed, 50 per cent of advances in the largest size category, £32,768 to £65,536, were secured by property.

The second most important collateral, in terms of the value of advances secured, was the mortgage (Chart 3.3), although only 5.15 per cent of the number of credit applications offered this type of security. In 1869 the steel merchants and manufacturers, John & William Charles, were granted a credit of £20,000 on the security of the second mortgage on their steel works[92]. The Albion Steel & Wire Co., already considered above and covered in further detail below, was granted credit totalling £54,000 on the security of their mortgage in 1873[93]. In 1877 the iron masters Joseph Armstrong & Co. were granted an advance of £10,000 on the security on the mortgage on their works, coupled with a first and a second mortgage on Whiston farm, presumably

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89 *ibid.*, AD3, 8 Apr. 1873.

90 *ibid.*, 4 Mar. 1873.

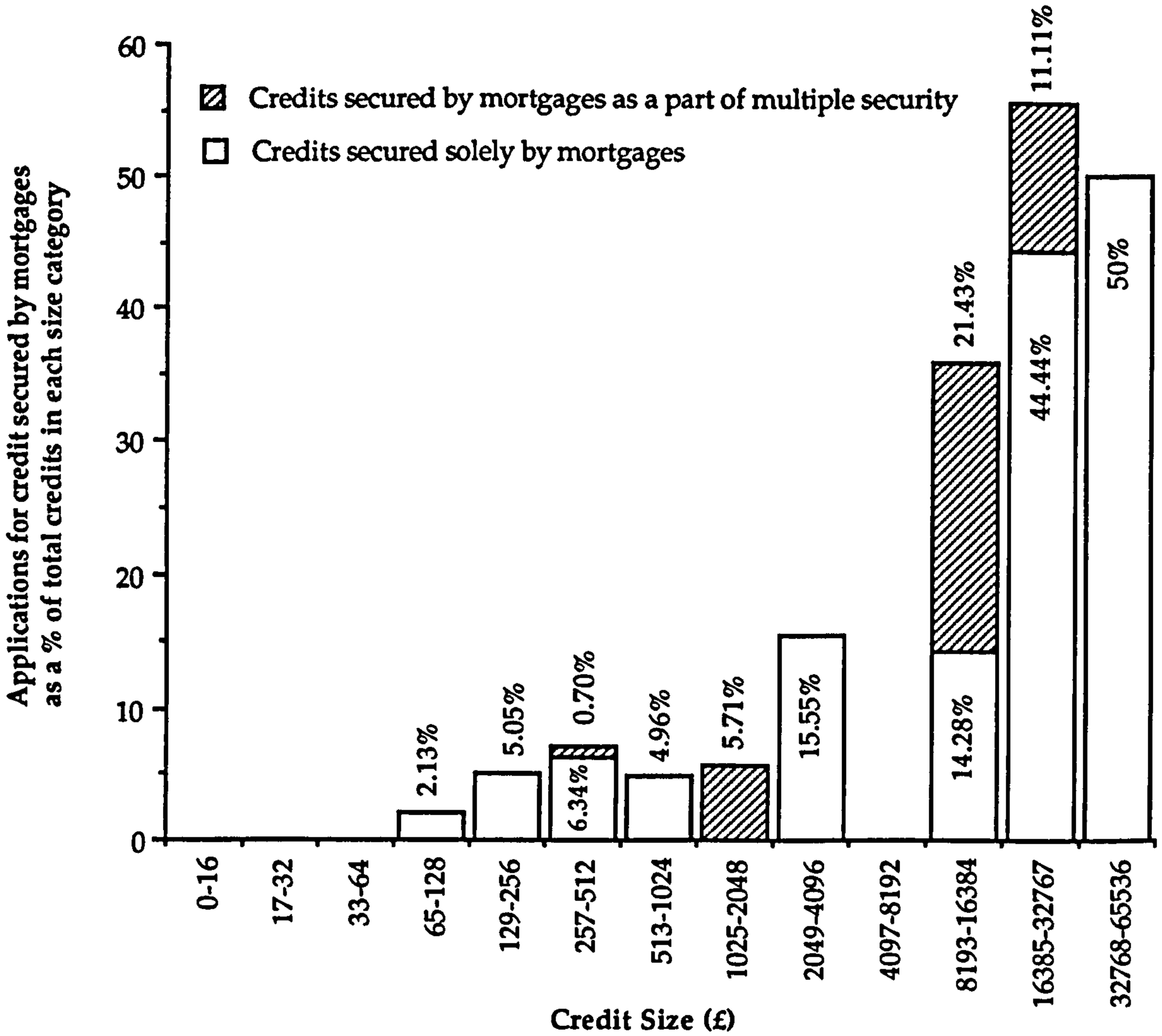
91 *ibid.*, AD5, 31 Aug. 1882.

92 *ibid.*, AD3, 11 Aug. 1869, f.208.

93 *ibid.*, 21 Oct. 1873, f.340 and 18 Nov. 1873, ff.345-346.

also owned by Joseph Armstrong.[94] Therefore, although the number of advances secured by mortgages was not substantial, their value was considerable. As with property, mortgages appear to have been used to secure large advances, which is confirmed in Chart 3.6 below.

Chart 3.6: Applications for credit to the Sheffield Union with mortgages offered, wholly or partly, as security distributed by credit size



Source: MBA: SUB, BDM, AD 2-5.

Accommodation granted by the Sheffield Union on the security of one or more mortgages, either as the only security, or part of multiple types of

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94 *ibid.*, AD 4, 6 Jul. 1877.

security, proves to have been usually large in size. As with the use of property as collateral, 50 per cent of credits in the largest size category, £32,768 to £65,536, were secured by mortgages. Moreover, a total of 55.55 per cent of credits in the next largest size category, £16,385-£32,767, were offered with mortgages as collateral.

Shares comprised eight per cent of the securities taken for loans and overdrafts by the Sheffield Union Banking Company, but only £27,950 was secured by shares. The application of F. G. Pearson & Company for an increase in their overdraft limit from £200 to £400 was accepted on the deposit of 20 share certificates of Brown Bayley & Dixon Ltd., a large and well known iron and steel manufacturer in Sheffield.[95] Shares in the Sheffield Union Bank were also acceptable security: the iron founders Jonathan Davy & Company were allowed a £500 overdraft in 1876 on the security of 25 bank shares.[96]

In order to analyse any change over time in the pattern of security accepted for advances to the customers of the Sheffield Union Bank, the period 1855-85 was divided in two and the percentages of credit secured by different types of collateral are show for both periods in Chart 3.7.

The data shown in Chart 3.7 are for advances approved by the board and the results indicate changes in the policy of the Sheffield Union directors. The practice of accepting property as collateral for accommodation declined, as 47.66 per cent of credits in 1855-69 were secured in this way, but fell to 27.58 per cent in 1870-85. The value of accommodation secured by mortgages

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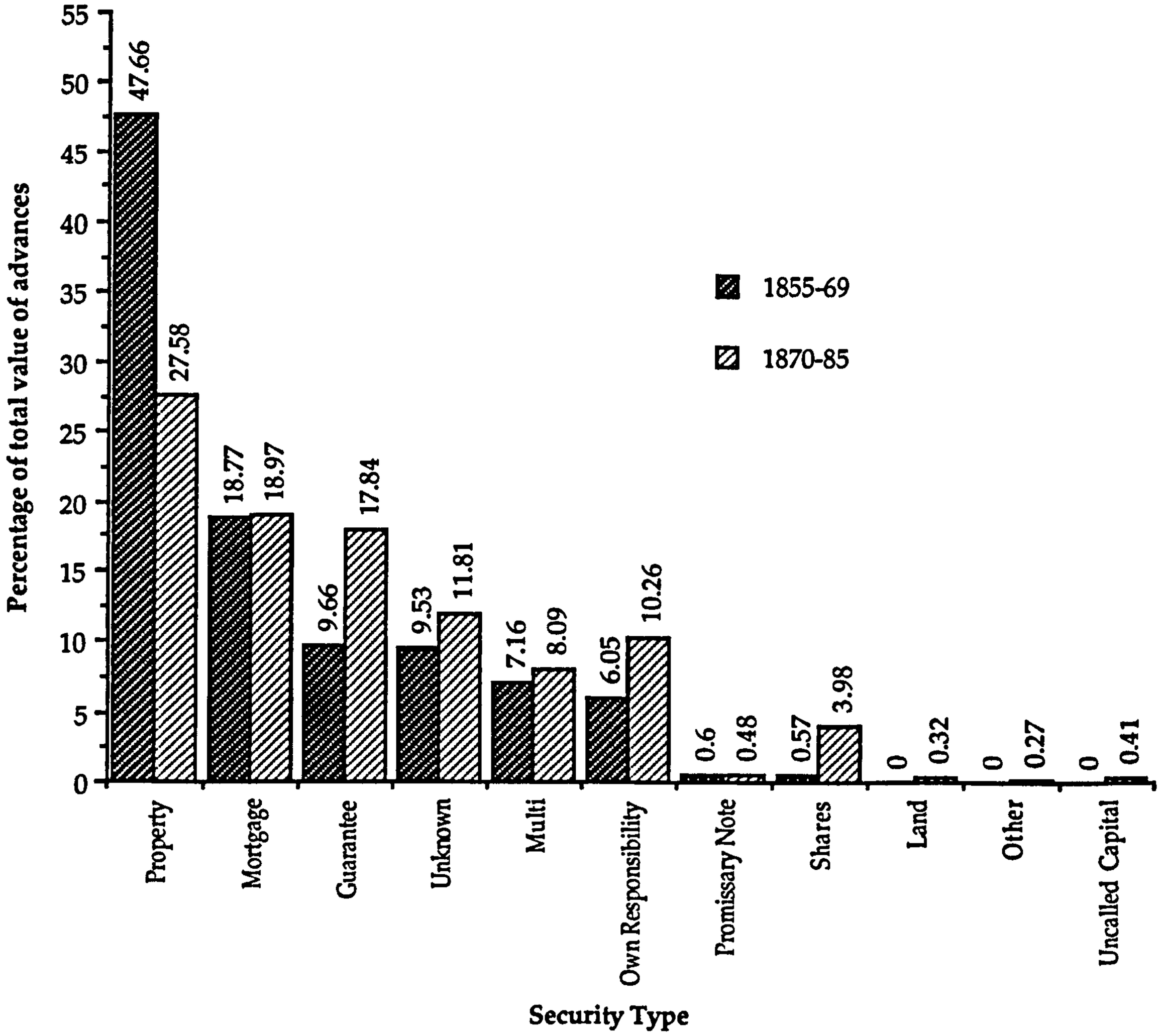
95 *ibid.*, AD5, 28 Aug. 1879.

96 *ibid.*, AD 4, 11 Apr. 1876.

Chart 3.7: Percentage of the total values of advances from the Sheffield Union Bank by security type 1855-69/1870-85



Source: MBA: SUB, BDM, AD 2-5.

remained constant, whereas the value of accommodation secured by guarantees increased from 9.66 per cent of credits secured in 1855-69 to 17.84 per cent in 1870-85. Furthermore, the value of advances granted on the customers' 'own responsibility' increased from 6.05 per cent in the earlier period to 10.26 per cent in the later, suggesting a less cautious policy was followed by the directors of the Sheffield Union as the period under examination progressed.

How do the findings for the Sheffield Union compare with those of other studies? Examining the relationship between clearing banks and industry in inter-war Britain, Ross found that 'the types of security considered acceptable to the bank were many and varied'.[97] Although Ross's study was undertaken in a different period to the one covered in this thesis, his work covers very similar material, and methods of analysis, and the results provide some interesting comparisons. In surveying 75 firms of various sizes and occupations, and from various regions, which banked with the Midland and Lloyds in the 1930s, Ross discovered that the most common form of collateral used as security was the guarantee (28 per cent).[98] This corresponds to the findings from the Sheffield Union, where the letter of guarantee was the most common form of security at 26.1 per cent. The guarantee was, according to Ross, 'either in the form of a personal guarantee of an entrepreneur, the joint and several guarantee of the directors of the borrowing company, or, in some cases, the corporate guarantee of a large customer or parent company'.[99]

The other most common forms of collateral found by Ross were the mortgage (22.66 per cent) and debentures (18.66 per cent).[100] The use of the mortgage and debentures by the banks in the 1930s contrasts with the findings of the Sheffield Union, where mortgages only comprised 5.15 per cent of the total security given to the bank and where debentures were not given as security at all. Ross argued that mortgages and debentures were very similar forms of security, 'in that in most cases the debentures were secured on the physical

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97 Ross, D.M., 'The clearing banks and the finance of British industry, 1830-1959', (unpublished Ph.D. thesis, University of London 1990), pp.86-91.

98 Ross, D. M., 'Information, Collateral and British Bank Lending in the 1830s', Financial Institutions and Financial Markets in the Twentieth Century Western Europe and North America, Colloquium of the European Association for Banking History, Zurich, May 1993, pp.17-18.

99 *ibid.*, p.18.

100 *ibid.*

assets of the company'.[101] He also argued that these two forms of collateral represented a 'formalisation of the debt which the borrower has contracted' and also gave the bank 'considerable power over the borrower, since the banks were usually careful to ensure that they had first charge over the company's assets'.[102] Thus, the banks were ensuring that any default on the loan by the company would have very serious penalties for the firms' operations. However, Ross also pointed out that the realisation of debentures and mortgages 'in the event of default on the loan could involve considerable costs and delays for the bank'.[103] Such assets, therefore, had the advantage of providing increased security for the bank, in terms of the disincentive for a company to default on a loan, but the disadvantage for the bank of being rather illiquid assets. Despite the disadvantages, mortgages and debentures were more popular forms of collateral security in the 1930s than the mid-nineteenth century.

Shares were not a popular form of collateral security in either studies, forming 10.66 per cent in the 1930s and 6.5 in the period 1855-85. Ross commented that shares were often not the most desirable form of collateral for the bank. Holding shares in the indebted company itself was not desirable for the bank, 'since in many cases this exposed them to a double risk. If the firm were to default on a loan, the value of the shares would fall considerably'.[104] Thus, he argued, the bank only accepted this form of security when others were not available, and preferred to hold shares which were unrelated to the borrower.[105]

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101 *ibid.*, p.19.

102 *ibid.*

103 *ibid.*

104 *ibid.*, p.20.

105 *ibid.*

Security in the form of property and promissory notes only formed 2.66 per cent each in the inter-war study.[106] Like the findings from the 1930s, promissory notes formed only 2.17 per cent of the security on advances from the Sheffield Union. However, in contrast to the 1930s, property was given as security on 15.45 per cent of Sheffield Union advances; yet, when dividing the period 1850-85 into two in order to analyse any changes in the pattern of security accepted by the Sheffield Union over time, it was found that the practice of accepting property as collateral for accommodation declined (47.66 per cent for advances in 1855-69 as compared with 27.58 per cent in 1870-85). Thus, property was accepted as security to a far greater extent by the Sheffield Union in the nineteenth century than by Lloyds and the Midland in the inter-war years but was, none the less, becoming a less popular form of collateral by 1885.

The second most common form of security accepted by the Sheffield Union was a company's 'own responsibility', a category not used in Ross's study. A point of comparison for this form of 'security' could be the 22 firms in the 1930s sample (29.3 per cent) which procured overdrafts on which no collateral security was given.[107] These could be classed as firms receiving credit on their 'own responsibility', although this term was not used by Ross. The differences between the two studies in the measurement of companies receiving advances without collateral security, or rather on the companies 'own responsibility', make comparisons difficult, but it does appear that the practice was far more prevalent in the period 1855-85 than in the 1930s.

The opinions and existing knowledge of the Sheffield Union's directors regarding the suitability of security, whether it was either an unreliable

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106 *ibid.*, p.18

107 *ibid.*, pp.21-22.

guarantor or a desirable piece of property, are not provided in the Minutes. Proposed security was sometimes rejected as 'unsatisfactory' or 'insufficient', but no further explanation was given. When Swallow & Hodgkinson, file manufacturers, applied for an account in 1855 with an overdraft of £300 on the security of a guarantee for £200, the board were willing to agree to such accommodation providing 'the names of the sureties are approved'.[108] In 1878 the New Silkstone Coal Co. Ltd. applied for an account with an overdraft of £3,000 with the guarantee of three of their directors proposed as security.[109] The Sheffield Union board rejected the application from the company directors: 'reports as to their responsibility being unsatisfactory'.[110] The firm of file forgers, Boswell Bros., was declined a credit request for £75 on the guarantee for £50 from the Reverend L. E. Ellis as the board saw 'the guarantee of a minister not being considered eligible'.[111] Yet there is no indication of the basis on which the board made these value judgements. However, a further example provides some explanation regarding judgements on the suitability of guarantors. The board declined an application for a £300 credit from Herring & Co., coal owners, on the security of a guarantee from Samuel Harrison, saw manufacturer, from Manchester. They stated that the bank 'want an approved name in the neighbourhood'.[112]: this clearly illustrates the local nature of the Sheffield Union's outlook concerning guarantors for loans and overdrafts.

It has been difficult to distinguish a clearly defined policy for the security demanded by the Sheffield Union Banking Company in the granting of accommodation. Such qualitative data concerning the conditions on which

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108 MBA: SUB, BDM, AD 2, 17 May 1855.

109 *ibid.*, AD 4, 14 Feb. 1878.

110 *ibid.*, 21 Feb. 1878.

111 *ibid.*, AD 5, 9 Feb. 1882.

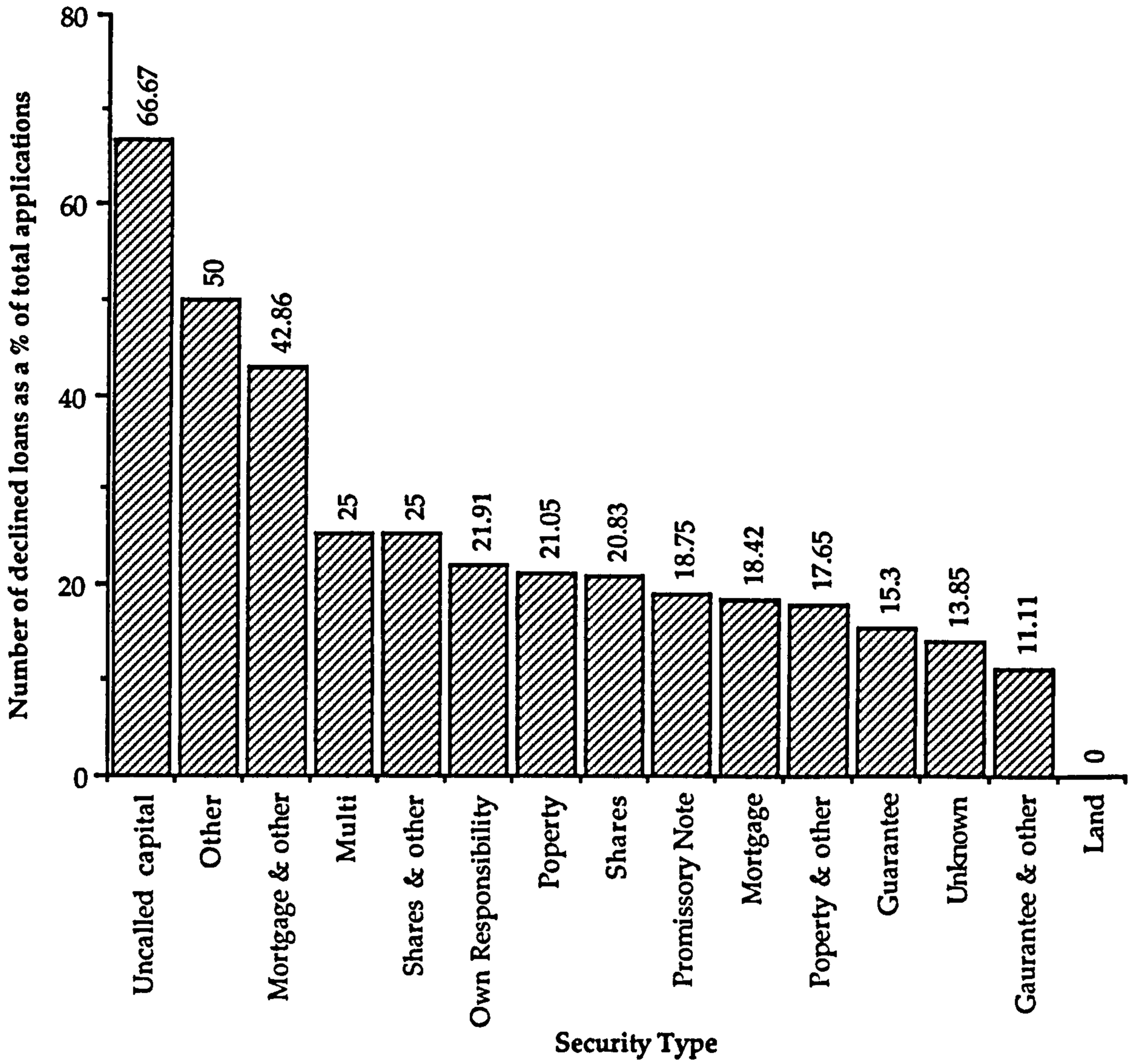
112 *ibid.*, AD 3, 15 Apr. 1863.

credit was advanced is difficult to analyse. In addition, the actual value of the security is mentioned only rarely and, therefore, correlation, if any, between the value of a loan on the one hand and the value of the collateral required to secure it on the other, is difficult to identify.

An attempt has been made to illuminate the policy pursued by the directors of the Sheffield Union concerning security for advances by examining credit applications made by manufacturers that were declined by the board. The number of declined credit applications, as a percentage of total applications in each security type, are shown in Chart 3.8.

Uncalled capital proves to be the type of security least favoured by the directors, as 67 per cent of applications for credit made with this type of security offered were declined. Presumably, the capital left uncalled on the shares of a limited company would be very difficult to attain when the bank had to call in the value of the security if a company was unable to repay the advance granted to it. In such an eventuality, the company would most likely be in the process of winding up its affairs and the shareholders themselves, as well as the bank, would be creditors of the failed company. Therefore, the shareholders would probably not be willing to pay any amount of uncalled capital remaining on the shares they owned in a failed limited liability company.

Chart 3.8: Security types offered on applications for accommodation declined by the Sheffield Union Banking Company: declined applications as a percentage of total applications



Source: MBA: SUB, BDM, AD 2-5.

Mortgages were also unpopular with the directors, 43 per cent of applications being declined when they were offered as collateral. This was probably due to the fact that a mortgage was itself a 'loan' gained by a company from a source other than the bank, and as such the bank would have second claim on this form of collateral if the company failed and the security was called in.

The policy of the Sheffield Union Bank in accepting, or rejecting, requests for credit with respect to factors, other than the suitability of security, is also unclear. The reasoning behind the board's decisions are rarely stated, but when explanations were given they can be illuminating. In 1855, a potential partner of Armitage & Hornfield, coal owners, applied for a loan of £250 on the security of his father (an iron bolt maker) in order that this money could form his part of the capital in this new firm. The board replied that 'it is not the business of a Bank to find capital for partners intending to commence a trade'.[113] This attitude may not have been encouraging new enterprise in the area seeking finance from their local bankers and is further justification of the argument that generally banks did not play a positive role in providing finance for new manufacturing concerns during the mid-nineteenth century.

Personal qualities proved to be important in the process of vetting potential customers, as with decisions regarding acceptable security for loans. When electro-platers, George Whitaker & Co. (with returns of £4/5,000 per annum), applied for an account in 1884, the board decided that it would accept the application, if 'enquiries regarding the character and position' of the applicants 'prove satisfactory'.[114] Presumably, the directors wished to know about the past employment or partnership records of the company's partners and whether or not they were successful businessmen. Further information sought could possibly have been their reputation for reliability within the manufacturing community and social status in the community as a whole. The banks' directors would presumably use their network of social and business contacts (see above) in order to acquire such information. However, it is difficult to measure how such value judgements about potential customers' 'character' and reliability were made. Comments by the directors

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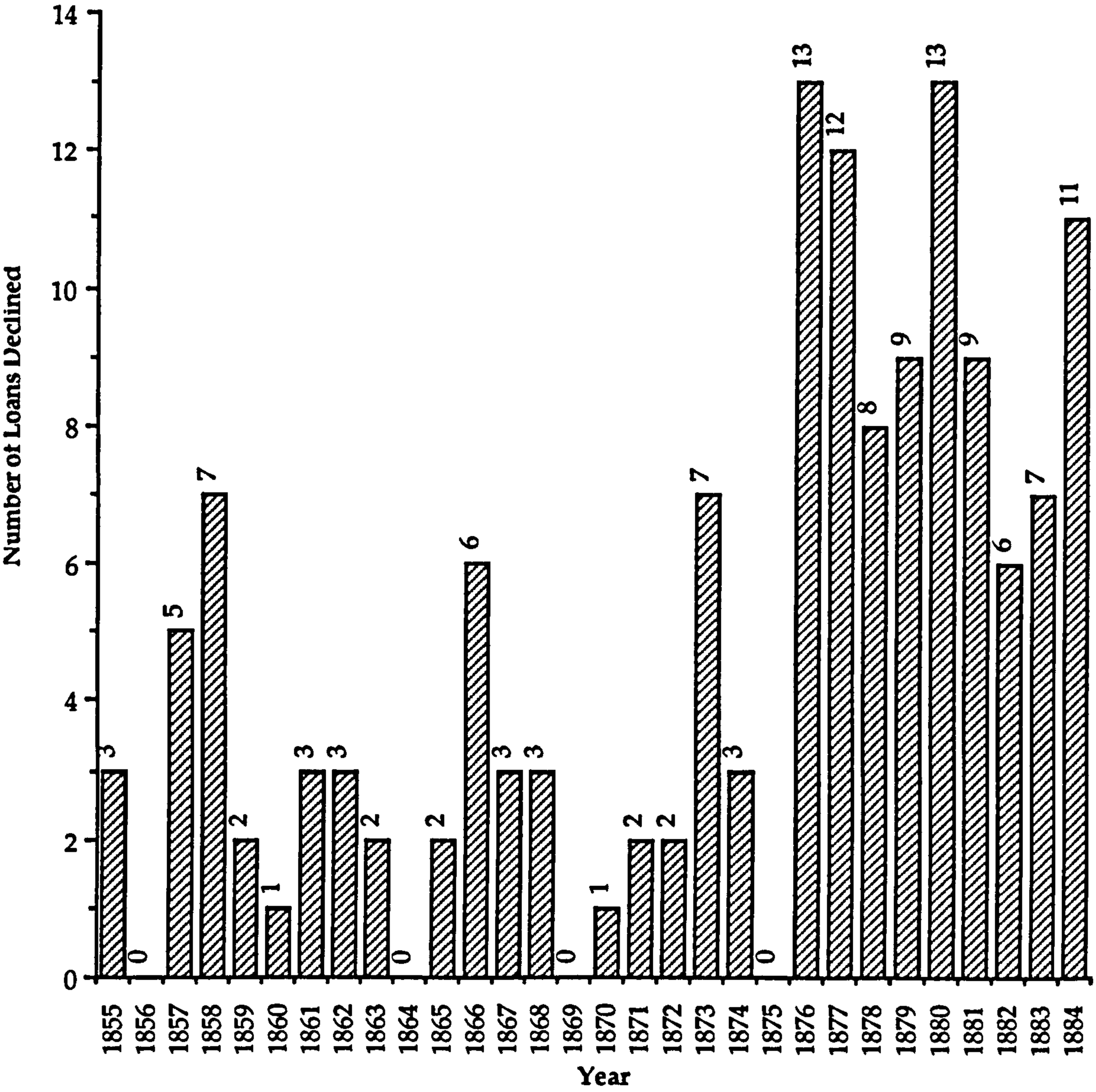
113 *ibid.*, AD 2, 22 Feb. 1855.

114 *ibid.*, AD 5, 31 Jan. 1884.

do not often prove illuminating; for instance when they decided to take the account of Greenfield Colliery only if the owners were found to be 'responsible people'.[115]

The number of credit applications that were declined by the directors of the Sheffield Union has been analysed on an annual basis in order to gain a

Chart 3.9: Number of credit applications declined annually by the Sheffield Union Bank



Source: MBA: SUB, BDM, AD 2-5.

115 *ibid.*, 15 Jul. 1881.

further insight into the policy for agreeing or rejecting applications The results are displayed in Chart 3.9.

The years in which the highest number of credit applications were declined generally correspond with the down-turn in the trade cycle: the late 1850s, mid-1860s and especially the late 1870s.

The Companies which received credit from the Sheffield & Hallamshire Bank and the conditions on which it was granted

The activities of all new account applicants to the Sheffield & Hallamshire Bank, and the accommodation granted on accounts, in the metal manufacturing, engineering, coal, and secondary metal sectors will now be considered. The resulting patterns that emerge from the Sheffield & Hallamshire's credit relations are analysed within the context of local and national trends, and in relation to the Sheffield Union Banking company.

Surveys of all new account applications have been made for 1851 and 1881 in order to indicate the overall structure of the Sheffield & Hallamshire's new customers.[116] The results are shown in Chart 3.10. The reason for new accounts constituting the basic data arises from the problems with continuity when examining accounts already operating. These new accounts have been followed up over a five year period after their opening (1851-1855 and 1881-85) in order to determine the credit relations between these industrial customers and the bank, and to yield some comparisons, if any, as between the beginning and the end of the period being studied. A survey over five years was chosen as only a minority of new accounts immediately received

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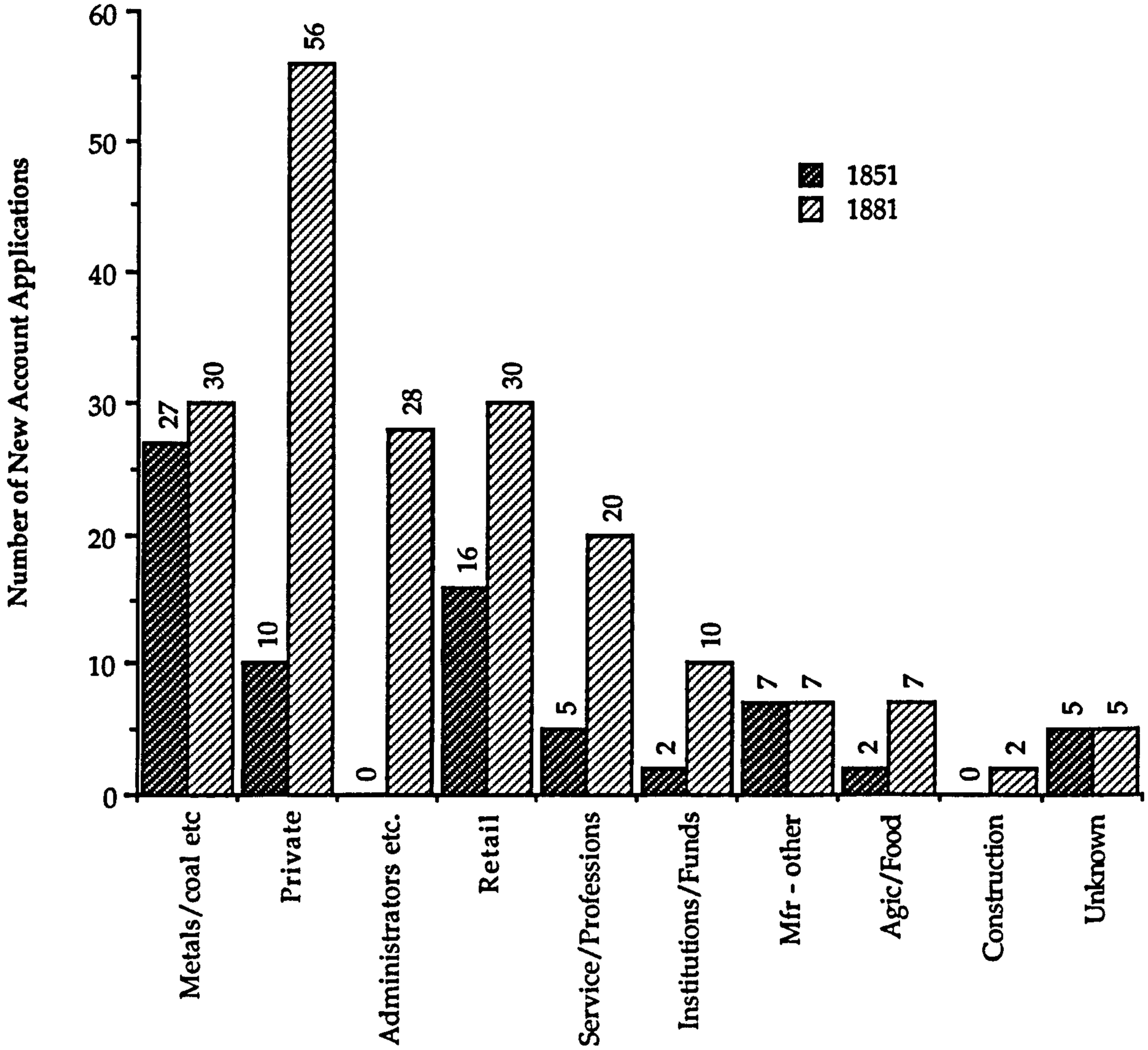
116 Surveys of new account applications have also been taken for 1860 and 1870 and these confirm the trend of decreasing numbers of 'industrial' accounts being opened with the Sheffield & Hallamshire Bank.

accommodation from the bank, seemingly a deliberate policy as requests for credit were usually made subsequently in separate applications, and as very few instances of credit were found beyond this time period. However, this is not an 'ideal' sample and the nature of the data must be taken into consideration when analysing the results and comparing them with the more complete information collected for the Sheffield Union Bank.

Chart 3.10: New account applications to the Sheffield & Hallamshire Bank in 1851 and 1881, by customer type



Source: MBA, SHB, BDM, AM 6-15.

In 1851 there were a total of 74 new account applications, 27 of which were 'industrial', whereas in 1881 there were 200 applications, of which 34 were 'industrial'. Thus, there is some evidence that the proportion of Sheffield & Hallamshire new customers in metal manufacturing and related industries decreased over the mid-century.[117] There are also relatively low numbers of new account applicants from 'other' manufacturing industries in both years. In addition, Chart 3.10 shows that the number of private and administrative accounts dramatically increased. Therefore, one outline conclusion would be that the bank provided a decreasing service to manufacturing industry over this period in comparison to the increase in relations with private and other non-manufacturing customers.

It could be argued that this declining service to the manufacturing sector by the Sheffield & Hallamshire was 'demand led' in that there were fewer applications from industrial customers. However, the nature of the sources consulted, and their limitations, must be taken into consideration. At each board meeting new accounts were recorded which had already been approved and opened, presumably by the bank manager. Thus, potential customers are being excluded from this investigation as the immediate primary sources containing the decisions about these firms are not available.

It could also be argued that the decrease in the number of manufacturing accounts as between the two years was a result of changing bank policies in reaction to national and local economic conditions. The early 1850s was a period of relative prosperity, both nationally and in the major Sheffield industries. The early 1880s were, in contrast, a period of relative economic depression. The beginning of this decade saw some economic improvement after the long slump of the late 1870s, but the national and local prosperity of

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117 See also footnote 116.

the early 1870s failed to return, especially in the iron industry. Furthermore, another depression began in 1883/4. Chart 2.1 in the Chapter 2 (page 40) displays the price of common iron bars during this period and gives some indication of the cyclical forces experienced within the Sheffield area. Booms can be identified by the peaks in the price of iron bars, while the sharp decline in prices in the late 1870s and early 1880s indicates the relative recession that occurred in metal manufacturing and processing trades. Given these circumstances the bank would probably have been more willing to shoulder the risk of lending to industrial concerns in the early 1850s, than in the early 1880s.

The new accounts of the Sheffield & Hallamshire in the metal manufacturing, coal, engineering and secondary metal manufacturing trades (the only accounts of this bank referred to hereafter) and the advances they received are now analysed more closely. Table 3.13 shows the nature of new accounts opened in 1851 and in 1881 and their subsequent use until 1855, and 1885, respectively.

Table 3.13: New 'industrial' accounts applications to the Sheffield & Hallamshire, 1851 and 1881

	1851	1881
Total account applications	27	34
Number of accounts opened	25	32
Accounts opened with credit	10	6
Accounts opened with credit and thereafter making no subsequent applications for credit	0	3
Accounts opened without credit	14	24
Accounts opened without credit and thereafter making no subsequent applications for credit	4	16
Accounts making subsequent applications for credit	20	11

Source: MBA, SHB, BDM, AM 6-15.

Most new applications were accepted, but only a minority received an immediate credit and these were frequently those of existing customers

formally opening a new account, having reconstituted a company with a new partnership agreement. Such accounts were, therefore, a continuation of an old account with merely a change in the company's name. Generally, the Sheffield & Hallamshire, therefore, appears to have been cautious in its lending policy.

The majority of accounts in both sample years were opened without credit being granted to the customer. A greater number of such instances in 1881 may suggest an increasingly cautious approach to new customers, possibly influenced by the general economic factors mentioned above. As Table 3.13 shows, there was also a higher number of subsequent applications for accommodation by customers in 1851 than in 1881, and there were a greater number of inactive accounts (those opened without credit and not applying for credit) 1881-85 than in the earlier period. Table 3.13 may imply that not only were there progressively less accounts being granted to industrial customers, but that the new customers in these sectors were receiving progressively fewer loans and overdrafts from the bank. Local and national economic fortunes may again be the explanations behind these trends, both in terms of the bank's policy and industrial demand - greater demand from prosperous customers wishing to fund expansion in a period of prosperity - the early 1850s - and greater caution by the bank in lending money to industry during relative recession - the early 1880s.

As with the Sheffield Union Banking Company, the Sheffield & Hallamshire's policy for either accepting or rejecting customers is unclear. Personal connections and financial viability are mentioned in the process of vetting potential customers. A cutlery manufacturer was able to open an account in 1881 after being introduced to the directors by a larger cutlery firm

that held an account with the bank.[118] In the 1851 the directors postponed the application of John Wigfall & Co. in order for 'the Manager to make further inquiries of him as to his capital'.[119] Such examples provide an insight into the directors' policy-making decisions, but certainly do not provide a comprehensive picture.

The Sheffield & Hallamshire appears to have provided a sizeable amount of credit to its customers by discounting bills of exchange, as shown in the half-yearly results for 1850 (page 49). However, there was no consistent record kept by its board of the amount of credit advanced by this method and, therefore, the analysis here will focus upon loans and overdrafts, the other major types of credit extended by the bank. Loans and overdrafts were consistently and efficiently recorded in the Minutes and therefore will be analysed in detail, but often the board did not differentiate between the two types of accommodation. The usual way in which the bank provided credit to local manufacturing customers apart from discounting was by overdraft.

The conditions on which overdrafts were granted were flexible and varied. The Sheffield & Hallamshire usually required cover of the same value and often more, especially on large amounts. The response from the Sheffield & Hallamshire directors on many occasions, when customers applied for credit without offering collateral security, was that the credit would be granted only 'if satisfactory security is given', usually of the same value of the loan itself.

Chart 3.11 shows the types of security accepted by the Sheffield & Hallamshire Bank from its manufacturing customers for credit advances.

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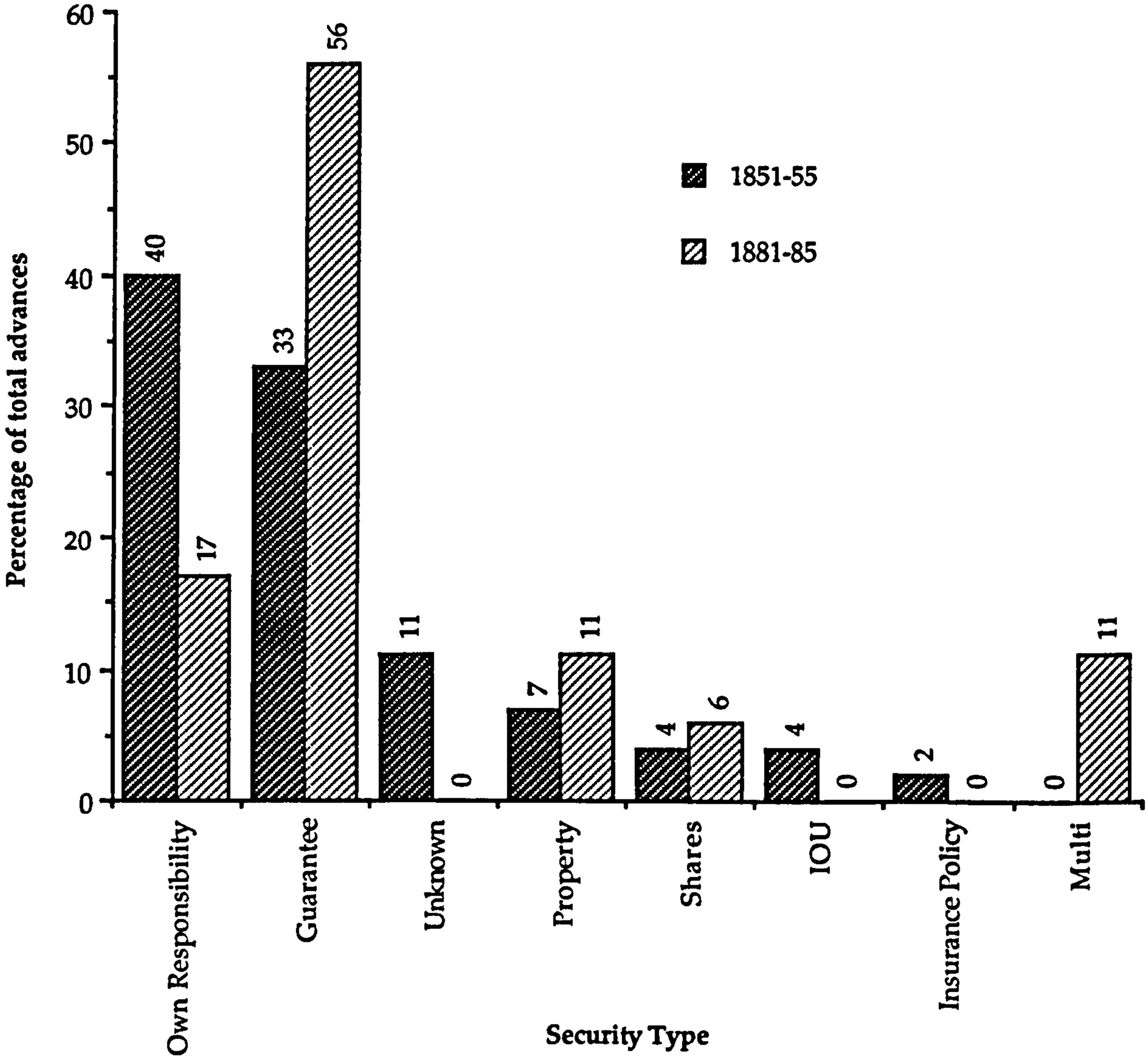
118 MBA: SHB, BDM, AM 14, Cutlery manufacturer.

119 *ibid.*, AM 6, 5 Nov. 1851.

Chart 3.11: Types of security on advances accepted by the Sheffield & Hallamshire Bank as a percentage of total advances, 1851-55 and 1881-85



Source: MBA, SHB, BDM, AM 6-15.

A common form of collateral security was the Letter of Guarantee (33 per cent 1851-55 and 55 per cent 1881-85) frequently provided by members of the customer's family, or local businessmen. In 1881 A. Davy & Sons, cutlery manufacturers, were allowed a £100 overdraft on the guarantee of Abraham Davy Senior, the father of the current partners and the man who had run the business before retirement.[120] The directors agreed to an overdraft of £2,000

120 *ibid* ., AM 14, 5 Jan 1881.

for another cutlery manufacturer, John Askham, in 1855 on the joint guarantee given by the father of one of the partners, and a fellow cutlery manufacturer.[121]

However, like the Sheffield Union, the most frequently occurring type of security, 1851-55, was the customers' 'own responsibility' (40 per cent), decreasing to 17 per cent in the period 1881-85. This indicates that no formal collateral security was given and that the individuals behind the firm were responsible for repayment of the credit extended. Once more such proportions suggest that the bank often granted accommodation simply on the basis of good faith of the customers involved and the businesses that they ran. Customers who were allowed credit on their own responsibility would presumably have been well known and trusted clients of the bank, or known to be reliable businessmen by members of the board. The larger number of such loans in the earlier period appears to indicate that the bank operated a more lenient policy regarding collateral security then, than between 1881 and 1885.

There are some examples of the Sheffield & Hallamshire directors' policy regarding the awarding of loans totally without security. When a company of anvil manufacturers applied for £200 credit in 1851, three months after opening its account with no collateral security offered, the directors commented 'that it is contrary to the practice of the Bank to grant credits without security.'[122] However, they 'deviated from this practice with the explanation of [the customers] having a remunerative account'.[123] In the same year John Yeomans & Son, cutlery manufacturers, were granted £200 for

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121 *ibid.*, AM 7, 7 Mar. 1855.

122 *ibid.*, AM 6, 1851, £200 Credit to anvil manufacturers.

123 *ibid.*,

three months on their 'own responsibility', the directors explaining that 'This credit could not have been granted without security except for this limited period'.[124] Indeed, the overall impression of the Minute Books throughout the period is one of caution, with directors ensuring that advances were adequately secured and that accounts were closely supervised and controlled. Yet, the number of loans granted without security seems to contradict these statements of policy. This could be partly due to some accommodation granted without security being actually an extension of an overdraft previously agreed with security. Therefore, although no further security was required for what was classed as a separate credit, some form of security was usually held against the account by the bank.

The policy of the Sheffield & Hallamshire Bank in accepting, or rejecting, requests for credit with respect to factors, other than the suitability of security, is also unclear. On three occasions in 1854 applications for credit were refused 'Owing to the present state of political and monetary affairs'.[125] (The Crimean War was probably the disruptive factor in this year.) An application for the extension of an overdraft was declined in 1857, the explanation again being 'the present state of the money market' - a likely reference to the national financial crisis which occurred in that year.[126]

The results from the investigation of the Sheffield & Hallamshire Bank offer an interesting comparison to those with respect to the Sheffield Union Banking Company. The Sheffield Union results, as discussed above, are for all industrial accounts over the whole period from 1855 to 1885. The proportions for types of security accepted by this bank are similar to those of

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124 *ibid.*, AM 5, 19 Nov. 1851.

125 *ibid.*, AM 5, 1854.

126 *ibid.*, AM 6, 14 Nov. 1855, f.82.

the Sheffield & Hallamshire. The most common form of was the Letter of Guarantee (24.1 per cent), which again was usually provided by a relative or fellow businessman. A firm's 'own responsibility' accounted for 26.1 per cent, and land and/or property was the other main category (17.8 per cent). However, the qualitative data supporting these figures indicates that the Sheffield Union seems to have had a more lenient policy regarding the extension of credit without collateral security.

So far, it has not been possible to distinguish a clearly defined policy for the security demanded by either bank, the qualitative data concerning the conditions on which credit was advanced being both scarce and difficult to analyse. However, from this survey, the Sheffield & Hallamshire seems to have operated a fairly stringent policy regarding the extension of credit without security, the majority of accommodation granted in both periods being secured in some form or another, whilst the Sheffield Union appears to have been less rigorous.

Credit granted by the Sheffield Union Banking Company : two case studies

Where credit was extended to existing concerns, the Sheffield Union Bank could sometimes operate with a high degree of flexibility. This may be illustrated by the following two examples.

During the early 1850s some Sheffield firms were developing into large units of production and a leader among them was Naylor, Vickers & Co., manufacturers of steel and files. Despite being the smallest bank in Sheffield, the Sheffield Union Banking Company held the account of this large and powerful concern. The bank lent large amounts of money to the firm and in the early 1850s a sum greater than the whole capital of the bank was employed

in this way, the paid-up capital of the bank being £82,000 in 1856.[127] The banking crisis of 1857 occurred precisely when Naylor, Vickers & Co. were in need of maximum assistance from the bank due to a parallel crisis in America seriously affecting their business. Consequently the Sheffield Union, in turn, had to lean heavily on its London agents. When, in November 1857, Naylor, Vickers & Co. suspended payments, the bank had advanced £60,000 to the firm.[128] This situation necessitated assistance to the Sheffield Union from the Bank of England and loans from the bank's own directors of over £30,000 from personal resources.[129] The bank survived this very dangerous situation by these methods. Thereafter the amount of credit extended to the firm was rapidly reduced to £30,000,[130] while the Sheffield Union fortunately did not suffer a considerable loss. Subsequently, the bank's assets were no longer dominated by a large loan to this one firm. Naylor, Vickers & Company went on to thrive and continued their account with the bank until the late 1860s. However, the bank failed to learn the lesson of the risks involved in heavily lending to one particular company, for by the late 1870s the Sheffield Union was heavily committed to the Albion Steel & Wire Company Ltd.

In July 1873 the current account credit of the Albion Steel & Wire Company Ltd. was fixed at £10,000[131] and this was increased to £33,790 in October of the same year.[132] A month later the board discussed the credit allowed on the company's mortgage account which then was set at £30,000.[133] By 1875 the company had obviously run into difficulties with the bank's Minutes now

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127 Crick & Wadsworth, *Hundred Years* ..., p.220.

128 *ibid.*, p.221. The £60,000 accommodation was recorded by the board 1858 - see Graph 3.13.

129 *ibid.*

130 MBA: SUB, BDM, AD 2, 22 Dec. 1858.

131 *ibid.*, AD 3, 17, Jul. 1873.

132 *ibid.*, 28 Oct. 1873.

133 *ibid.*, 18 Nov. 1873.

referring to the 'heavy liability' of the Albion Company's working (current) account, mortgage account, and returned bills account and consequently further security was requested for the overall debt.[134] A distress warrant was actually issued to the company by the bank for rent due, but this was withdrawn when a discussion between the two boards resulted in an agreement over terms in an attempt to continue the business. These included the company's total debt of £86,000 being put into a suspense account and a new current account opened, but with no overdraft allowance.[135] The bank was apparently wise enough not to continue lending to this struggling concern, the large amount of financial support already having been granted having been ultimately fruitless. Yet by the time that the company had 'no alternative but to wind up' in October 1876, the debt owing to the bank had risen to nearly £92,000.[136] The company had obviously drawn beyond the agreed credit limit, but the bank's board Minutes fail to explain how this was allowed to happen. Consequently the Sheffield Union became involved in the very lengthy process of trying to retrieve the security held against the account. The imprudent policy of heavily supporting one manufacturing concern resulted in a substantial financial loss for the bank and this occurred at the start of a general severe depression of trade in the local area.

Reasons for manufacturing companies applying to the Sheffield Union for credit

Thus far, all applications for credit have been discussed from the point of view of the bank and its directors - the supply side. What of the motivations of a company requesting an advance from the bank? The specific reason for a company's application for credit was not usually stated. Therefore it is not

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134 *ibid.*, AD 4, 29 Sep. 1875.

135 *ibid.*, 2 Nov. 1875.

136 *ibid,,* 5 Oct. 1876.

possible to analyse the use to which finance from the bank was put. However, occasionally a business stated the need for which an advance was required and these statements prove interesting. Several examples are recorded in the Sheffield Union Board Minutes. In 1883 Joseph Wordsworth & Son were granted a loan of £2,250 to allow them to buy their works.[137] The iron founders Hattersley Brothers were allowed a £1,000 extension of their overdraft in 1875, as the previous sum of £2,000 had proved inadequate 'due to expansion'.[138] Davenport Brothers, saw manufacturers, were granted a £300 overdraft in 1878 to expand their business,[139] and Joseph Jonas & Company had their credit limit increased to £2,000 in 1873 'in order to more conveniently conduct their increasing business'.[140] Muxlow & Knott, steel manufacturers, received a £1,000 loan to purchase their works outright,[141] and Henry Green, steel hammer and tool manufacturer, was granted £300 in order to buy another company.[142] These examples demonstrate the Sheffield Union Bank's practice of supporting local expansion. However, Joseph Armstrong & Company made several successful applications for overdraft extensions for short periods of time during the depression of the late 1870s in order simply to pay their employee's wages. The company eventually went bankrupt in 1882.[143] In this case mere survival, rather than expansion, appears to have been supported by the bank. The Sheffield & Hallamshire Minutes also provide some examples of the reasons for customers applications for credit. John Wigfall & Co. applied for an overdraft extension

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137 *ibid.*, AD 5, 3 May 1883.

138 *ibid.*, AD 4, 23 Mar. 1875.

139 *ibid.*, 17 Oct. 1878.

140 *ibid.*, AD 3, 14 Oct. 1873.

141 *ibid.*, AD 5, 20 Dec. 1884.

142 *ibid.*, 26 May 1881.

143 *ibid.*, AD 5, 31 Aug. 1882.

of £100 for one month 'to enable him to purchase goods'.[144] In 1881 Samuel Thornhill was granted a loan of £900 to form part of the £1,500 partnership capital he required to join a firm of cutlery manufacturers.[145] In contrast, George Butler & Co. received an additional advance of £150 on a £4,000 overdraft in order to pay wages.[146] Therefore, finance from the bank appears to have been provided for both new business and to help firms cope with running costs during difficult financial periods.

Credit granted to industry by the Sheffield Union and the Sheffield & Hallamshire: annual analysis

The actual advances granted by the Sheffield Union Banking Company and by the Sheffield & Hallamshire bank to local businesses will now be analysed in detail. Firstly the advances from the Sheffield Union Bank are examined. Charts 3.12 and 3.13 show the number of advances granted and the total values of the accommodation on an annual basis. The increasing trend in nominal credit provision is clear and would imply that further research into the period after 1884 would be of interest.

From 1855 to 1871 there was only a gradual increase in the number of loans made by the Sheffield Union. This was a period of general prosperity in the iron, steel, and secondary metal trades, but the individual units of production tended to be small in size. The most outstanding year for the value of accommodation granted during this period was 1858, in which a total of £126,350 was agreed by the bank to be advanced in the form of loans and

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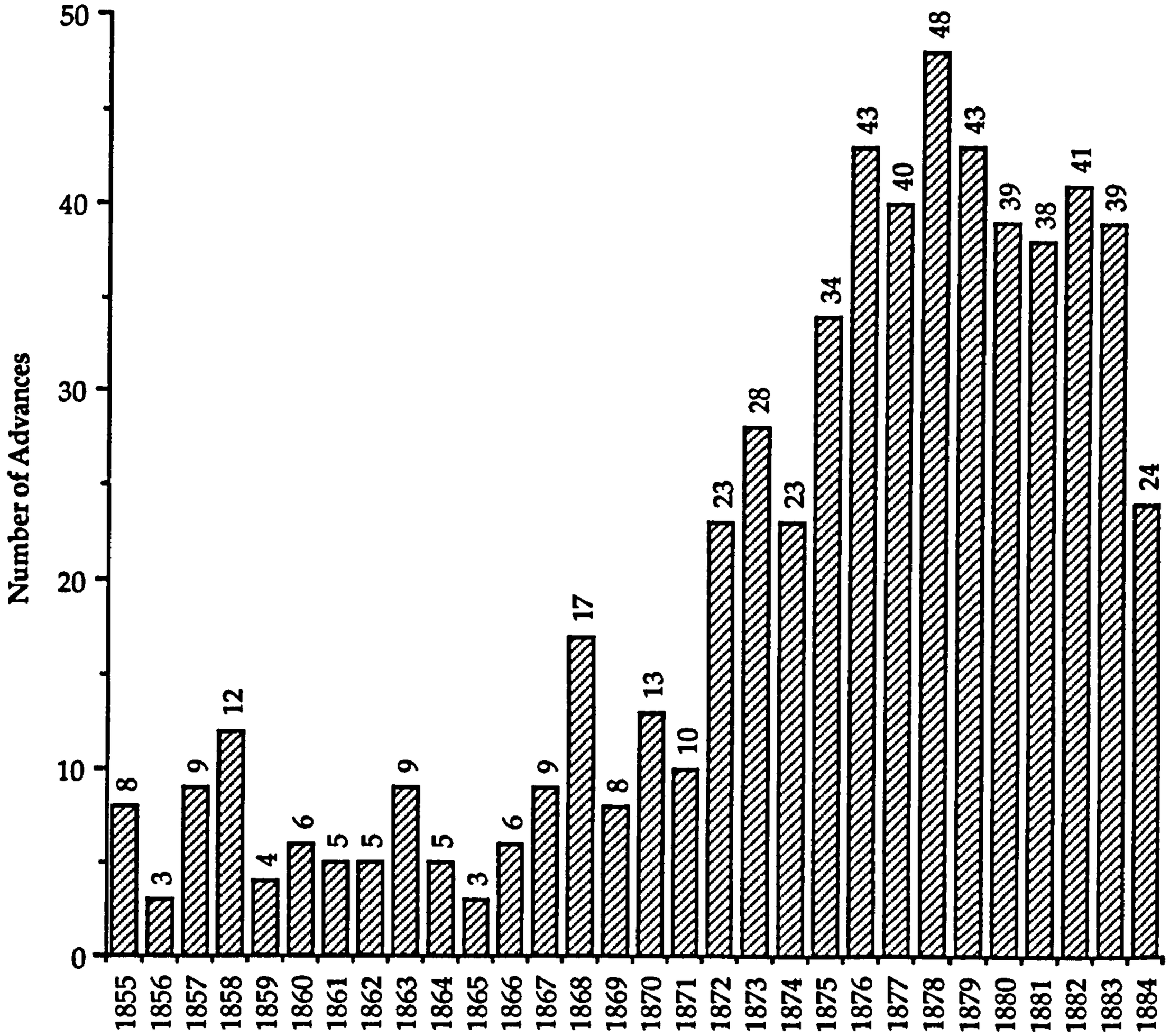
144 MBA: SHB, BDM, AM, 20 Nov. 1854.

145 *ibid.*, AM 14, 17 Aug. 1881.

146 *ibid.*, AM 9, 30 Aug. 1865.

overdrafts and this is largely due to the large amount of credit granted to Naylor, Vickers & Co., as mentioned in detail above.

Chart 3.12: Number of advances to firms made by the Sheffield Union Banking Company 1855-1885



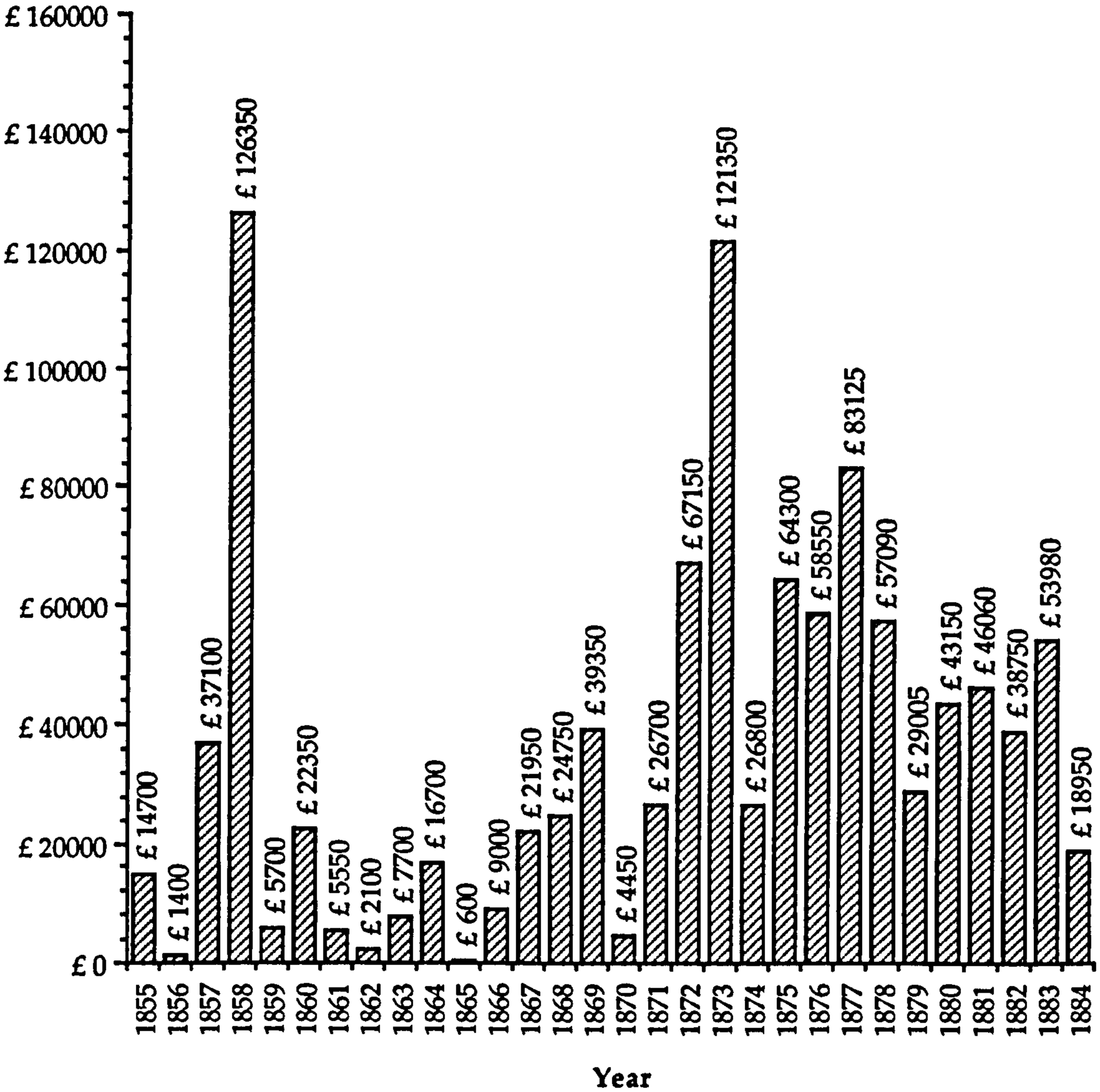
Source: MBA: SUB, BDM, AD 2-5

The number of credits granted increased dramatically after 1871 until 1883, a period marked by the growing adoption of new technology which facilitated the large-scale production of steel. The consequent increase in the size of firms in the steel sector and their higher capital requirements also meant that the 'plough-back' of company profits was possibly no longer sufficient to

finance such concerns. The changing attitudes towards seeking outside capital necessitated by this situation may have played a part in this trend. The period 1870-74 was also one of unprecedented prosperity, especially in the heavy industrial sector, and finance would presumably have been readily provided for expansion either internally or externally. When examining the value of advances made after 1871 the most dramatic increase occurs in 1873, when the Sheffield Union agreed to advance £121,350 to its manufacturing customers. This, like the peak in 1858, was caused by the demand from one company - Albion Steel & Wire Co., which has again been discussed in detail above. This figure for 1873 contrasts with the £27,000 granted to industrial customers by the bank in 1871 and 1874, not substantial sums and probably the result of the general prosperity in the iron and steel industries.

The highest value of advances per annum maintained in consecutive years occurs from 1875 to 1878, when annual sums lent by the bank range from £57,000 to £83,000. This coincides with the peak period for the actual number of advances granted by the Sheffield Union: from 1875 to 1883 the number of credits per annum remained approximately 40. The late 1870s was a time of a severe depression in all industrial sectors covered in this survey and mention was repeatedly made at the Annual General Meetings of the Sheffield Union Bank of the unfavourable economic climate between 1876 and 1881, referring specifically in 1877 to the 'great depression'. As the position worsened, firms appear to have turned to their bank for support. Therefore, the bank not only supplied funds for the expansion of manufacturing industry in the area, but also provided a source of finance for survival during periods of recession. It also appears that the greatest demand for bank assistance from manufacturing customers was generated, not by the drive for expansion and profit, but by the need to try and stay in business.

Chart 3.13: Total value of advances per annum from the Sheffield Union Banking Company 1855-85



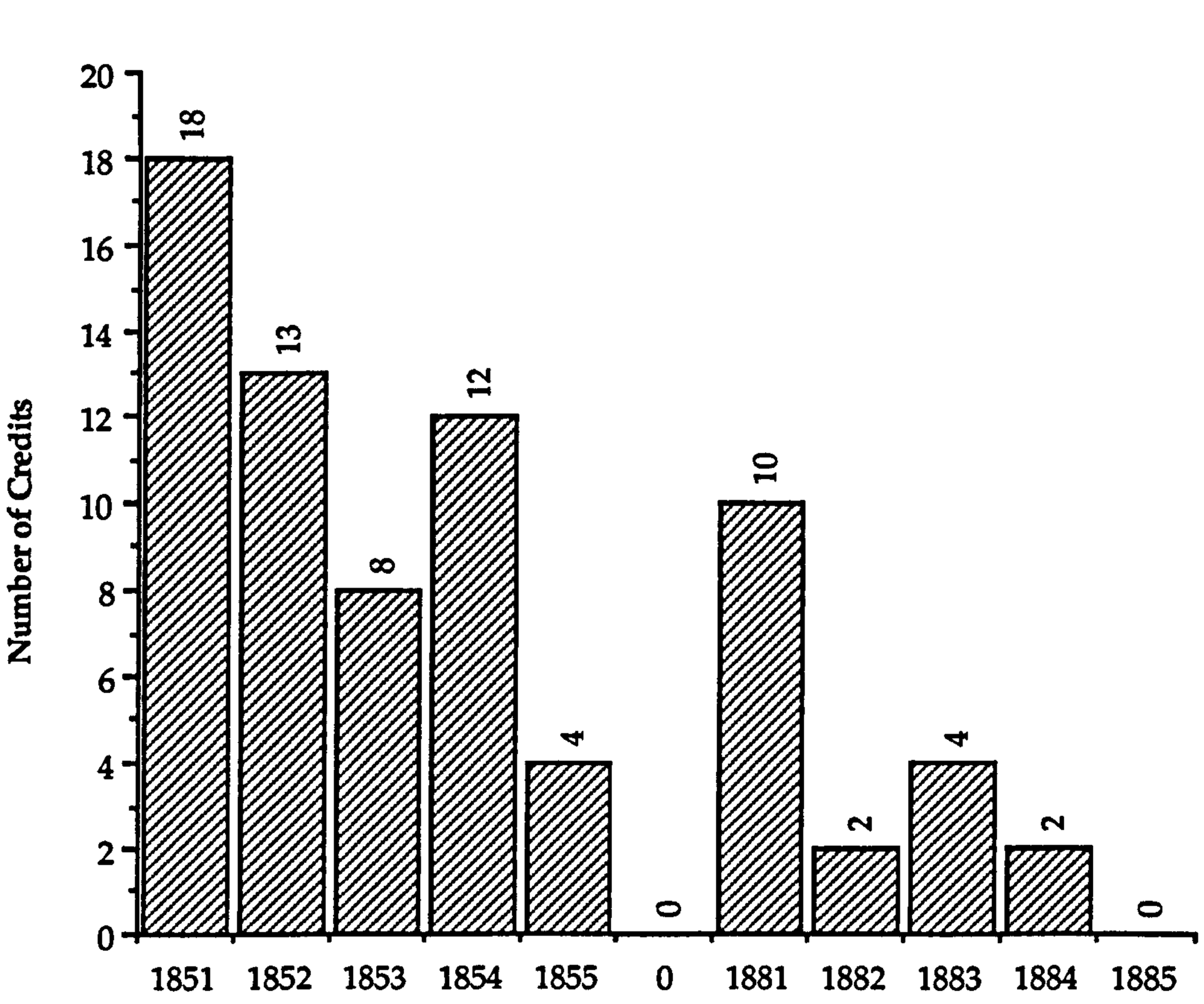
Source: MBA: SUB, BDM, AD 2-5

The number of loans granted between 1880 and 1884 remained high due to a combination of factors: the recovery of industry in the area from the late 1870s depression and the increasing demand for 'outside capital' from local industry created by the continued adoption of new technology and expansion in the scale of production.

Advances granted by the Sheffield & Hallamshire Bank to local businesses will now be analysed. In the years 1851 to 1855 27 loans were accorded to the

accounts in question, and in 1881 to 1885, 18 (see Chart 3.14). This decrease may be explained by the contrasting economic conditions prevailing in the two periods and the bank's reaction to them, the prosperity of the early 1850s as compared with the relative economic depression of the early 1880s. The nature of the material consulted is also an important factor - these figures are for new accounts. In a period of economic difficulty the bank would presumably have reacted by agreeing fewer accounts with new customers and granting fewer overdrafts to those new and untested customers it accepted. From the demand side, local firms appear to have been willing to turn to this institution in the 1850s period of prosperity, perhaps in order to finance expansion.

Chart 3.14: Number of credits advanced by the Sheffield & Hallamshire Bank 1851-55 and 1881-85

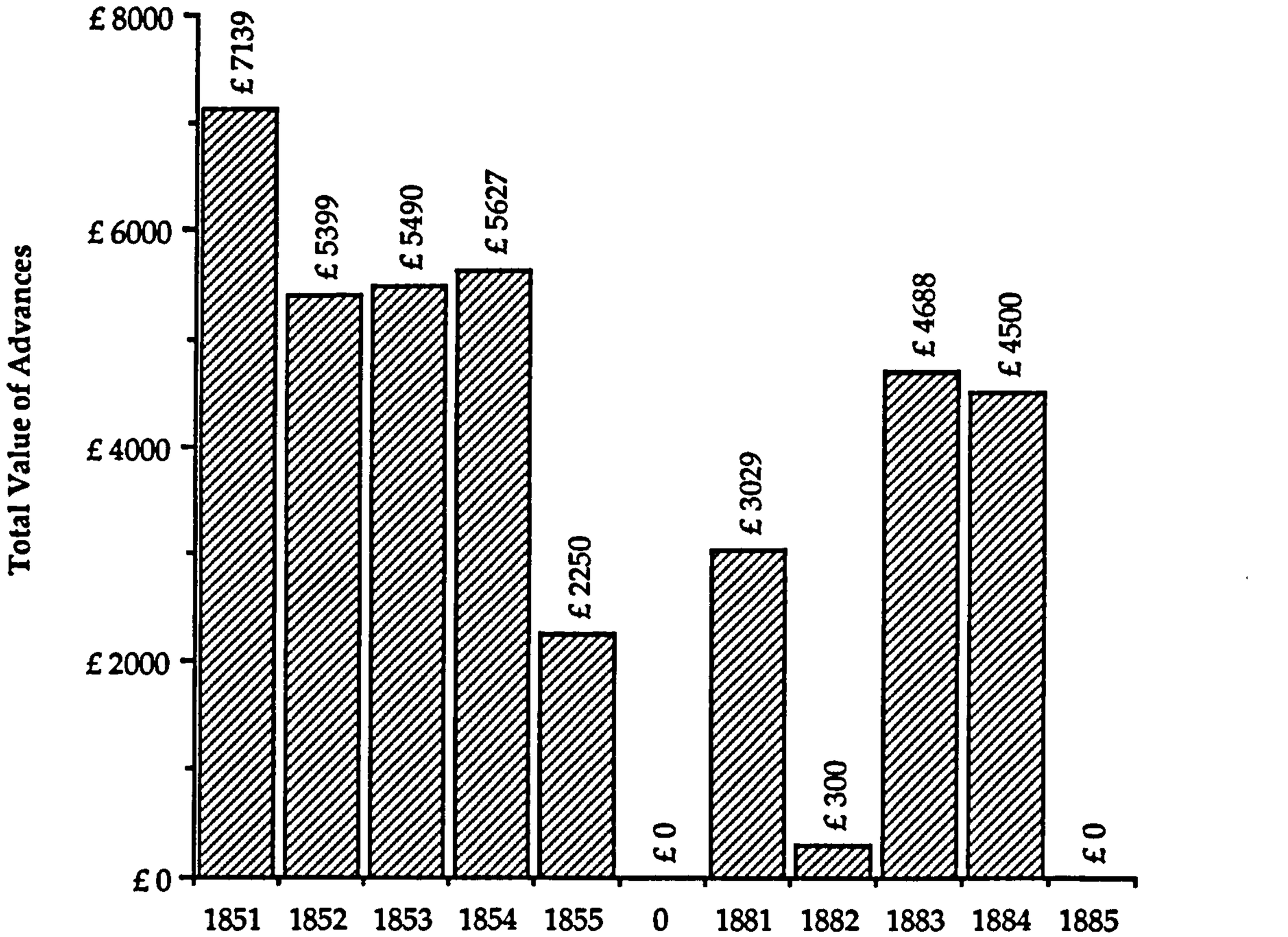


Source: MBA, SHB, BDM, AM 6-15

This contrasts with the Sheffield Union Banking Company, which granted an increasing number of credits to its industrial customers between 1855 and 1885. However, the different sets of data collected must be taken into consideration. The data from the Sheffield & Hallamshire is a sample of new accounts from 1851 and from 1881, whereas that for the Sheffield Union is all industrial credits granted between 1855 and 1885. The nature of the material, and the different sizes and different customers bases of the two banks, means that results will vary for the two banks. The majority of Sheffield Union customers were 'industrial' and therefore the bank's fortunes would have been more closely tied to local industrial fluctuations.

Chart 3.15 shows the total values of credits granted by the Sheffield & Hallamshire Bank. The total value of credits granted to new accounts opened 1851, and over the following five years, is £25,905, and the total value for those accounts opened in 1881, until 1885, is £12,517. A greater amount of finance was being granted to industrial customers in the earlier period, again probably due to the fact that the figures are for new accounts, the bank opening fewer accounts with new customers and granting fewer overdrafts in the later period of relative recession. These values suggest that the bank was not a major lender to the manufacturing sector in Sheffield.

Chart 3.15: Total value of credits from the Sheffield & Hallamshire Bank, 1851-55/1881-85

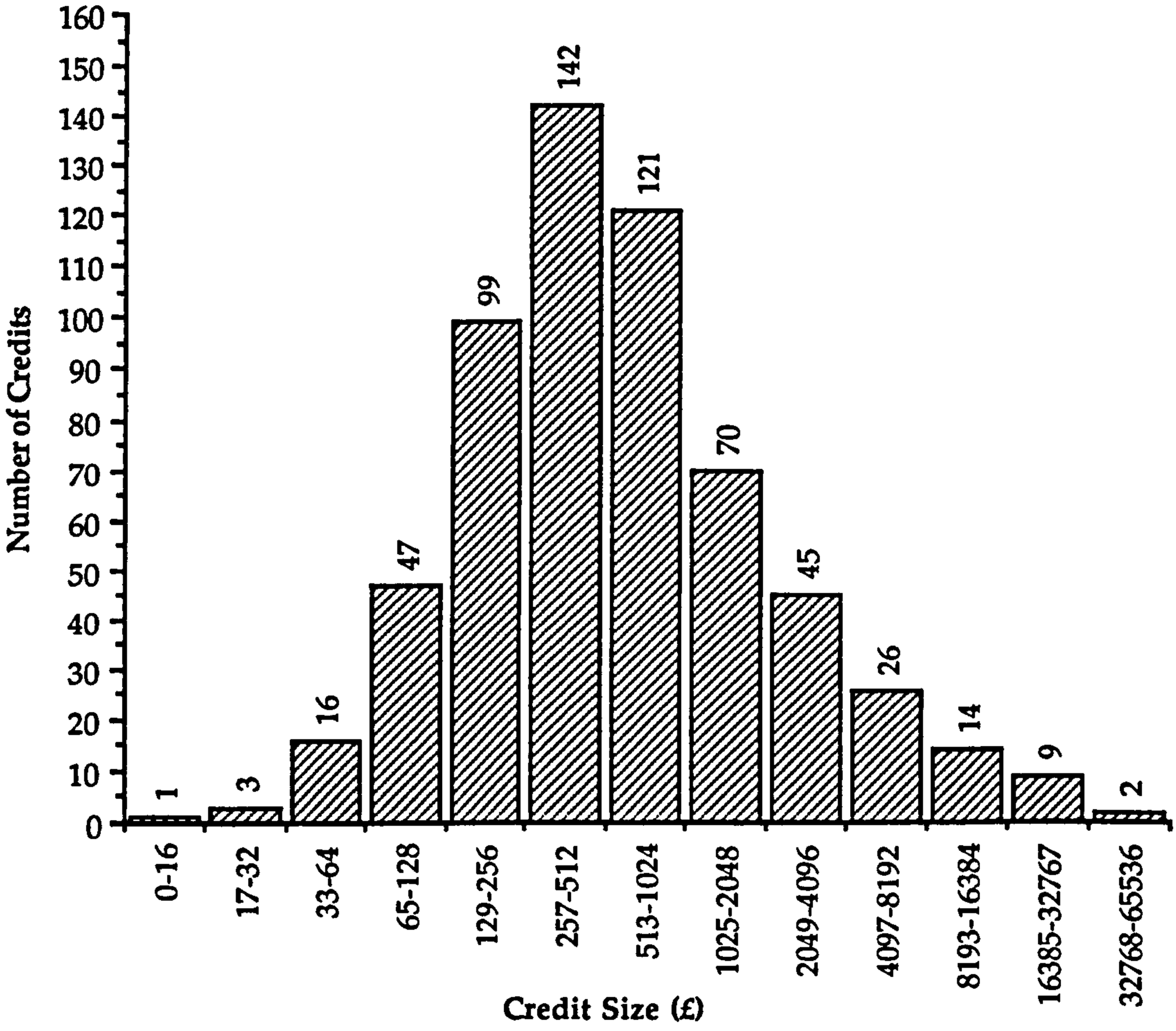


Source: MBA, SHB, BDM, AM 6-15

The size and values of advances to industry from the Sheffield Union and the Sheffield & Hallamshire

The actual size and total values of the advances granted by these two banks are now considered. Charts 3.16, 3.17 , 3.18 and 3.19 show the size of loans and their value by total amount. Due to the large range of values in the size of the loans, it is more convenient to represent these values on a logarithmic rather a than simple arithmetic scale (a constant ratio as opposed to a constant difference). Also, where overdrafts are concerned the single figure of the credit limit set by the bank has been taken, as the varying amounts of a firm's overdraft balance over time are not available.

Chart 3.16: Size of credits advanced by the Sheffield Union Banking Company, 1855-85

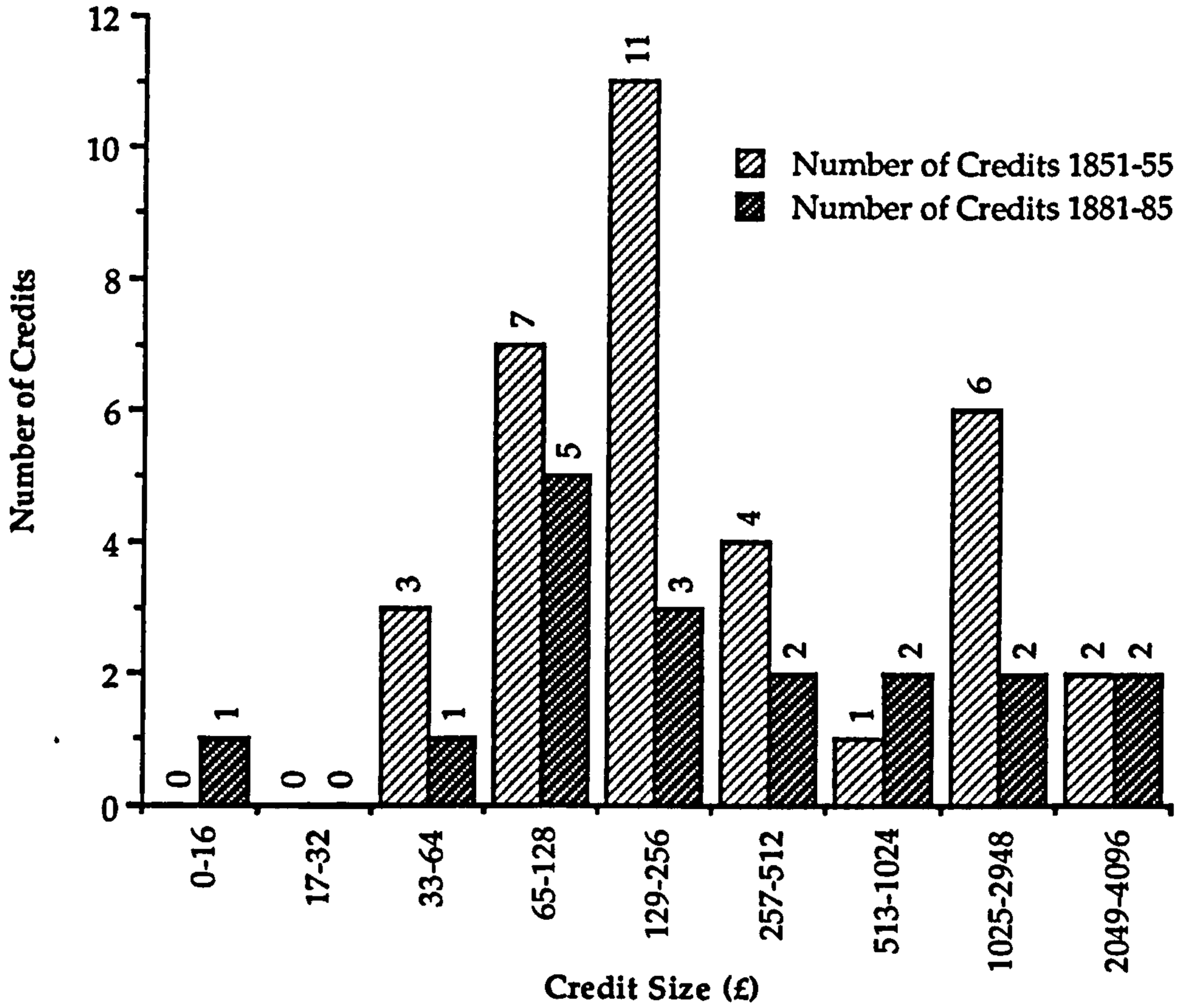


Source: MBA: SUB, BDM, AD 2-5

Chart 3.16 illustrates the distribution of advances from the Sheffield Union by their size. The vast majority of loans occur in the range of values between £129 and £1,024, with the highest number of loans being between £257 and £512. This would imply that, although the bank offered both small and large scale loans, the majority were relatively small in amount.

Analysis of the distribution of Sheffield & Hallamshire loans by size reveals that the majority of loans 1851-55 occurred in the range of values between £129-£256 and the majority 1881-85 appear in the £65-£128 range (Chart 3.17). There are only two loans over £2,000 1851-55 and in 1881-85. The average size of loan granted was £471 1851-55 and £695 1881-85; the median loan value was

Chart 3.17: Size of credits advanced by the Sheffield & Hallamshire Bank 1851-55 and 1881-85



Source: MBA: SHB, BDM, AM 6-15

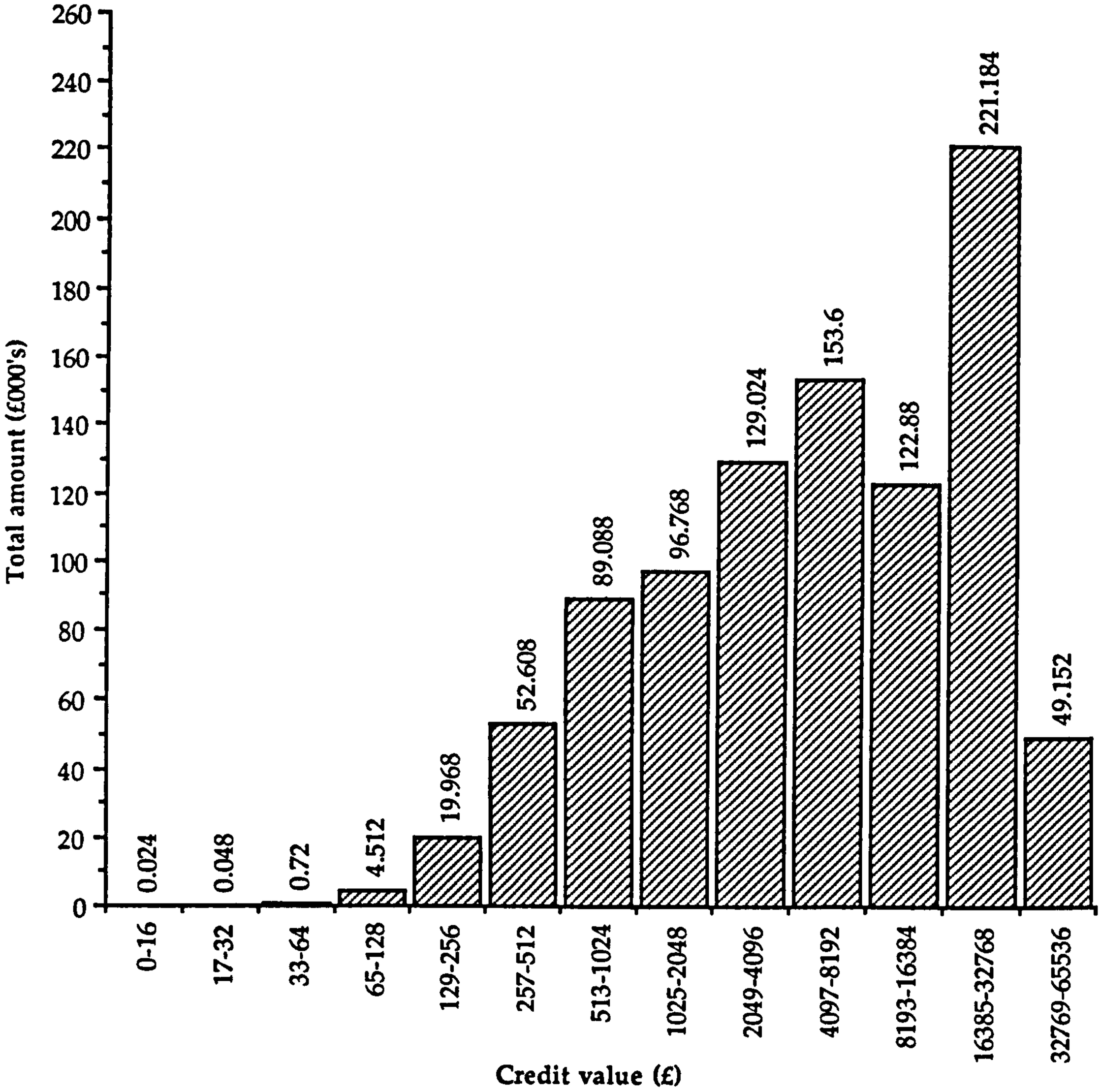
£165 in 1851 to 1855 and £200 1881 to 85; and the modal value of loans in both periods was £100. This indicates that the bank granted mainly small amounts of credit to its manufacturing customers.

The Sheffield Union Banking Company, however, offered small, medium, and large scale loans. During the period under study it granted 20 loans over £8,000 (of which one was for £60,000) to industrial customers and was therefore involved in large-scale lending to a far greater extent than the Sheffield & Hallamshire. Yet, the majority of credits from the Sheffield Union were relatively small in amount, the highest number of loans falling in the £257 - £512 category, so in this regard the two banks were similar.

The distribution of these loans by total amount is shown in Charts 3.18 and 3.19. These figures were reached by multiplying the average number in the class interval by the actual number of loans in that class and it should be stressed that this calculation gives an estimate of the total amount of loans.

Chart 3.16 showed that the highest number of loans granted by the Sheffield Union were between £200 and £500 in value. However, far more important, in terms of total amount, were loans in the £16,385 to £32,768 bracket, as shown in Chart 3.18. Although there are only nine loans in this category, they have a total value of £221,880. This represents a substantial sum and may have been an important contribution to the finance of local manufacturing industry. However, this sum was spread over but nine loans to only five companies. The Albion Steel & Wire Company Limited (mentioned above) received three loans with a total value of £86,000 and Naylor, Vickers & Company (also mentioned above) received three out of the nine loans with a total value of £60,000. In addition, the latter firm received a £60,000 advance, occurring in the £32,769 to £65,536 bracket in Chart 3.16, which made it the recipient of four out of the ten loans of over £16,000 granted by the bank between 1855 and 1885. Therefore, although the Sheffield Union was involved in the provision of large sums to local industry, such finance was restricted to just a few companies which limited its overall impact upon the Sheffield area as a whole. This also suggests that the Sheffield Union operated a rather unwise policy in granting such large sums of money to so few companies. Becoming 'locked in' to a few companies in

Chart 3.18: Total value of credit advanced by the Sheffield Union Banking company, distributed by credit size



Source: MBA: SUB, BDM, AD 2-5

this way meant that the bank's assets were potentially illiquid and put them in a dangerous position if a crisis occurred, as has already been shown.

A similar policy existed with medium sized advances granted by the Sheffield Union. The second highest aggregate value was in the £4,097-£8,192 bracket, with a total of £153,600. This indicates that the bank also granted a considerable amount of credit in the form of medium size loans, but this

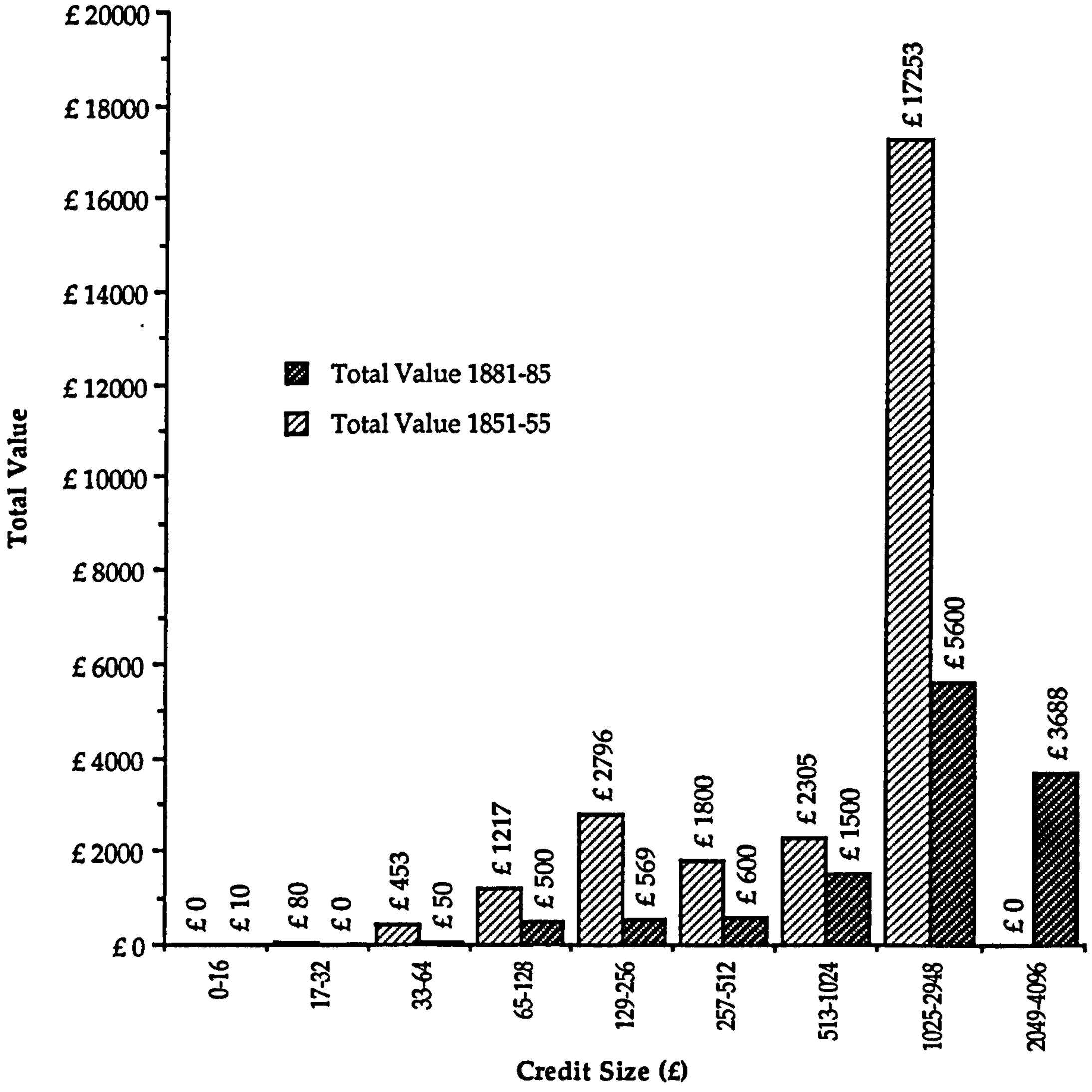
again was spread among just 25 companies. This would further limit the impact of such finance on the local industry as a whole and also presented risks for the Sheffield Union Bank itself.

A different picture emerges from the data for the Sheffield & Hallamshire Bank. Chart 3.19 illustrates the values of advances granted by this bank, distributed by the size of the advance.

Chart 3.17 showed that the highest number of credits granted by the Sheffield & Hallamshire were between £65 and £256. However, more important, in terms of total value, were advances in the £1,025-£2,948 bracket, especially 1851-55. There are six loans in this category 1851-55, with a total value of £17,253, and two loans 1881-85, worth £5,600. These are relatively small sums and do not appear to indicate that the bank was following a potentially dangerous lending policy. The distribution of remaining total values by size appears to be relatively even, confirming the bank's cautious approach, and contrasts with the far less restrained lending practices of the Sheffield Union.

Therefore, whereas the Sheffield & Hallamshire gave only a relatively small amount of loans, both in terms of size and total value, the Sheffield Union granted loans of far greater value to its industrial customers and, consequently, appears to have played a more important role in the finance of manufacturing industry in Sheffield during the period. Despite the finance from the Sheffield Union being spread over only a few companies, it still represented a considerable source of funds for local industry.

Chart 3.19: Total value of credits advanced by the Sheffield & Hallamshire distributed by credit size



Source: MBA, SHB, BDM, AM 6-15

The time periods for the extensions of these credits was not usually specified in the Minutes, which makes the duration of industrial lending difficult to analyse. The time period of a loan is only sometimes referred to in the Minutes. Such instances tend to be concerned with short-term credits and were expressed merely as 'for a short time'. There are a several examples of accommodation being granted for periods between one week and one year, but they do not provide sufficient data for proper analysis.

In an attempt to analysis the duration of loans, the credits granted by the Sheffield Union to companies have been divided into single or multiple (two or more) loans. Single instances of accommodation are those referred to in the Minutes only once: such single loans amount to 140 out of the 572 examined. However, the rest of the bank's customers received several loans, or overdraft extensions, referred to here as multiple loans. There were 110 companies that receive such multiple loans: in this way, capital was provided for medium and long periods of time. For example, Craven Bros., railway wagon builders, were granted credit eight times between 1861 and 1883 (22 years), the amount stipulated totalling £41,250.[147] Joseph Armstrong & Co. were awarded credits amounting to £40,250 over a period of 15 years (1873-81)[148] and Austin & Dobson were awarded £8,500 over 20 years (1864-84).[149] The maximum period over which credit was extended was 29 years, during which S & J Kitchen & Co., cutlery manufacturers received three loans totalling £4,150.[150]

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147 MBA: SUB, BDM, AD 3, 24 Jul. 1861, 10 Apr. 1867,18 Aug. 1869, AD 4, 8 Mar. 1877, 12 Jul. 1877, AD 5, 30 Nov. 1882, 11 Dec. 1882, 13 Dec. 1883.

148 *ibid.*, AD 3, 4 Mar. 1873, AD 4, 10 Aug. 187619 Oct. 1876, 18 Jan. 1877, 22 Mar. 1877, 3 May 1877, 31 May 1877, 6 Jul. 1877, 30 Aug. 1877, 29 Nov. 1877, 7 Jan. 1878, 19 Sep. 1878, 10 Oct. 1878, 19 Dec. 1878, AD 5, 29 May 1879, 11 Sep. 1879, 13 Nov., 1879, 19 Feb. 1880, 8 Apr. 1880, 22 Jul. 1880, 24 Nov. 1881.

149 *ibid.*, AD 3, 16 Nov. 1864, 31 Jul. 1867, AD 5, 17 Nov. 1881, 8 Mar. 1883, 26 Apr. 1883,17 Jul. 1884.

150 *ibid.*, AD 2, 5 Apr. 1855, AD 3, 8 Oct. 1872, AD 5, 2 Oct. 1884.

Conclusions

As stated at the beginning of this chapter, the illustrations of bank lending drawn here are fragmentary, but some general conclusions can be indicated in outline.

The two banks did not fulfil all of the local manufacturing industry's credit needs, but they certainly provided some degree of finance. Their main role was as a supplier of short and medium term funds. The majority of credit extended, as examined here,[151] took the form of overdrafts for small amounts. Some long-term, large-scale loans were provided, but only to a few companies. In addition the number of advances granted annually by the Sheffield Union increased from 1855 to 1885, and particularly from 1870. These findings conform broadly with the national patterns that Collins, Cameron,[152] and Cottrell have discovered in their respective work.

The number of companies seeking finance from banks over the period under examination obviously increased. The Sheffield Union appears to have been able to meet the demand for such finance from industry at the beginning of the period but, as Tables 3.3 and 3.4 show, the bank became increasingly 'overlent', and therefore unstable, during the 1870s and 1880s. The bank seems to have been unable to cope with the growing demand of manufacturing concerns' increase in size and capital requirements. It also encountered the problem of lending large sums to just a few companies, which created further instability. It therefore appears that the structure of the bank fitted the local structure of industry in the mid-1850s but by the 1880s there was a growing mismatch between the two. By the closing decades of the nineteenth century the Sheffield Union was unable to serve the needs of

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151 Discounts have had to be excluded due to the unavailability of sources.

152 Cameron, Rondo E. (ed.) *Banking in the Early Stages of Industrialisation* (1967).

large industrial concerns based on new technology without putting itself in danger. The Sheffield & Hallamshire was also 'overlent' throughout the period but, unlike the Sheffield Union, it managed to gain greater liquidity by 1880.

However, as emphasised in Chapter 2, it was the minority of firms that were increasing in scale and capital requirement: the majority of manufacturing establishments in the Sheffield region operated on a small- or medium-sized scale, even by 1885. Thus, it appears that a minority of large companies, many of whom took advantage of the new opportunities opened up by limited liability, were the cause of the Sheffield Union's difficulty in coping with the demands for finance from industry. Such difficulties would probably not have arisen during the early 1870s boom in iron and steel - the plough-back of company profits being sufficient to fund expansion and the acquisition of new technology - but with the consequent down turn in the economy, especially 1874-79, companies would have turned increasingly to their bankers for financial support. Therefore, the growing 'mis-match' between the financial requirements of manufacturing companies and the bank's ability to meet their demands involved large-scale concerns and probably occurred to an increasing degree after the mid-1870s.

The Sheffield & Hallamshire appears not to have been an 'industrial' bank, despite being the largest local institution. This bank operated industrial accounts on which advances were provided, but the volume of such credit provision cannot be measured from the data collected for this chapter. The present survey of the new accounts of the bank shows that such accounts were mainly of customers outside the manufacturing sector. Thus, the Sheffield & Hallamshire appears to have had a broad base of clients and did not let industry dominate its business. The accounts that were opened with firms in the metal manufacturing, engineering, coal, and secondary metal

trades appear to have been managed cautiously by the bank. Credits extended on these accounts were small in number and value, and large-scale loans were not provided. In addition, the number of loans granted in the period 1851-55 was greater than 1881-85, conforming to what might be expected for new accounts in two contrasting periods of economic prosperity.

The case of the Sheffield & Hallamshire corresponds with the view that provincial banks did not provide important amounts of capital to local industry in the nineteenth century, but rather that they tended to operate a very cautious policy when they did venture into lending to the manufacturing sector, and that the majority of funding for industry came from the plough-back of profits. The bank did have some very large industrial customers, such as Newton Chambers & Co., to whom it lent considerable sums of money, but such accounts formed the minority of the bank's customers.[153] However, the results from the Sheffield & Hallamshire Bank contrast markedly with those found from the Sheffield Union Bank over the same period. The majority of the Sheffield Union's customers were industrial, mainly from the metal manufacturing and related industries. This bank provided both small-scale and large scale loans and operated a relatively lenient policy regarding the securing of accommodation. In this way the bank provided a considerable amount of accommodation for manufacturing in the area and certainly does not conform with the view of a provincial bank conservative in its approach to lending to industrial sectors.

Also important to consider are the close links between banks and industry, as has been demonstrated by the existence of inter-locking directorships, the

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153 Moreover, although Newton Chambers & Co. received considerable amounts of credit from the Sheffield & Hallamshire and on very lenient terms, the firm was large and successful and would therefore probably be classified as a 'safe' account on which to lend.

ownership of local firms by bank directors, and the purchase of shares in a variety of local manufacturing concerns by the banks' directors. The directors were the men who actually formulated bank policy and therefore their industrial knowledge and links were of vital importance to the decisions made concerning the provision of finance by the two banks to local manufacturers. The impact of bank/industry links could have had both negative and positive effects on the lending policies of the Sheffield Union and the Sheffield & Hallamshire. It would have been advantageous for bank board members to have had a good knowledge of local industry on which to assess a company's credit-worthiness and also to attract new customers. Conversely, intimate links could have been disadvantageous to a bank: manufacturing customers in which bank directors were involved could have received preferential treatment, become highly indebted to the bank and thus create illiquidity and instability for the financial institution. Moreover, if the bank directors were not dispassionate in their judgements, negative decisions could have been made against rival companies. However, in the cases of the Sheffield Union and the Sheffield & Hallamshire, despite the close alliances between the directors and local industry, impartiality when dealing with manufacturing customers as a whole and, more importantly, those in which directors were involved, appears to have been maintained. Thus, overall, it appears that the advantages of bank board members possessing a good knowledge of local industry outweighed the dangers such ties could have brought.

Therefore, what existed in provincial banking in Sheffield in the mid-nineteenth century was a mixed system of banking whereby banks did not fulfil all of the local manufacturing industry's needs, but certainly did provide a considerable amount of finance. This financial provision was carried out at very different rates by the individual banks and their branches

in the area. Moreover, within this system of financial provision there existed very close links between banks and local manufacturing industry.

In examining the role of provincial banks in the provision of finance to Sheffield's manufacturing industry, the adoption of limited liability by large iron steel, engineering and coal firms has been touched upon. This issue has also been mentioned when considering the size and structure of industry in the region. Therefore, the next Chapter will examine the adoption of this new form of company organisation in the Sheffield region and its use as a method of financial provision for firms in the area.

CHAPTER 4: INCORPORATION AND SHEFFIELD'S TRADES, 1855-1885

Following the liberalisation of company law in 1855 and 1856, limited liability became increasingly adopted in Great Britain as a form of company organisation. With limited liability, a company's shareholders were only liable for its debts to the extent of the nominal value of their shareholdings, and, furthermore, each shareholder could freely transfer his/her holding in such a company without reference to any other shareholder. This method of company organisation also potentially allowed a firm to raise capital publicly. However, despite the ruling permissive code of company law from 1856, the use made of limited liability by English manufacturing concerns was not very widespread before 1885. Within industry there was some concentration of conversions in the cotton, iron, steel, and coal sectors, while, more rapidly and generally, the number of joint stock companies only increased from the 1880s. In addition, conversion to the limited form was not always accompanied by public appeals for capital: in an effort to prevent the divorce of ownership from management, shares were often retained by those previously in control of the firm and/or their friends and relatives.

This chapter is concerned with an analysis of the importance, nature and extent of limited liability as a form of financial organisation within the manufacturing industry of Sheffield and its region during the period from 1855 to 1885. The aim is to ascertain whether the nascent trend towards more 'public' capital markets, that was developing in England from 1855 and causing some lessening of the reliance on 'auto-finance' (the plough back of profits), also occurred in this region. The focus is on the main trades of this area: steel manufacture, secondary metals, engineering and coal mining. After examining the emergence of joint stock limited liability manufacturing companies in this area, comparisons will be made with national trends.

Unfortunately, it is very difficult to ascertain exactly the number of companies that adopted limited liability during this period in the Sheffield region. It is possible to establish the number of companies quoted on the London Stock Exchange. However, many companies, both in this survey and in other industrial regions outside the metropolis, were only quoted on the provincial stock exchanges. In his work, Thomas has pointed out that 'unfortunately it is not possible to quantify the development of the home industrial share market of the provincial stock exchanges'.[1]

Thomas provides some estimates for company registrations in Sheffield: 25 iron and steel concerns were incorporated between 1863 and 1871, another 25 during the boom of 1872-3,[2] and by the mid-1880s Sheffield had a total of 44 limited companies with a paid up capital of £12 million.[3] Thomas also reviewed other areas of provincial activity in industrial shares, such as Liverpool's specialisation in insurance and shipping companies; Newcastle's active market in iron, steel and shipping companies; Chadwick's iron, steel and engineering promotions in Manchester and Sheffield; and the market for shares in railway carriage and wagon companies that existed in Birmingham and Bristol. Yet he was not able to quantify the number of such company quotations. It is therefore difficult to make comparisons regarding the adoption of limited liability in Sheffield relative to national developments or trends in other industrial regions and/or cities. However, the number of cotton spinning company registrations has been established for Oldham, the town that has become well known for its early adoption of limited liability. Thomas points out that 'by the mid-1880s Sheffield, along with Oldham, was

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1 Thomas, W. A. *The Provincial Stock Exchanges* (1973) [hereafter Thomas, *Provincial Exchanges...*] p.114.

2 Thomas, *Provincial Exchanges ...*, p.123.

3 *Accountant*, 1887, quoted by Thomas, *ibid.*, p.124.

one of the two most important centres of joint stock in the country'.[4] Therefore, it is important to make comparisons between the two locations.

In his work on the nineteenth century English cotton industry, Farnie examined in considerable detail the emergence of the 'Oldham Limiteds'. He found that 15 cotton spinning limited companies were registered by 1872; that a further 15 were incorporated during the years 1872-3; and that in the boom experienced by the industry between 1873 and 1875, 70 'limiteds' were established.[5] Farnie noted that:

> In sum Oldham formed between 1858 and 1896 154 companies in the cotton industry, or more than twice as many as the 76 registered in Bolton, the second largest centre of company registration.[6]

Of these 154 limited companies, 100 were established during 1868-75.[7] This can be compared directly with the 90 'Sheffield' companies identified for this study[8] - the number of registrations being numerous but not as substantial as those located in Oldham. With such comparisons borne in mind, the 'Sheffield' registrations will be reviewed in detail.

The companies from this particular study were initially selected by viewing the summary Parliamentary Papers concerned with London registrations of

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4 *ibid.*

5 Farnie, D. A. *The English Cotton Industry and the World Market, 1815-1896* (Oxford 1879) [hereafter Farnie, *English Cotton ...*], pp.249-50.

6 *ibid.*, p. 251.

7 *ibid.*

8 The 90 limited companies in this survey are those for which I was able to locate the necessary Board of Trade papers. Other limited companies were incorporated in the region during this period, such as William Jessop & Co. Ltd., George Wostenholme & Co. Ltd., John Brown & Co. Ltd., and Samuel Fox & Co. Ltd., but I was unable to trace the files for these concerns. Therefore, the figure of 90 does not represent the total number of firms incorporated in the region between 1855 and 1885.

limited liability companies.[9] The majority of limited companies were registered in London and, due to the accessibility of the relevant information, they have been used in this work. Once the titles of the companies in the defined region[10] had been collected, the returns of the summary of capital and shares made annually to the Registrar of Joint Stock Companies by each company were then traced at the Public Record Office (PRO) at Kew. Firstly, the unique registration numbers assigned to each firm had to be established in order to examine the company's documents. This was undertaken by consulting one of three printed indexes for limited liability companies held at the PRO. If the company number could not be located from this source, the PRO list of company files, i.e. the box numbers assigned on dissolution, was then consulted. This list is arranged chronologically. Once the companies' files had been found, their details were collected. Whilst searching in the indexes and lists, further companies were identified for this study, either by their title referring to a location in the region, or by being similar to a company already identified in the Parliamentary Papers. Ninety companies from Sheffield and its region for the period 1855 to 1885 were identified for analysis.

The annual returns of shareholders for the companies can be found in the PRO, Board of Trade papers, file series 31 (BT31). These usually contain the following documents: Memorandum and Articles of Association containing particulars of a company's constitution, as well as any amendment; copy of the Certificate of Incorporation; statement of the nominal share capital; location of registered office and a register of directors; annual returns,

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9 *British Parliamentary Papers*, 'Returns of the names, objects, places of business, date of registration, nominal capital, number of shares etc. of all joint stock companies formed or registered ...': 1864, LVIII; 1866, LXVI; 1867, LXIV; 1867-68, LIV; 1868-9, LVI; 1874, LXII; 1875, LXXI; 1876, LXVIII; 1877, LXXVI; 1878, LXVIII; 1878-80, LXVII; 1881, LXXXIII; 1881-82, LXIV; 1882-83, LXIV; 1884, LXXII; 1884-85, LXXI.

10 See introduction for the definition of the region used for the research.

containing details of share capital and debentures and a list of shareholders, to be filed with the Registrar within 42 days of its annual general meeting; and liquidation and dissolution documents, including a Return of the Final Winding-up Meeting, a copy of Court Order for compulsory winding-up, or a certificate of notice in the *London Gazette*, as appropriate.

The basis of this chapter is the analysis of the wealth of data provided by these Board of Trade files. The purpose is to show the number of limited companies formed in the Sheffield region throughout the period, their different types, how long they survived, and how much capital was involved in financing them. In particular, the shares and shareholders of these companies will be examined in detail, involving consideration of the character and denomination of the shares used by the limited companies, the geographical and social composition of the investors who took up these shares, and the occurrence of multiple shareholders in the Sheffield companies. The character and denomination of shares used by the limited companies are related to the social and geographical composition of shareholders as they, to a certain extent, determined the type of person prepared to subscribe to a company. Shares with a low nominal value were within the reach of many middle-class investors whereas those with a high denomination were more likely to have been taken up by those with more substantial financial means. Furthermore, those shares which had a small proportion of their nominal value called up were 'risky', due to the considerable amount of unpaid liability that could be incurred by a shareholder. This again may have restricted the type of investor to which such shares appealed. Those looking for a low-risk, secure form of investment would probably have found such shares most unattractive. From the shareholders addresses, the existence of a local, regional, or national network of capital supply can be identified from this data. Moreover, from

the description of shareholders occupations the social composition of investors can also be distinguished.

The companies are examined in detail below, in terms of - 'Birth'; 'Duration and Death'; Capital; Shares; and Shareholders. The section of this chapter concerning 'Birth' includes analysis of the industrial activities of the firms under examination; the years in which they were incorporated; their locations; reasons for their conversion to limited liability; promoters involved in these conversions; the initial subscribers to the firms; and the quotations of these enterprises on the Sheffield and London Stock Exchanges. The section of this chapter examining the capital of the 90 'Sheffield' companies includes analysis of nominal and subscribed capital; the character and denomination of shares; and calls upon shares. Finally, the survey of shareholders includes a geographical and social analysis, the latter being indicated by occupation, and an examination of multiple shareholders.

'Birth': Basic Company Characteristics and Years of Incorporation

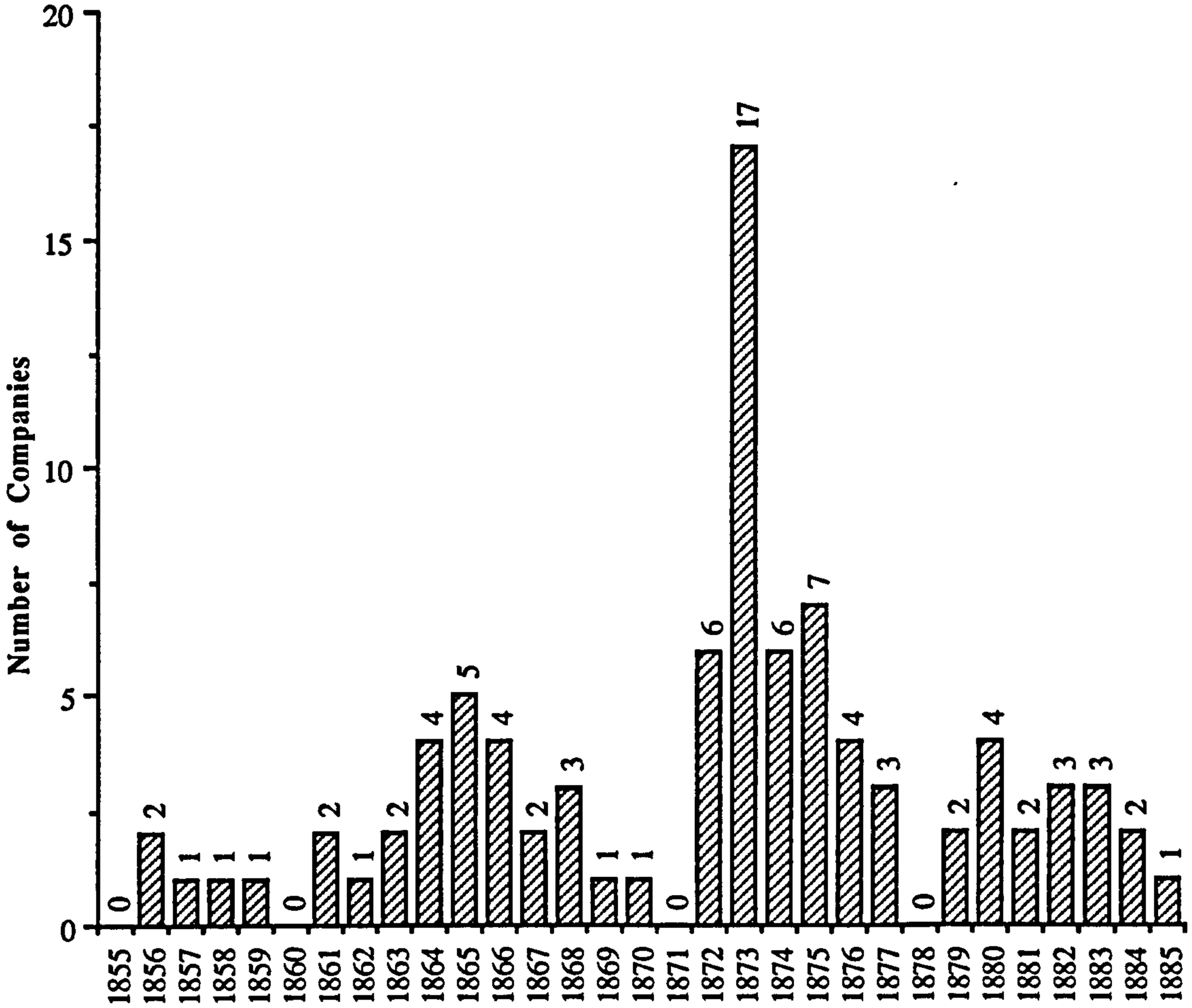
The basic characteristics of the 90 'Sheffield' companies are displayed in Table 4.1.

Limited liability companies came into existence through the grant of a Certificate of Incorporation by the Registrar of Joint Stock Companies, therefore, analysing the birth of such companies is straightforward.

Table 4.1: Characteristics of the 'Sheffield' companies, 1855-1885	
Number of Companies	90
Number of Conversions	76 (84.44%)
Number of New companies	14 (15.55%)
Number of 'Abortive' Companies	4 (4.44%)
Number of 'Live' companies	5 (5.55%)
Industrial sector of companies	
Tools	1
Blacksmith	1
Transport	1
Cutlery	2
Engineering	3
Other Metals	3
Steel & Engineering	3
Coal/Coke & Iron	4
Metal Plating	5
Iron	10
Iron & Steel	13
Steel	13
Coal	31

Chart 4.1 shows the annual registrations of the Sheffield companies being considered, and includes the four 'abortive' companies.

Chart 4.1: The number of limited companies registered annually in the Sheffield region 1855-1885

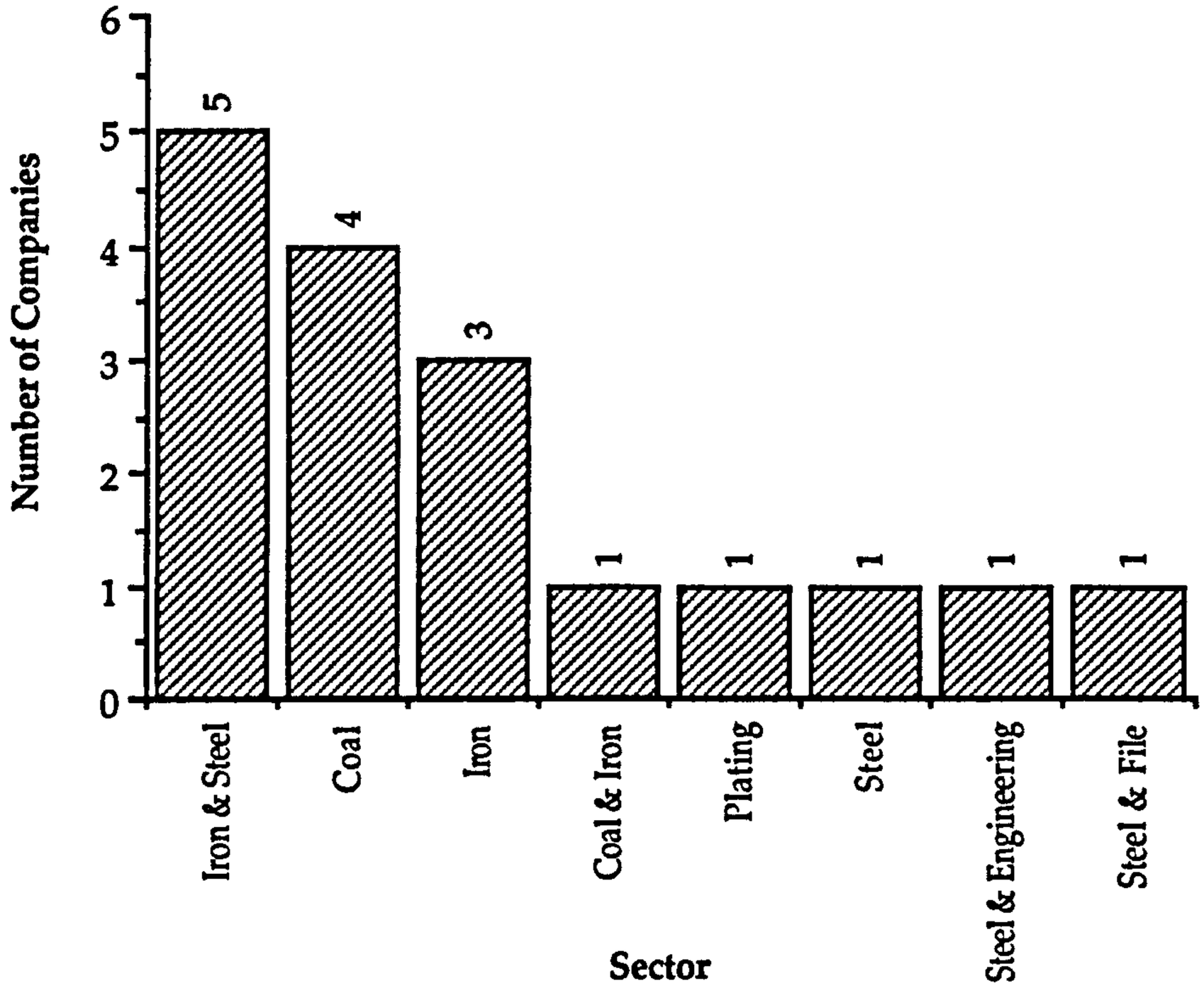


The number of companies incorporated annually during this period remained relatively constant - between nil and five incorporations per annum - in spite of upturns in registrations in the mid-1860s and, more noticeably, in the early 1870s, following upturns in the trade cycle. The exceptional year within the overall period was 1873, when more than double the number of limited liability company registrations occurred - 17. Alongside this peak year of 1873, six registrations took place in both 1872 and 1874, and seven in 1875. The marked increase in company registrations during the early 1870s was due to the cyclical boom experienced then by the iron and steel industries. The 1873 peak in registrations does appear extreme, even for an area where industry was experiencing a boom, but the small size

of the sample exaggerates the 1873 peak. This boom is clearly illustrated in Chart 2.1, Chapter 2 (page 40), which displays the price of common iron bars throughout this period and in which the peak in 1873 stands out.

The industrial sectors where the Sheffield companies were incorporated in 1873 is also important to consider. Chart 4.2 displays the types of companies that were incorporated in 1873 and confirms that the majority of registrations were carried out by firms involved in some capacity in the production of steel, or iron, or both metals - 13 out of 17 registrations.

Chart 4.2: Companies in the Sheffield area registered in 1873 by industrial sector



Many firms would, presumably, have been motivated to expand in order to meet demand and achieve higher profits. Successful expansion would have required investment in new equipment and technology and, consequently, higher capital inputs. The capital requirements of iron and steel firms would be particularly high due to the costs of technology involved, especially the

advantages of either the Bessemer or Open Hearth process, and the larger scale on which many such companies were coming to operate. Therefore, the impetus behind the boom in company formations in the Sheffield region in the early 1870s, and especially in 1873, appears to have been the requirement for capital financing by iron and steel firms in order to allow expansion. The plough back of company profits appears not to have been sufficient to fund increased production, in terms of either expansion in the size of operations or investment in new technology.

Conversely, the slump experienced by these industries during the late 1870s (see Chart 2.1) corresponds with a decline in the number of company registrations - three in 1877, nil in 1878 and two in 1879. This would presumably have been a time for vendors to attempt to sell a business. However, the adoption of limited liability does not appear to have been widely used as a method for raising capital during periods of financial difficulties.[11] Motivations behind company incorporations will be explored further below.

'Birth': Locations of the companies

Registration for limited liability required a company to declare the address of its 'head office'. Chart 4.3 shows the location of registered offices of the 90 'Sheffield' companies.

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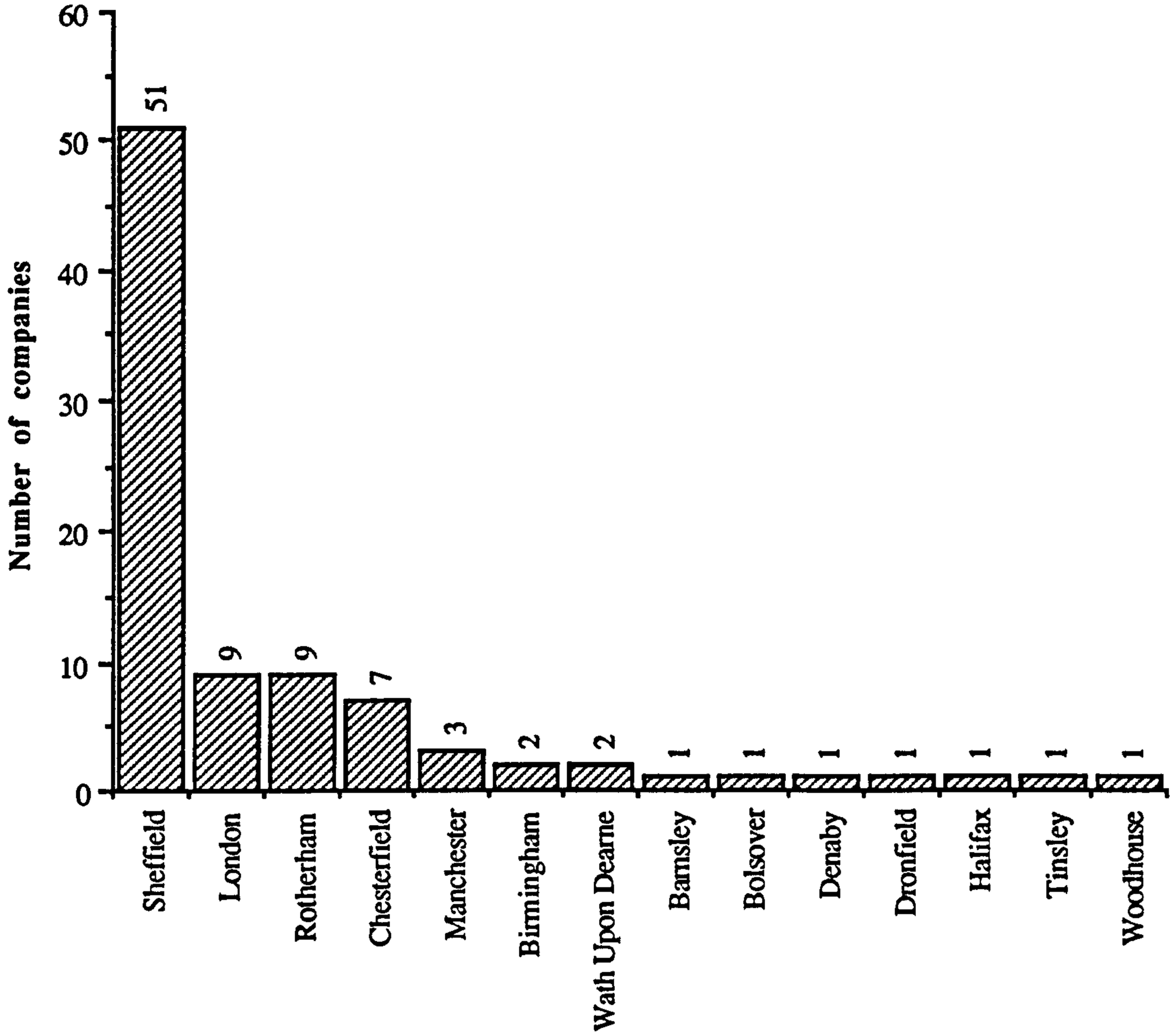
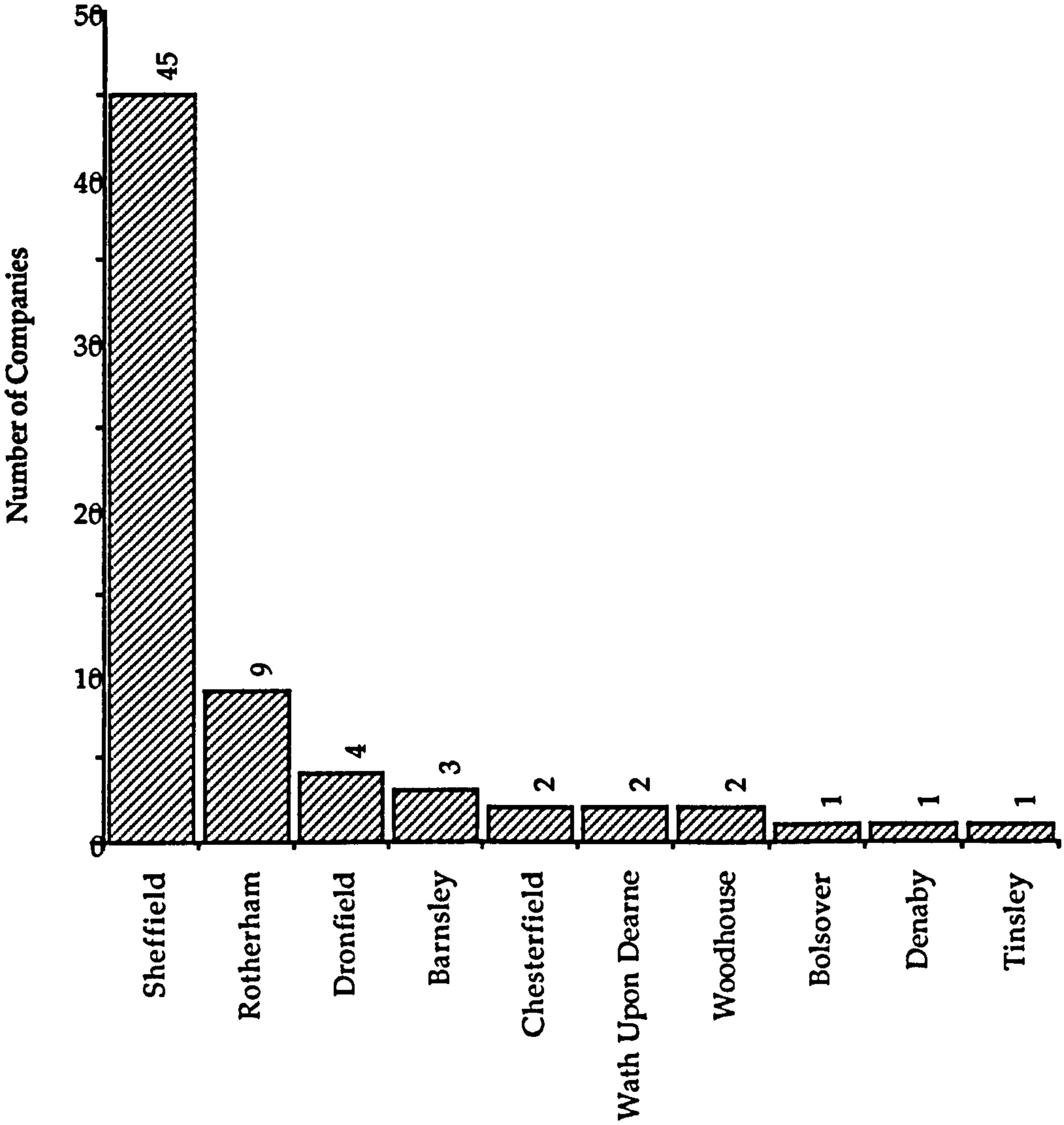
11 Payne, Peter L. *The Early Scottish Limited Companies 1856-1895: An historical and analytical survey* (Edinburgh 1980) [hereafter Payne, *Early Scottish Limited Companies* ...], p.22.

Chart 4.3: Location of registered offices of the companies surveyed



The location of the registered office did not always correspond with that of a company's operations and, thus, some companies had 'legal' offices in London, Manchester and Birmingham. The criterion applied for selecting the 'Sheffield' companies was the location of their works, rather than of their registered offices. Companies with registered offices outside the Sheffield region are those which were discovered whilst further searching in the PRO indexes and file series. Chart 4.4 shows the actual geographical locations of the companies operations; exactly half of the companies works were located in Sheffield.

Chart 4.4: Location of the company operations



'Birth': Reasons for conversion to limited liability

Reasons for the adoption of limited liability by an industrial undertaking are rather more difficult to analyse as such information was not systematically recorded in the Registrar's papers. However, information is available for some enterprises concerning both the reasons for taking up limited liability, and the methods by which the company was established.

The number of companies that were newly created at the time of their registration as a limited concern is 14 (15.5 per cent).[12] Such ventures were

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12 Five of these 'new' companies were coal firms (36 %).

firms that did not previously exist in any form and came into existence with registration. Having been incorporated, works for the company were purchased, or constructed, using funds raised from the first sale of shares and also, most probably, further investment from the company's directors and major shareholders. Therefore, such limited companies were 'new' concerns in the real sense of the word. Very little can be ascertained from the Board of Trade files concerning the reasons for forming such firms. The majority of 'Sheffield' companies were conversions of existing firms to limited liability status (84.4 per cent). Often the details of conversion only indicate that an existing concern had been incorporated, retaining its old name, and no hint given for the motives behind the change. Details are only provided in few cases and, even though such information was intended for consumption by the Registrar, it does provide further illumination of the motives of mid-nineteenth century entrepreneurs in the region.

With the 31 'Sheffield' limited liability coal companies, incorporation took place usually in order to raise the necessary funds to buy existing collieries, and/or land on which new mines could be sunk. During the period under consideration, the raising of coal also involved greater size and depth of mines and the adoption of new technologies related to these trends. These general developments required financing. Moreover, collieries needed resources for working capital, especially during the early stages of their operation. Five of the 31 'Sheffield' coal companies, were new concerns, with the majority incorporated in the Sheffield region being conversions (84 per cent). These findings conform with Church's study of the national coal industry: he stated that 'the rate at which joint-stock incorporation occurred

was slow and for many years scarcely affected the formation of new coal mining enterprises'.[13]

Coal-raising iron companies did, according to Church, figure in the conversions of the mid-1860s and of the boom of the early 1870s.[14] However, he asserts that the majority of such iron and coal companies:

> were conversions in which the vendors took a relatively large proportion of the issued capital, which is why the growth in the number of companies did not necessarily imply a proportionate expansion of real investment expenditure before 1913.[15]

Mitchell discovered that in 1870 collieries owned by joint stock companies constituted a small, but important, proportion of the industry. Public colliery companies in Yorkshire owned approximately six per cent of mines in each of the country's coalfields and, similarly, private companies had a comparable share.[16]

In industries other than mining, some companies were converted in order to raise finance to pay off debts incurred by the existing operation. In 1873 the Neepsend Rolling Mills Co. Ltd. was registered as a limited company to discharge debts owed to the Sheffield Banking Company.[17] The Midland Iron Co. Ltd. was converted in 1865 in order to raise money to pay off its creditors - the iron and steel manufacturers Marriott & Atkinson.[18] Generally, in these instances, the 'new' company took over the liabilities of such troubled firms.

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13 Church, Roy *The History of the British Coal Industry*, Volume III, *1830-1913: Victorian Pre-eminence* (Oxford 1986) [hereafter Church, *History of the British Coal Industry*...] p.133.

14 *ibid.*

15 *ibid.*

16 Mitchell, B. R. *Economic Development of the British Coal Industry* (Cambridge 1984) [hereafter Mitchell, *British Coal* ...], pp.64-5.

17 Public Record Office, Kew, London [hereafter PRO]: Board of Trade Papers [hereafter BT], file series 31, company number 1824/7071, Articles of Association.

18 PRO: BT31/1073/1961C, Memorandum and Articles of Association.

In the case of three 'Sheffield' companies it was stated that the adoption of limited liability was primarily in order to finance the purchase of certain patents, or inventions. Stanley's Patent Furnace Co. Ltd was formed in 1874 and within its Memorandum of Association declared that its objects were to purchase 'five letters patent duty granted to John Martin Stanley, of Sheffield, Iron founder' and to carry on 'as Iron and Steel Merchants, Iron and Steel Manufacturers and merchants of engines, boilers etc.'.[19] It is not clear whether the company either was a new venture specifically created to exploit Stanley's patents, or was the conversion of an existing operation. In 1876 the Universal Railway Carriage Spring Co. Ltd was formed by conversion, with the object of:

> The immediate acquisition of the Patent granted to Perry Green Gardiner ... dated January 3rd, 1873, for the United Kingdom, for the manufacture and improvement in Railway Springs and all improvements thereof, and the acquisition of any other patents for Railway purposes.[20]

It was even stated that, if the company was successful, patents would be taken out in Austria, Bavaria, Belgium, and France. The acquisition and working of the invention of Joseph Betts Bradshaw for 'Improvements in Rolling Mills for the Manufacture of Merchantable Iron and Steel' was the impetus behind converting the Rotherwood Iron & Steel Co. in 1880.[21]

The requirement of capital for expansion was another factor stated in Memoranda of Association that had led existing owners to convert their firms. In particular, the experience of two partnerships illustrate this policy of incorporation for growth. The Memorandum of Association for the Saville Street Foundry Co. Ltd. included an agreement between the company's

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19 PRO: BT31/1952/8219, Memorandum of Association.

20 PRO: BT31/2201/10334, Memorandum of Association.

21 PRO: BT31/2664/14190, Memorandum of Association.

owners and the Duke of Norfolk for the purchase of the Midland Iron Works, built on land belonging to the Duke.[22] One of the stated objects of Steel, Peech & Seeman Ltd., on its conversion in 1885, was to acquire the lease of the Minerva Works in Sheffield.[23] Both these companies appear to have required additional premises in order to expand their operations.

The failure of one company could provide the means of expansion for another. Joseph Peace & Co. Ltd. was incorporated in 1868 and wound up in 1873, when both The Sheffield Steel & Manufacturing Co. and Neepsend Rolling Mills Co. took up limited liability and purchased the various premises of the defunct company.[24]

Expansion by merger was also a motivation behind incorporation. Yates Haywood & Co. merged with the Rotherham Foundry Co. in 1865 in order to form Yates Haywood & Co. & The Rotherham Foundry Co. Ltd.[25] In 1873 the Sheffield Nickel & Silver Plate Co. Ltd. was established out of four existing companies - John Brook & Son, William Mammatt & Co., John Unwin & Son, and Unwin & Rodgers.[26] (The latter two companies would appear to possibly have had a family connection.) The Albion Steel & Wire Co. Ltd. was converted in 1872 from two existing partnerships - the Albion Steel & Wire Co. and George Gray & Co.[27]

Alongside the conversion of partnerships, dissolved limited liability firms were reconstituted. The 90 'Sheffield' concerns being considered are not, in fact, all separate companies as some were merely reconstructions of dissolved

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22 PRO: BT31/1816/7002, Memorandum of Association.

23 PRO: BT31/3574/21913, Memorandum of Association.

24 PRO: BT31/1426/4162, Memorandum and Articles of Association.

25 PRO: BT31/2533/13127, Memorandum and Articles of Association.

26 PRO: BT31/1871/7421, Memorandum and Articles of Association.

27 PRO: BT31/1779/6713, Memorandum and Articles of Association.

companies. For example, Brown, Bayley & Dixon Ltd., registered in 1882, was the re-formation of a limited company of the same name which had been incorporated in 1873.[28] The first Brown Bayley & Dixon Ltd. was eventually dissolved in 1884, after the resolution to wind up the company had been agreed in 1881.[29] The new Brown Bayley & Dixon Ltd. was not to fare much better than its predecessor as the resolution to wind up this firm was passed in 1888 and the company was dissolved in 1891.[30] Other limited liability companies were constructed in this way. The Clogau Mining Co. Ltd., registered in 1880, was a reincarnation of the Clogau Co. Ltd., incorporated in 1874 and wound up in 1880.[31] In 1866 the Chesterfield & Midland Silkstone Colliery Co. Ltd. (incorporated in 1861) was reformed as the New Midland Colliery Co. Ltd.[32] The latter venture was even less successful than the first as it proved to be an 'abortive' company - not even commencing operations. The New Dronfield Silkstone Coal Co. Ltd. (1881)[33] and the New Midland Mining Co. Ltd. (1858)[34] were merely reconstitutions of corporate colliery companies, the same name being used but with the addition of the prefix 'New'.[35] Similarly, the New Silkstone Colliery Co. Ltd. (1875) was created

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28 PRO: BT31/1843/7211 and BT31/2957/16577, Memorandum of Association. The original Brown Bayley & Dixon was, in fact converted from The Sheffield Forge & Rolling Co. Ltd. I was unable to trace the documents for the latter firm despite extensive searches in both the PRO and Companies House.

29 PRO: BT31/1843/7211, Extraordinary Resolution to wind up the company voluntarily, 7 January 1881 and the final wind up meeting held on 29 July 1884.

30 PRO: BT31/2957/16577, agreement to wind up the company voluntarily made at an Extraordinary General Meeting held on 7 August 1888 and the final winding up meeting was held on 24 March 1891.

31 PRO: BT31/2681/14356 and BT31/1980/8462.

32 PRO: BT31/581/2411 and BT31/1267/3110.

33 PRO: BT31/2816/15438.

34 PRO: BT31/325/1143.

35 The original Dronfield Silkstone Coal Co. Ltd. was incorporated in 1867 and wound up in 1879 and the Midland Mining Co. Ltd. was registered in 1857 but dissolved in 1858. The latter was not, however, an abortive company in the sense that it did submit an

from the remains of the South Yorkshire Coal & Iron Co. Ltd. (1873), the new firm apparently specialising in coal mining, rather than mining coal and iron ore, in an attempt to succeed.[36] Therefore, out of the 90 companies being considered, six are reconstructions, with both the original firms and their resurrected operations being included in the review.[37] In effect, the number of 'Sheffield' companies is actually 84 rather than 90, over the period 1855 to 1885.

A further reason for the adoption of limited liability was considered by Thomas. He noted that the *Economist* referred to iron company shares in Sheffield, commenting that they 'grew suddenly in notoriety in 1872-3 when dozens of Yorkshire iron masters, seeing their opportunity, converted into public companies'.[38] Thomas stated that 'These conversions were made at a time of rapidly rising share prices permitting 'sales of private concerns at inflated prices'.[39]

Thus, it is possible that many vendors converted their firms to limited liability in order to profit from the buoyant financial conditions of the early 1870s.

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annual summary of capital and shares. Whether or not this company did, in fact, exist in terms of actually carry some form of operations, is not clear from the Board of Trade files.

36 PRO: BT31/2104/9512 and BT31/1864/7346

37 The first Brown, Bayley & Dixon Co. Ltd. was a reconstituted joint stock company, but the records for the original limited company could not be located and it is not, therefore, included in this survey.

38 *Economist*, April 19, 1884, p.480.

39 *ibid.*; Thomas, Provincial *Exchanges* ..., p.123.

Birth: Promoters of 'Sheffield' Companies

Having examined the numbers of, and reasons for, limited company registrations, those who were responsible for bringing these companies 'to life' will now be considered.

When a partnership was converted, a legal agreement was drawn up involving the vendors, the purchasers and/or the promoter of the company and this was sometimes included in the details of the documentation sent to the Registrar. Of the 90 'Sheffield' companies, 47 had agreements included within their articles of association. Such contracts were often very detailed and lengthy legal documents but sometimes brief affairs. When cursory, the agreements included the names, (and usually addresses and occupations) of the parties involved, and the amount to be paid and method of payment to the vendor. Payment was frequently made in fully, or partially, paid shares in the new concern, with any balance being met in cash, either as a lump sum or through instalments. (See Appendix, Table 4.59)

Examining the names of vendors, purchasers and promoters, where available, provides an interesting portrait of a group of capitalists/ entrepreneurs operating in the region. It is the initial step in identifying those involved in a network of capital provision for the regions industry.

When reviewing the names of vendors and promoters of companies adopting the limited liability form in the Sheffield region, the most striking feature was the recurrence of certain promoters' names. The three dominant promoters so identified were Alfred Allott, John Unwin Wing and David Chadwick, all accountants. Alfred Allott, from Sheffield, was the sole

promoter of eight companies[40] and a joint promoter of one other[41] - all were conversions of existing undertakings. Four of Allott's promotions took place in 1872, four in 1873 and one in 1874 - a very concentrated burst of activity, occurring during the boom years in the iron and steel industries (see Graph 2.1, Chapter 2). All the companies with which Allott was involved were iron or steel firms; eight in Sheffield and one in Rotherham. John Unwin Wing, also from Sheffield, was the promoter of seven companies - one in 1872, three in 1873, two in 1874 and one in 1876.[42] Again, all were conversions. Wing's period of promotions activity was also intense, although not as concentrated as that of Allott, and his promotions again coincide with the iron and steel boom of the early 1870s. Six of the companies were manufacturers and processors of iron, steel or other metals and metal goods, and one was a colliery. The mining enterprise was the only Wing venture located outside Yorkshire, being just over the county border on the Derbyshire coal field. Of the other Wing companies, four were located in Sheffield and two in Rotherham. Four companies were promoted by the Manchester accountant David Chadwick. These took place in 1864, 1865 and 1867 and involved iron, steel and engineering firms in Sheffield and Rotherham. Thus, the activities of the promoter who was based outside the region took place in the 1860s, in contrast to the local promotions of the 1870s, and one of his undertakings was not a conversion but a completely new venture.

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40 Albion Steel & Wire, Charlton Iron Works, Davy Bros., Hallamshire Steel & File, Hydes & Wigfull, Phoenix Bessemer Steel, Saville St Foundry & Engineering, and William Cooke.

41 Jarvis William Barber was the joint promoter of Henry Wilkinson & Co. Ltd. with Alfred Allott, and also joint promoter with W. B. Peat of the reconstituted Brown, Bayley & Dixon Co. Ltd. in 1882.

42 Cardigan Iron & Steel, G & J Brown, James Fairbrother Kelham Rolling Mills, Sheffield Nickel & Silver Plate, Tinsley Rolling Mills, and Whittington Silkstone colliery.

Who were these men that played such prominent role in the movement towards limited liability by manufacturing industry in the Sheffield region before 1885? Much has already been written about David Chadwick.[43] He was not only an accountant, with offices in both Manchester and London, but had been the Treasurer to the Corporation of Salford, a writer on urban living conditions and a statistician. He was involved in the creation of 47 limited companies, most importantly iron, steel and coal concerns, and was a forceful advocate of limited liability as a method of industrial organisation and finance. The backgrounds of John Unwin Wing and Alfred Allott are harder to discern. Alfred Allott is listed in the 1862 *White's Directory of Sheffield* as an accountant and general agent, having premises in High Street, Sheffield and a house in New Porter Street. Allott obviously progressed during the 1870s as in the 1879 *White's Sheffield District Directory* he is described as a partner in Allott, Hadfield, Kidner & Hawson, 'auditors, financial agents, and public accountants' and insurance agents, a firm with a London office. By then Allott's private residence was also located in London. John Unwin Wing is listed in the 1879 *White's Sheffield District Directory* as a partner in Wing, Wing & Co., 'accountants, auditors, etc.' of Prideaux Chambers, Sheffield and Princes Street, Bank, London. John Wing himself was also secretary to the Sheffield Wagon Co. Ltd. and resided in Abbeydale, a Sheffield suburb. In *Kelly's 1881 Directory of West Riding*, the accountancy practice had expanded to Wing, Wing, Lilly & Co. John Unwin Wing remained a partner and continued as accountant and Secretary to the Sheffield Wagon Co. Ltd. By the early 1880s he had moved his private residence to Totley Hall, Derbyshire. However, despite this seemingly more salubrious address, John Unwin Wing's career failed to develop smoothly thereafter. The minutes of the Board of directors of The Sheffield Union Banking Company show that on 27 July 1882 they were pressing for a new guarantor for the bank loan/

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43 Cottrell, *Industrial Finance* ..., pp.113-14, 153, 186, 187, 252 and idem. 'David Chadwick' in Jeremy, D. ed. *The Dictionary of Business Biography*, Vol.1, pp.625-633.

overdraft to the firm of R & J Harris, the company's previous guarantor being Mr John Unwin Wing 'who has been this day convicted at Leeds Assizes for felony'.[44] This must have been a major set back to the career of an accountant and company promoter; indeed, Wing did not promote any companies in the 1880s and no information has been found concerning him after this date.

The importance of such individuals in the region's industrial and financial networks is apparent by their share of Sheffield industrial companies - 22 per cent of the 90. Their significance is also illustrated by the volume of capital involved in the companies that they promoted, as shown in the Table 4.2. These three men taken together were responsible for the promotion of 20 companies with a combined nominal capital of £2,885,000. Chadwick promoted the fewest companies numerically but they involved the greatest volume of nominal capital. They were financially important individuals within the region during the 1860s and 1870s. In addition, their influence was important for the success, or failure, of the new limited companies, most particularly in the initial sale of their shares.

Table 4.2: Capital involved in promotions by Allott, Wing and Chadwick

Name	Number of companies	Total Nominal Capital (£)	Average Nominal Capital (£)
David Chadwick	4	1,655,000	108,875
Alfred Allot	9	795,000	72,333
John Unwin Wing	7	435,000	62,143

With the 1856 Act, the only major condition for a company to be granted limited liability status was the filing of a Memorandum of Association with the Registrar, signed by at least seven shareholders. The initial subscribers to the company needed only to take up one share, for which no minimum value was set and no money required to be subscribed. Company promoters

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44 Midland Bank Archives, London [hereafter MBA]: AD5, Sheffield Union Banking Company [hereafter SUB], Board of Directors Minutes [hereafter BDM], p.227.

were often signatories to a Memorandum of Association and Table 4.3 shows those companies where Allott, Wing and Chadwick were thereby initial subscribers.

Table 4.3: Initial Subscriptions of Allott, Wing and Chadwick

Promoter	Company	Year	No. of shares
Allott	Davy Bros.	1874	50
Allott	Phoenix Bessemer	1872	50
Allott	Brown Bayley & Dixon (original)	1873	1
Chadwick	Yorkshire Engine	1865	100
Wing	Whittington Silkstone Colliery Co.	1874	1
Wing	James Fairbrother	1876	1
Wing	G & J Brown	1872	2
Wing	Sheffield Nickel & Silver Plate	1873	20
Wing	Tinsley Rolling Mills	1874	20
Wing	Neepsend Rolling Mills	1873	75

Allott was an initial subscriber to just two of the companies he promoted and one other, where he played a more passive role. Wing made initial subscriptions to five out of his seven promotions and one further company. Yorkshire Engine Ltd. was the only company for which Chadwick acted as a signatory to the Memorandum of Association. This was a new venture, which Chadwick was instrumental in forming and in which he also held £9,000 vendors shares following registration (see below, Chapter 5).

In addition to initial subscription, the three promoters often owned shares in their prodigies, once a full allotment had been made, such shares being then potentially available on the open market. Table 4.4 shows the shareholdings of Allott, Wing and Chadwick in their companies following initial subscription and, therefore, gives some indication as to the extent of their interest once a company was established. These have been extracted from the first available annual return made to the Registrar of the summary of capital and shares of the company, following registration.

Table 4.4: Shareholdings of Allott, Chadwick and Wing					
Company	**Year**	**Type of Share**	**No. of shares**	**Capital subscribed by the promoter (£)**	**Promoters' subscribed capital as % of total subscribed capital per company**
Allott					
Whittington Freehold Colliery	1864	Ordinary	500	2,200	14.65
Midland Iron Co.	1865	Ordinary	160	1,280	6.40
Joseph Peace & Co.	1869	Ordinary	12	24	0.18
Albion Steel & Wire	1873	Ordinary	100	500	0.86
Brown Bayley & Dixon	1873	Ordinary	50	1,000	0.64
Charlton Iron Works	1873	Ordinary	20	550	0.81
Davy Bros.	1873	Ordinary	50	750	2.50
Henry Wilkinson	1873	Ordinary	20	100	0.47
Hydes & Wigfull	1873	Ordinary	50	188	1.48
Phoenix Bessemer	1873	Ordinary	50	2,000	2.50
William Cooke	1873	Ordinary	50	750	1.11
David Chadwick					
Charles Cammell	1865	Vendors	180	9,000	2.29
Parkgate Iron	1865	Ordinary	100	2,000	3.33
Yorkshire Engine	1865	Ordinary	100	1,500	8.06
John Unwin Wing					
James Fairbrother	1869	Ordinary	100	100	6.67
G & J Brown	1873	Ordinary	2	90	0.19
Sheffield Nickel & Silver Plate	1873	Ordinary	20	80	0.84
Sheffield Steel & Manufacturing Co.	1874	Ordinary	25	150	1.25
Tinsley Rolling Mills	1874	Ordinary	70	245	5.51
Whittington Silkstone Colliery	1874	Vendors	247	2,470	4.94

Chadwick subscribed a total of £12,500 to the three companies he promoted, a sizeable amount of personal capital. However, £9,000 of this was invested in

vendors shares of Yorkshire Engine Co. Ltd., an indication of Chadwick's commitment to the success of this new company.[45]

A relatively large amount of capital was also subscribed by Alfred Allott - £4,838 to seven out of the nine companies he promoted - but, in addition, £4,504 to four where he was not the promoter and he also made large subscriptions to these latter companies.[46] Therefore, Allott appears to have been committed to investing in Sheffield's manufacturing industry *per se*, rather than only confining his funds to his own promotions. In contrast, John Unwin Wing was not as supportive to the companies that he had promoted in terms of funds he subscribed once they had been registered. He took up shares of five out of seven companies he promoted, but the total amount involved was only £2,985.[47] Thus, Wing's involvement appears to have been with regard to the legal and financial aspects of promotion, rather than constituting actual personal investment in the companies themselves.

Therefore, the involvement of Allott, Wing and Chadwick in their promotions went beyond merely registration. However, it is difficult to assess the extent to which they influenced the subsequent success of the companies they had promoted. Chadwick's involvement in the management of both Yorkshire Engine Ltd. and Parkgate Iron Co. Ltd. will be considered in detail in Chapter 5, where case studies of these companies, and three others, are examined in detail.

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45 See Chapter 5 concerning case studies of five companies, which includes Yorkshire Engine Ltd.

46 £1,000 to Brown Bayley & Dixon, £1,280 to London & Sheffield Nickel Silver Plate, and £2,200 to The Whittington Freehold Colliery.

47 He also subscribed £150 to The Sheffield Steel & Manufacturing Co. Ltd., a company he did not promote.

An attempt has been made to measure the success of the promoters' companies from the data available in the Board of Trade files. One measurement of the success of a company is its life span, as illustrated in Table 4.5. Two of the nine companies that Allott promoted and one of Chadwick's are still in existence today. Five companies out of the total of 90 are 'live', and the fact that three out of the five were promoted by Allott and Chadwick indicates a possible high degree of success on their part. A further such marker is the longevity of their other promotions, i.e. those not in existence today, as displayed in Table 4.5. The companies having the lowest average life span were those promoted by Wing. The nine companies promoted by Allott had an average life span of only 19 years when his two live companies are excluded. Chadwick's companies had the longest life spans, even when the live company is excluded. This would indicate success for Chadwick's companies in terms of longevity, and to a greater degree than the promotions of his two Sheffield counterparts.

Table 4.5: Duration of the Allott, Wing and Chadwick's industrial promotions

Name	Average duration (years) including live companies	Average duration (years) excluding live companies
Wing	17.29	17.29
Allot	40.89	18.71
Chadwick	58.50	36.33

The success of a company might also be gauged by the proportion of capital subscribed from its first share issue, possibly indicating how attractive the venture was to investors. The promoter may have had a major influence upon the sale of the first issue of shares, although the precise extent cannot be measured. All three promoters under discussion were accountants and therefore may have had well developed networks of financial contacts and

potential investors.[48] The actual amount of capital subscribed to Allott's, Wing's and Chadwick's promotions, as a percentage of nominal capital, is shown in Table 4.6.

Table 4.6: Capital subscribed to the industrial promotions of Allott, Wing and Chadwick

Name	Total nominal capital (£)	% Capital subscribed of nominal capital (£)	Average share denomination
Wing	435,000	40.76	24
Allot	795,000	48.43	34
Chadwick	1,655,000	34.25	100

The table indicates that for each of the three groups of companies, the subscribed capital amounted to less than half of the aggregate nominal capital. Both Shannon[49] and Jefferys[50] have argued that the amount of capital called on shares was relatively low before the 1866 crisis and thereafter became progressively higher. The 'Sheffield' company promotions undertaken by Chadwick occurred in the 1860s and overall these have a lower percentage of capital subscribed than the companies promoted by either Wing or Allott in the early 1870s. Cottrell found that the limited companies he sampled between 1866 and 1882 had, on average, only 25 per cent of their nominal capital called up, whilst during the 1860s boom the average was even lower at 18.9 per cent.[51] Therefore, comparatively, the amount of capital called by the companies of Chadwick, Wing and Allott was relatively high. The willingness of investors to subscribe to these companies and fulfil the relatively high amount of calls made on the shares would indicate that these 'promotions' were successful.

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48 Cottrell, *Industrial Finance* ..., p.117 'Chadwick stated that the companies' shares were offered to his firms "friends"'.

49 Shannon, 'First Five Thousand ... and 'Limited Companies, 1866-83'.

50 Jefferys, 'Denomination and Character ...'

51 Cottrell, *Industrial Finance* ..., pp.84-85

Jefferys also argues that share denominations were high in the early days of the general availability of limited liability, but thereafter gradually decreased. The earlier company registrations of Chadwick had higher average share denomination (all Chadwick's companies have shares with a nominal value of £100) than those of the later registrations of Wing and Allott (average share denomination £24 and £34 respectively). The introduction of lower denominations made shares potentially more widely available, especially with the increase in denominations of £5 or less. However, as not one average share denomination for any set of companies is below £20, it does not appear that there was a reluctance to subscribe to the shares offered by these companies, despite their relatively high nominal share values. The attraction of investing in these companies must have, in some part, been due to Wing, Allott and Chadwick acting as financial agents, using both business and personal connections to insure that subscriptions were plentiful.

What of the shareholders in the companies promoted by Chadwick, Allott and Wing, firstly those who were seven signatories to the Memoranda of Association and those investing in shares once the companies were registered?

Chadwick regarded initial shareholders in a company - the seven signatories to the Memorandum of Association - as the 'promoters' of the company.[52] These 'promoters' were often important to the management of the company, as they usually included the vendors, if it was a conversion, sometimes the promoter, the Directors of the company and, if additional names were required, family members or business colleagues of the vendors. The three financial agents discussed above may have been the dominant individuals, but there were other 'names' which recur amongst the signatories to

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52 *ibid.*, p.115

Memoranda of Association of the 'Sheffield' companies. Studying such individuals allows a broader picture of the financial and industrial networks of the Sheffield region to be drawn. The men, who were the initial subscribers to these companies, formed a interlocking management structure in the iron, steel coal, secondary metal and engineering industries in the Sheffield region between 1855 and 1885. The initial subscribers for the promotions undertaken by Allott, Chadwick and Wing were reviewed in order to identify any individuals who appeared more than once as subscribers to Memoranda of Association.

Alfred Allott was an initial subscriber to only two of his promotions, but he appears to have used a group of people to sign the Memorandum of Association for his promotions. Five names appear as initial subscribers for more than one of his companies - William Cooke (ironmaster), David Davy (engineer), Alfred Davy (engineer), George Haywood (ironfounder), and Joseph Pickering (polish manufacturer). Both Alfred and David Davy were the vendors of Davy Bros. & Co. Ltd., but only David was an initial subscriber to that company. David also signed the Memorandum of Association of another of Allott's companies - the Charlton Iron Works - and Alfred gave his signature to two others - Phoenix Bessemer and Albion Steel & Wire. All of the companies to which the Davys subscribed were incorporated in 1872 - Davy Bros. in February, Charlton Iron Works in August, Phoenix Bessemer in September, and Albion Steel and Wire in October. Therefore, although it is not known how the initial connection was made between the Davy family and Alfred Allott, it appears that once this link was made, both David and Alfred Davy became more generally involved in Allott's promotions.

Another individual used by Allott to promote his companies was William Cooke, an ironmaster. He was a vendor of William Cooke and Co. Ltd., for which he was a signatory, but he was also an initial subscriber to the Charlton

Iron Works, and Charlton Iron Works was promoted first (1872), his own William Cooke & Co. Ltd. being converted in 1873. Therefore, apparently, William Cooke was connected with Allott through the foundation of one limited company and subsequently employed him to promote his own concern.

George Haywood was an ironfounder from Rotherham, an owner of Yates Haywood & Co.,[53] which merged with the Rotherham Foundry Co. in 1879 to form a limited concern, a conversion in which Allott was not involved.[54] His connection with Allott's promotions appears to have been a result of involvement in the iron industry. Joseph Pickering was a Sheffield polish manufacturer. Unlike the others involved with Allott's companies, he does not appear to have been directly connected with the iron and steel industry. His link with Allott may have arisen through either Allott's accountancy practice, or a personal relationship. However, all those used by Allott in the formation of limited companies as signatures to the Memorandum of Association originated from either Sheffield or Rotherham. Thus, the business and personal contacts of Allott were local.

The companies promoted by John Unwin Wing do not contain the same cluster of common initial subscribers. Wing himself made initial subscriptions to five of the seven companies he promoted, but only two other names appear more than once on the Memoranda of Association of his companies. They are John Easterbrook, signatory to three companies and John James Brown, signatory to two. Easterbrook was an engineer from Sheffield, a member of the firm of Easterbrook & Allcard, machinists and

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53 White, W. *White's General and Commercial Directory of Sheffield District* (Sheffield 1879) [hereafter *White's Directory of Sheffield, 1879*] p.154.

54 The company formed was Yates Haywood & Co. & the Rotherham Foundry Co. Ltd., PRO: BT31/2533/13127.

engineers tool manufacturers. Brown, an ironmaster from Rotherham, was manager of one of Wing's promotions - G & J Brown Co. Ltd. - to which he was an initial subscriber. Brown was also a signatory to Tinsley Rolling Mills, a company that Wing promoted in 1874, two years after G & J Brown. The relationship between Wing and Brown, therefore, may have begun with the conversion of the firm that Brown managed and continued thereafter.

Only two names appear more than once amongst the Memoranda of Association of the 'Sheffield' companies promoted by David Chadwick. William Landsdowne Beale, an ironmaster with a London address, and George Wood, a Manchester merchant, were both signatories to two of Chadwick's companies. In terms of initial subscribers, the companies promoted by Chadwick do not show a clear group of men used by the promoter to 'found' or manage these firms, but only four companies are being considered here. However, both of these men were from outside the Sheffield region and demonstrates the use made by Chadwick of extra-regional capital, especially that from Manchester and London. This contrasts with Allott's and Wing's multiple signatories, who were all from the Sheffield locality.

To expand upon the exploration of interlocking ownership within the 20 companies promoted by Wing, Allott, and Chadwick, the shareholders, as in the first summaries of capital and shares returned to the Registrar were analysed. Interlocking shareholdings between the companies promoted by the same financial agent were thereby established.

Chadwick's four promotions involved 413 shareholdings held by 384 investors. The two men that had more than one holding in the initial subscriptions of Chadwick's companies - William Landsdowne Beale and George Wood - retained multiple shareholdings in these companies on the first issue

of shares proper. Beale held shares in Yorkshire Engine and Parkgate Iron & Steel, the two companies for which he was a signatory of the Memorandum of Association. George Wood, and other individuals with the same surname, figure prominently amongst the shareholdings of Chadwick's companies. George Wood, George Wood Junior and Edward Wood, all cotton dealers from Manchester, each held shares in three of Chadwick's companies. William Newmarch, the economist and manager of the London private bank Glyn Mills, also had shareholdings in three of Chadwick's companies. Eighteen other men held shares in two of Chadwick's companies: of these, one came from Sheffield, one from Oldham, one from London, one from Edinburgh, two from Doncaster, with the remaining 12 all from Manchester. Therefore, the use of extra-regional capital by Chadwick is again demonstrated by these multiple shareholders. There appears to have been a movement of funds generated in the cotton manufacturing North West to the iron, steel and coal producing area of South Yorkshire/North Derbyshire, facilitated by Chadwick and his Manchester associates.

The companies promoted by John Unwin Wing had a number of investors with cross shareholdings. There were 621 shareholdings in total and 537 investors: 13 men had shareholdings in three or four of Wing's companies. Of these, seven originated from Sheffield and six from Rotherham, eight were involved in the production of iron and steel and two were colliery proprietors. There were also 50 others which had shareholdings in just two of Wing's companies, of which 38 had Sheffield addresses and nine were from Rotherham. This confirms the local base of Wing's business affiliations.

Alfred Allott's promotions involved the largest amount of subscriptions in numerical terms - 951 shareholdings and 730 investors. The shareholders included individuals with the highest number of multiple shareholdings - 50

people held shares in three to seven companies. Of these 50 multiple shareholders, 41 originated from Sheffield, three from Rotherham, two from Saltaire, one from Barnsley, one from Bridgenorth, and only three from outside Yorkshire.[55] All the individuals who were initial subscribers to more than one of Allott's companies retained their shareholdings. William Cooke and George Haywood held shares in three companies and Joseph Pickering held shares in two. The Davy family expanded their investment in Allott's companies after incorporation. Abraham junior, Albert, Charles, Walter Scott and David all had shareholdings in four companies, Dennis had three, and Abraham senior, Alfred, and Mary Ann had shareholdings in two companies.[56] All these family members held shares in Davy Bros. Ltd. but their involvement in financial investment in the region's iron and steel production extended to other of Allott's conversions.

Two other men were important investors in the companies promoted by Allott. They were Thomas Hampton and John Kidner, both holders of shares in five of Allott's companies and both co-partners in the same accountancy practice as Allott. Interestingly, two women also appear as multiple shareholders in Allott's companies, both spinsters from Sheffield. Women as providers of capital appears to have been a vein tapped by Allott, but not the other two promoters.

Table 4.8 displays the regional distribution of all shareholders in the companies promoted by Chadwick, Wing and Allott once they were registered. The majority of capital invested in the companies of Wing and Allott originated from Yorkshire, 89 per cent and 84 per cent respectively. These men were financial agents, originally based in Sheffield, and capital from their local sphere of influence dominated the companies with which

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55 Bridgenorth (Shropshire), London and Worksop.

56 In addition, four others with the surname Davy held shares in Davy Bros.

they were involved. However, as mentioned previously, the 1879 *White's Sheffield District Trade Directory* shows that both Wing and Allott were by then members of financial practices which had London offices. In contrast, the geographical origins of the funds invested in Chadwick's companies are predominantly Lancashire and London. Chadwick had both Manchester and London offices and the results in Tables 4.7 and 4.8 reflect the rising difference compared with Wing's and Allott's companies: 29 per cent of the capital invested in Chadwick's firms originated from Yorkshire, whereas a higher amount of capital - 33 per cent - came from Lancashire. Only five per cent of

Table 4.7: Allott, Wing and Chadwick industrial promotions - cities which were major sources of capital

City	Allott	Wing	Chadwick
Sheffield	70.24	57.62	22.56
London	7.24	1.07	20.73
Barnsley	0.94	1.90	0.11
Manchester	0.79	1.34	26.56

the capital subscribed to Wing's companies was from Lancashire and one per cent with respect to Allott's companies. In addition, a substantial amount of capital in Chadwick's companies came from London - 21 per cent - as opposed to only one per cent for Wing's firms and seven per cent for Allott's. Before the late 1870s, the London connections of Chadwick, therefore, appear to have been far more highly developed than those of the locally based Sheffield

Table 4.8: Allot, Wing and Chadwick industrial promotions - regional distribution of shareholders

County	Allott	Wing	Chadwick
	% total subscribed capital		
Yorkshire	84.33	89.24	29.25
London	7.24	1.07	20.73
Derbyshire	2.46	4.26	0.00
Staffordshire	1.39	0.05	0.37
Lancashire	1.02	4.61	32.68
Cheshire	0.50	0.00	1.19
Sussex	0.00	0.00	2.27

promoters. Chadwick's influence was far more national than either Allott or Wing, with the investment base of the latter two being predominantly local. The remaining capital subscribed to the 20 companies originated from dispersed locations around the British Isles, with no one single county accounting for more than one per cent of subscriptions.

Tables 4.9 and 4.10 below illustrate just how localised the capital market was for the firms promoted by Wing and Allott. The majority of the capital subscribed to the companies promoted by these two men came from the West Riding of Yorkshire and, furthermore, the dominant source of capital within the West Riding was the Southern Division. This region includes the city of Sheffield and the towns of Barnsley and Rotherham. It is also the region in which all of the firms, bar one, promoted by Wing and Allott were located.

Table 4.9: Capital from the Yorkshire Ridings invested in the companies of Wing, Allott and Chadwick

	Wing	Allott	Chadwick
Riding	% of total Capital Subscribed		
West	88.88	83.65	28.35
North	0.27	0.00	0.04
York	0.05	0.09	0.41
East	0.04	0.16	0.44
Unknown	0.00	0.43	0.00

Table 4.10: Capital from the West Riding of Yorkshire invested in the companies of Wing, Allott and Chadwick

	Wing	Allott	Chadwick
Riding Division	% of total Capital Subscribed		
South	88.52	82.50	24.70
East	0.36	0.60	2.80
North	0.00	0.54	0.84
Unknown	0.00	0.43	0.00

The occupations of those investing in the companies promoted by the three accountants are examined in Table 4.11. The majority of shareholders in each of the promotional groups gave their occupation as 'manufacturing'. This is

not surprising given the nature of the companies being considered. The other dominant groups of investors consist of those from commerce, the professions and those with independent means. After manufacturing, 'commerce' constituted the most important occupational group for those investing in both Chadwick's and Wing's industrial concerns, 25 per cent and 20 per cent respectively. More important for the companies promoted by Allott were investors from the 'Professions', 18 per cent of capital invested as opposed to 12 per cent of capital from those in commerce. The most important group of investors in Allot's companies within the professions were engineers, 44 per cent of the total. Investors from the professions were less important to Chadwick's companies - nine per cent of subscribed capital originating from such individuals. Men and women of independent means were an important source of finance for each three promotional groups - 16 per cent in the case of Allott's companies, 11 per cent of Wing's and 17 per cent of Chadwick's. The only other significant occupation, other than the 'top four', occurs in the enterprises promoted by John Unwin Wing, with ten per cent of capital coming from the mining sector, almost the same as that subscribed by those of independent means. This is probably due to one of the promotions being a coal mining concern, the only such undertaking converted by any of the three. The remaining balance of capital originated from a wide social group of subscribers with varying occupations.

Therefore, the promoters Wing, Allott and Chadwick had a very important influence upon any movement towards limited liability made by manufacturing industry in the Sheffield region during the period 1855 to 1885. The number of companies they promoted, and the capital involved in these formations, clearly demonstrates the significance of their roles. Chadwick's promotions in the 1860s introduced extra-regional capital to the local iron and steel industry, mainly from Lancashire, specifically Manchester, and also

London. In contrast, local funds constituted the mainstay of Allott's and Wing's promotions in the iron and steel boom of the early 1870s. All of the

Table 4.11: Allott, Wing and Chadwick promotions: occupational distribution of shareholdings

	% of subscribed capital		
Occupational category	**Allott**	**Wing**	**Chadwick**
Domestic Service	0.06	0.00	0.00
Public Service	0.07	0.03	0.40
Unknown	0.32	0.16	2.05
Agriculture	0.38	1.04	0.51
Other Services	0.55	0.43	2.40
Transport	0.56	0.14	0.78
Mining	2.67	9.80	0.11
Construction	2.84	0.54	0.09
Unknown workers	2.85	1.32	0.81
Unknown management	3.44	5.03	1.79
Commerce	12.16	20.03	24.71
Independent	15.88	11.02	17.52
Professional	18.31	13.09	8.83
Manufacturing	38.91	37.36	39.98

promoters were involved with the companies they promoted, as either signatories to the Memoranda of Association or shareholders thereafter, with both Chadwick and Allott retaining considerable shareholdings in their promotions. The development of a management group by the promoters appears to have been most significant in the case of Alfred Allott, who used a group of men involved in the Sheffield and Rotherham iron and steel industries. In each case, Allott, Wing and Chadwick seem to have used their local connections, be they Mancunian or from South Yorkshire, to provide finance for the expansion of iron and steel manufacturing in the Sheffield region.

'Birth': Initial Subscribers

Moving from companies aided by three identified promoters to an examination of the seven founders of all 90 companies[57] - that is the seven men, or women, who took up the first shares in these companies by signing their Memoranda of Association - those which Chadwick regarded as the true 'promoters', their geographical and social composition is discussed below. In addition, multiple initial subscriptions will be identified in order to ascertain whether an investment group amongst initial subscribers emerged for the 90 companies in the survey during this period.

The percentages used in the following tables are based on the total of capital subscribed solely by initial shareholders. This amount has been calculated from the number of shares held and their nominal share value. This is not ideal because initial subscribers were not necessarily required to pay any money on these shares; however, as a base measure allowing comparisons with other results in this chapter, this proportion is the most appropriate. Firstly, the occupations of initial subscribers to all the companies in the sample are displayed in Table 4.12.

The five main occupational categories to which initial subscribers belonged were manufacturing, commerce, the professions, those of independent means, and mining. The importance of the manufacturing and mining sectors as a source of funds and company founders is unsurprising, given the nature of the companies involved and the types of industry located in the region as a whole. On the other hand, commerce and the professions pro-

57 Those involved with the birth of all 90 companies in the sample, including the above 20.

vided a growing source of income in the nineteenth century, as both the number, and wealth, of the middle classes grew.[58]

Table 4.12: Occupation categories for initial subscribers			
Occupational category	**Subscribed capital 1855-85 % total**	**Subscribed capital 1855-69 % total**	**Subscribed capital 1870-85 % total**
Manufacturing	37.01	8.99	28.02
Commerce	17.88	12.94	4.94
Professions	14.64	3.09	11.55
Independent	12.62	9.25	3.37
Mining	10.41	5.08	5.33
Unknown Management	3.54	0.06	3.48
Public Service	1.60	1.53	0.06
Other Services	1.48	1.21	0.27
Unknown	1.32	1.28	0.04
Unknown Workers	0.62	0.17	0.45
Agriculture	0.04	0.04	0
Construction	0.03	0.03	0
Transport	0.01	0.01	0

The period 1855 to 1885 has been divided at 1870 to create two chronological blocks of comparable length in order to observe any changes in the patterns of social composition within the overall period. The importance of those involved in mining remains constant throughout the whole period, whereas the share of both people of independent means and those involved in commerce decreased after 1870. Conversely, the percentage of manufacturers and professions increased after 1870. The increase in the influence of manufacturing is most marked and indicates the growing participation of industrialists in the initiation of limited liability companies within the sector in which they themselves were active.

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58 Rubinstein, W.D. *Wealth and the Wealthy in the Modern World* (1980) [hereafter Rubinstein, *Wealth and Wealth* ...].

Table 4.13 shows the percentage of capital from initial subscribers originating from Sheffield and Yorkshire. The majority of the capital initially subscribed came from Yorkshire and, in particular, Sheffield. The amount of capital from Sheffield actually increased markedly, from eight per cent during the sub-period before 1870 to 32 per cent in the sub-period after 1870, demonstrating the growing importance of local initial subscriptions.

Table 4.13: The percentage of capital invested by initial subscribers from Sheffield and Yorkshire (% of total)

	Subscribed capital 1855-85	Subscribed capital 1855-69	Subscribed capital 1870-85
Yorkshire - Total	62.96	11.46	51.50
Sheffield	40.36	8.32	32.04
Yorkshire (excluding Sheffield)	18.15	2.96	15.19
Rotherham	11.92	1.95	19.28

The exact extent of the predominance of local capital is illustrated in Tables 4.14 and 4.15. These show the percentages of initial subscriptions originating from the West Riding of Yorkshire and, within the West Riding, its southern division. Both Sheffield and Rotherham are located in the Southern division of the West Riding of Yorkshire, as were the majority of registered offices and works of the 90 firms included in the survey. Thus, those that formed the dominant founding group for the limited companies being surveyed were local men and women.

Table 4.14: The percentage of capital subscribed by initial shareholders from Yorkshire by Riding (% of total)

Riding	Subscribed capital 1855-85	Subscribed capital 1855-69	Subscribed capital 1870-85
West	61.66	23.90	89.55
East	0.85	1.99	0.00
North	0.45	1.07	0.00
Unknown	0.00	0.00	0.00
York	0.00	0.00	0.00

Table 4.15: The percentage of subscribed capital by initial shareholders from West Riding by division (% of total)			
Riding Division	Subscribed capital 1855-85	Subscribed capital 1855-69	Subscribed capital 1870-85
South	59.98	23.66	86.80
North	1.55	0.12	2.61
East	0.13	0.12	0.14

The distribution of capital and shareholdings originating from initial subscribers resident outside of Yorkshire are shown in the tables below. Table 4.16 displays the main sources of capital by major towns and cities. Manchester was the most important source of non-Yorkshire capital but the majority of this investment from this city occurred before 1870. When for the whole period the subscriptions from other Lancashire towns in the table are added to those from Manchester, it amounts to 13 per cent. This influence of the Lancashire towns on the initial subscriptions to the companies formed before 1870 is undoubtedly due to Chadwick's promotions (see above).

Table 4.16: Major national city/town locations of initial subscribers (% of total)			
City or town	Subscribed capital 1855-85	Subscribed capital 1855-69	Subscribed capital 1870-85
Manchester	10.07	18.96	1.41
London	6.31	13.72	0.83
Brighton	3.02	7.12	0.00
Chesterfield	1.63	3.68	0.10
Derby	1.30	3.06	0.00
Salford	1.21	2.85	0.00
Bury	1.04	2.45	0.00
Retford	0.88	2.08	0.00
Oldham	0.85	1.99	0.00
Lincoln	0.72	0.00	1.26

Tables 4.17 and 4.18 shows initial subscriptions by county, both in terms of capital subscribed and shareholdings. Yorkshire, not surprisingly, dominates both tables, with Lancashire, London and Derbyshire being the other main locations of initial subscriptions. Lancashire appears in these tables because of

Chadwick's involvement in company promotion in the Sheffield region; Derbyshire due to the inclusion of companies in Northern Derbyshire in the survey and the proximity of this area to South Yorkshire; and London due to its multiple role as the country's capital, particularly in terms of the proportional size of its resident population, its wealth and its provision of financial services.

Table 4.17: Percentage of capital from initial subscribers by county			
County	Subscribed capital 1855-85 % of total	Subscribed capital 1855-69 % of total	Subscribed capital 1870-85 % of total
Lincolnshire	1.20	0.00	2.08
Cheshire	1.47	3.42	0.04
Nottinghamshire	2.26	5.04	0.21
Sussex	3.02	7.12	0.00
London	6.31	13.72	0.83
Derbyshire	6.60	11.33	3.111
Lancashire	13.58	26.56	1.88
Yorkshire	62.96	26.97	89.55

Table 4.18: Number of initial subscribers in each English county			
Yorkshire	418	Staffordshire	4
London	69	Cheshire	3
Derbyshire	52	Kent	3
Lancashire	39	Unknown	3
Warwickshire	11	Durham	2
Lincolnshire	7	Leicestershire	2
Nottinghamshire	7	Cumberland	1
Surrey	6	Essex	1
Middlesex	4	Hertfordshire	1
Northamptonshire	4	Oxfordshire	1
Northumberland	4	Sussex	1

Therefore, the men and women that formed the initial management group of shareholders within the 90 companies were predominantly local, from Sheffield or the surrounding area, and were mainly involved in manufacturing, commerce or the professions.

'Birth': Quotations on the Sheffield and London Stock Exchanges

In his study of the provincial Stock Exchanges, Thomas pointed out that the provincial stock exchanges 'did not possess the vast range of the London markets' but rather 'dealt in a special range of shares with quotations dependent mainly on local information as to industrial conditions.'[59] The Sheffield Stock Exchange was established in 1844 and came to deal substantially in the shares of local iron, steel and coal companies of the locality.[60] There was much activity on the exchange in the early 1870s boom, a period of rapidly rising share prices, when many iron and steel firms converted to limited liability.[61] Indeed, Thomas stated:

> As early as the mid 1870s the Sheffield list quoted all the leading coal and iron companies and in addition over thirty local companies described in the list as 'Manufacturing', but which were mainly concerned with steel and engineering products.[62]

Thus, shares of many of the 90 'Sheffield' companies being studied here were quoted and traded on the Sheffield Stock Exchange, the implication being that these were local concerns which attracted local investors.

However, some of the companies surveyed were also quoted on the London Stock Exchange, usually a few years after their initial registration. Of the 90 companies being examined, 23 were quoted from the mid-1870s on the London Stock Exchange and these are listed in Table 4.19.[63] This implies that these companies were making increasingly more 'public' calls for capital, in that their shares were being offered on a national market. However, in the case of Charles Cammell and Parkgate Iron, listed in the *Stock Exchange Year-*

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59 Thomas, *Provincial Exchanges* ..., p.114.

60 *ibid.*, pp.51, 123.

61 *ibid.*, p.123.

62 *ibid.*, p.124.

63 It is important to note that the *Stock Exchange Yearbook* was not published until 1874 and therefore previous quotations on the London Stock Exchange may have been omitted as the *Yearbook* was the only source used to trace such companies.

book, the following comment was included with the company entry: that 'the shares being chiefly held and dealt in locally.'[64]

Table 4.19: 'Sheffield' companies quoted on the London Stock Exchange			
Company number	**Company name**	**Year of incorporation**	**Year of quotation on London Stock Exchange**
BT31/200/606	Rotherham, Masborough & Holmes Coal Co. Ltd.	1856	1880
930/1166C	Charles Cammell & Co. Ltd.	1864	1876
14355	Parkgate Iron Co. Ltd.	1864	1876
1073/1961C	Midland Iron Co. Ltd.	1865	1876
1101/2124C	Yorkshire Engine Co. Ltd.	1865	1886
3543	Vickers Sons & Co. Ltd.	1867	1880
1756/6547	Charlton Iron Works Co. Ltd.	1872	1876
1770/6651	Henry Wilkinson & Co. Ltd.	1872	1878
1843/7211	Brown Bayley & Dixon Ltd.	1873	1877
7399	Hallamshire Steel & File Co. Ltd.	1873	1877
1877/7460	Hydes & Wigfall Ltd.	1873	1879
1859/7319	Kelham Rolling Mills Ltd.	1873	1876
1824/7071	Neepsend Rolling Mills Co. Ltd.	1873	1881
1824/7070	Sheffield Steel & Manufacturing Co. Ltd.	1873	1882
1859/7320	William Cooke & Co. Ltd.	1873	1877
1876/7451	William Corbitt & Co. Ltd.	1873	1878
6662	Davy Bros. Ltd.	1874	1876
1981/8470	Tinsley Rolling Mills Co. Ltd.	1874	1883
9413	Cocker Bros. Ltd.	1875	1878
2533/13127	Yates Haywood & Co. & the Rotherham Foundry Co. Ltd.	1879	1887
2718/14677	Askham Bros. & Wilson Ltd.	1880	1885
15997	Newton Chambers & Co. Ltd.	1881	1883
2957/16577	Brown Bayley & Dixon Ltd.	1882	1883

Source: *Stock Exchange Yearbook*

Of the 23 companies in the *Stock Exchange Yearbook*, 12 were incorporated between 1872 and 1874, boom years for the iron and steel industry. They were listed in the *Yearbook* between 1876 and 1883. Therefore, it appears that these

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64 *Stock Exchange Yearbook* 1876 and 1877.

companies, incorporated at a peak in the trade cycle, came to be quoted on the London Stock Exchange during the subsequent years of depression. This implies that there was a movement to deal in their shares on a national market when the companies concerned were, most probably, struggling financially. Indeed, all of the 'Sheffield' companies in the *Stock Exchange Yearbook* were listed after 1876. Thus, the firms incorporated outside the early 1870s boom also turned to the London Stock Exchange during the 1874-79 depression, or the faltering recovery of the early 1880s.

'Duration and Death'

Having examined the processes behind company formation, it remains to be seen how long these companies survived. The birth of a limited company occurred with the granting of a Certificate of Incorporation by the Registrar of Joint Stock Companies and is therefore easy to pin point. The date of the death of a company is much harder to establish and therefore measuring the longevity of a company is fraught with difficulties. The end point for the measurement of the duration of a company has been taken here as the date at which it was officially wound up, or, in the case of involuntary winding up, the date at which the company's dissolution was advertised by the Registrar in the *London Gazette.* The former method of winding up was voluntary, arising from the company's shareholders agreeing to dissolve their company and organising its winding-up, and the Registrar of Joint Stock Companies was informed of the process. The company was ultimately dissolved at the final wind up meeting. With involuntary winding up, a company was advertised publicly in the *London Gazette* as having been dissolved following the firm going out of operation, but having failed to inform the Registrar, despite repeated queries concerning the company's existence. Thus, the measurement for the life-span of the 90 Sheffield companies could be termed the firm's 'legal life' rather than its actual operating life.

Firstly, with respect to those companies which did not come into existence at all: this survey includes four abortive companies, that is those which made no returns to the Registrar other than the documentation necessary to gain the Certificate of Incorporation. The incidence of abortion in this survey is only 4.4 per cent, much lower than that found by either Shannon and Cottrell, their figures concerning all English companies and ranging between 30 and 36 per cent.[65] The early limited companies of the Sheffield region had a premature death rate lower than the national average. However, Payne found the abortion rate of the early Scottish limited companies to have been seven per cent, which is closer to that of this survey.[66] Comparisons with other findings will be considered further below when the duration of the firm's lives are considered.

Such abortive registrations were frequently an indication of a company's inability to raise sufficient capital. Three of the four abortive 'Sheffield' companies were wound up voluntarily, each in the year following their registration, before any summary of capital, or shares, was submitted. No reasons were given for the winding up of these companies in the available documents. The fourth company, formed in 1866, submitted only its registration documents but was not dissolved until 1883, action then being taken by the Registrar after many letters had been sent requesting share returns from the company. Two of the abortive companies were coal mining operations, one was an ironfounders and the other was a steel firm.[67]

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65 Shannon, 'Limited Liability Companies, 1866-1883', p.382 and Cottrell *Industrial Finance* ..., p.90.

66 Payne, *Early Scottish Limited Companies* ..., p.29.

67 The steel company, Steel, Peach and Seaman Ltd., was later re-registered as a limited company but the documents concerning this subsequent registration were not available.

With a very low abortion rate, the only impediment to growing numbers of 'Sheffield' companies was a low life expectancy. It is therefore important to analyse their duration. The average duration of companies is shown, grouped by year of registration, in Table 4.20. The dates given in the table are those of company registrations, from which the average duration of companies formed in each of these years has then been calculated. Included in these figures are the five 'live' companies.

Table 4.20: Average duration of companies after the year of their registration

Year	Average duration (years)	No. of companies registered
1855	0.00	0
1856	17.00	2
1857	1.00	1
1858	4.00	1
1859	23.00	1
1860	0.00	0
1861	31.00	2
1862	4.00	1
1863	21.00	2
1864	30.25	4
1865	23.40	5
1866	18.50	4
1867	68.00	2
1868	27.67	3
1869	33.00	1
1870	1.00	1
1871	0.00	0
1872	12.83	6
1873	22.00	17
1874	33.00	6
1875	25.00	7
1876	14.75	4
1877	16.67	3
1878	0.00	0
1879	13.50	2
1880	18.50	4
1881	61.00	2
1882	6.67	3
1883	14.50	3
1884	13.50	2
1885	1.00	1

The average duration of all 86 companies, that is including the five live companies, is 20.81 years, whereas it is 15.33 if the live companies are excluded. Payne found that the average life span for Scottish companies dissolved by 1870 was 16.4 years, close to the 15.33 years of these 'Sheffield' companies.[68] Such longevity with respect to 'Sheffield' and Scottish incorporations compares very favourably with Levis' estimate, that the average life span for an English joint stock company in 1865 was 18 months.[69]

The small number of companies in this regional survey makes it difficult to discern trends on an annual basis. The registration years which stand out as providing particularly long lasting firms are 1868 and 1881. However, both of these years include one 'live' company, therefore the figures could be misleading. To illustrate the difference that the inclusion of the live companies makes to the data measuring the duration of companies, Chart 4.5 considers the years in which the live companies were registered in greater detail. The average duration of companies formed in these years has been calculated excluding these live companies. The resultant overall average duration of such companies, excluding the live firms, is 14 years.

The years marked by booms in company registrations were the mid-1860s and especially the early 1870s, which has cyclical implications. Both of these were periods which experienced an upturn in economic activity, particularly marked during the early 1870s. Companies formed in the mid-1860s have average (18 years) or above average life spans, whilst the early 1870s registrations have an average, or just below average, life spans. The

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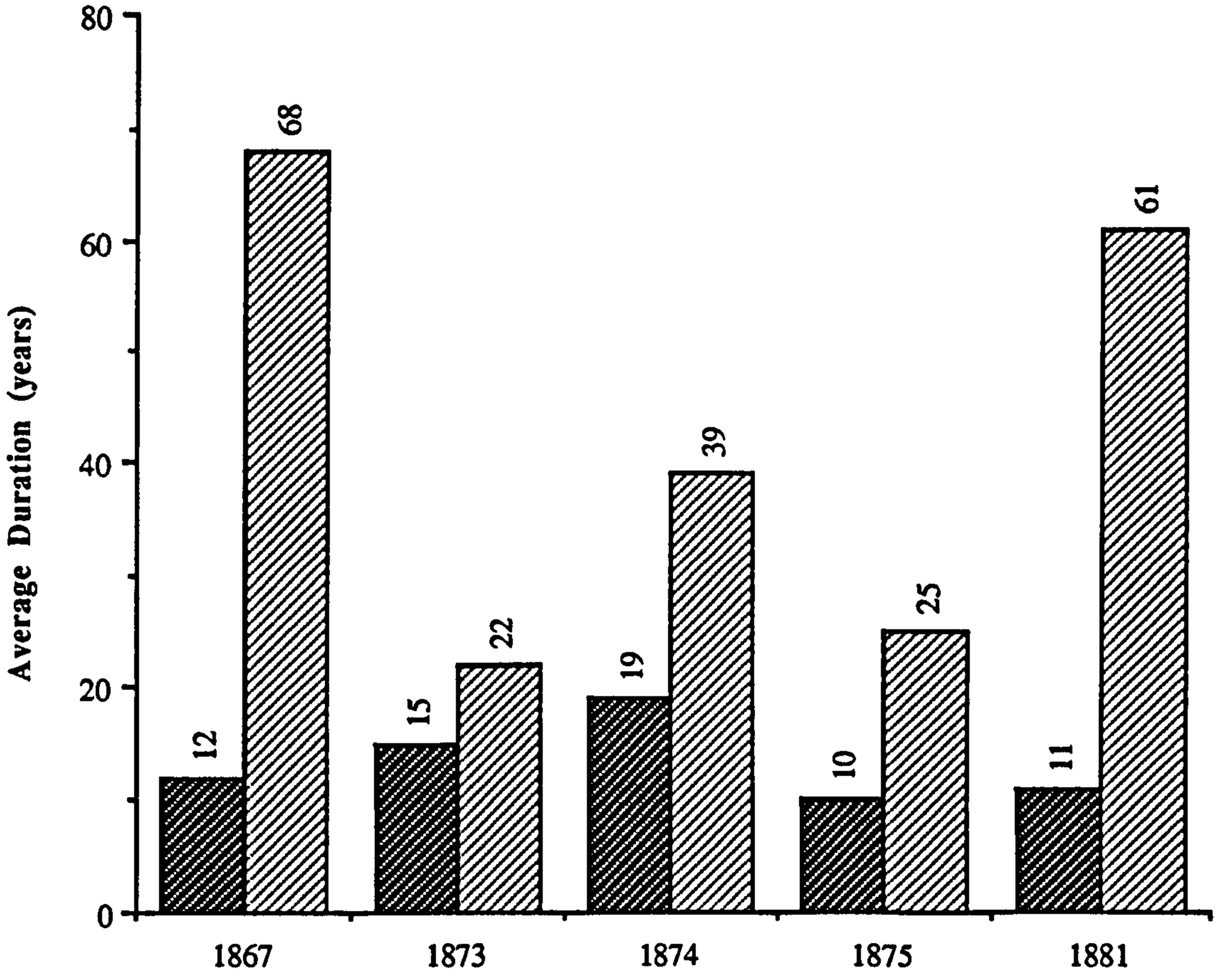
68 Payne, *The Early Scottish Limited Companies ...*, p.31.

69 Levi, L. 'On Joint Stock Companies', *Journal of the Statistical Society*, XXXIII (1870) p.17.

companies formed in the peak year of registrations, 1873, had an average life span of 22 years. In addition, three of the 'live' companies in the sample were

Chart 4.5: Years in which live companies were registered - average duration of all companies registered in these years with, and without, live companies



incorporated in the early 1870s - in 1873, 1874, and 1875. The other 'live' company was formed in 1867, after the 1866 crisis coincident with a cyclical downturn. The company was Vickers & Co. Ltd. and its incorporation was undertaken in order to save the company from severe financial difficulties.[70]

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70 A more detailed coverage of this company's affairs can be found in on pages 215-216 of this Chapter and also in Chapter 3, pages 116-117, where the relationship of Vickers and its bankers, the Sheffield Union Banking Company, is examined in detail.

Therefore, the companies formed during booms enjoyed by the iron and steel industries had above average longevity, and were not merely 'speculative flashes'. These findings correspond with those of Payne, who stated that 'companies formed during upswings enjoyed a slightly longer length of life than those incorporated during downswings'.[71] These results further support the contention that companies converting to the limited form during periods of high profits were probably well established undertakings, turning to this form of organisation to finance expansion, rather than new companies attempting to 'cash in' on a boom. However, the results could also support the argument that vendors were willing to sell their concerns when the market was most advantageous and thereby profit from converting to limited liability in such boom periods.

In contrast, the early 1880s registrations have a below average duration. This could be due to the difficulties that the Sheffield metal and related trades experienced after the major slump of the late 1870s. Recovery was uneven after this late 1870s depression and the profits of the early 1870s iron and steel boom were not to be reached again before 1885.

Table 4.21 shows the longevity of limited companies in the Sheffield area formed between 1855 and 1885. Most companies were dissolved after surviving for ten and 30 years. Companies which failed within five years of their registration form approximately 18 per cent of the total, and 'Sheffield' companies which lasted for over 40 years constitute only 15 per cent. Half the companies registered were liquidated within 16 years of their registration, a figure that corresponds with that derived by Shannon for all London company registrations.[72]

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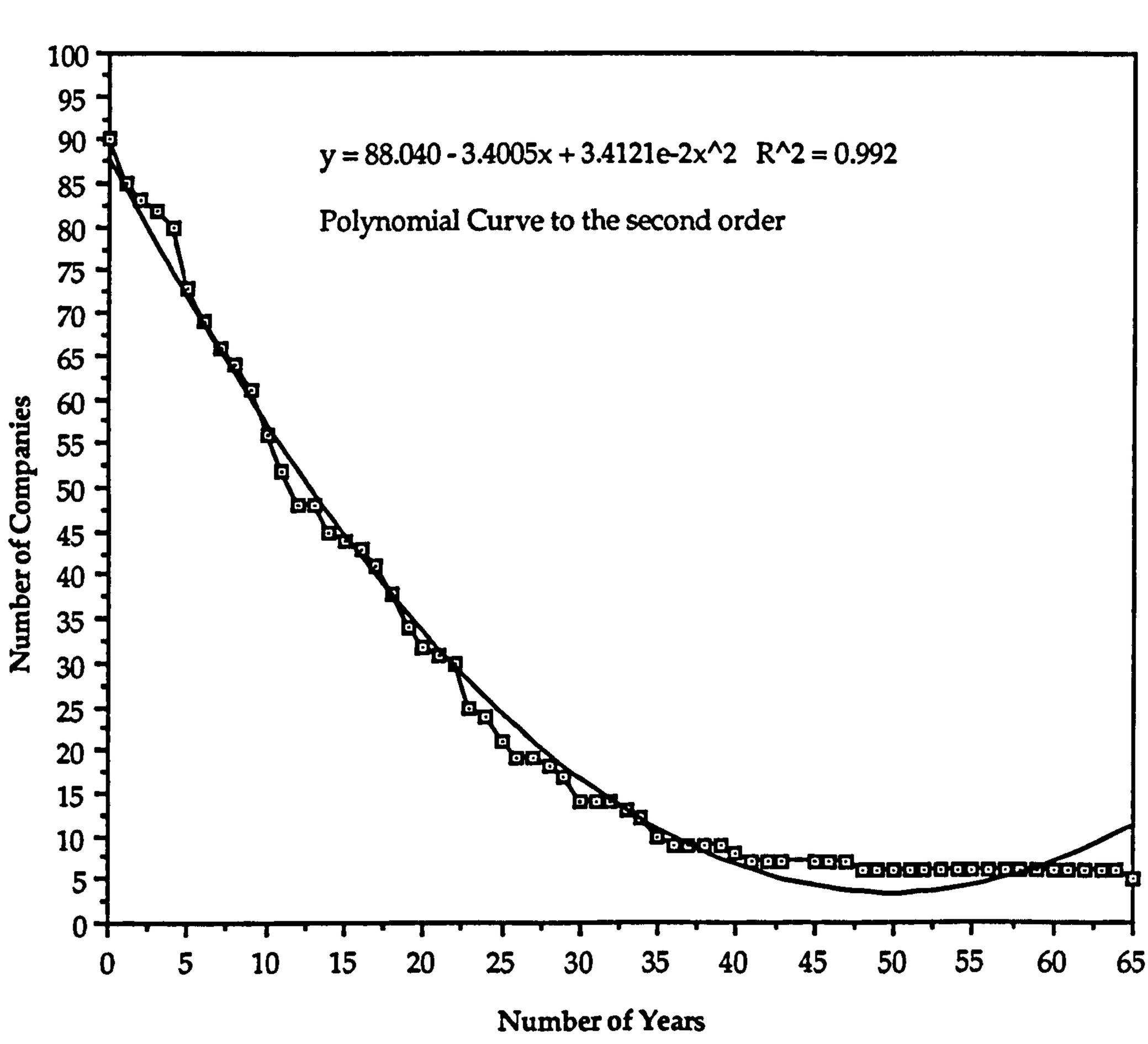
71 Payne, *The Early Scottish Limited Companies* ..., p.53.

72 Shannon, 'First Five Thousand ...'.

Table 4.21: Company duration/survival			
Period	**No of companies dissolved**	**Percentage of companies dissolved**	**Percentage survival of companies**
1 year	5	5.55	94.44
2 years	2	2.22	92.22
5 years	9	10.00	82.22
10 years	17	18.88	63.34
20 years	24	26.66	36.68
30 years	18	20.00	16.68
40 years	6	6.66	10.02
50 years	1	1.11	8.91
60 years	1	1.11	7.80
Live	5	5.55	5.55

Chart 4.6 reveals the declining survival rate of all the companies. There is a very sharp decrease in the number of companies surviving during the first 20

Chart 4.6: The duration of the 90 'Sheffield' companies



years but the rate of corporate attrition slowed down after 15 years and levelled out after 35 years, albeit at a low level. Not all 'Sheffield' companies ceased their existence after dissolution; some were dissolved for sale, reconstruction or amalgamation.

The effect of the general economic climate upon company dissolutions is illustrated in Table 4.22, containing annual rates of company liquidations.

Table 4.22: Years in which companies were liquidated

Year	No. of companies liquidated	Year	No. of companies liquidated
1858	1	1889	0
1859	0	1890	0
1860	0	1891	4
1861	1	1892	2
1862	1	1893	1
1863	0	1894	1
1864	0	1895	0
1865	0	1896	1
1866	1	1897	2
1867	0	1898	2
1868	1	1899	2
1869	0	1900	1
1870	0	1901	2
1871	1	1902	3
1872	0	1903	1
1873	1	1904	2
1874	1	1905	3
1875	1	1906	1
1876	0	1907	0
1877	2	1908	1
1878	3	1909	0
1879	2	1910	0
1880	2	1911	0
1881	0	1912	0
1882	4	1913	1
1883	7	1914	0
1884	4	1915	0
1885	8	1916	1
1886	7	1917	0
1887	3	1918	0
1888	2	1919	1

The most concentrated period of dissolutions, the early and mid-1880s, coincides with the downturn in fortunes of the iron and steel industries, as shown in the graph illustrating iron prices, (Chapter 2, page 40). Iron prices plummeted in the late 1870s, thereafter experiencing only slight recoveries in 1880 and again in 1882. Moreover, iron prices reached a further low point in 1885, the year of the single highest number of company liquidations - the 1880s also saw the rise in the use of steel at the expense of iron. There might be some lag in the timing of liquidations, with possibly the deep cyclical slump of the late 1870s not fully affecting the 'Sheffield' companies until the early 1880s. However, the clustering of company deaths in the 1880s is probably also influenced by the time it took to go through winding up, as the official dissolution date came somewhat after the decision to wind up a company's affairs. Yet it could also be due to the tenacity of local manufacturers: Payne observed that:

> despite perpetual public ululations concerning the state of trade, the majority of nineteenth century business men clung steadfastly to the hope, even belief, that 'things would get better'. It took a relatively long period of unprofitable activity before they reluctantly became convinced that their companies had little prospect of future prosperity.[73]

The case studies in Chapter 5 illustrate how individual firms survived the depression in trade, especially their ability to cope financially with the onset of the slump but also the increasing difficulties they experienced as the depression continued.

Capital: Nominal and Subscribed Capital

This section examines the capital market for the 86 'Sheffield' companies. The success and stability of a limited company may be measured in terms of longevity but that arises in part from the success of a company in raising

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73 *ibid.*, p.23

funds at a local, regional and/or national level. This section considers the sources of subscriptions to the 86 'Sheffield' companies which had in aggregate a nominal capital of £4,016,300 and subscribed capital from their first share issues of £1,750,785 (43.59 per cent of total nominal capital).

Firstly, consideration will be given to the nominal capital of the companies. The annual average initial nominal capital of the companies is shown in Table 4.23 (including the four abortive companies). However, the number of

Table 4.23: Aggregate and average nominal capitals by year of joint stock companies formed in the Sheffield region, 1855-1885

Year	No. of companies registered	Total nominal capital (£)	Average nominal capital (£)
1855	0	0	0
1856	2	64,000	32,000
1857	1	5,250	5,250
1858	1	2,000	2,000
1859	1	30,000	30,000
1860	0	0	0
1861	2	50,000	25,000
1862	1	10,000	10,000
1863	2	165,000	82,500
1864	4	4,012,000	1,003,000
1865	5	485,000	97,000
1866	4	109,000	27,250
1867	2	195,000	40,000
1868	3	185,400	61,800
1869	1	5,000	5,000
1870	1	140,000	140,000
1871	0	0	0
1872	6	585,000	97,500
1873	17	1,231,000	73,188
1874	6	168,000	33,600
1875	7	233,000	28,883
1876	4	188,300	47,075
1877	3	160,000	53,333
1878	0	0	0
1879	2	130,000	65,000
1880	4	113,000	28,250
1881	2	670,000	20,000
1882	3	120,000	40,000
1883	3	62,000	20,667
1884	2	12,000	6,000
1885	1	6,000	6,000

companies being considered is too small for any substantial pattern to emerge. The overall average nominal capital of the 90 companies was £103,703.

It is also important to consider the figures for nominal capital sectorially. The average initial nominal capital of the companies is shown by type of operation in Table 4.24 below.

Table 4.24: Average initial nominal capital of companies by sector

Sector	Average initial nominal capital	No. of companies
Blacksmith	£2,000	1
Tools	£10,000	1
Transport	£10,000	1
Metal Plating	£21,000	5
Cutlery	£25,000	2
Steel & Engineering	£30,000	3
Other Metals	£39,000	3
Coal	£43,095	31
Steel	£50,308	13
Engineering	£85,000	3
Iron & Steel	£157,077	13
Coal/Coke & Iron	£241,250	4
Iron	£340,500	10

Companies manufacturing iron, iron and steel and iron and raising coal had the largest average nominal capitals. These were relatively large industrial concerns requiring a high volume of financial input, both due to their physical size and costly technological requirements. In contrast, blacksmiths, tools and transport companies had very low average initial capitals as they were relatively small scale concerns.[74]

Of this nominal capital, the amount actually subscribed by investors is a more important measure of the company's success and viability. Table 4.25 shows the amount of subscribed capital annually; the data have been taken from the

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74 The one transport company of the 90 'Sheffield' firms was the Sheffield Steam Haulage Co. Ltd., a small scale concern.

summary of capital and shares submitted to the Registrar of Joint Stock Companies. It is necessary to remember that these data contain inaccuracies due to human error, while they also do not constitute the total that should have been subscribed if all calls had been paid, as 44 out of the 86 'live' companies had varying amounts of calls unpaid.[75]

Table 4.25: Total amount of subscribed capital annually

Year	Total capital subscribed (£)	Year	Total capital subscribed (£)
1856	450.0	1871	0.0
1857	14,790.0	1872	23,980.0
1858	900.0	1873	625,204.0
1859	0.0	1874	189,910.0
1860	95.0	1875	74,017.0
1861	0.0	1876	110,299.0
1862	291.6	1877	62,705.0
1863	20,229.0	1878	9,045.0
1864	15,020.0	1879	107,550.0
1865	511,505.0	1880	17,200.0
1866	8,460.0	1881	41,760.0
1867	11,525.0	1882	87,520.0
1868	262,520.0	1883	331,470.0
1869	23,918.0	1884	9,300.0
1870	0.0	1885	0.0

Table 4.26 shows the relationship, as a percentage, between capital subscribed and nominal capital, on an annual basis. The year, for the amounts of both nominal capital and subscribed capital, is taken from the first summary of capital and shares; therefore the dates differ from those for the nominal capital given at registration in Table 4.23 above.

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75 This analysis does not include abortive companies as no capital was reported to be subscribed to such ventures. Also, no share returns after 1885 examined. The first Share returns were usually made one year after registration and only one company in the sample was registered in 1885, Steel, Peach & Seaman, but this was an abortive company which did not submit any returns.

Generally, subscribed capital as a percentage of nominal appears to have been higher after 1870 than before; the percentage subscribed was certainly higher during the early 1870s boom than in the mid-1860s boom. Many have argued that the financial stability of a company increased as the amount of capital left

Table 4.26: Nominal and subscribed capital of the 90 'Sheffield' companies, 1855-85

Year	Total nominal capital	Total subscribed capital	Capital called as a % of nominal	No. of companies
1856	4,000.0	450.0	11.25	1
1857	65,250.0	14,790.0	22.65	2
1858	2,000.0	900.0	45.00	1
1859	0.0	0.0	0.00	0
1860	30,000.0	95.0	0.32	1
1861	0.0	0.0	0.00	0
1862	10,000.0	291.6	2.91	1
1863	50,000.0	20,229.0	40.46	2
1864	135,000.0	15,020.0	11.13	1
1865	1,589,000.0	511,505.0	32.20	8
1866	40,000.0	8,460.0	21.15	1
1867	59,000.0	11,525.0	19.53	3
1868	305,400.0	262,520.0	85.96	3
1869	80,000.0	23,918.0	28.56	3
1870	0.0	0.0	0.00	0
1871	200,000.0	50,825.0	25.41	1
1872	40,000.0	23,980.0	59.95	1
1873	1,645,000.0	625,204.0	38.01	16
1874	415,000.0	189,910.0	45.76	9
1875	115,000.0	74,017.0	64.36	6
1876	158,300.0	110,299.0	69.68	2
1877	306,000.0	62,705.0	23.76	7
1878	30,000.0	9,045.0	30.15	1
1879	130,000.0	107,550.0	82.73	2
1880	63,000.0	17,200.0	27.30	2
1881	70,000.0	41,760.0	59.66	3
1882	95,000.0	87,520.0	92.13	2
1883	707,000.0	331,470.0	46.88	3
1884	42,000.0	9,300.0	22.14	4
1885	0.0	0.0	0.00	0

uncalled decreased - as the liability of the investor was limited more effectively. There certainly was a decrease in the percentage of capital left unsub-

scribed after 1870; at no point after 1870 did the percentage of subscribed capital fall below 20 per cent and in eight of the 15 years it was above 40 per cent. This may intimate that, by such a criterion, these limited liability concerns became increasingly more financially stable during the period.

Subscribed capital as a percentage of nominal capital is shown by sector in Table 4.27. Engineering and blacksmith companies had very low percentages of nominal capital subscribed, whereas steel and engineering and firms manufacturing other metals had the highest proportion of their nominal capitals subscribed.

Table 4.27: Percentage subscribed capital of nominal capital per company type

Company type	No. of companies	Subscribed capital as % nominal capital
Engineering	3	15.31
Blacksmith	1	15.60
Tools	1	27.25
Transport	1	30.00
Iron	10	32.51
Coal/Coke & Iron	4	39.56
Iron & Steel	13	39.81
Coal	31	40.04
Cutlery	2	42.77
Metal Plating	5	43.65
Steel	13	45.90
Steel & Engineering	3	72.88
Other Metals	3	80.20

Capital: Shares

The level of capital subscribed by investors was affected by the denomination and type of share offered by a company. The character and denomination of shares could determine the types of investor that purchased them. Previous studies[76] of limited liability companies have established trends of decreasing

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76 Shannon, 'Limited Companies, 1866- 1883'; Jefferys, 'Denomination and Character ...'; and Cottrell, *Industrial Finance* ..., pp.81-84, 88, 132.

share denomination, decreasing amounts of capital left uncalled on shares, and an increasing variety in the types of shares issued occurred between 1855 and 1885. Decreasing denominations meant that shares became potentially available to wider groups of investors, whereas the reduction of uncalled capital on these shares reduced the liability of the investor and so the risk involved.

Both Shannon and Jefferys[77] concluded that share denominations decreased during the period 1855 to 1885. Jefferys believed that the high share denominations in the early days of limited liability were a product of inexperience of the financial system. This resulted in a reliance for guidance on existing canal and railway companies - companies which had high share values - and also a mistrust of the joint stock system which resulted in using high share denominations in an attempt to minimise speculation. A fear of some manufacturers and company proprietors was that lower share denominations would encourage 'more ignorant investors'.[78] Capitalists had little experience of limited liability and wished to adhere closely to the familiar principles of partnership - to keep control of their companies by having relatively few shareholders and attract only investors with whom they had connections. However, the 1866 crisis revealed the danger of 'unlimited' limited liability and, Jefferys argues that the result of this, along with the increasingly varying needs of companies and the changing nature of investors groups, was a fall in share denominations.

Table 4.28 shows the mean nominal value of shares, per annum, of the companies in this survey, the base year being that in which the companies were registered. The mean share value fluctuates throughout the period, not conforming to Shannon's and Jefferys' conclusions. In addition, the mean

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77 Shannon, 'Limited Companies, 1866-83' and Jefferys, 'Denomination and Character ...'.

78 Jefferys, 'Denomination and Character ...'.

value does show a tendency to follow the cyclical booms and slumps of the period. The booms of 1856-7, 1862-66, 1870-74 and 1880-82 can be seen quite clearly in the table. Similarly, the mean values used by Cottrell for his sample of English companies followed cyclical booms and slumps.[79]

Table 4.28: The denomination of shares, 1855-1885

Year	No. of companies registered	Average share denomination (£)	Year	No. of companies registered	Average share denomination (£)
1856	2	26	1871	0	0
1857	1	5	1872	6	40
1858	1	1	1873	17	18
1859	1	1	1874	6	13
1860	0	0	1875	7	22
1861	2	3	1876	4	20
1862	1	2	1877	3	40
1863	2	10	1878	0	0
1864	4	56	1879	2	75
1865	5	30	1880	4	65
1866	4	45	1881	2	23
1867	2	63	1882	3	15
1868	3	27	1883	3	10
1869	1	10	1884	2	6
1870	1	500	1885	1	100

The relatively small size of the survey makes it difficult to discern any trend over period when the data are examined annually, therefore, the data has been divided into groups of years and denomination categories in Tables 4.29, 4.30 and 4.31 in order to try and identify more clearly any possible underlying trends.

Table 4.29 shows average share denominations, firstly by dividing the period in half and, secondly, by taking 1866 as the dividing year. The first division is convenient as provides two equal periods of time and it clearly shows a decrease in the nominal value of shares between the two periods. The second division has been taken due to Jefferys having identified the crisis of 1866 as a

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79 Cottrell, *Industrial Finance* ..., pp. 81-84

trigger to the decrease of share denominations. However, the average share size of 'Sheffield' companies remains similar, even increasing slightly after 1866, and therefore does not conform with Jeffreys' thesis. Moreover, at no time does the average share denomination fall below £27.

Table 4.29: Average share denominations	
Years	**Average share denomination (£)**
1855-85	33.33
1855-70	45.20
1871-85	27.40
1855-66	27.87
1867-85	35.21

Tables 4.30 and 4.31 again divide the period into sub-periods but also group share denominations into categories.

Table 4.30: Denomination of shares - 1855-69/1870-85						
Denom-ination	**1855-85**		**1855-69**		**1870-85**	
	Total	**%**	**Total**	**%**	**Total**	**%**
0-£5	13	14.44	7	23.33	6	10.00
£6-£10	40	44.44	10	33.33	30	50.00
£11-£25	13	14.44	4	13.33	9	15.00
£26-£50	10	11.11	1	3.33	9	15.00
£51-£100	12	13.33	7	23.33	5	8.33
£100+	2	2.22	1	3.33	1	1.66
Total	90	100.00	30	100.00	60	100.00

Table 4.31: Denomination of shares - 1855-66/1866-85						
Denom	**1855-85**		**1855-66**		**1867-85**	
	Total	**%**	**Total**	**%**	**Total**	**%**
0-£5	13	14.44	7	30.43	6	8.96
£6-£10	40	44.44	7	30.43	33	49.25
£11-£25	13	14.44	3	13.04	10	14.93
£26-£50	10	11.11	1	4.35	9	13.43
£51-£100	12	13.33	5	21.74	7	10.45
£100+	2	2.22	0	0.00	2	2.99
Total	90	100.00	23	100.00	67	100.00

The majority of shares at all times fell into the £6-£10 bracket and it should be noted that all the shares in the 'denomination category £6-£10' are, in fact, £10 shares. Overall, therefore, the £10 share is the single most common share denomination for the companies being considered. As the dominant amount is shown to be £10, shares issued by limited liability companies in the major Sheffield trades would appear to have been within reach of the majority of those with 'adequate means', the potential investing classes.

Shares of ten pounds and less in nominal value dominated the companies surveyed. From 1855 to 1885, and each sub-period therein, they constitute c.60 per cent of the total.[80] However, the influence of shares in the 0-£5 range is not as strong as the £10 share. Shares with a value of £5 or less form only 13 per cent of the total over the whole period. Moreover, when the period is divided, such shares are shown to decrease in importance, from 23 per cent to 10 per cent when 1870 marks the break, and from 30 per cent to nine per cent when 1866 is used as the divider. This does not conform with Jeffreys' thesis.

Large share denominations, those of £50 and over, were used far less by the companies in this survey - only 15 per cent of the total in the whole period. Dividing the period in two, large shares were more common before 1870 (27 per cent) and decline thereafter (11 per cent), as Jefferys found. The figures are similar when 1866 is taken as the diving date, large share values decreasing from 22 per cent of the total to 13 per cent thereafter. The medium sized share, that of £11 to £50, became more widely used as the period progressed.[81]

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80 Shares of £10 or less form 59% of the total in the whole period (1855 to 1885), 57% in 1855-70, 60 % in 1870-85, 61% in 1855-66, 58% in 1867-85.

81 Shares values between £11 and £50

1855-70	17%	1855-66	17%
1871-85	30%	1867-85	24%

The work of both Shannon and Jefferys on limited liability companies in general indicates that share denominations decreased in size in the period 1855 to 1885; however, 'Sheffield' companies do not conform completely with this trend. The proportion of small denomination shares, those up to £5, is lower in the second sub-period when either 1870 or 1866 are taken as the dividing date. The predominant denomination of share is £10, a relatively low value, which increased in importance after 1866/1870 from c.30 per cent to 50 per cent, but the share of higher values shares, £26-£50, also increased. The larger value shares, those of £50 and over, do decrease in importance, in line with Jefferys' thesis. However, the demise of large denomination shares in favour of smaller denomination shares is not a trend that is shown clearly by this data, with the extent of change being minimal rather than startling.

Important to the trend in share denominations is the nature of the industries in which the companies being considered were involved. Jefferys, Shannon and Cottrell[82] included a range of industries in their work on limited liability companies, whereas this study only considers firms from the iron, steel, engineering, coal and secondary metal sectors. Jefferys argued, with respect to the financial requirements of different types companies, that their varying needs caused different trends in both the denomination, and character, of shares. He stated that companies in the iron, steel, coal and engineering sectors were often conversions and that their shareholders were chiefly the original owners, but with some other local investors. Both the capital and the size of individual shareholdings of such firms were often large and the number of investors relatively small. The denomination of shares in these companies was high and were acquired as long term investments with high share values creating few difficulties for this type of investor. Substantial

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82 Jefferys 'Denomination and Character ...'; Shannon, 'Limited Companies, 1866-83'; and Cottrell, *Industrial Finance* ...

profits from iron, steel and related industries, especially in the early 1870s, however, encouraged the formation of a number of smaller firms with lower share denominations which could potentially have attracted a wider group of share holders. However, according to Jefferys, the large, semi-private company continued to dominate these sectors until the late 1880s.[83]

To examine the share denominations of different industries included in this study, the companies have been divided into industrial types in Table 4.32.

Table 4.32: Average share denominations per company type

Company type	Number of companies	Average share denomination (£)	Average nominal start up capital (£)
Steel & Engineering	3	66.67	95,000
Iron & Steel	13	45.77	157,077
Other Metals	3	43.33	39,000
Engineering	3	40.00	85,000
Steel	13	38.08	50,308
Iron	10	33.00	340,500
Coal	31	31.87	43,095
Coal/Coke & Iron	4	15.00	241,250
Metal Plating	5	11.00	21,000
Tools	1	10.00	10,000
Transport	1	10.00	10,000
Cutlery	2	3.00	25,000
Blacksmith	1	1.00	2,000

As might be expected, coal, iron steel, and engineering firms had a relatively high average share denomination, (over £30) and firms involved in engineering, in some capacity, also had high share denominations. What of the relationship between company size and share denomination? The financial size of a concern was related to its technologically based capital and, in turn, to the total value of its issued shares. Iron, steel, coal and engineering firms tended to be large operations with high capital requirements in contrast to cutlery manufacturers, blacksmiths and tool

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83 Jefferys, 'Character and Denomination ...'.

manufacturers which operated on a much smaller scale and required less capital. The relationship between share denomination and company size, as measured by the average initial nominal capital, can be seen more accurately in Table 4.32. The blacksmith, cutlery and tool manufacturing companies had low average initial nominal capitals and low share values while the iron, steel and engineering firms, in marked contrast had relatively high nominal capitals and high share values. The exception appears to be coal companies, where share denominations were high, but initial nominal capital was relatively low. Therefore, the denomination of share values in some firms with high capital requirements might have inhibited investment by those with only small incomes and instead attracted those investors described by Jefferys - the owners of manufacturing concerns interested in long term investments. However, it would appear that the size of shares in other firms, including those in smaller, less capital intensive industries, would be readily available to the majority of those of 'adequate means'.

However, share denomination by itself does not determine the type of investor in a company. As illustrated previously in the chapter, nominal capitals (and therefore share values) were rarely fully paid up. The amount of capital actually called on the share was consequently crucial in determining the potential availability of shares to members of the investing classes. Low share calls would mean availability to a greater number of people but those who purchased such shares incurred a high liability as a large proportion of their share value was left uncalled. Jefferys refers to this as the practice as amounting to limited liability in theory but unlimited liability in fact.[84]

Shannon and Jefferys argue that, during the initial period of limited liability, a high proportion of uncalled capital was viewed as providing security for the company. However, this opinion changed after the 1866 crisis and thereafter

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84 *ibid.*

the amount of capital left uncalled on shares decreased markedly. The data for the 86 'Sheffield' companies in this study do not, however, fit neatly into this pattern. Jefferys points out that experiences differed between industries, therefore the data are given here both annually and by company type. Tables 4.33 and 4.34 show both the calls on individual shares as a percentage of their nominal value and also display the actual subscribed capital as a percentage of nominal capital. The companies included in these calculations are those which submitted a share return giving the details of both nominal and subscribed capital, in total and per share. Therefore, the four abortive companies in this study which failed to submit a share return are not included in the results concerning subscribed capital.

Table 4.33 provides annual figures of the amount of capital called on shares in relation to their nominal values. Overall, calls were relatively high; in only three years was the percentage of capital called on shares below 30 per cent of their nominal value.

Table 4.33: Call on shares as a percentage of their nominal value 1855-1885

Year of share return	Number of companies	Share call as a % of nominal share value	Year of share return	Number of companies	Share call as a % of nominal share value
1856	1	10.00	1871	1	100.00
1857	2	33.33	1872	2	85.00
1858	1	45.00	1873	16	46.61
1859	0	0.00	1874	9	67.04
1860	1	50.00	1875	6	57.92
1861	0	0.00	1876	2	98.18
1862	1	25.00	1877	7	0.00
1863	2	85.00	1878	1	50.00
1864	1	40.00	1879	2	100.00
1865	8	33.10	1880	2	22.00
1866	1	50.00	1881	3	86.11
1867	3	68.75	1882	2	100.00
1868	3	86.49	1883	3	66.25
1869	3	40.00	1884	4	83.06
1870	0	0.00	1885	0	0.00

There does appear to be a higher level of capital called on shares after 1866, especially in the early 1870s and early 1880s. Due to the small number of companies in the survey it is, however, difficult to discern trends when the data are given on an annual basis. Therefore, the period 1855 to 1885 has again been divided into two fifteen year periods, and also two periods with 1866 used as the dividing line.

When the period 1855 to 1885 is divided at 1870, the percentage called on the shares is very similar in each sub-period (Table 4.34). However, when 1866 is taken as the dividing year, as Jefferys suggests, the results show a decrease in the amount of capital left uncalled on shares after 1866 and these results fit Jefferys' hypothesis.

Table 4.34: Share calls as a percentage of nominal share values

Year	Number of companies	Share call as a % of nominal share value
1855-70	27	50.68
1871-85	59	58.94
1855-66	17	33.46
1867-85	69	61.82

The type of company also influenced the amount of capital called on each share. Table 4.35 shows the share denominations and subscribed capital as a percentage of nominal value by company type. Discrepancies appear in Table 4.35 between the percentages called on shares and the percentages of subscribed capital when, in fact, the two figures should, presumably, be the same. This difference arises because despite calls being made, some were left unpaid. The figure used to calculate the percentage of subscribed capital is the total amount of calls paid, unpaid calls being excluded.

Table 4.35: Share calls per company type as a percentage of share denomination			
Company Type	**Number of Companies**	**Share call as a % of share denomination**	**Subscribed Capital as % Initial Nominal Capital(£)**
Transport	1	100.00	30.00
Other Metals	3	83.46	80.20
Steel & Engineering	3	82.50	72.88
Cutlery	2	76.67	42.77
Coal/Coke & Iron	4	76.67	39.56
Blacksmith	1	75.00	15.60
Steel	13	72.91	45.90
Metal Plating	5	63.64	43.65
Coal	31	61.93	40.04
Iron	10	38.59	32.51
Iron & Steel	13	37.23	39.81
Tools	1	30.00	27.25
Engineering	3	17.50	15.31

The industries with low share calls, and therefore a large amount of capital left unpaid on each share, were in iron, iron and steel, and engineering. These would also be large concerns. Jefferys would argue that these were the firms least affected by the trend in issuing shares of lower denominations and with a higher percentage paid up. According to Jefferys, the large amount of money left uncalled on the share was used as security for loans; other times it arose as a result of mistakes in the valuation of a company when it was being formed, or converted, whereas generally investors tended mainly to be the owners of such concerns. The companies with high proportions called on their shares seem to consist of the smaller, less capital intensive firms - cutlery and blacksmiths. However, firms in the categories steel, steel and engineering, coal, coal and iron, metal plating, and the production processing of other metals - also had high proportionate calls on their shares. Such firms would be large and capital intensive. Therefore, the experience of the 90 'Sheffield' companies does not fit neatly with Jefferys hypothesis. The dates

of registration of the incorporations in the steel, steel and engineering, coal, coal and iron categories may offer an explanation for the high calls by these firms. Jefferys suggests that the iron and steel boom of the early 1870s led to the registration of companies which issued shares with lower share denominations and less uncalled capital. Of all the 90 'Sheffield' companies there was a cluster of steel firms registered in the early 1870s, eight out of the 12 steel companies being registered between 1873 and 1877. Of the three 'steel and engineering' companies in the survey, one was formed in 1868 and the other two in 1873. The 'coal and iron' companies were formed in 1871, 1873, 1875, and 1883. (Registrations of the 'non-abortive' 29 coal companies in the survey are spread across the period between 1856 and 1884). Therefore, it does appear that there was a tendency for companies in these large, capital intensive industries, which had a low level of uncalled capital on their shares, to cluster in the early 1870s and the iron and steel boom. Thus, this data conforms with the explanation offered by Jefferys.

The character of share was also important with regards to the potential investors that might purchase them. Shares issued by the 'Sheffield' limited companies were nearly always ordinary shares, as shown in Table 4.36. Ordinary shares actually increased in importance as the period progressed. The development of the use of other types of shares can also be seen in the table. Preference and deferred shares were not used at all by companies in this survey before 1870 but shares with differential calls increased in importance thereafter. However, both shares with differential calls and fully paid up shares were mainly ordinary shares but which had differing amounts of calls made upon them as compared to the majority of ordinary shares issued by a company. Thus, there appears to have been a formal development after 1870 in terms of the differentiation of shares - the greater variety of classification used. Vendors shares were also an important share type used by the 90 companies: these were fully paid up and used as a method of paying owners

of a company for their transferred property. They also increased in importance over the period. Fully paid up shares were also used as a method of paying vendors, but in this sample they were used less often after 1870, but this was probably due to a change in description, with shares of this type coming to be increasingly described as 'vendors'.

Table 4.36: The character of shares 1855-1885

Types of Share	Percentage capital subscribed per share type 1855-85	Percentage capital per share 1855-69	Percentage capital per share 1870-85
Ordinary	77.50	33.02	44.48
Vendor	9.48	3.87	5.61
Preference	8.81	0.00	8.81
Differential	3.59	0.30	3.29
Fully Paid Up	0.54	0.40	0.14
Deferred	0.08	0.00	0.80

Shareholders

Those that purchased shares in the limited companies being surveyed - the men and women who 'owned' the concerns - will now be analysed in terms of their social and geographical origins. The data used to examine the geographical location, and social composition, of the shareholders were taken from the first annual return of the summary of capital and shares made by each company to the Registrar. The four abortive companies in the sample are not included as they did not submit any returns; therefore the survey is of the 86 remaining 'live' companies

Shareholders: Geographical Location

The geographical location of shareholders has been taken as the addresses submitted by each investor in every share return. Problems arise with these data as an individual may have had more than one address; for example, a

private residence and a business premise.[85] However, the address provided for each investor is a detailed, and usually, accurate recording of geographical location.[86] (See Appendix 4.2 for geographical classifications).

Results of this aspect of the analysis, as might be expected, reveal a very localised capital market. Manufacturing industry in the mid-nineteenth century relied on local capital markets. However, previous work has suggested that as the century progressed, and with the introduction of limited liability, the increase in the size and, therefore, capital requirements of many manufacturing firms and the changing attitudes of capitalists, caused an increasingly national capital market to emerge. However, the findings of this particular inquiry indicate that exactly the opposite was true of at least the Sheffield region. The companies in this survey display an increasing reliance on local capital markets as the period progressed. Unsurprisingly, Sheffield is the dominant single location for investors in companies surveyed and Yorkshire the county contributing the single largest source of capital. Table 4.37 illustrates the growing importance of Sheffield as a source of capital when the 30 year period of this study is divided in two. This goes against the trend of a very local capital market in the mid-nineteenth century broadening into a more national entity towards the end of the century.

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85 In the process of nominal record linkage, individual shareholders were identified by their address and occupation. However, investors with shares in several companies sometimes gave different addresses. They could be identified as the same individuals by cross referencing with contemporary trade directories where their home and work addresses were given. Addresses as given in the BT 31 files were left unchanged once both the home and the works addresses were established as being correct.

86 In the process of nominal record linkage, some addresses were altered where they were found to be inaccurate. However, it was impossible to cross check every address and, furthermore, during this process most addresses were found to be recorded accurately in the returns when cross referenced with trade directories.

Table 4.37: The percentage of capital invested from Sheffield and Yorkshire			
Town/City	Capital subscribed % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
Yorkshire	54.96	38.59	64.83
Sheffield	31.62	19.70	38.80
Rotherham	5.82	1.14	8.64
Leeds	1.95	4.39	0.47
Halifax	1.31	2.62	0.52
Pontefract	1.13	3.01	0.00
Doncaster	0.93	2.05	0.26
Barnsley	0.75	1.03	0.58
Rawmarsh	0.27	0.00	0.44

Detailed examination of subscribers resident in Yorkshire as a whole confirms this trend of an increasing localisation of the capital market, as shown in Tables 4.38 and 4.39. A breakdown of subscribed capital in each Riding of Yorkshire in Table 4.38 reveals the dominance of the West Riding. This is the Riding in which Sheffield, Rotherham, Barnsley and, therefore, the majority of the companies in the survey, were located. More significantly, the importance of West Riding increased as it provided the location for 64 per cent of subscribed capital after 1870, as opposed to 38 per cent previously. The East, North and York Ridings[87] were of very little importance as a location for shareholders of the 86 companies in the survey.

Table 4.38 shows more detailed figures for West Riding, which has been broken down into the 'divisions' found in contemporary Directories and Gazetteers. The southern division of West Riding contained Sheffield, Rotherham, Barnsley and their surrounding villages. The concentration of subscribed capital coming from this division is quiet startling and, further-

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87 York, the county in which the city of York was located, formed a county in itself which was separate from the three Ridings. See Bartholemew, J. G. ed. *The Survey Gazetteer of the British Isles, Topographical, Statistical and Commercial* (1904) [hereafter *Gazetteer of the British Isles* ...], p.875.

more, the amount of capital from this restricted area increased markedly after 1870. Therefore, Table 4.38 illustrates the increasing importance of a very local capital to the companies formed after 1870 within this survey.

Table 4.38: The percentage of capital subscribed from Yorkshire by Riding			
Riding	Capital subscribed 1855-85 % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
West	54.35	37.59	64.45
York	0.23	0.43	0.11
East	0.16	0.31	0.07
North	0.13	0.26	0.05
Unknown	0.10	0.00	0.16

Table 4.39: The percentage of subscribed capital from West Riding by division			
West riding divisions	Capital subscribed 1855-85 % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
South	48.88	25.44	63.01
East	3.90	9.22	0.70
North	1.56	2.92	0.74

The geographical location of shareholders may have been influenced by the 20 companies in this sample that were promoted by Alfred Allott, John Unwin Wing and David Chadwick, as mentioned above. The industrial promotions of Chadwick occurred in the 1860s and involved share subscriptions originating from outside Yorkshire, in particular Manchester and London. The promotions of Wing and Allott occurred in the 1870s and were dominated by capital subscribed from their local city - within the southern division of the West Riding of Yorkshire. Thus, the localisation of the capital market between 1855 and 1885 for the 86 'live' companies appears to have been strongly influenced by the emergence of local, rather than 'external', promoters in the 1870s.

The actual sites of the works of the companies in this survey were not all located within the West Riding of Yorkshire. The area for study was extended to include North Derbyshire seen to be a part of a natural economic region.[88] Yet despite the inclusion of these Derbyshire firms, the West Riding still dominates as a source of investment capital.

Analysis of subscriptions coming from outside the county of Yorkshire must be examined in order to ascertain the extent and origin of a 'regional' or a 'national' capital market. The principal individual cities and towns that were the residences of such sources of subscribed capital are shown in Table 4.40.

Table 4.40: Major national city/town locations-% capital subscribed

Town/City	Capital subscribed 1855-85 % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
London	18.98	19.00	18.95
Manchester	8.60	20.53	1.47
Clitheroe	2.17	0.00	2.17
Chesterfield	0.98	0.81	0.17
Brighton	0.68	0.66	0.02
Bury	0.63	0.54	0.09
Birmingham	0.48	0.22	0.26
Horncastle	0.46	0.46	0.00
Oldham	0.41	0.41	0.00

Birmingham, a centre of iron, steel and engineering, is a logical supplier of capital, given the connections within these industries which presumably transcended regional boundaries. Chesterfield is again an obvious location for shareholders considering the North Derbyshire companies included in the survey. Horncastle and Brighton are more puzzling locations to feature in the results obtained. Brighton in the nineteenth century was a source of wealth in the South East and a location for either those individuals with a second home outside London or those retiring from the capital.[89] The

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88 See Introduction for the defined region.

89 Rubinstein, *Wealth and Wealthy* ...

appearance of Horncastle as an extra-regional source of some significance will be examined in the consideration of county locations below, as Lincolnshire as a whole was an important location of shareholders' residences.

Two other cities outside Yorkshire prove to have been major sources of capital. London remained a steady provider of funds throughout the period. As the most concentrated area of population and wealth in Great Britain, its appearance in these results is not unexpected. In addition, Manchester emerges as an important location for the investors. An area of intensive cotton manufacturing activity, and consequently a generator of financial capital, the North West, specifically Manchester, would appear to be a natural source of those willing to invest in production. Oldham and Clitheroe, two major cotton manufacturing centres near Manchester, also provided substantial amounts of capital. However, the importance of Manchester is confined specifically to the period before 1870, with few subscriptions coming from the city to companies formed thereafter. This would imply that the influence of Manchester was probably confined to the flotation of certain companies in the 1860s, namely those promoted by David Chadwick, as mentioned above.[90]

Four companies in this survey were promoted by Chadwick: Charles Cammell & Company Ltd, Parkgate Iron Company Ltd, Yorkshire Engine Ltd, and Vickers. Charles Cammell and Parkgate Iron were registered as limited companies in 1864, Yorkshire Engine in 1865 and Vickers in 1867. The first summaries of the capital and shares for the first three of these companies were returned in 1865, while that for Vickers in the year of the firm's incorporation. The tables below attempt to portray the influence of these companies within the total amount of capital originating from Manchester

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90 Cottrell, *Industrial Finance* ...

with respect to all 'Sheffield' firms surveyed. The data were acquired by selecting all the companies which had a substantial proportion of their capital subscribed from the city of Manchester and the results are displayed in Table 4.41 and 4.42.

Table 4.41: Percentage capital subscribed to Chadwick companies from Manchester of total capital subscribed

Company	Subscribed capital from Manchester as a % of total subscribed capital	Subscribed capital per company as a % of total subscribed capital from Manchester
Charles Cammell	6.55	75.89
Parkgate Iron	0.62	7.20
Yorkshire Engine	0.28	3.28
Newton Chambers	0.16	1.88
Vickers	0.00	0.00

In highlighting those companies with substantial amounts of capital originating from Manchester, Charles Cammell, Parkgate Iron and Yorkshire Engine prove to have had the three highest amounts of funds subscribed from the city. The coal company of Newton Chambers is the only other company with a sizeable amount of capital subscribed from Manchester-based investor and was also connected with Chadwick - the accountancy practise of Chadwick & Collier were the firms auditors. No other company displays a concentration of capital from this city, the remaining subscriptions from Manchester being dispersed over 32 other companies. Charles Cammell shows most clearly the influence of David Chadwick's Manchester connections, in contrast to Vickers in which no capital from the city was placed.

The pattern of the composition of Vickers' shareholders is very different. It was a company that was incorporated due to financial crisis: only 11 share-holders subscribed to the first issue of shares made by the company, four from London, one from Middlesex, and six from Sheffield. Seven of these share-

holders had the surname Vickers. Out of the remaining four, Benzon was involved in running the firm (his name having been previously used in the company title), Whitehead was a steel manufacturer from Sheffield, Bower was a solicitor from London (as was Henry Vickers), and finally the remaining shareholder was a London merchant. It is clear from this list that, despite the company being incorporated, there was a definite aim to keep the firm within the hands of the family and a few closely connected people.

The importance of Lancashire as a whole as a location of capital for Chadwick's companies is portrayed in Table 4.42. Capital from Lancashire was selected by company and the same four firms were found to be the main recipients of funds from Lancashire, Charles Cammell again dominating the table. Investors resident in Manchester actually comprised 63.9 per cent of total subscribed capital from Lancashire. However, it is important to note that the funds originating from the rest of Lancashire included capital from shareholders who resided within Manchester's sphere of influence, if not in the city - those in suburbs/villages surrounding Manchester, and in other Lancashire cotton manufacturing centres.

Table 4.42: Capital subscribed to Chadwick companies from Lancashire

Company	Subscribed capital from Lancashire as a % of total subscribed capital	Subscribed capital per company as a % of total subscribed capital from Lancashire
Charles Cammell	7.98	59.10
Newton Chambers	2.33	17.26
Parkgate Iron	0.70	5.17
Yorkshire Engine	0.42	3.14
Vickers	0.00	0.00

Returning to the broader view of the national origins of capital subscribed to the 'Sheffield' companies, the tables below display the data in detail. The counties which contained the main concentrations of subscribed capital are

displayed in Table 4.43. The figures present the percentages of total subscribed capital that originated from the stated locations.

Table 4.43: Subscribed capital by county			
County	Capital subscribed 1855-85 % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
Yorkshire	54.96	38.59	64.83
London	18.98	19.00	18.95
Lancashire	13.54	26.22	5.88
Derbyshire	3.05	4.59	2.12
Nottinghamshire	1.16	1.24	1.11
Warwickshire	0.88	0.58	1.06
Staffordshire	0.81	0.32	1.10
Sussex	0.75	1.76	0.15
Cheshire	0.56	1.13	0.22

Yorkshire, Lancashire and London have already been discussed in detail. Derbyshire largely appears in the table due to the inclusion of companies from this county in the survey and also the county, with Nottinghamshire, was adjacent to the Southern division of the West Riding of Yorkshire. However, even given the inclusion of these companies, the county does not feature as prominently as might have been expected. Cheshire, with major centres of manufacturing and being adjacent to Lancashire, appears in the table of the top eight counties which provided capital. Connections with the specific types of industries in which the companies being considered were involved are displayed in Table 4.43 by Staffordshire and Warwickshire, both areas with concentrations of production of steel and iron, and especially engineering and the secondary metal trades. The appearance of Sussex in Table 4.43 may be linked to the fact that Brighton, the major town of this county, was a source of funds for the companies surveyed, as shown in Table 4.40.

The number of individual shareholdings held in all the companies in the survey from each English county is displayed in Table 4.44 - i.e. the county

location of each individual shareholding expressed numerically, as opposed to the money value of the shares used in the previous tables which have been expressed in percentages. Yorkshire, Lancashire, London, and Derbyshire stand out as the four predominant locations of investors, concurring with the results measuring subscribed capital. The main difference between Tables 4.43 and 4.44, is the appearance of Lincolnshire in the latter table as the sixth most important location for shareholdings in numerical terms in the survey. Lincolnshire does not figure as one of the most important sources of subscribed capital in Table 4.43, which indicates that although more shareholders came from Lincolnshire than Warwickshire, Staffordshire and Cheshire, the actual amount of capital they subscribed was low.

Table 4.44: Number of shareholdings in each English county			
Cambridgeshire	1	Northamptonshire	10
Herefordshire	1	Shropshire	11
Huntingdonshire	1	Sussex	11
Westmorland	1	Middlesex	12
Wiltshire	1	Gloucestershire	13
Cornwall	2	Kent	13
Buckinghamshire	3	Surrey	13
Oxfordshire	3	Worcestershire	14
Dorset	4	Northumberland	15
Norfolk	5	Unknown	17
Berkshire	5	Durham	22
Cumberland	5	Cheshire	24
Bedfordshire	6	Staffordshire	33
Somerset	7	Warwickshire	46
Hampshire	7	Lincolnshire	49
Hertfordshire	7	Nottinghamshire	82
Leicestershire	7	Derbyshire	307
Devon	8	London	317
Essex	8	Lancashire	395
Suffolk	9	Yorkshire	3333

In addition to examining the shareholders of the 86 'Sheffield' companies as a whole, it is also important to examine specific companies and the geographical origin of their investors, that is, whether or not specific companies contained a significant number of shareholders that originated from a district

city or county. The predominance of Yorkshire and Sheffield as locations of shareholders has already been illustrated, as has the importance of Lancashire and Manchester. Therefore, the influence of other English counties and towns upon specific companies will now be examined.

The two most striking examples of county/company links in terms of the origin of shareholdings occur in the cases of Lincolnshire and Derbyshire. The connection between Lincolnshire and the iron and steel firms of the Sheffield region have already been mentioned. There were 49 shareholdings in the 86 'Sheffield' companies which originated from Lincolnshire, 14 of which came from Horncastle. Furthermore, of these 14 shareholding, 10 were associated with one company, the Whittington Freehold Colliery Co. Ltd., a connection that existed due to the fact that the estate upon which the colliery was situated belonged to Reverend William Matthew Pierce of Horncastle. The city of Lincoln was the origin of 17 shareholdings, 11 of which were held in the Plumbley Colliery Co. Ltd. Moreover, eight shareholdings that came from Lincolnshire were held in the West Dronfield Colliery, which was situated in Dronfield (Derbyshire) and had a registered office in London. Therefore, the connection with Lincolnshire in terms of shareholdings appears to be with colliery companies, rather than iron or steel firms, as may have been expected considering the county's role as a supplier of iron ore.

In Derbyshire there were a total of 307 shareholdings, 184 of which were clustered in just six companies. These companies and their relative shareholdings are displayed in Table 4.45. Three companies had registered offices that were located in Chesterfield, and one colliery was located in Whittington, Derbyshire. Therefore, the high number of shareholdings in these concerns that originated from the county would be predictable due to the geographical location of the company offices or operations. The links between Brown, Bayley & Dixon Ltd. and the Midland Iron Company Ltd. are less obvious.

The close proximity of Derbyshire to these concerns would seem one viable explanation.

Table 4.45: Companies in which major shareholdings originated from Derby shire			
Company Name	**Location of registered office**	**Location of company works/operations**	**No. of share-holdings from Derbyshire**
New Midland Mining Company Ltd	Chesterfield	National	61
Midland Mining Company Ltd.	Chesterfield	National	55
Oliver & Company Ltd.	Chesterfield	Chesterfield	24
Whittington & Sheepbridge Colliery	Sheffield	Whittington	18
Brown, Bayley & Dixon Ltd.	Sheffield	Sheffield	16
Midland Iron Company Ltd.	Rotherham	Rotherham	10

The other important company/county links that existed involved Staffordshire and Warwickshire. Staffordshire was the origin of 33 shareholdings, ten of which were held in the Rotherham firm Midland Iron Company Ltd. The county was a major centre for the mining of coal and iron ore, as well as the manufacture of iron and secondary metal trades. Six of the ten shareholding in the Midland iron Co. were from Bilston, which was described in the *Survey Gazetteer of the British Isles* as: 'a great centre of hardware trade - iron and brass castings, tin and japanned wares, etc., with extensive iron foundries and smelting works, and potteries'.[91] Therefore, the logical explanation for the link between Staffordshire and the Midland Iron Co. appears to be the existence of iron manufacture in the county - connections presumably existing between individuals occupied in the same trades in different regions.

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91 *Gazetteer of the British Isles* ..., pp.72.

A total of 46 shareholdings originated from Warwickshire and ten were held in Charles Cammell & Co. Ltd. There again appears to a logical explanation for the link between county and company with regard to common industries. Warwickshire mined both coal and iron ore and contained centres of iron and steel manufacture, secondary metal trades and engineering at Birmingham and Coventry.

Links between cities and company shareholdings also existed, Manchester being a prime example and discussed in detail above. Other cities or towns also had links with specific companies, such as Newcastle Upon Tyne, from which a total of 18 shareholdings originated, 10 of which were held in the Unstone Coal & Coke Company Ltd. This connection could possibly due to the fact that Newcastle was situated in a coal producing region and therefore links between investors in collieries would be likely to occur. Mansfield was another coal producing town from where ten shareholdings originated, all held in colliery companies: five in the Whittington & Sheepbridge Colliery Ltd. and five in the Midland Mining Company Ltd. Moreover, both these companies were located in Derbyshire but located close to this North Nottinghamshire town. Thus, links in the coal industry between company investors from different regions appears to have been quite strong.

Ten shareholdings originated from the town of Northampton, all being held in the Thrapstone Iron Ore Co. Ltd. Northampton was the centre for boot and shoe manufacture but also had an important ironworking industry. It is therefore not surprising that links existed between this town and an iron ore company.

As has been mentioned above, London was a major single location from where shareholdings originated - 317 in total. Table 4.46 illustrates concentrations of shareholdings from London that existed in six specific

companies, the remaining shareholdings from the capital being dispersed among the other 80 companies. Of these six companies, four had their registered offices in London and therefore the existence of so many shareholders in these concerns from the capital is unsurprising. A company with a registered office in London would presumably have the ability and connections to draw upon the investing classes from the city. Of the other two concerns, Charles Cammell was a large engineering concern which presumably had a national reputation that would have stretched to those investors located in London. Moreover, those involved in the management of the concern, for example Chadwick, would probably also have had links with the capital. Parkgate Iron was a Rotherham company but was also promoted by David Chadwick. Chadwick had offices in both Manchester and London and would therefore have had connections in the capital which could have been used when selling shares in the companies which he promoted. Therefore, not only was London a major source of shareholdings in all the 86 'Sheffield' companies due to its importance in size and wealth accumulation, but specific links involving certain companies also existed due to the influence of individuals or office location on investment patterns.

Table 4.46: Companies in which major shareholdings originated from London

Company name	Location of registered office	Location of company works/operations	No. of shareholdings from London
Parkgate Iron	Rotherham	Rotherham	32
Unwin & Rodgers	London	Sheffield	19
Clogau Mining Co. Ltd	London	National	57
Chesterfield & Midland Silkstone Colliery Co. Ltd	London	Sheepbridge (Derbyshire)	25
Whittington Freehold Colliery Co. Ltd	London	Whittington (Derbyshire)	25
Charles Cammel & Co. Ltd	Sheffield	Sheffield	34

Capital originating from the counties outside England played a very minor role in supplying firms in the Sheffield region with funds (Table 4.47). Wales provided most of the 'non-national' capital, but this only amounted to 0.95 per cent of total subscribed capital.

Table 4.47: Capital from outside England

Area	Capital subscribed (£)	% of total capital subscribed
Wales	25,087	0.95
Scotland	15,964	0.60
Ireland	1,230	0.05
Abroad	2,509	0.09

A closer look at the locations of shareholders from Wales illustrates a logical link with the industries of the Sheffield region. One shareholder came from each of these towns: Aberystwyth, Cardiff, New Milford, and Newport. Aberystwyth was large town and port, with iron foundries. Cardiff, was a prosperous county town and port, being described in the 1904 edition of the *Gazetteer of the British Isles* in the following terms:

> The rapid prosperity of the town is due to the abundance of minerals in the district. Its exports of coal and iron from the valleys of the Taff, Rhymney, etc., are among the most important in the kingdom.[92]

New Milford, another port, was also terminus of the Great Western Railway. Lastly, Newport, also a port, is described in the same *Gazetteer* as 'The great trade of the place is the export of manufactured iron and coal.'[93] The shareholders from Wales, therefore, would appear to have had 'natural' links with the Sheffield region, through both common industries and transport connections.

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92 *ibid.*, pp.129-130.

93 *ibid.*, p.596.

The capital from 'abroad' originated from Jersey, the Isle of Man, Canada, Egypt, France, Germany, Holland, and Russia - a wide spread of locations, but with European funds predominating.

Shareholders: Social Status, as indicated by Occupation

Occupational data in the share returns must be regarded with caution as the information relies on self classification. There is always a tendency for individuals to inflate his or her social status through the definitions of their 'occupations' required by the Registrar on the list of shareholders. Many referred to themselves simple as 'merchants' or 'gentleman', broad occupational categories which are not a very helpful for historical analysis. The occupation of 'gentleman' was given by those who in aggregate invested 6.15 per cent of the capital in this survey and, similarly, that of 'merchant' by those investing 6.8 per cent.

Occupations have been divided into 15 broad categories and the percentage of subscribed capital which falls within each of these categories is displayed in Table 4.48.[94]

The majority of shareholders came from four socio-occupational groups: manufacturing, commerce, the professions and those that were independent or unoccupied. The importance of each of these groups can be seen to have increased when the data are presented in two sub-periods, the technique already used in order to identify changing patterns over time.

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94 A full list of occupational classifications is given in Appendix 4.3.

Table 4.48: Occupation categories as a percentage of total subscribed capital			
Occupational category	Capital subscribed 1855-85 % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
Manufacturing	39.96	33.79	43.68
Commerce	16.02	20.04	13.59
Professions	13.92	10.60	15.92
Independent	13.91	14.70	13.44
Mining	6.45	10.51	4.00
Unknown	2.29	3.00	1.86
Unknown Management	1.93	1.89	1.96
Unknown Workers	1.55	1.88	1.35
Public Service	1.40	0.34	2.04
Other Services	0.88	1.75	0.35
Construction	0.70	0.17	1.02
Agriculture	0.47	0.61	0.39
Transport	0.41	0.59	0.31
Institutional Holding	0.06	0.10	0.04
Domestic Service	0.02	0.00	0.02

Manufacturing is the single most common occupational category of shareholders in the surveyed companies. At 40 per cent, manufacturers of one kind or another provided sometimes approaching half of the capital subscribed. Given that over half the companies surveyed are themselves manufacturing concerns, this outcome may not be surprising. Moreover, the vendors of these manufacturing concerns, as shareholders of newly converted limited companies, would also probably be included in this category, if they so classified themselves. However, 30 colliery companies are included, yet those occupied in the coal sector do not figure very highly . The degree of manufacturers' involvement in the main industries of the area is very distinctive.

Table 4.49 amplifies the occupational category 'manufacturing' by providing more detail. Iron and steel producers stand out clearly as the main subscribers

(26 per cent of the total), again unsurprising given the industries involved in the survey. However, their dominance is quite startling as the next highest provider of manufacturing capital is the group 'unspecified' at only six per cent.[95] These unspecified industries themselves probably include many shareholders from iron, steel or the metal manufacturing trades. Moreover, none of the other manufacturing groups provide more than one per cent of total capital subscribed.

Table 4.49: Percentage of total capital subscribed by shareholders engaged in manufacturing

Branch	Capital subscribed 1855-85 % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
Iron & steel	25.54	12.22	33.57
Unspecified	6.09	11.80	2.52
Gold & silver	0.78	0.13	1.16
Machinery	0.73	0.16	1.06
Printing	0.58	0.05	0.90
Cutlery	0.52	0.00	0.84
Food preparation	0.65	0.77	0.57
Other Metals	0.40	0.13	0.55
Clothes	0.34	0.15	0.45
Tools	0.26	0.05	0.39
Brewing	0.31	0.33	0.30
Wagon/carriage	0.27	0.24	0.29
Paper	0.12	0.00	0.20
Chemicals	0.74	1.64	0.19
Rope etc.	0.12	0.13	0.12
Lace	0.07	0.00	0.10
Dye	0.43	0.98	0.09
Furniture	0.05	0	0.08
Wool	0.87	2.30	0.01
Cotton	0.98	2.60	0.01
Glass	0.05	0.00	0.00

The second most important occupational group after manufacturers consisted of those involved in commerce, supplying 16 per cent of total subscribed

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95 Many shareholders described themselves merely as 'manufacturers', not very helpful to subsequent historians.

capital. This is a very loose description, as are many of the self-classifications provided in the share returns. Table 4.50 shows in more detail the occupations within this group.

Table 4.50: Percentage of total capital subscribed by shareholders engaged in commerce

Branch	Capital subscribed 1855-85 % total	Capital subscribed 1855-69 % total	Capital subscribed 1870-85 % total
Merchants- unspecified	6.80	13.71	2.63
Agent- metals	2.58	0.00	4.13
Dealers- specified	2.00	2.44	0.54
Retail	1.70	1.42	1.84
Merchants -iron & steel	1.08	0.23	1.59
Merchants -specified	0.89	0.50	1.12
Merchants- coal & coke	0.49	0.17	0.68
Merchants -cutlery	0.32	0.50	0.21
Agents- unspecified	0.32	0.37	0.29
Agents- specified	0.23	0.58	0.01
Brokers- specified	0.18	0.09	0.24
Agents- coal & coke	0.07	0.02	0.10
Brokers- unspecified	0.05	0.00	0.08
Dealers- unspecified	0.05	0.00	0.08

Both the groups constituted by the professions and those of independent means each provided 14 per cent of total subscribed capital. The figures for the distributions of capital within these occupational groups are displayed in the Tables 4.51 and 4.52 below. Engineers and those involved in the legal profession provided most capital (each supplying approximately four per cent of the total), with solicitors subscribing the majority in the latter group (almost four per cent). Accountants and share brokers provided surprisingly little subscribed capital. The importance of such financial agents has been demonstrated previously with their involvement in company promotions. However, overall, their role as actual providers of capital is obviously far less important than the manufacturers themselves, implying that a few

individual promoters/ agents facilitated the adoption of limited liability rather than provided funds for the companies involved.

Table 4.51: Percentage of total subscribed capital by shareholders engaged in the 'Professions'			
Branch	**Capital subscribed 1855-85 % total**	**Capital subscribed 1855-69 % total**	**Capital subscribed 1870-85 % total**
Law	4.05	2.48	5.05
Engineers	3.95	2.69	4.71
Accountant	1.34	1.30	1.39
Stock/Share Brokers	0.79	0.14	1.18
Banker	0.70	0.77	0.66
Religion	0.49	0.50	0.48
MP	0.46	1.18	0.02
Medicine	0.37	0.28	1.09
Teaching	0.29	0.02	0.45
Chemists	0.24	0.14	0.30
Scientists	0.11	0.02	0.17

The descriptions of those described as being 'independent', i.e. in terms of wealth, are rather vague. Nevertheless, they provided 14 per cent of total subscribed capital. The aristocracy had a very minor role in providing capital for the region's manufacturing industry.

Table 4.52: Percentage of total subscribed capital by shareholders in the Independent/Unoccupied category			
	Capital subscribed 1855-85 % total	**Capital subscribed 1855-69 % total**	**Capital subscribed 1870-85 % total**
Gentleman	6.15	5.97	6.26
Unoccupied males	4.13	8.08	1.75
Unoccupied females	2.98	0.43	4.53
Aristocracy	0.64	0.21	0.90

Therefore, the majority of shareholder were male, came from Sheffield and were occupied in manufacturing or commerce, most probably connected with

the iron and steel industries. The majority of shares held were £10 in nominal value and ordinary in type.

Shareholdings: Multiple Shareholdings

An important aspect of this study has been to establish the existence of any regional or local capital networks. One method of identification is to examine those shareholders which held shares in more than one company - multiple shareholders. The vast majority of shareholders in the 86 'Sheffield' companies, in fact, only held a single share in one company: 86 per cent. Thus, the majority of shareholdings were widely dispersed among numerous investors. The remaining shareholders owned two or more shares, the exact shareholding patterns being displayed in Table 4.53.

Table 4.53: Multiple shareholders

Shareholdings	Number of shareholders
Single shareholders	3179
Two shareholdings	335
Three shareholdings	93
Four shareholdings	42
Five shareholdings	11
Six shareholdings	6
Seven shareholdings	1
Eight shareholdings	1
Twelve shareholdings	1
Total	3668

Table 4.54 identifies those shareholders with four or more shareholdings in order to identify a 'capital network' and examine the occupational and geographical origins of the 'major' investors in the 90 'Sheffield' companies.

Table 4.54: Shareholders owning shares in four or more of the 90 'Sheffield' companies			
Name	**Address**	**Occupation**	**No. of share-holdings**
Hadfield	Sheffield	Accountant	4
Potter		Accountant	4
Hawksley	Sheffield	Boiler Manufacturer	4
Wild	Sheffield	Boiler Manufacturer	4
Greenwood	Sheffield	Coal Merchant	4
Cooper		Colliery Proprietor	4
Shaw	Sheffield	Colliery Proprietor	4
Unwin	Sheffield	Cutlery mfr	4
Davy	Sheffield	Engineer	4
Davy	Sheffield	Engineer	4
Davy	Sheffield	Engineer	4
Davy	Sheffield	Engineer	4
Davy	Sheffield	Engineer	4
Easterbrook	Sheffield	Engineer	4
Davy	Sheffield	Gentleman	4
Dickson	Sheffield	Gentleman	4
Waterfall		Gentleman	4
Woodhouse	Sheffield	Grocer	4
Hampton	Sheffield	Iron & Steel mfr	4
Hampton		Iron & Steel mfr	4
Firth	Sheffield	Ironfounder	4
Haywood	Rotherham	Ironfounder	4
Loxley	Sheffield	Joiner & Builder	4
Parker	Sheffield	Law Stationer	4
Mycroft	Sheffield	Licensed Victualler	4
Clayton	Sheffield	Manager	4
Jeeves	Sheffield	Manager	4
Lowe	Sheffield	Manager	4
Bray	Rotherham	Merchant	4
May	Sheffield	Merchant	4
Breakey	Sheffield	Minister	4
Cowlishaw	Sheffield	Pearl Merchant	4
Brailsford	Sheffield	Printer	4
Brown	Rotherham	Solicitor	4
Steel	Sheffield	Spinster	4
Peace	Sheffield	Steel & File mfr	4
Brittain	Sheffield	Steel mfr	4
Smith	Sheffield	Steel mfr	4
Wood	Sheffield	Steel mfr	4
Cobb	Bridgenorth	Tailor & Draper	4
Bunting	Chesterfield	Tallow Chandler	4

Name	Address	Occupation	No. of share-holdings
Wordsworth	Sheffield	Wire Manufacturer	4
Wood	Sheffield	Boiler Manufacturer	5
Wood	Saltaire	Cashier	5
Blakeley	Sheffield	Clerk	5
Rymer	Sheffield	Clerk	5
Staniforth	Sheffield	Clerk	5
Wigfield	Rotherham	Draper	5
Barras	Rotherham	Gentleman	5
Wicks	Sheffield	Gentleman	5
Harriss	Rotherham	Ironfounder	5
Pawson	Sheffield	Printer & Publisher	5
Gamble	Sheffield	Steel Manufacturer	5
Kidner	Sheffield	Accountant	6
Wing	Sheffield	Accountant	6
Wood	Sheffield	Boiler Manufacturer	6
Fieldsend	Sheffield	Colliery Manager	6
Wright	Sheffield	Pawn Broker	6
Wright	Sheffield	Pawn Broker	6
Smith	Sheffield	Share Broker	6
Smith	Sheffield	Share Broker	7
Heane	London	Gentleman	8
Allott	Sheffield	Accountant	12

Table 4.54 displays the individuals who formed a 'capital network' within the 86 'Sheffield' firms under consideration. There were 63 individuals who held four or more shares in several of the firms in the survey. Some investors had two shareholdings in one company, possible due to the different character of the shares being held, and these will be discussed further below. Of the 'major' shareholders that formed this network, 87 per cent originated from Sheffield or Rotherham, therefore, the network was a local one. In terms of occupational composition, the members of the 'professions' (excluding engineers) comprised 13 per cent of the shareholders in the network; those undertaking the manufacture of iron, steel, boilers and wire, and also engineering, consisted of 33 per cent; and those involved in the mining or selling of coal comprised 6 per cent. Thus, the majority of those in this capital network were involved in the main Sheffield trades.

The multiple shareholdings of this 'network' of 63 investors were clustered within certain firms, the location of such 'cross-holdings' being illustrated in Table 4.55.

Table 4.55: Cross-holdings of the 63 'major' shareholders in 86 'Sheffield' limited companies

Company Number	Company Name	Year of incorpo-ration	No. of share-holdings	Promoter
1756/6547	Charlton Iron Works Co. Ltd.	1872	24	Allott
1763/6597	Phoenix Bessemer Steel Co. Ltd.	1872	16	Allott
1770/6651	Henry Wilkinson & Co. Ltd	1872	13	Allott/ Barber
1779/6713	Albion Steel & Wire Co. Ltd	1872	30	Allott
1824/7070	Sheffield Steel & Manufacturing Co. Ltd.	1873	8	None
1832/7141	Cardigan Iron, Steel & Wire Co. Ltd.	1873	23	Wing
1843/7211	Brown Bayley & Dixon Ltd.	1873	17	None
1859/7319	Kelham Rolling Mills Ltd.	1873	27	None
1859/7320	William Cooke & Co. Ltd.	1873	27	Allott
1871/7421	Sheffield Nickel & Silver Plating Co. Ltd.	1873	7	Wing
1877/7460	Hydes & Wigfull Ltd.	1873	7	Allott
6662	Davy Bros. Ltd.	1874	30	Allott

Table 4.55 shows that 12 firms comprised the main location of investment of the 64 major shareholders. All 12 firms were incorporated in 1872, 1873 and 1874, the first two years being at the peak of the trade cycle. The majority of firms in this survey of 90 companies were incorporated in the early 1870s and therefore a large number of investors would be expected to be identified in these years. However, there appears to be a specific concentration of share-holders during this period of substantial investment activity in the Sheffield region. Moreover, all the companies were iron, steel and/or engineering enterprises.

Therefore, from examining the multiple-shareholders and cross-holdings that occurred in this survey of 86 limited companies, there appears to have been a very localised capital network consisting of primarily iron, steel and engineering industrialists who invested in companies involved the same manufacturing activities as themselves. Moreover, the table also shows that of these 12 firms, seven were promoted by Alfred Allott and two by John Unwin Wing. Thus, nine of the firms which were the main location of investment of the 63 major shareholders were promoted by Allott and Unwin which indicates that the 'core' membership of the local capital market comprised individuals connected with the two Sheffield promoters. Furthermore, the concentration of this investment activity by this group of individuals occurred in the boom years of the early 1870s, the period in which the majority of Allott and Wing's firms were incorporated.

Conclusions

In examining the extent to which limited liability was adopted by companies in the Sheffield region and its use as a method of industrial finance, comparisons with other regions have been made. Quantitative comparisons of incorporation's have only been possible with Oldham and, although the latter was an exceptional case as the number of limited companies established there during the third quarter of the nineteenth century was well above the national average, parallels have previously been made between the high number of in registrations in both Sheffield and Oldham.[96] However, it is clear that, although there was a increase of registrations in the Sheffield region during 1855-85, this form of company organisation was more prevalent amongst the businesses of Oldham. Moreover, the number of firms adopting limited liability, as a proportion of the total number of

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96 Accountant, 1887, quoted by Thomas, *Provincial Exchanges* ...,p.124.

manufacturing concerns operating in the Sheffield area,[97] indicates that the 90 'Sheffield' companies examined in this chapter represented a minority of manufacturing operations. Furthermore, the companies surveyed were comparatively large-scale concerns. They were, therefore, unrepresentative of the typical form of company organisation, nor did they not constitute the dominant scale of manufacturing operations in the region. (The size of manufacturing concerns will be considered further in the concluding chapter of the thesis). Thus, relatively few companies in the Sheffield region adopted limited liability as a method to procure industrial finance.

The 90 'Sheffield' companies analysed that adopted limited liability were involved in the manufacture of iron, steel, engineering, and secondary metals, along with the raising of coal - the major Sheffield heavy trades. Their operations were located in or around the city and were formed for a variety of reasons, be it to avoid bankruptcy, to fund growth or to facilitate expansion through merger. The majority of companies were the result of public or private conversions of existing partnerships. Once incorporated, shares in all 90 companies were mainly dealt with locally, on the Sheffield Stock Exchange, although 23 concerns were also quoted on the London Stock Exchange. The majority of shares were ordinary in character and had a value of £10, although there was a trend towards a greater variety in share types as the period progressed.

Analysis of shareholders in the 90 'Sheffield' companies has revealed a very localised capital market which was dependent mainly upon subscriptions

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97 As an indication of the number of firms operating in the region see Chapter 2, concerning the size and structure of Sheffield trades, and Chapter 3, concerning the relationship between local banks and industry. The number of firms considered in these two chapters illustrates that the 90 'Sheffield' companies examined in this chapter formed a minority of manufacturing operations.

from three social groups: those engaged trade, commerce or the 'professions' (members of the former two groups being chiefly occupied in the major Sheffield trades). Indeed, shareholdings became increasingly localised, a trend mainly resulting from the promotions of Chadwick in the 1860s, which brought an influx of extra-regional funds from the cotton producing North West, and the subsequent promotions of the Sheffield based Allott and Wing in the 1870s, which attracted funds from the local area. This pattern contrasts with the experience of the 'Oldham Limiteds', in which firms incorporated in the early 1870s were mainly operated on a co-operative basis and many of the shareholders were comprised of workers involved in the concerns. However, after the 1877-79 depression in the cotton industry, incorporation's in Oldham tended to be 'semi-private limiteds, launched by cliques of mill officials, and financed by wealthy investors.'[98] Therefore, the 'Oldham Limiteds' became increasingly dominated by middle-class investors, often from outside the region, as the need to call upon a national capital market to provide funds for the cotton industry increased after the early 1870s.

Within the local financial capital market, there also existed a specific capital network in the Sheffield companies, identified by the existence of multiple shareholders and their cross-holdings. The company promoters were again influential in this phenomenon as nine of the early 1870s registrations of Allott and Wing contained a common group of local investors. This capital network consisted mainly of local industrialists who were often linked with each other, the promoters and the vendors of the limited companies in which they held shares, by their occupations and also by kinship and social ties.

The identification of the development of more 'public' capital markets for limited companies in the Sheffield region, as opposed to the reliance upon

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98 Farnie, *English Cotton ...*, p.266.

'auto-finance' (the plough back of profits), is difficult to discern from the sources examined in this chapter. However, it is possible to observe that, despite the adoption of limited liability, the companies analysed only very rarely attracted investors from outside the local area and, moreover, shareholders were often comprised of those in the same trade as the company vendors and/or family or friends.[99] Many shareholders were, therefore, probably known to the vendors or directors of the 90 companies. Furthermore, it appears that the vendors of the firms studied did not relinquish control of their concerns but continued in the capacity of directors and major shareholders. It is necessary to qualify such statements by examining specific business archives in order to analyse more fully the extent to which companies in the Sheffield region operated as 'private' rather than 'public' limited concerns. Thus, the case studies of five limited iron, steel and engineering firms are considered in the following chapter.

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99 A prime example is the Vickers Sons & Co. Ltd. where nearly all the shares were held by family members (see above).

PAGE NUMBERING AS ORIGINAL

APPENDIX 4.1: Incorporation and Dissolution details of the 90 Limited 'Sheffield' companies

Table 4.56: Incorporation details of the 90 Limited 'Sheffield' companies

Incorporated	Company Name	File No.	Sector	Conversion
1856	Brightside Coal Co. Ltd.	49/201	Coal	No
1856	Rotherham Masbro' and Holmes Coal Co. Ltd.	200/606	Coal	No
1857	Midland Mining Co. Ltd.	244/794	Coal	No
1858	New Midland Mining Co. Ltd.	325/1143	Coal	Yes
1859	Attercliffe Colliery Co. Ltd.	396/1500	Coal	Yes
1861	Chesterfield & Midland Silkstone Colliery Co. Ltd.	581/2411	Coal	Yes
1861	Sheffield Co-op Commercial & Mfring Co. Ltd.	595/2483	Cutlery (& tools)	No
1862	Chesterfield New Dunston Colliery Co. Ltd.	651/2742	Coal	Yes
1863	Stavely Main (Devonshire Silkstone) Coal Co. Ltd.	853/804C	Coal	No
1863	Whittington Freehold Colliery Co. Ltd.	823/649C	Coal	Yes
1864	Charles Cammell & Co. Ltd.	930/1166C	Iron & Steel	Yes
1864	Parkgate Iron Co. Ltd.	14355	Iron	Yes
1864	Sheffield Metal Co. Ltd.	1018/1652C	Other Metals	No
1864	Silkstone Coal Co. Ltd.	911/1065C	Coal	No
1865	London & Sheffield Nickel Silver Co. Ltd.	1073/1957C	Metal Plating	Yes
1865	Midland Iron Co. Ltd.	1073/1961C	Iron	Yes
1865	Oliver & Co. Ltd.	1053/1846C	Iron	Yes
1865	Tapton Colliery Coke & Iron Co. Ltd.	1061/1896C	Coke & Iron	Yes
1865	Yorkshire Engine Co. Ltd.	1101/2124C	Engineering	No
1866	Killamarsh Coal Co. Ltd.	1276/3169	Coal	Yes
1866	Midland Colliery Co. Ltd.	1267/3110	Coal	Yes
1866	Midland Counties Iron Ore Co. Ltd.	1229/2862C	Iron	No

Incorporated	Company Name	File No.	Sector	Conversion
1866	Sheffield File Grinding Co. Ltd.	1253/3018	Tools	No
1867	Dronfield Silkstone Coal Co. Ltd.	1339/3530	Coal	Yes
1867	Vickers Sons & Co. Ltd.	3543	Steel & Engineering	Yes
1868	Denaby Main Colliery Co. Ltd.	1393/3927	Coal	Yes
1868	Joseph Peace & Co. Ltd.	1426/4162	Steel	Yes
1868	Unstone Coal & Coke Co. Ltd.	1439/4246	Coal	Yes
1869	Woodhouse Colliery Co. Ltd.	1449/4307	Coal	Yes
1870	Sheffield & Tinsley Coal Co. Ltd.	1558/5041	Coal	Yes
1872	Albion Steel & Wire Co. Ltd.	1779/6713	Steel	Yes
1872	Charlton Iron Works Co. Ltd.	1756/6547	Iron	Yes
1872	G & J Brown & Co. Ltd.	1771/6652	Iron & Steel	Yes
1872	Henry Wilkinson & Co. Ltd.	1770/6651	Metal Plating	Yes
1872	Northfield Iron & Tyre Co. Ltd.	1796/6840	Iron & Steel	Yes
1872	Phoenix Bessemer Steel Co. Ltd.	1763/6597	Steel	Yes
1873	Brown Bayley & Dixon Ltd.	1843/7211	Iron & Steel	Yes
1873	Cardigan Iron Steel & Wire Co. Ltd.	1832/7141	Iron & Steel	Yes
1873	Hallamshire Steel & File Co. Ltd.	7399	Steel	Yes
1873	Hydes & Wigfall	1877/7460	Iron	Yes
1873	Kelham Rolling Mills Ltd.	1859/7319	Iron & Steel	Yes
1873	Manor Silkstone Coal Co. Ltd.	1900/7676	Coal	Yes
1873	Neepsend Rolling Mills Co. Ltd.	1824/7071	Iron & Steel	Yes
1873	Saville St Foundry & Engineering Co. Ltd.	1816/7002	Steel & Engineering	Yes
1873	Sheffield High Moor Colliery Co. Ltd.	1846/7231	Coal	Yes
1873	Sheffield Nickel & Silver Plate Co. Ltd.	1871/7421	Metal Plating	Yes
1873	Sheffield Steel & Manufacturing Co. Ltd.	1824/7070	Steel	Yes

Incorporated	Company Name	File No.	Sector	Conversion
1873	South Yorkshire Coal & Iron Co. Ltd.	1864/7346	Coal & Iron	Yes
1873	West Dronfield Colliery Co. Ltd.	1905/7727	Coal	Yes
1873	Whittington & Sheepbridge Colliery Co. Ltd.	1911/7794	Coal	Yes
1873	William Arnold & Co. Ltd.	1919/7888	Iron	Yes
1873	William Cooke & Co. Ltd.	1859/7320	Iron & Steel	Yes
1873	William Corbitt & Co. Ltd.	1876/7451	Iron	Yes
1874	Clogau Co. Ltd.	1980/8462	Coal	No
1874	Davy Bros Ltd.	6662	Steel & Engineering	Yes
1874	Sharrow Rolling Mills Co. Ltd.	2059/9068	Steel	Yes
1874	Stanleys Patent Furnace Co. Ltd.	1952/8219	Iron	No
1874	Tinsley Rolling Mills Co. Ltd.	1981/8470	Other Metals	Yes
1874	Whittington Silkstone Colliery Co. Ltd.	1936/8048	Coal	Yes
1875	Cocker Bros Ltd.	9413	Steel	Yes
1875	E. J. Hattersley & Co. Ltd.	2269/10868	Iron & Steel	Yes
1875	Edwin Round & Son Ltd.	2094/9403	Metal Plating	Yes
1875	New Silkstone Colliery Co. Ltd.	2104/9512	Coal	Yes
1875	Sheffield Blacksmith Co. Ltd.	2079/9253	Blacksmith	No
1875	Thrapstone Iron Ore Co. Ltd.	2067/9134	Iron & Coal	No
1875	Unwin & Rodgers Ltd.	2144/9906	Cutlery	Yes
1876	James Fairbrother & Co. Ltd.	2289/11031	Iron & Steel	Yes
1876	Taylor & Jessop Ltd.	2291/11042	Engineering	Yes
1876	Universal Railway Carriage Spring Co. Ltd.	2201/10334	Engineering	Yes
1876	Wath-Upon-Dearne Main Colliery Ltd.	2177/10168	Coal	Yes
1877	Henry Bessemer & Co. Ltd.	2330/11338	Steel	Yes
1877	Henry Ecroyd & Co. Ltd.	2350/11514	Steel	Yes

Incorporated	Company Name	File No.	Sector	Conversion
1877	Newhill & Milton Main Coal Co. Ltd.	2376/11763	Coal	Yes
1879	E. W. Oakes & Co. Ltd.	2481/12728	Steel	Yes
1879	Yates Haywood & Co. & the Rotherham Foundry Co. Ltd.	2533/13127	Other Metals	Yes
1880	Askham Bros & Wilson Ltd.	2718/14677	Steel	Yes
1880	Clogau Mining Co. Ltd.	2681/14356	Coal	Yes
1880	Plumbley Colliery Co. Ltd.	2600/13696	Coal	Yes
1880	Rotherwood Iron & Steel Co. Ltd.	2664/14190	Iron & Steel	Yes
1881	New Dronfield Silkstone Coal Co. Ltd.	2816/15438	Coal	Yes
1881	Newton Chambers & Co. Ltd.	1599	Coal & Iron	Yes
1882	Brown Bayley & Dixon Ltd.	2957/16577	Iron & Steel	Yes
1882	Sheffield Plate Manufacturing Co. Ltd.	2987/16803	Metal Plating	Yes
1882	Sheffield Steel & Wire Co. Ltd.	3045/17276	Steel	Yes
1883	Bathhurst Firestone & Fire Brick Co. Ltd.	3263/19188	Coal	Yes
1883	Marriott & Atkinson Ltd.	3220/18797	Iron & Steel	Yes
1883	Sheffield Steam Haulage Co. Ltd.	3239/18985	Transport	Yes
1884	Baths Foundry Co. Ltd.	3320/19678	Iron	Yes
1884	Sheldon Mining Co. Ltd.	3274/19273	Coal	Yes
1885	Steel Peach & Seaman Co. Ltd.	3574/21913	Steel	Yes

Table 4.57: Further incorporation details of the 90 Limited 'Sheffield' companies

Incorporated	Company Name	Nominal Capital (£)	No. of Shares	Denomination of Shares (£)	Location of registered office
1856	Brightside Coal Co. Ltd.	4,000	160	25	Sheffield
1856	Rotherham Masbro' and Holmes Coal Co. Ltd.	60,000	2,400	26	Rotherham
1857	Midland Mining Co. Ltd.	5,250	1,050	5	Chesterfield
1858	New Midland Mining Co. Ltd.	2,000	2,000	1	Chesterfield
1859	Attercliffe Colliery Co. Ltd.	30,000	30,000	1	London
1861	Chesterfield & Midland Silkstone Colliery Co. Ltd.	40,000	8,000	5	London
1861	Sheffield Co-op Commercial & Mfring Co. Ltd.	10,000	10,000	1	Sheffield
1862	Chesterfield New Dunston Colliery Co. Ltd.	10,000	5,000	2	Middlesex
1863	Stavely Main (Devonshire Silkstone) Coal Co. Ltd.	30,000	3,000	10	Manchester
1863	Whittington Freehold Colliery Co. Ltd.	135,000	13,500	10	London
1864	Charles Cammell & Co. Ltd.	1,000,000	10,000	100	Sheffield
1864	Parkgate Iron Co. Ltd.	300,000	3,000	100	Rotherham
1864	Sheffield Metal Co. Ltd.	2,000	100	20	Sheffield
1864	Silkstone Coal Co. Ltd.	10,000	2,000	5	Sheffield
1865	London & Sheffield Nickel Silver Co. Ltd.	20,000	2,000	10	Sheffield
1865	Midland Iron Co. Ltd.	25,000	2,500	10	Rotherham
1865	Oliver & Co. Ltd.	40,000	2,000	20	Chesterfield
1865	Tapton Colliery Coke & Iron Co. Ltd.	200,000	20,000	10	Manchester
1865	Yorkshire Engine Co. Ltd.	200,000	2,000	100	Sheffield
1866	Killamarsh Coal Co. Ltd.	24,000	400	60	Sheffield
1866	Midland Colliery Co. Ltd.	50,000	5,000	10	London
1866	Midland Counties Iron Ore Co. Ltd.	25,000	250	100	Chesterfield

Incorporated	Company Name	Nominal Capital (£)	No. of Shares	Denomination of Shares (£)	Location of registered office
1866	Sheffield File Grinding Co. Ltd.	10,000	1,000	10	Sheffield
1867	Dronfield Silkstone Coal Co. Ltd.	40,000	1,600	25	Sheffield
1867	Vickers Sons & Co. Ltd.	155,000	1,550	100	Sheffield
1868	Denaby Main Colliery Co. Ltd.	110,400	1,840	60	Rotherham
1868	Joseph Peace & Co. Ltd.	50,000	5,000	10	Sheffield
1868	Unstone Coal & Coke Co. Ltd.	25,000	2,500	10	Chesterfield
1869	Woodhouse Colliery Co. Ltd.	5,000	500	10	Sheffield
1870	Sheffield & Tinsley Coal Co. Ltd.	140,000	20	500	Sheffield
1872	Albion Steel & Wire Co. Ltd.	150,000	10,000	15	Sheffield
1872	Charlton Iron Works Co. Ltd.	125,000	2,500	50	Sheffield
1872	G & J Brown & Co. Ltd.	125,000	1,250	100	Rotherham
1872	Henry Wilkinson & Co. Ltd.	45,000	3,000	15	Sheffield
1872	Northfield Iron & Tyre Co. Ltd.	40,000	4,000	10	Rotherham
1872	Phoenix Bessemer Steel Co. Ltd.	100,000	2,000	50	Rotherham
1873	Brown Bayley & Dixon Ltd.	500,000	10,000	50	Sheffield
1873	Cardigan Iron Steel & Wire Co. Ltd.	60,000	6,000	10	Sheffield
1873	Hallamshire Steel & File Co. Ltd.	60,000	3,000	20	Sheffield
1873	Hydes & Wigfall	25,000	2,500	10	Sheffield
1873	Kelham Rolling Mills Ltd.	100,000	10,000	10	Sheffield
1873	Manor Silkstone Coal Co. Ltd.	10,000	1,000	10	Manchester
1873	Neepsend Rolling Mills Co. Ltd.	25,000	2,500	10	Sheffield
1873	Saville St Foundry & Engineering Co. Ltd.	30,000	600	50	Sheffield
1873	Sheffield High Moor Colliery Co. Ltd.	15,000	1,500	10	Halifax

Incorporated	Company Name	Nominal Capital (£)	No. of Shares	Denomination of Shares (£)	Location of registered office
1873	Sheffield Nickel & Silver Plate Co. Ltd.	20,000	2,000	10	Sheffield
1873	Sheffield Steel & Manufacturing Co. Ltd.	20,000	2,000	10	Sheffield
1873	South Yorkshire Coal & Iron Co. Ltd.	100,000	5,000	20	Birmingham
1873	West Dronfield Colliery Co. Ltd.	20,000	4,000	5	London
1873	Whittington & Sheepbridge Colliery Co. Ltd.	100,000	10,000	10	Sheffield
1873	William Arnold & Co. Ltd.	100,000	1,000	10	Barnsley
1873	William Cooke & Co. Ltd.	16,000	3,200	50	Sheffield
1873	William Corbitt & Co. Ltd.	30,000	3,000	10	Rotherham
1874	Clogau Co. Ltd.	25,000	5,000	1	Sheffield
1874	Davy Bros Ltd.	100,000	2,000	50	Sheffield
1874	Sharrow Rolling Mills Co. Ltd.	3,000	300	10	Sheffield
1874	Stanleys Patent Furnace Co. Ltd.	25,000	2,500	10	Sheffield
1874	Tinsley Rolling Mills Co. Ltd.	15,000	1,500	10	Rotherham
1874	Whittington Silkstone Colliery Co. Ltd.	100,000	5,000	20	Chesterfield
1875	Cocker Bros Ltd.	60,000	600	100	Sheffield
1875	E. J. Hattersley & Co. Ltd.	6,000	600	10	Sheffield
1875	Edwin Round & Son Ltd.	10,000	1,000	10	Sheffield
1875	New Silkstone Colliery Co. Ltd.	100,000	500	20	Birmingham
1875	Sheffield Blacksmith Co. Ltd.	2,000	2,000	1	Sheffield
1875	Thrapstone Iron Ore Co. Ltd.	15,000	1,500	10	Sheffield
1875	Unwin & Rodgers Ltd.	40,000	8,000	5	London
1876	James Fairbrother & Co. Ltd.	15,000	1,500	10	Sheffield
1876	Taylor & Jessop Ltd.	5,000	500	10	Sheffield

Incorporated	Company Name	Nominal Capital (£)	No. of Shares	Denomination of Shares (£)	Location of registered office
1876	Universal Railway Carriage Spring Co. Ltd.	50,000	5,000	10	Sheffield
1876	Wath-Upon-Dearne Main Colliery Ltd.	118,300	2,366	50	Rotherham
1877	Henry Bessemer & Co. Ltd.	120,000	1,200	100	Sheffield
1877	Henry Ecroyd & Co. Ltd.	10,000	1,000	10	Sheffield
1877	Newhill & Milton Main Coal Co. Ltd.	30,000	3,000	10	Rotherham
1879	E.W. Oakes & Co. Ltd.	30,000	600	50	Sheffield
1879	Yates Haywood & Co. & the Rotherham Foundry Co. Ltd.	100,000	1,000	100	Rotherham
1880	Askham Bros & Wilson Ltd.	20,000	200	10	London
1880	Clogau Mining Co. Ltd.	30,000	30,000	1	London
1880	Plumbley Colliery Co. Ltd.	25,000	500	50	Chesterfield
1880	Rotherwood Iron & Steel Co. Ltd.	38,000	190	200	Sheffield
1881	New Dronfield Silkstone Coal Co. Ltd.	20,000	800	25	Dronfield
1881	Newton Chambers & Co. Ltd.	650,000	32,500	20	Sheffield
1882	Brown Bayley & Dixon Ltd.	85,000	3,400	25	Sheffield
1882	Sheffield Plate Manufacturing Co. Ltd.	10,000	1,000	10	Sheffield
1882	Sheffield Steel & Wire Co. Ltd.	25,000	2,500	10	Sheffield
1883	Bathhurst Firestone & Fire Brick Co. Ltd.	20,000	2,000	10	Chesterfield
1883	Marriott & Atkinson Ltd.	32000	3,200	10	Sheffield
1883	Sheffield Steam Haulage Co. Ltd.	10,000	1,000	10	Sheffield
1884	Baths Foundry Co. Ltd.	10,000	1,000	10	Rotherham
1884	Sheldon Mining Co. Ltd.	2,000	2,000	1	Sheffield
1885	Steel Peach & Seaman Co. Ltd.	6,000	60	100	Sheffield

Table 4.58: Dissolution Details of the 90 Limited 'Sheffield' Companies

Incorporated	Company Name	File No.	Date of resolution to wind up	Date of final wind up meeting	Wind up date in London Gazette	'Life'
1856	Brightside Coal Co. Ltd.	49/201	1857	1861		5
1856	Rotherham Masbro' and Holmes Coal Co. Ltd.	200/606	1881	1885		29
1857	Midland Mining Co. Ltd.	244/794	1857	1858		1
1858	New Midland Mining Co. Ltd.	325/1143		1862		4
1859	Attercliffe Colliery Co. Ltd.	396/1500			1882	23
1861	Chesterfield & Midland Silkstone Colliery Co. Ltd.	581/2411	1867		1902	41
1861	Sheffield Co-op Commercial & Mfring Co. Ltd.	595/2483			1882	21
1862	Chesterfield New Dunston Colliery Co. Ltd.	651/2742	1863	1866		4
1863	Stavely Main (Devonshire Silkstone) Coal Co. Ltd.	853/804C	1871	1886		23
1863	Whittington Freehold Colliery Co. Ltd.	823/649C	1866		1882	19
1864	Charles Cammell & Co. Ltd.	930/1166C	1897	1898		34
1864	Parkgate Iron Co. Ltd.	14355	1919	1919		55
1864	Sheffield Metal Co. Ltd.	1018/1652C	1870	1878		14
1864	Silkstone Coal Co. Ltd.	911/1065C	1865		1882	18
1865	London & Sheffield Nickel Silver Co. Ltd.	1073/1957C			1883	18
1865	Midland Iron Co. Ltd.	1073/1961C	1899	1900		35
1865	Oliver & Co. Ltd.	1053/1846C	1886	1891		26
1865	Tapton Colliery Coke & Iron Co. Ltd.	1061/1896C			1883	18
1865	Yorkshire Engine Co. Ltd.	1101/2124C	1884	1885		20
1866	Killamarsh Coal Co. Ltd.	1276/3169			1902	36
1866	Midland Colliery Co. Ltd.	1267/3110			1883	17

Incorporated	Company Name	File No.	Date of resolution to wind up	Date of final wind up meeting	Wind up date in London Gazette	'Life'
1866	Midland Counties Iron Ore Co. Ltd.	1229/2862C			1885	19
1866	Sheffield File Grinding Co. Ltd.	1253/3018	1868	1868		2
1867	Dronfield Silkstone Coal Co. Ltd.	1339/3530	1879	1879		12
1867	Vickers Sons & Co. Ltd.	3543				
1868	Denaby Main Colliery Co. Ltd.	1393/3927	1915		1916	48
1868	Joseph Peace & Co. Ltd.	1426/4162	1873	1873		5
1868	Unstone Coal & Coke Co. Ltd.	1439/4246	1897	1898		30
1869	Woodhouse Colliery Co. Ltd.	1449/4307	1869		1902	33
1870	Sheffield & Tinsley Coal Co. Ltd.	1558/5041	1870	1871		1
1872	Albion Steel & Wire Co. Ltd.	1779/6713	1876	1879		7
1872	Charlton Iron Works Co. Ltd.	1756/6547	1876	1891		19
1872	G & J Brown & Co. Ltd.	1771/6652	1876	1880		8
1872	Henry Wilkinson & Co. Ltd.	1770/6651	1892	1896		24
1872	Northfield Iron & Tyre Co. Ltd.	1796/6840	1881	1886		14
1872	Phoenix Bessemer Steel Co. Ltd.	1763/6597	1875	1877		5
1873	Brown Bayley & Dixon Ltd.	1843/7211	1881	1884		11
1873	Cardigan Iron Steel & Wire Co. Ltd.	1832/7141	1876	1878		5
1873	Hallamshire Steel & File Co. Ltd.	7399				
1873	Hydes & Wigfall	1877/7460	1883	1888		15
1873	Kelham Rolling Mills Ltd.	1859/7319	1910	1913		40
1873	Manor Silkstone Coal Co. Ltd.	1900/7676	1874	1878		5
1873	Neepsend Rolling Mills Co. Ltd.	1824/7071	1902	1903		30

Incorporated	Company Name	File No.	Date of resolution to wind up	Date of final wind up meeting	Wind up date in London Gazette	'Life'
1873	Saville St Foundry & Engineering Co. Ltd.	1816/7002	1889	1908		35
1873	Sheffield High Moor Colliery Co. Ltd.	1846/7231			1885	12
1873	Sheffield Nickel & Silver Plate Co. Ltd.	1871/7421	1880	1883		10
1873	Sheffield Steel & Manufacturing Co. Ltd.	1824/7070	1887	1887		14
1873	South Yorkshire Coal & Iron Co. Ltd.	1864/7346	1876		1885	12
1873	West Dronfield Colliery Co. Ltd.	1905/7727	1875		1875	2
1873	Whittington & Sheepbridge Colliery Co. Ltd.	1911/7794		1883		10
1873	William Arnold & Co. Ltd.	1919/7888		1874		1
1873	William Cooke & Co. Ltd.	1859/7320	1898	1899		26
1873	William Corbitt & Co. Ltd.	1876/7451	1891	1892		19
1874	Clogau Co. Ltd.	1980/8462	1880		1904	30
1874	Davy Bros Ltd.	6662				
1874	Sharrow Rolling Mills Co. Ltd.	2059/9068	1876	1880		6
1874	Stanleys Patent Furnace Co. Ltd.	1952/8219			1885	11
1874	Tinsley Rolling Mills Co. Ltd.	1981/8470	1897	1897		23
1874	Whittington Silkstone Colliery Co. Ltd.	1936/8048	1882	1886		12
1875	Cocker Bros Ltd.	9413				
1875	E. J. Hattersley & Co. Ltd.	2269/10868	1879		1886	11
1875	Edwin Round & Son Ltd.	2094/9403	1881	1884		9
1875	New Silkstone Colliery Co. Ltd.	2104/9512			1885	10
1875	Sheffield Blacksmith Co. Ltd.	2079/9253	1876		1885	10
1875	Thrapstone Iron Ore Co. Ltd.	2067/9134	1883	1883		8

Incorporated	Company Name	File No.	Date of resolution to wind up	Date of final wind up meeting	Wind up date in London Gazette	'Life'
1875	Unwin & Rodgers Ltd.	2144/9906	1883	1884		9
1876	James Fairbrother & Co. Ltd.	2289/11031		1899		23
1876	Taylor & Jessop Ltd.	2291/11042			1886	10
1876	Universal Railway Carriage Spring Co. Ltd.	2201/10334	1877	1877		1
1876	Wath-Upon-Dearne Main Colliery Ltd.	2177/10168	1900	1901		25
1877	Henry Bessemer & Co. Ltd.	2330/11338	1892	1893		16
1877	Henry Ecroyd & Co. Ltd.	2350/11514	1885		1905	28
1877	Newhill & Milton Main Coal Co. Ltd.	2376/11763	1879	1882	1883	6
1879	E.W. Oakes & Co. Ltd.	2481/12728	1883	1884		5
1879	Yates Haywood & Co. & the Rotherham Foundry Co. Ltd.	2533/13127	1900	1901		22
1880	Askham Bros & Wilson Ltd.	2718/14677	1883		1905	25
1880	Clogau Mining Co. Ltd.	2681/14356	1883		1905	25
1880	Plumbley Colliery Co. Ltd.	2600/13696	1887	1887		7
1880	Rotherwood Iron & Steel Co. Ltd.	2664/14190	1896	1897		17
1881	New Dronfield Silkstone Coal Co. Ltd.	2816/15438	1892	1892		11
1881	Newton Chambers & Co. Ltd.	1599				
1882	Brown Bayley & Dixon Ltd.	2957/16577	1888	1891		9
1882	Sheffield Plate Manufacturing Co. Ltd.	2987/16803	1885	1888		6
1882	Sheffield Steel & Wire Co. Ltd.	3045/17276	1885	1887		5
1883	Bathhurst Firestone & Fire Brick Co. Ltd.	3263/19188			1894	6
1883	Marriott & Atkinson Ltd.	3220/18797	1888		1906	23
1883	Sheffield Steam Haulage Co. Ltd.	3239/18985	1885	1886		3

Incorporated	Company Name	File No.	Date of resolution to wind up	Date of final wind up meeting	Wind up date in London Gazette	'Life'
1884	Baths Foundry Co. Ltd.	3320/19678	1903	1904		20
1884	Sheldon Mining Co. Ltd.	3274/19273			1891	7
1885	Steel Peach & Seaman Co. Ltd.	3574/21913	1886	1886		1

Table 4.59: Company Conversions, Vendors and Promoters

Company No.	Company Name	Incorp.	Old Company Name	Vendors	Names	Promoters	Names
49/201	Brightside Coal Co. Ltd.	1856					
200/606	Rotherham Masbro' and Holmes Coal Co. Ltd.	1856					
244/794	Midland Mining Co. Ltd.	1857					
325/1143	New Midland Mining Co. Ltd.	1858	Midland Mining Co. Ltd.				
396/1500	Attercliffe Colliery Co. Ltd.	1859				0	
581/2411	Chesterfield & Midland Silkstone Colliery Co. Ltd.	1861		3	J. L. Sparke, J. Wright, Joseph Owen		
595/2483	Sheffield Co-op Commercial & Mfring Co. Ltd.	1861					
651/2742	Chesterfield New Dunston Colliery Co. Ltd.	1862		3	John Boyer, Edward Boyer, Duke of Devonshire		
853/804C	Stavely Main Coal Co. Ltd. (later Devonshire Silkstone Coal Co.)	1863					
823/649C	Whittington Freehold Colliery Co. Ltd.	1863		1	(Rev) William Matthew Pierce		
930/1166C	Charles Cammell & Co. Ltd.	1864	Charles Cammell & Co.	1	Charles Cammell	7	Chadwick, Leppoc, McNaughton, Wood, Leo, Carlton, Vickers, Munster
14355	Parkgate Iron Co. Ltd.	1864	S Beale & Co.	3	Sam & W. L. Beale & C. S. Geach	1	David Chadwick
1018/1652C	Sheffield Metal Co. Ltd.	1864					
911/1065C	Silkstone Coke Co. Ltd.	1864					
1073/1957C	London & Sheffield Nickel Silver Co. Ltd.	1865		1	Alfred Tooth		
1073/1961C	Midland Iron Co. Ltd.	1865	Beatson & Sandford				
1053/1846C	Oliver & Co. Ltd.	1865	Oliver & Co.				

Company No.	Company Name	Incorp.	Old Company Name	Vendors	Names	Promoters	Names
1061/1896C	Tapton Colliery Coke & Iron Co. Ltd.	1865	Tapton New Colliery Co.	3	William Booth, William Wyatt, William Holford	4	Olive, Glossop, Gregory, J.W. Williams
1101/2124C	Yorkshire Engine Co. Ltd.	1865					
1276/3169	Killamarsh Coal Co. Ltd.	1866		1	Turner Ward	3	John Saunders Clarke, William Booth, G. Wiles
1267/3110	Midland Colliery Co. Ltd.	1866					
1229/2862C	Midland Counties Iron Ore Co. Ltd.	1866					
1253/3018	Sheffield File Grinding Co. Ltd.	1866					
1339/3530	Dronfield Silkstone Coal Co. Ltd.	1867		2	James Addy and Fred Ward	1	William Wake
3543	Vickers Sons & Co. Ltd.	1867	Naylor Vickers & Co.	6	E., G. N., T. E., A., and F. Vickers and William Whitehead	1	E. L. S. Benzon
1393/3927	Denaby Main Colliery Co. Ltd.	1868					
1426/4162	Joseph Peace & Co. Ltd.	1868	Joseph Peace & Co.	2	Joseph Peace and John Brownill	4	John Tasker, Ben Jones, H. J. J. Brownill, George Saville
1439/4246	Unstone Coal & Coke Co. Ltd.	1868		2	Emerson Muschamp Bainbridge and William Muschamp	1	Charles Thorold
1449/4307	Woodhouse Colliery Co. Ltd.	1869		2	T. Nichholson & George Newell		
1558/5041	Sheffield & Tinsley Coal Co. Ltd.	1870					
1779/6713	Albion Steel & Wire Co. Ltd.	1872	Albion Steel & Wire Co. and George Gray & Co.	2	Edwin Fox and John Bear	1	Alfred Allott
1756/6547	Charlton Iron Works Co. Ltd.	1872	Cooke & Swinnerton	2	Henry Cooke and J. W. Swinnerton	1	Alfred Allott

Company No.	Company Name	Incorp.	Old Company Name	Vendors	Names	Promoters	Names
1771/6652	G & J Brown & Co. Ltd.	1872		1	George Brown	1	John Unwin Wing
1770/6651	Henry Wilkinson & Co. Ltd.	1872	Henry Wilkinson & Co.	1	Henry Wilkinson	2	Alfred Allott and Jarvis William Barber
1796/6840	Northfield Iron & Tyre Co. Ltd.	1872	Neill Edgar & Co.	2	George Neill and George Edgar	1	Robert John Evans
1763/6597	Phoenix Bessemer Steel Co. Ltd.	1872	Hampton, Radcliffe & Co.	2	Thomas Hampton and William Radcliffe	1	Alfred Allott
1843/7211	Brown Bayley & Dixon Ltd.	1873	Sheffield Forge & Rolling Mills Co. Ltd.	3	Brown, Bayley & Dixon	1	John Kidner
1832/7141	Cardigan Iron Steel & Wire Co. Ltd.	1873	Humphrey Turner & Co.	8		1	John Unwin Wing
7399	Hallamshire Steel & File Co. Ltd.	1873	Earl Smith & Co.	1	William Smith	1	Alfred Allott
1877/7460	Hydes & Wigfall	1873	Hydes & Wigfull	2	Thomas Hydes & William Wigfull	1	Alfred Allott
1859/7319	Kelham Rolling Mills Ltd.	1873		1	John Matthew Habbershon	1	John Unwin Wing
1900/7676	Manor Silkstone Coal Co. Ltd.	1873					
1824/7071	Neepsend Rolling Mills Co. Ltd.	1873	Works of Joseph Peace & Co.				
1816/7002	Saville St Foundry & Engineering Co. Ltd.	1873	Midland Wks	4	W. A. Goodall, G. Bellamy, William Booth, J. M. Stanley	1	Alfred Allott
1846/7231	Sheffield High Moor Colliery Co. Ltd.	1873	High Moor Co. Ltd.	2	Francis and Thomas Fleming		
1871/7421	Sheffield Nickel & Silver Plate Co. Ltd.	1873	John Brook & Son, Wllm Mammatt & Co., John Unwin & Son, Unwin & Rodgers	1	John Unwin	1	John Unwin Wing
1824/7070	Sheffield Steel & Manufacturing Co. Ltd.	1873	Works of Joseph Peace & Co.				
1864/7346	South Yorkshire Coal & Iron Co. Ltd.	1873		1	Sam Whitehall Malloney	1	William Thomas Smedley

Company No.	Company Name	Incorp.	Old Company Name	Vendors	Names	Promoters	Names
1905/7727	West Dronfield Colliery Co. Ltd.	1873		1	H. W. Morris	1	Charles Henry Wood
1911/7794	Whittington & Sheepbridge Colliery Co. Ltd.	1873		1		2	John Johnson & John Armistead
1919/7888	William Arnold & Co. Ltd.	1873					
1859/7320	William Cooke & Co. Ltd.	1873	William Cooke & Co.	3	William Cooke, Thomas Alfred Mann, John Cooke	1	Alfred Allott
1876/7451	William Corbitt & Co. Ltd.	1873	William Corbitt	1	William Corbitt	1	Robert John Evans
1980/8462	Clogau Co. Ltd.	1874					
6662	Davy Bros Ltd.	1874	Davy Bros	4	A., W. S., D, and A. (jr.) Davy	1	Alfred Allott
2059/9068	Sharrow Rolling Mills Co. Ltd.	1874		2	James & George Duce	1	Robert Henry Smith
1952/8219	Stanleys Patent Furnace Co. Ltd.	1874		1	J. M. Stanley	1	Bernard Smith
1981/8470	Tinsley Rolling Mills Co. Ltd.	1874		1	Edwin Wilkinson Short	1	John Unwin Wing
1936/8048	Whittington Silkstone Colliery Co. Ltd.	1874		1	JohnHolford	1	John Unwin Wing
9413	Cocker Bros Ltd.	1875	Cocker Bros	4	T. F., Samuel, T. F. jr., & B. F. Cocker	1	Samuel Fox
2269/10868	E. J. Hattersley & Co. Ltd.	1875	E. J. Hattersley	2	E. J. and Roert Hattersley	1	John Sellars
2094/9403	Edwin Round & Son Ltd.	1875		1	Edwin Round	1	Frederick R. Booth
2104/9512	New Silkstone Colliery Co. Ltd.	1875	South Yorkshire Coal Iron Co.				
2079/9253	Sheffield Blacksmith Co. Ltd.	1875					
2067/9134	Thrapstone Iron Ore Co. Ltd.	1875		1	Thomas Whitehouse	1	Joseph Bedford
2144/9906	Unwin & Rodgers Ltd.	1875					
2289/11031	James Fairbrother & Co. Ltd.	1876	James Fairbrother & Co.	1	James Fairbrother	1	John Unwin Wing
2291/11042	Taylor & Jessop Ltd.	1876		2	R. H. Taylor & J. M. Jessop	1	E. I. Blackeley

Company No.	Company Name	Incorp.	Old Company Name	Vendors	Names	Promoters	Names
2201/10334	Universal Railway Carriage Spring Co. Ltd.	1876		1	Alfred John Dobson	1	Thomas Grove
2177/10168	Wath-Upon-Dearne Main Colliery Ltd.	1876					
2330/11338	Henry Bessemer & Co. Ltd.	1877		1	William Daniel Allen	0	
2350/11514	Henry Ecroyd & Co. Ltd.	1877	Henry Ecroyd & Co.	1	Henry Eckroyd	2	J. H. P. Fry & A. R. Eckroyd
2376/11763	Newhill & Milton Main Coal Co. Ltd.	1877	Beaumont Brown & Co.	3	James Beaumont, George Brown, George Turner	7	C. Adams, J. Bamforth, G. Willis, E. Beacher, L. Evans, J. Parker, H. R. Porter
2481/12728	E.W. Oakes & Co. Ltd.	1879	E. W. Oakes & Co.				
2533/13127	Yates Haywood & Co. & the Rotherham Foundry Co. Ltd.	1879	Yates, Haywood & Co. and The Rotherham Foundry Co.				
2718/14677	Askham Bros & Wilson Ltd.	1880	Askham Bros & Wilson	3	John Unwin Askham, Phillip Unwin Askham, T. H. Wilson	0	
2681/14356	Clogau Mining Co. Ltd.	1880	Clogau Co. Ltd.	1	John Armistead (Liquidator)	1	Daniel Deane
2600/13696	Plumbley Colliery Co. Ltd.	1880		1	John Rhodes	6	Henry Newsum, J. Ruston,W. J. Warrener, C. K. Thomlinson, W. T. Thomlinson & William Spencer
2664/14190	Rotherwood Iron & Steel Co. Ltd.	1880					
2816/15438	New Dronfield Silkstone Coal Co. Ltd.	1881	Dronfield Silkstone Coal Co. Ltd.				

Company No.	Company Name	Incorp.	Old Company Name	Vendors	Names	Promoters	Names
1599	Newton Chambers & Co. Ltd.	1881	Newton Chambers & Co.	6	T. C. Newton, Samue Owen, G. Dawson, A. Robinson, A. M. Chambers, and M. H. Habbershon	1	Edward Tozer
2957/16577	Brown Bayley & Dixon Ltd.	1882	Brown, Bayley & Dixon	1	W. J. Armitage	2	J. H. Barber & W. B. Peat
2987/16803	Sheffield Plate Manufacturing Co. Ltd.	1882	William Howe (Globe works)	2	William and Sarah Ryland	2	Samuel Smith & Cecil Arthur Cooke
3045/17276	Sheffield Steel & Wire Co. Ltd.	1882	Sheffield Steel & Wire Co.	2	Charles Nodder and Ben Eyre Platts	1	Jonathan Smith Hancock
3263/19188	Bathhurst Firestone & Fire Brick Co. Ltd.	1883	Bathurst Main Colliery Co.	2	Josuah Court & William Minnikin	1	John Flecknoe Court
3220/18797	Marriott & Atkinson Ltd.	1883	Marriott & Atkinson				
3239/18985	Sheffield Steam Haulage Co. Ltd.	1883	Sheffield Steam Haulage Co.				
3320/19678	Baths Foundry Co. Ltd.	1884		1	Dennis George Davy	0	
3274/19273	Sheldon Mining Co. Ltd.	1884	The Magpie Mining Co.	1	Jarvis William Braber		
3574/21913	Steel Peach & Seaman Co. Ltd.	1885					

APPENDIX 4.2: Geographical Classifications

Table 4.60: Locations within Sheffield and Rotherham - areas and streets

Sheffield	Sheffield streets	Rotherham	Rotherham streets
ABBEYDALE	ATTERCLIFFE COMMON	HOLMES	CLIFTON BANK
ATTERCLIFFE	BAKERS HILL	ICKLES	EASTWOOD VIEW
BRIGHTSIDE	BRAMALL LANE	MASBROUGH	HIGHFIELD
BRINCLIFFE	BRIDGE HOUSE		MILLGATE
BRINCLIFFE EDGE	BROAD ST (PARK)		WESTGATE
BROOMFIELD	BROADFIELD PARK ROAD		WOOD BANK
BROOMHALL PARK	BROCCO BANK		
CARBROOK	BROOK HILL		
CHERRY TREE HILL	BROOK HILL		
CROOKES	BROOMFIELD		
CROOKESMOOR	CLOUGH BANK		
CROSSPOOL	EAST BANK RD		
DARNALL	ENDCLIFFE EDGE		
ECCLESHALL	ENDCLIFFE VALE (RD)		
ENDCLIFFE	FARGATE		
GRIMESTHORPE	FIR VALE RD		
HARVEST LANE	HAYMARKET		
HEELEY	LOWFIELD		
HIGHFIELD	MANOR OAKES (INTAKE ROAD)		
KENWOOD	MILLSANDS		
MACHON BANK	MOOR OAKES RD		
MALIN BRIDGE	MOORFIELDS		
MILLHOUSES	PYE BANK		
MOORFIELDS	SALE HILL		
NEEPSEND	SANDYGATE		
NETHER EDGE	SHEFFIELD MOOR/MOOR		
NURSERY	SNIG HILL		
OSGATHORPE	SPRING HILL		
OUGHTIBRIDGE	SUMMERFIELD		
OWLERTON	SUNNY BANK		
PARK/SHEFFIELD PARK	TAPTON PARK		
PARKWOOD SPRINGS	TAPTONVILLE		
PHILADELPHIA	WEST BAR		
PITSMOOR	WICKER		
PORTMAHON			
RANMOOR			
SAVILLE STREET			
SHARROW			
SHEFFIELD MOOR			
SPITAL HILL			
STEEL BANK			
TAPTON			
THE ROYDS			
UPPER HALLAM			

Sheffield	Sheffield streets	Rotherham	Rotherham streets
UPPERTHORPE			
VICTORIA PARK			
WALKLEY			
WICKER			
WOODSIDE			

Table 4.61: Locations within Yorkshire

Place	Type	Nearest town or city	Dist-ance	Direct-ion	Riding	Division
ACKWORTH	PARISH	PONTEFRACT	3.5	S	WEST	EAST
ACKWORTH	PARISH	PONTEFRACT	3.5	S	WEST	EAST
ACKWORTH (HIGH & LOW)	HAMLET	PONTEFRACT	3.5	S	WEST	EAST
ALLERTON	VILLAGE	BRADFORD	3	NW	WEST	NORTH
ANSTON (SOUTH & NORTH)	PARISH	SHEFFIELD	10	SE	WEST	SOUTH
ARDSLEY	VILLAGE	BARNSLEY	2	E	WEST	SOUTH
ASTON	VILLAGE	SHEFFIELD	8	SE	WEST	SOUTH
AUGHTON	VILLAGE	SHEFFIELD	5	SE	WEST	SOUTH
BARBER NOOK	HAMLET	SHEFFIELD	4	SW	WEST	SOUTH
BARNOLDSWICK	URB. DIST.	SKIPTON	9.5	SW	WEST	NORTH
BARUGH	VILLAGE	BARNSLEY	2.5	NW	WEST	SOUTH
BATLEY	BOROUGH	LEEDS	8	SW	WEST	SOUTH
BAWTRY	TOWN	DONCASTER	9	SE	WEST	SOUTH
BEDALE	TOWN	NORTHALLERTON	7	SW	NORTH	
BENTS GREEN	HAMLET	SHEFFIELD	2	SW	WEST	SOUTH
BOLSOVER HILL						
BOLTON-UPON-DEARNE	VILLAGE	ROTHERHAM	7	N	WEST	EAST
BRADFIELD	VILLAGE	SHEFFEILD	7	NW	WEST	SOUTH
BRADFORD	TOWN	LEEDS	9	W	WEST	NORTH
BRAMLEY	PARISH	ROTHERHAM	4	E	WEST	SOUTH
BRAMPTON BIERLOW	VILLAGE	ROTHERHAM	5	N	WEST	SOUTH
BRIDLINGTON	TOWN	HULL	31	N	EAST	
BRIDLINGTON QUAY	PORT	BRIDLINGTON			EAST	
BRINSWORTH	PARISH	ROTHERHAM	2	SW	WEST	SOUTH
BROAD OAK GREEN	HAMLET	SHEFFIELD	3.5	SW	WEST	SOUTH
BROOM	HAMLET	ROTHERHAM	2	S	WEST	SOUTH
BROOMHALL	HAMLET	SHEFFIELD	3.5	SW	WEST	SOUTH
BROTHERTON	VILLAGE	PONTEFRACT	3	NE	WEST	EAST
BROUGHTON	PARISH	SKIPTON	4	SW	WEST	NORTH
BURLEY	VILLAGE	LEEDS	3	NW	WEST	EAST
BURNESTON	PARISH	BEDALE	4	SE	NORTH	
BURTERSETT	HAMLET	HOWES	1	E	NORTH	
BUTTERTHWAITE	HAMLET	SHEFFIELD	5.5	N	WEST	SOUTH
BUTTON HILL	HAMLET	SHEFFIELD	4.5	SW	WEST	SOUTH
CALVERLEY	URD. DIST.	LEEDS	6	WNW	WEST	EAST
CANTLEY	VILLAGE	DONCASTER	3.5	SE	WEST	SOUTH
CAR GREEN (UPPER & LOWER)	HAMLET	BARNSLEY	3	NW	WEST	SOUTH
CARSICK HILL	HAMLET	SHEFFIELD	2	W	WEST	SOUTH
CARTER KNOWLE	HAMLET	SHEFFIELD	4.5	SW	WEST	SOUTH
CASTLEFORD	TOWN	LEEDS	10	SE	WEST	EAST
CATCLIFFE	PARISH	ROTHERHAM	3	S	WEST	SOUTH
CAWTHORNE	VILLAGE	BARNSELY	4	WNW	WEST	SOUTH
CHAPELTOWN	VILLAGE	SHEFFIELD	8	N	WEST	SOUTH
CHAPLETOWN	VILLAGE	BRADFORD	4	E	WEST	EAST
CLAYTON, WEST	URB. DIST.	HUDDERSFIELD	12	SE	WEST	SOUTH

Place	Type	Nearest town or city	Dist-ance	Direct-ion	Riding	Division
CLIFTON	VILLAGE	SHEFFIELD	10	NE	WEST	SOUTH
COLLINGHAM	VILLAGE	WETHERBY	2.5	SW	WEST	EAST
CONISBOROUGH	TOWN	DONCASTER	5	SW	WEST	SOUTH
CRABTREE	VILLAGE	SHEFFIELD	3	NE	WEST	SOUTH
CUDWORTH (UPPER & LOWER)	VILLAGE	BARNSELY	3.5	NE	WEST	SOUTH
DALTON	PARISH	ROTHERHAM	2	E	WEST	SOUTH
DARFIELD	VILLAGE	BARNSLEY	5	SE	WEST	SOUTH
DEEPCAR	VILLAGE	SHEFFIELD	8	NW	WEST	SOUTH
DOBBIN HILL	HAMLET	SHEFFIELD	4	SW	WEST	SOUTH
DODWORTH	VILLAGE	BARNSELY	2	W	WEST	SOUTH
DOVEHOUSES	HAMLET	SHEFFIELD	3	SW	WEST	SOUTH
DRIFFIELD	TOWN	YORK	36	E	EAST	
DRIGHLINGTON	URB. DIST.	BRADFORD	6.5	SE	WEST	EAST
ECCLESFIELD	PARISH	SHEFFIELD	6	N	WEST	SOUTH
ELESCAR	VILLAGE	BARNSLEY	5.5	SE	WEST	SOUTH
ELMHIRST	SEAT	BARNSLEY			WEST	SOUTH
FEATHERSTONE	PARISH	PONTEFRACT	2.5	SW	WEST	EAST
FRIARS WOOD	AREA OF	PONTEFRACT				
FULWOOD	ECCL. DIST.	SHEFIILED	4	SW	WEST	SOUTH
GARFORTH	VILLAGE	LEEDS	7	E	WEST	EAST
GLEADLESS	VILLAGE	SHEFFIELD	4	SE	WEST	SOUTH
GOOLE	TOWN	HULL	23	SW	WEST	EAST
GREASBROUGH	URB. DIST.	ROTHERHAM	2	NW	WEST	SOUTH
GREENFIELD	VILLAGE	OLDHAM	4	E	WEST	SOUTH
GRENOSIDE	VILLAGE	SHEFFIELD	4.5	NW	WEST	SOUTH
GREYSTONES	HAMLET	SHEFFIELD	3	SW	WEST	SOUTH
GRIMESTHORPE	HAMLET	SHEFFIELD	2	NE	WEST	SOUTH
GUILTHWAITE	HAMLET	ROTHERHAM	2	SE	WEST	SOUTH
GUISBOROUGH	TOWN	MIDDLESBROUGH	19.5	SE	NORTH	
HALIFAX	TOWN				WEST	NORTH
HALLAMGATE	HAMLET	SHEFFIELD	2	SW	WEST	SOUTH
HALTON	VILLAGE	LEEDS	3	E	WEST	EAST
HANDSWORTH	URB. DIST.	SHEFFIELD	4	SE	WEST	SOUTH
HARROGATE	TOWN	LEEDS	18	N	WEST	EAST
HARTHILL	VILLAGE	WORKSOP	6	W	WEST	SOUTH
HAZLEHEAD	HAMLET	SHEFFIELD	15	NW	WEST	SOUTH
HEADINGLEY	PARISH IN	LEEDS			WEST	EAST
HEBDEN BRIDGE	TOWN	HALIFAX	9	NW	WEST	NORTH
HECKMONDWIKE	TOWN	DEWSBURY	2	NW	WEST	EAST
HEPWORTH	VILLAGE	HUDDERSFIELD	7	SE	WEST	SOUTH
HIGH GREEN	VILLAGE	SHEFFIELD	8.5	N	WEST	SOUTH
HILL FOOT	HAMLET	SHEFFIELD	2	W	WEST	SOUTH
HILLSBOROUGH	VILLAGE	SHEFFIELD	1	NW	WEST	SOUTH
HOLLINGSEND	HAMLET	SHEFFIELD	3	SSW	WEST	SOUTH
HOWDEN	TOWN	HULL	21	W	EAST	
HOYLAND	PARISH	BARNSLEY	6	SE	WEST	SOUTH
HOYLAND COMMON	VILLAGE	HOYLAND	2		WEST	SOUTH

Place	Type	Nearest town or city	Dist-ance	Direct-ion	Riding	Division
HOYLAND NETHER	PARISH	BARNSLEY	5.5	SE	WEST	SOUTH
HUDDERSFIELD	TOWN	LEEDS	16.5	SW	WEST	SOUTH
HULL	CITY	HULL			EAST	
HUNSLET	SUBURB	LEEDS			WEST	EAST
IDLE	WITHIN	BRADFORD				
ILKLEY	URB. DIST.	SKIPTON	9	SE	WEST	EAST
INTAKE	VILLAGE	SHEFFIELD	3	SE	WEST	SOUTH
KEIGHLEY	TOWN	BRADFORD	9	NW	WEST	NORTH
KENWOOD BANK	HAMLET	SHEFFIELD			WEST	SOUTH
KILNHURST	VILLAGE	ROTHERHAM	4	NE	WEST	SOUTH
KIMBERWORTH	ECCL. DIST.	ROTHERHAM	1.5	W	WEST	SOUTH
KIRK SMEATON	VILLAGE	PONTEFRACT	5.5	SE	WEST	EAST
KIVERTON PARK	VILLAGE	SHEFFIELD	10.5	SE	WEST	SOUTH
KNARESBOROUGH	TOWN	HARROGATE	3.5	NE	WEST	EAST
LINDLEY	PARISH	HUDDERSFIELD	3		WEST	EAST
LINTHWAITE	URB. DIST.	HUDDERSFIELD			WEST	SOUTH
LITTLETHORPE	VILLAGE	RIPON	1.5	SE	WEST	EAST
LOCKWOOD	PARISH IN	HUDDERSFIELD				
LOFTHOUSE	VILLAG	WAKEFIELD	3	N	WEST	SOUTH
LONGLEY	HAMLET	ECCLESFIELD	2	N	WEST	
LOXLEY	HAMLET	SHEFFIELD	3	NW	WEST	SOUTH
MACHON BANK	HAMLET	SHEFFIELD			WEST	SOUTH
MALTBY	HAMLET	ROTHERHAM	6	E	WEST	SOUTH
MALTON	TOWN	YORK	21	NE	NORTH	
MANNINGHAM	SUBURB OF	BRADFORD				
MARSH	SUBURB OF	HUDDERSFIELD				
MASHAM	TOWN	RIPON	8	NW	NORTH	
MEADOW HALL	RAILWAY STATION	SHEFFIELD	4.5	NE	WEST	SOUTH
MEXBOROUGH	TOWN	ROTHERHAM	5.5	NE	WEST	SOUTH
MIDDLESBROUGH	TOWN	STOCKTON	3	NE	NORTH	
MILLHOUSE	HAMLET	SHEFFIELD	13	NW	WEST	SOUTH
MOOR ALLERTON	ECCL. DIST.	LEEDS	4	N	WEST	EAST
MOORGATE	HAMLET	ROTHERHAM	2	SE	WEST	SOUTH
MOORTOWN	PLACE	LEEDS	3	NW	WEST	EAST
NETHER HOYLAND	URB. DIST.	BARNSLEY	5.5	SE	WEST	SOUTH
NEW LINTHORPE	VILLAGE	MIDDLESBROUGH	1	S	NORTH	
NORMANTON	TOWN	WAKEFIELD	3	NE	WEST	SOUTH
NORTHALLERTON	TOWN	DARLINGTON	15	SE	NORTH	
NORTON	PARISH	DONCATSRE	8.5	NW	WEST	EAST
ORGREAVE	PARISH	ROTHERHAM	3.5	SW	WEST	SOUTH
PARKGATE	ECCL. DIST.	ROTHERHAM	2	N	WEST	SOUTH
PARSON CROSS	HAMLET	SHEFFIELD	3	NW	WEST	SOUTH
PENISTONE	TOWN	SHEFFIELD	12.5	NW	WEST	SOUTH
PILLEY	VILLAGE	BARNSLEY	4	S	WEST	SOUTH
PONTEFRACT	TOWN	WAKEFIELD	10	E	WEST	EAST
RAWMARSH	TOWN	ROTHERHAM	2	NE	WEST	SOUTH
REDACR	TOWN	MIDDLESBROUGH	8	NE	NORTH	

Place	Type	Nearest town or city	Dist-ance	Direct-ion	Riding	Division
RICHMOND	VILLAGE	SHEFFIELD	4	E	WEST	SOUTH
RINGINGLOWE	VILLAGE	SHEFFIELD	4	SW	WEST	SOUTH
RIPON	CITY				WEST	
RIPPONDEN	VILLAGE	HALIFAX		WEST	WEST	NORTH
ROTHERHAM	TOWN	SHEFFIELD	6	NE	WEST	SOUTH
ROTHWELL	TOWN	LEEDS	4	SE	WEST	SOUTH
ROTHWELL HAIGH	VILLAGE	WAKEFIELD	5	NW	WEST	SOUTH
ROYSTONE	VILLAGE	BARNSLEY	4	NE	WEST	SOUTH
SADDLEWORTH	TOWN	HUDDERSFIELD	12	SW	WEST	
SALTAIRE	TOWN	BRADFORD	4	N	WEST	EAST
SCARBOROUGH	TOWN	YORK	42	NE	NORTH	
SCHOLES	HAMLET	ROTHERHAM	4	NW	WEST	SOUTH
SETTLE	TOWN	SKIPTON	15	NW	WEST	NORTH
SHAROW	VILLAGE	RIPON	1	E	NORTH	
SHAROW MOOR	HAMLET	SHEFFIELD	3	SW	WEST	SOUTH
SHARROW HEAD	HAMLET	SHEFFIELD	3	SW	WEST	SOUTH
SHARROW VALE	HAMLET	SHEFFIELD	3	SW	WEST	SOUTH
SHEEPBRIDGE	VILLAGE	HUDDERSFIELD	3	NE	WEST	
SHIREGREEN	HAMLET	SHEFFIELD	3	N	WEST	SOUTH
SILKSTONE	VILLAGE	BARNSELY	4	W	WEST	SOUTH
SKELMANTHORPE	TOWN	HUDDERSFIELD	6	SE	WEST	SOUTH
SKIPTON	TOWN	KEIGHLEY	9	NW	WEST	NORTH
SLADE HOOTON	HAMLET	ROTHERHAM	7	E	WEST	SOUTH
SOUTH MILFORD	VILLAGE	LEEDS	12	E	WEST	EAST
STANNINGTON	VILLAGE	SHEFFIELD	4	W	WEST	SOUTH
STOCKSBRIDGE	URB. DIST.	SHEFFIELD	7.5	NW	WEST	SOUTH
STOKESLEY	TOWN	STOCKTON	9	SE	NORTH	
SWINTON	TOWN	SHEFFIELD	10	N	WEST	SOUTH
TADCASTER	TOWN	YORK	9	SW	WEST	EAST
TANKERSLEY	PARISH	BARNSLEY	4.5	S	WEST	SOUTH
THIRSK	TOWN	YORK	10.5		NORTH	
THORNCLIFFE	PLACE	SHEFFIELD	8	N	WEST	SOUTH
THORPE HESLEY	VILLAGE	ROTHERHAM	4	NW	WEST	SOUTH
THORPE SALVIN	VILLAGE	WORKSOP	5	NW	WEST	SOUTH
THRYBERGH	VILLAGE	ROTHERHAM	3.5	NE	WEST	SOUTH
THURGOLAND	VILLAGE	BARNSLEY	5	SW	WEST	SOUTH
THURLSTONE	URB. DIST.	SHEFFIELD	13	NW	WEST	SOUTH
TICKHILL	TOWN	ROTHERHAM	10	E	WEST	SOUTH
TINSLEY	PARISH	ROTHERHAM	2	SW	WEST	SOUTH
TREETON	PARISH	ROTHERHAM	3.5	S	WEST	SOUTH
ULLEY	PARISH	ROTHERHAM	4	SE	WEST	SOUTH
UPPER HOYLAND	HAMLET	BARNSLEY	6	SE	WEST	SOUTH
WADSLEY	ECCL. DIST.	SHEFFIELD	3	NW	WEST	SOUTH
WADSLEY BRIDGE	DISTRICT	SHEFFIELD	3	NW	WEST	SOUTH
WARD GREEN	HAMLET	BARNSLEY	4	NW	WEST	SOUTH
WARDSEND	VILLAGE	SHEFFIELD	3	NW	WEST	SOUTH
WATH-UPON-DEARNE	URB. DIST.	BARNSLEY	8	SE	WEST	SOUTH
WENTWORTH	VILLAGE	ROTHERHAM	4.5	NW	WEST	SOUTH

Place	Type	Nearest town or city	Dist-ance	Direct-ion	Riding	Division
WENTWORTH CASTLE	SEAT	BARNSLEY	3	SW	WEST	SOUTH
WENTWORTH WOODHOUSE	SEAT	ROTHERHAM	4.5	NW	WEST	SOUTH
WESTFIELDS	AREA OF	HUDDERSFIELD				
WETHERBY	TOWN	HARROGATE	6	SE	WEST	NORTH
WHARNCLIFFE	VILLAGE	SHEFFIELD	6	NW	WEST	SOUTH
WHIRLOW	VILLAGE	SHEFFIELD	4	SW	WEST	SOUTH
WHISTON	PARISH	ROTHERHAM	2	SE	WEST	SOUTH
WHITBY	TOWN	SCARBOROUGH	19	SW	NORTH	
WICKERSLEY	VILLAGE	ROTHERHAM	3.5	E	WEST	SOUTH
WINCOBANK	VILLAGE	SHEFFIELD	5.5	S	WEST	SOUTH
WOMBWELL	TOWN	BARNSLEY	4.5	SE	WEST	SOUTH
WOODHILL	HAMLET	ROTHERHAM	6	NW	WEST	SOUTH
WOODHOUSE	DISTRICT	SHEFFIELD	5	SE	WEST	SOUTH
WOODSIDE	ECCL. DIST.	LEEDS	5	NW	WEST	EAST
WORSBOROUGH	URB. DIST.	BARNSLEY	2.5	S	WEST	SOUTH
WORSBOROUGH COMMON	ECCL. DIST.	BARNSELY	2.5	S	WEST	SOUTH
WORSBOROUGH DALE	ECCL. DIST.	BARNSELY	2.5	S	WEST	SOUTH
WORTLEY	PARISH IN	LEEDS			WEST	EAST
WORTLEY	VILLAGE	BARNSLEY	6	SW	WEST	SOUTH

Table 4.62: Locations within Great Britain

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
ABERDEEN	ABE	TOWN	EDINBURGH	159.0	NE
ABERYSTWYTH	CAG	TOWN			
ACCRINGTON	LAN	TOWN	MANCHESTER	22.0	N
ADLINGTON	LAN	URB. DIST.	CHORLEY	3.5	SE
ALFORD	LIN	TOWN	BOSTON	23.0	NE
ALFRETON	DER	TOWN	DERBY	14.0	NNE
ALTRINCHAM	CHE	URB. DIST.	MANCHESTER	8.0	SW
ALVASTON	DER	PARISH	DERBY	3.0	SE
ARDWICK	LAN	SUBURB OF	MANCHESTER		
ASHBOURNE	DER	TOWN	DERBY	13.0	NW
ASHFORD	DER	VILLAGE	BAKEWELL	2.0	NW
ASHOVER	DER	VILLAGE	CHESTERFIELD	7.0	SW
ASHTON UNDER LYNE	LAN	TOWN	MANCHESTER	6.0	E
ASPLEY GUISE	BED	PARISH	WOBURN	2.0	N
ASTLEY	LAN	VILLAGE	MANCHESTER	8.5	SE
ASTON	DER		CASTLETON	2.0	
ASTON	WAR	PARISH IN	BIRMINGHAM		
AYLESBURY	BUC	TOWN	BUCKINGHAM	17.0	SE
BACUP	LAN	TOWN	MANCHESTER	22.0	N
BAKEWELL	DER	TOWN	DERBY	25.0	NW
BALLYSADARE	SLI	VILLAGE	SLIGO	4.0	SW
BARFORD ST JOHN	OXF	PARISH	DEDDINGTON	2.0	NW
BARLBOROUGH	DER	VILLAGE	CHESTERFIELD	8.0	NE
BARLOW	DER	PARISH	CHESTERFIELD	3.5	NW
BARNET	HFT	TOWN	LONDON	11.5	
BARROROW UPON SOAR	LEI	VILLAGE	LOUGHBOROUGH	2.5	SE
BARROW IN FURNESS	LAN	TOWN	LIVERPOOL	50.0	NW
BATH	SOM	CITY			
BAYSWATER	LON	SUBURB OF			
BEDFORD	BED	TOWN	LONDON	50.0	NW
BEIGHTON	DER	VILLAGE	SHEFFIELD	6.5	SE
BELFAST	ANT	TOWN	DUBLIN	113.0	N
BELPER	DER	TOWN	DERBY	8.0	N
BELSIZE PARK	LON	DIST			
BETHNAL GREEN	LON	PARISH			
BEXLEY	KEN	TOWN	LONDON	13.0	SE
BILLINGBEAR	BER	SEAT	WOKINGHAM	3.0	NE
BILSTON	STA	TOWN	WOLVERHAMPTON	2.5	SE
BINLEY	WAR	PARISH	COVENTRY	2.5	E
BIRCHFIELD	STA	ECCL. DIST.			
BIRKDALE	LAN	URB. DIST.	SOUTHPORT	1.0	S
BIRKENHEAD	CHE	TOWN	CHESTER	13.0	NNW
BIRMINGHAM	WAR	CITY			
BISHOP AUCKLAND	DUR	TOWN	DURHAM	11.0	SW
BLACKBURN	LAN	TOWN	PRESTON	11.0	E
BLACKHEATH	LON	SUBURB OF	LONDON		
BLANDFORD FORUM	DOR	TOWN	DORCHESTER	16.0	NE

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
BOLSOVER	DER	TOWN	CHESTERFIELD	6.0	E
BOLTON	LAN	TOWN	MANCHESTER	10.5	NW
BONSALL	DER	VILLAGE	MATLOCK	2.0	SW
BOSTON	LIN	TOWN	LINCOLN	30.0	SE
BOWDON	CHE	URB. DIST.	MANCHESTER	9.0	S
BRAMPTON	DER	VILLAGE	CHESTERFIELD	4.0	NW
BRIDGNORTH	SHR	TOWN	WOLVERHAMPTON	14.5	SW
BRIGG	LIN	TOWN	LINCOLN	33.0	N
BRIGHTLINGSEA	ESS	URB. DIST.	COLCHESTER	10.5	SE
BRIGHTON	SUS	TOWN	LONDON	50.0	S
BRISTOL	GLO	CITY			
BROCKTON	SHR	HAMLET	SHREWSBURY	12.5	S
BROSELEY	SHR	PARISH	SHREWSBURY	14.0	SE
BROUGHTON	LIN	URB. DIST.	BRIGG	3.0	NW
BRYNMAWR	BRE	TOWN	ABERGAVENNY	8.0	WSW
BUESILL	LAN	HAMLET	ROCHDALE	2.0	SE
BURNHAM	BUC	VILLAGE	MAIDENHEAD	2.5	NE
BURNLEY	LAN	TOWN	PRESTON	23.0	E
BURNTISLAND	FIF	TOWN	EDINBURGH	20.0	N
BURY	LAN	TOWN	MANCHESTER	10.0	NW
BURY ST EDMUNDS	SUF	TOWN	IPSWICH	27.0	NW
BUXTON	DER	TOWN	DERBY	36.0	NW
CAIRO	EGY	CITY			
CAMBRIDGE	CAM	TOWN	LONDON	57.0	N
CAMDEN TOWN	LON	DIST			
CARDIFF	GLA	TOWN	BRISTOL	38.0	W
CARLISLE	CUM	CITY			
CHADDERTON	LAN	PARISH	OLDHAM		
CHAPELFIELD	LAN	DIST OF	RADCLIFFE		
CHARLECOTE	WAR	VILLAGE	STRATFORD UPON AVON	4.5	NE
CHARLTON	KEN	VILLAGE	WOOLWICH	1.0	W
CHARLTON,OLD	KEN	VILLAGE	WOOLWICH	1.0	W
CHEETHAM	LAN	DISTRICT	MANCHESTER		
CHEETHAM HILL	LAN	DISTRICT	MANCHESTER		
CHELMSFORD	ESS	TOWN	LONDON	30.0	NE
CHELSEA	LON	DISTRICT			
CHELTENHAM	GLO	CITY			
CHESTERTON	CAM	SUBURB	CAMBRIDGE		
CHIPPENHAM	WIL	TOWN	BATH	13.0	NE
CHORLEY	CHE	PARISH	MACCLESFIELD	5.5	NW
CHORLTON ON MEDLOCK	LAN	SUBURB OF	MANCHESTER		
CHRISTCHURCH	HAMLET	TOWN	SOUTHAMPTON	25.0	SW
CHURCH	LAN	URB. DIST.	ACCRINGTON	1.0	W
CLAPHAM	LON	PARISH			
CLAPTON (UPPER & LOWER)	LON	DISTRICT			
CLAY CROSS	DER	URB. DIST.	CHESTERFIELD	4.5	S
CLEETHORPES	LIN	URB. DIST.	GRIMSBY	2.2	SE

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
CLERKENWELL	LON	PARISH			
CLEVEDON	SOM	TOWN	BRISTOL	15.0	SW
COAL ASTON	DER	PARISH	DRONFIELD	1.0	NE
COLNE	ESS	SEAT	HALSTEAD	4.0	SE
CORK	COK	TOWN			
CORNHILL	LON	DIST			
CORNHILL	NOL	VILLAGE	COLDSTREAM	2.0	E
COSHAM	HAMLET	VILLAGE	PORTSMOUTH	4.5	N
COVENTRY	WAR	TOWN	BIRMINGHAM	19.0	SE
CRAWLEY	SUS	VILLAGE	HORSHAM	7.0	NE
CRICH	DER	VILLAGE	ALFRETON	4.0	SW
CRICKLEWOOD	LON	DISTRICT	LONDON		
CROYDON	SUR	TOWN			
CRUMPSALL	LAN	ECCL. DIST.	MANCHESTER	2.5	N
CUPAR	FIF	TOWN	EDINBURGH	44.0	NE
CUTTHORPE	DER	VILLAGE	CHESTERFIELD	3.0	NW
DALSTON	LON	DISTRICT			
DARLEY BRIDGE	DER	HAMLET	MATLOCK	4.0	NW
DARLINGTON	DUR	TOWN			
DARTMOUTH	DEV	TOWN			
DARWEN	LAN	TOWN	BLACKBURN	4.0	S
DENTON	LAN	TOWN	MANCHESTER	7.0	ESE
DERBY	DER	TOWN	NOTTINGHAM	15.0	W
DIDSBURY	LAN	VILLAGE	STOCKPORT	3.0	W
DOLGELLY (DOLGELLAU)	MER	TOWN	BARMOUTH	9.0	E
DORE	DER	PARISH	SHEFFIELD	5.0	SW
DOUGLAS	IOM	TOWN			
DOWNHAM	ESS	PARISH	BILLERICAY	4.0	E
DRONFIELD	DER	TOWN	CHESTERFIELD	6.0	NW
DUBLIN	DUB	TOWN			
DUDLEY	WOR	TOWN	BIRMINGHAM	8.0	NW
DUFFIELD	DER	TOWN	DERBY	4.0	N
DUKINFIELD	CHE	BOROUGH			
DUNDEE	FOR	TOWN	PERTH	21.0	E
DUNKELD	PER	TOWN	PERTH	15.5	NW
DURHAM	DUR	CITY			
EALING	MID	PARISH	LONDON		
EARLESTOWN	KIL	PARISH	CALLAN	1.0	E
EARLS COURT	LON	DIST			
EASTBORNE	SUS	VILLAGE	PETWORTH	5.0	NW
EASTWOOD	NOT	VILLAGE	NOTTINGHAM	9.0	NW
ECKINGTON	DER	TOWN	SHEFFIELD	6.0	SE
EDGBASTON	WAR	PARISH IN	BIRMINGHAM		
EDGWARE	MID	PARISH	LONDON	11.5	NW
EDINBURGH	MIL	CITY			
ELTON	LAN	WARD OF	BURY		
EPSOM	SUR	TOWN	LONDON	17.0	SW
EVERTON	NOT	PARISH	BAWTREY	2.0	SE

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
EYAM	DER	VILLAGE	BAKEWELL	5.0	N
FALLOWFIELD	LAN	SUBURB OF	MANCHESTER		
FAVERSHAM	KEN	TOWN	CANTERBURY	10.0	NW
FINSBURY	LON	BOROUGH			
FLEET	HAMLET	VILLAGE	FARNBOROUGH	3.5	SW
FOREST GATE	ESS	DIST	LONDON	5.5	NE
FOREST HILL	LON	DIST			
FULHAM	LON	BOROUGH			
FURNIVALS INN	LON	PARISH			
GATEHOUSE-OF-FLEET	KIR	PORT			
GATESHEAD	DUR	TOWN			
GLASGOW	LAK	CITY			
GLENWORTH	LIN	PARISH	GAINSBOROUGH	8.0	SE
GLOUCESTER	GLO	CITY			
GOLDENHILL	STA	VILLAGE	BURSLEM	3.0	NW
GOREBRIDGE	MIL	VILLAGE	EDINBURGH	12.0	SE
GRANBY	NOT	VILLAGE	NOTTINGHAM		
GRANTHAM	LIN	TOWN	LINCOLN	25.0	SW
GRAVELLY HILL	WAR	DIST OF	BIRMINGHAM		
GRAYS INN	LON	PARISH			
GREAT YARMOUTH	NOF	TOWN	NEWPORT	10.0	W
GREENOCK	REN	TOWN	GLASGOW	22.5	NW
GRIMSBY	LIN	TOWN	HULL	15.0	SE
GUILDFORD	SUR	TOWN	LONDON	30.0	SW
HALE	CHE	URB. DIST.	ALTRINCHAM	2.0	SE
HALTWHISTLE	NOL	TOWN	HEXHAM	16.0	W
HAMBURG	GER	CITY			
HAMPSTEAD	LON	BOROUGH OF	LONDON		
HANDSWORTH	STA	URB. DIST.			
HANLEY	STA	TOWN	STAFFORD	18.0	N
HAPWOOD	LAN	SUBURB OF	HEYWOOD	12.0	
HARDSTOFT	DER	HAMLET	MANSFIELD	5.5	NW
HARTLEBURY	WOR	VILLAGE	BEWDLEY	6.0	SE
HASLAND	DER	VILLAGE	CHESTERFIELD	1.5	SE
HASLINGDEN	LAN	TOWN	MANCHESTER	19.0	NW
HASTINGS	SUS	TOWN	BRIGHTON	34.0	E
HATHERSAGE	DER	PARISH	BAKEWELL	10.0	N
HAUGHTON	LAN	ECCL. DIST.	MANCHESTER	6.0	SE
HAVANT	HAMLET	TOWN	PORTSMOUTH	8.0	NE
HAZELHURST	LAN	URB. DIST.	ASHTON UNDER LYNE		
HEANOR	DER	TOWN			
HEATH	DER	VILLAGE	CHESTERFIELD	5.0	SE
HEMEL HEMPSTEAD	HFT	TOWN	LUTON	12.0	SW
HERNE BAY	KEN	URB. DIST.	MARGATE	11.0	SW
HERTFORD	HFT	TOWN	LONDON	25.0	N
HEYWOOD	LAN	TOWN	BURY	3.0	E
HIGHFILED	JER	TOWN			

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
HIGHGATE	MID	DISTRICT	LONDON		
HILTON	STA	PARISH	WOLVERHAMPTON	5.5	NE
HOLLAND PARK	LON	DISTRICT			
HOLLAWAY	DER				
HOLLINGWORTH	CHE	URB. DIST.	STALYBRIDGE	3.0	E
HOLLINWOOD	LAN	VILLAGE	OLDHAM	1.5	SW
HOLLOWAY	LON	DISTRICT			
HOMLESFILED	DER	VILLAGE	CHESTERFIELD	6.0	NW
HORNCASTLE	LIN	TOWN	LINCOLN	21.0	E
HORTON BRIDGE	MID	PLACE	UXBRIDGE		
HULME	LAN	SUBURB OF	MANCHESTER		
HUNTINGDON	HUN	TOWN			
HYDE PARK	LON	DISTRICT			
INCE	LAN	PARISH	WIGAN	1.0	SW
IPSWICH	SUF	TOWN			
ISLESWORTH	MID	TOWN	LONDON	3.0	WSW
ISLINGTON	LON	BOROUGH			
JERSEY	JER				
KENNINGTON	LON	SUBURB			
KENSINGTON	LON	BOROUGH			
KENTISH TOWN	LON	DISTRICT			
KEW	SUR	PARISH			
KEYWORTH	NOT	VILLAGE	NOTTINGHAM	6.0	SE
KIDDERMINSTER	WOR	TOWN	WORCESTER	15.0	NW
KILLAMARSH	DER	VILLAGE	CHESTERFIELD	8.5	NE
KILMARNOCK	AYR	TOWN	GLASGOW	24.5	SW
KINGSTON UPON THAMES	SUR	TOWN	LONDON WATERLOO	12.0	SW
KNOWLE	WAR	VILLAGE	BIRMINGHAM	9.5	SE
LAMBETH	LON	BOROUGH	LONDON		
LANGLEY MILL	DER	VILLAGE	ILKESTON	3.0	N
LANGWITH	DER	VILLAGE	CHESTERFIELD	9.0	SE
LEAMINGTON	WAR	TOWN	WARWICK	2.0	E
LEICESTER	LEI	TOWN	NORTHAMPTON	29.0	NW
LEIGH	LAN	TOWN	MANCHESTER	16.0	W
LEIGHTON BUZZARD	BED	TOWN	DUNSTABLE	7.0	NW
LEWISHAM	LON	BOROUGH			
LEWISHAM ROAD	KEN	RAILWAY STATION	NUNHEAD STATION	1.5	E
LICHFIELD	STA	CITY	STAFFORD	17.0	SE
LIMEHOUSE	LON	PARISH			
LINCOLN	LIN	CITY	NOTTINGHAM	33.0	NE
LINCOLNS INN	LON	DISTRICT			
LINDFORD	ESS	PLACE			
LISKEARD	COR	TOWN	PLYMOUTH	19.0	WNW
LITTLE LEIGH	CHE	VILLAGE	NORTHWICH		
LIVERPOOL	LAN	CITY			
LLANDOVEY	CAR	TOWN	LLANDILO	11.0	NE
LLANDRINDOD WELLS	RAD	TOWN			

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
LLANDUDNO	CAE	TOWN			
LONG EATON	DER	URB. DIST.			
LONGSIGHT	LAN	SUBURB	MANCHESTER		
LONGSTONE	DER	RAILWAY STATION	BAKEWELL	4.0	NW
LOUGHBOROUGH	LEI	TOWN	LEICESTER	10.5	NW
LOUTH	LIN	TOWN	LINCOLN	30.5	NE
LUTTERWORTH	LEI	TOWN	RUGBY	7.2	NE
LYME REGIS	DOR	TOWN	DORCHESTER	24.0	W
MACCLESFIELD	CHE	TOWN	MANCHESTER	17.5	S
MAIDA HILL	LON	DISTRICT			
MAIDA VALE	LON	DISTRICT			
MAIDENHEAD	BER	TOWN	READING	11.5	NE
MAIDSTONE	KEN	TOWN	LONDON	39.0	SE
MANCHESTER	LAN	CITY			
MANSFIELD	NOT	TOWN	NOTTINGHAM	16.0	N
MARGATE	KEN	TOWN	RAMSGATE	5.0	NW
MARYPORT	CUM	TOWN	CARLISLE	28.0	SW
MATLOCK	DER	TOWN	DERBY	17.0	NW
MELTON MOWBRAY	LEI	TOWN	LEICESTER	14.0	NE
MIDDLETON	LAN	TOWN	OLDHAM	4.0	W
MILCOMBE	OXF	VILLAGE	DEDDINGTON	4.0	NW
MONTREAL	CAN	CITY			
MUIRKIRK	AYR	TOWN	CUMNOCK	8.0	NE
NEATH	GLA	TOWN	SWANSEA	8.0	NE
NEW BROMPTON	KEN	ECC DIST			
NEW CROSS	LON	RAILWAY STATION			
NEW MALDEN	SUR	SUBURB	KINGSTON UPON THAMES	2.0	E
NEW MILFORD	PEM	TOWN			
NEWARK	NOT	TOWN	NOTTINGHAM	18.5	NE
NEWCASTLE UPON TYNE	NOL	CITY			
NEWMARKET	SUF	TOWN	CAMBRIDGE	13.0	E
NEWPORT	MON	TOWN	CARDIFF	12.0	NE
NEWPORT	SHR	TOWN	STAFFORD	11.0	WSW
NEWTON HEATH	LAN	TOWN			
NORBITON	SUR	ECCL. DIST.	KINGSTON		
NORTHAM	DEV	URB. DIST.	BIDEFORD	1.5	NW
NORTHAMPTON	NOH	TOWN	BEDFORD	21.5	NW
NORTHAW	HFT	VILLAGE	HERTFORD	7.0	SW
NORTHWICH	CHE	TOWN	WARRINGTON	11.0	SE
NORTON	HFT	VILLAGE	BALDOCK	1.0	NW
NORTON	DER	VILLAGE	SHEFFIELD	4.0	SE
NORWICH	NOF	CITY			
NORWOOD, UPPER & SOUTH	SUR	DISTRICT OF	CROYDON		
NOTTING HILL GATE	LON	RAILWAY STATION			
NOTTING HILL	LON	DISTRICT			

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
NOTTINGHAM	NOT	CITY	DERBY	15.0	E
OAKENGATES	SHR	TOWN	SHREWSBURY	14.0	E
OLBURY	WOR	TOWN	BIRMINGHAM	5.0	NW
OLDHAM	LAN	TOWN	MANCHESTER	6.0	NE
OLTON	WAR	DISTRICT OF	BIRMINGHAM	5.5	SE
OMAGH	TYR	TOWN	LONDONDERRY	34.0	SE
ORTON	WES	VILLAGE	APPLEBY	8.0	SW
OSGATHORPE	LEI	VILLAGE	ASHBY DE LA ZOUCH	5.0	NE
OXFORD	OXF	CITY			
PADDINGTON	LON	BOROUGH IN	LONDON		
PADIHAM	LAN	TOWN	BURNLEY	3.0	W
PAPCASTLE	CUM	VILLAGE	COCKERMOUTH	1.0	NW
PAPCASTLE	CUM	VILLAGE	CARLISLE	33.0	SW
PARIS	FRA	CITY			
PECKHAM RYE	LON	RAILWAY STATION			
PENN (UPPER & LOWER)	STA	VILLAGE	WOLVERHAMPTON	2.0	SW
PENTONVILLAGEE	LON	ECCL. DIST.			
PERTH	PER	CITY			
PETERSFIELD	HAMLET	TOWN	PORTSMOUTH	19.0	NE
PICCADILLY	LON	DISTRICT			
PLYMOUTH	DEV	PORT	EXETER	53.0	SW
PORTLAND	DOR	DISTRICT	WEYMOUTH	4.0	S
PRESCOT	LAN	TOWN	LIVERPOOL	7.5	E
PRESTON	LAN	TOWN	LIVERPOOL	28.0	NE
PRESTON BROOK	CHE	VILLAGE	WARRINGTON	6.0	SW
RADCLIFFE	LAN	TOWN	BURY	3.0	SW
RAMPSIDE	LAN	VILLAGE			
RAWTENSTALL	LAN	TOWN	BURY	8.0	N
READING	BER	TOWN			
REDHILL	SUR	TOWN			
REGENTS PARK	LON	DISTRICT			
RENISHAW	DER	VILLAGE	CHESTERFIELD	6.5	NE
RETFORD	NOT	TOWN	NEWARK	18.5	NW
RETFORD, EAST	NOT	TOWN	NEWARK	18.5	NW
RHUDDLAN	FLI	TOWN	ST. ASAPH	3.0	NW
RHYL	FLI	URB. DIST.	CHESTER	30.0	NW
RIDGEWAY	DER	VILLAGE	SHEFFIELD	3.0	SE
RIPLEY	DER	TOWN	DERBY	10.0	NE
ROCHDALE	LAN	TOWN	MANCHESTER	10.5	NE
ROCHESTER	KEN	CITY	LONDON	30.0	SE
ROCK FERRY	CHE	SUBURB OF	BIRKENHEAD		
ROEHAMPTON	LON	ECCL. DIST.	LONDON		
ROTTERDAM	HOL	CITY			
ROYTON	LAN	TOWN	OLDHAM	3.0	N
RUSSEL SQUARE	LON	DIST			
RYDE	IOW				
SALE	CHE	URB. DIST.	MANCHESTER	5.0	SW

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
SALFORD	LAN	TOWN			
SANDBACH	CHE	TOWN	CREWE	4.5	NE
SAXMUNDHAM	SUF	TOWN	IPSWICH	20.0	NE
SCARCLIFF	DER	VILLAGE	CHESTERFIELD	8.0	ESE
SECKINGTON	WAR	PARISH	TAMWORTH	4.0	NE
SEVENOAKS	KEN	TOWN	TONBRIDGE	7.5	NW
SHARPLES	LAN	SEAT	BOLTON	3.0	N
SHELDON	DER	PARISH	BAKEWELL	3.0	W
SHERBOURNE	DOR	TOWN	YEOVIL	4.5	NE
SHIFNAL	SHR	TOWN	SHREWSBURY	17.0	E
SKELLINGTHORPE	LIN	VILLAGE	LINCOLN	3.5	W
SMETHWICK	STA	TOWN	BIRMINGHAM	3.5	NW
SOUTH KENSINGTON	LON	DISTRICT OF	LONDON		
SOUTH NORWOOD	SUR	RES DIST OF	CROYDON		
SOUTH SHIELDS	DUR	TOWN	NEWCASTLE	8.0	E
SOUTHAMPTON	HAMLET	CITY			
SOUTHPORT	LAN	TOWN	LIVERPOOL	18.5	N
SOUTHWARK	LON	BOROUGH			
SOUTHWARK	LON	BOROUGH			
SOUTHWELL	NOT	TOWN	NOTTINGHAM	16.0	NE
SPILSBY	LIN	TOWN	BOSTON	19.0	NE
ST ALBANS	HFT	CITY	LONDON	21.5	NW
ST HELENS	LAN	TOWN	LIVERPOOL	10.0	NE
ST JOHNS WOOD	LON	ECCL. DIST.			
ST KEVERNE	COR	VILLAGE	FALMOUTH	8.0	S
ST LUKE	LON	PARISH			
STALEYBRIDGE	CHE	TOWN	MANCHESTER	7.5	E
STANDISH	GLO	PARISH	STROUD	3.0	NW
STANDISH	LAN	VILLAGE	WIGAN	3.5	NW
STANSTEAD	ESS	VILLAGE	BISHOP STRTFORD	2.5	NE
STAVELEY	DER	PARISH	CHESTERFIELD	4.0	NE
STIRLING	STI	TOWN			
STOCKPORT	CHE	TOWN	MANCHESTER	5.5	SE
STOCKTON ON TEES	DUR	TOWN	MIDDLESBROUGH	4.0	SW
STOCKWELL	LON	DISTRICT			
STOKE NEWINGTON	LON	PARISH			
STONEHOUSE	DEV	URB. DIST.	PLYMOUTH		
STOURBRIDGE	WOR	TOWN	BIRMINGHAM	11.5	W
STOWMARKET	SUF	TOWN	IPSWICH	12.5	NW
STRATFORD ON AVON	WAR	TOWN	WARWICK	8.0	SW
STREATHAM	LON	DISTRICT OF	LONDON		
STRETFORD	LAN	TOWN	MANCHESTER	4.0	SW
SUNDERLAND	DUR	TOWN			
SURBITON	SUR	TOWN			
SUTTON BONNINGTON	NOT	VILLAGE	LOUGHBOROUGH	4.0	NW
SUTTON COLDFIELD	WAR	TOWN	BIRMINGHAM	7.0	NE
SUTTON IN ASHFIELD	NOT	TOWN	MANSFIELD	3.0	SW
SWADLINCOTE	DER	TOWN	BUTON ON TRENT	5.0	SE

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
SYDENHAM	LON	DISTRICT			
SYDENHAM	OXF	PARISH	THAME	3.0	E
TAMWORTH	STA	TOWN	LICHFIELD	6.5	SE
TAPTON	DER	PARISH	CHESTERFIELD	2.0	NE
TAUNTON	SOM	TOWN	BRISTOL	44.5	SW
TEMPLE	LON	INNS OF COURT			
TENBURY	WOR	TOWN	WORCESTER	22.0	NW
TETBURY	GLO	TOWN	KEMBLE	7.0	SW
TEVERSALL	NOT	VILLAGE	MANSFIELD	3.0	W
THE CITY	LON	DISTRICT			
TIBSHELF	DER	VILLAGE	ALFRETON	NE	NE
TIDESWELL	DER	TOWN	BUXTON	6.5	E
TONBRIDGE	KEN	TOWN	LONDON	30.0	SE
TOOTING, UPPER	LON	ECCL. DIST.			
TORQUAY	DEV	TOWN			
TOTLEY	DER	VILLAGE	SHEFFIELD	6.0	SW
TOTTENHAM	MID	URB. DIST. OF	LONDON		
TOTTINGTON	LAN	URB. DIST.	BURY	3.0	
TRENTHAM	STA	VILLAGE	STOKE ON TRENT	3.0	S
TULSE HILL	LON	DISTRICT OF	LONDON		
TUNBRIDGE WELLS	KEN	TOWN			
TUPTON	DER	PARISH	CHESTERFIELD	3.0	S
UCKFILED	SUS	TOWN	LEWES	8.0	NE
ULVERSTON	LAN	TOWN			
UNSTONE	DER	PARISH	CHESTERFIELD	4.0	N
WALSALL	STA	TOWN			
WALTHAMSTOW	ESS	URB. DIST.	LONDON (LVPL ST)	6.0	NE
WANDSWORTH	LON	DISTRICT			
WARRINGTON	LAN	TOWN	LIVERPOOL/ MANCHESTER		
WARWICK	WAR	TOWN	LEAMINGTON	2.0	SW
WEDNESBURY	STA	TOWN	BIRMINGHAM	8.0	N
WELLINGTON	SHR	TOWN	SHREWSBURY	10.0	E
WENDOVER	BUC	TOWN	AYLESBURY	5.0	SE
WEOBLY	HFR	TOWN	LEOMINSTER	7.0	SW
WEST BROMICH	STA	TOWN			
WEST DERBY	LAN	PARISH	WITHIN LIVERPOOL		
WESTBOURNE	SUS	VILLAGE	HAVANT	3.0	NE
WESTMINSTER	LON	CITY			
WEYBRIDGE	SUR	TOWN			
WEYMOUTH	DOR	PORT	DORCHESTER	7.5	S
WHALLEY RANGE	LAN	ECCL. DIST.	MANCHSTER		
WHITECHAPEL	LON	DISTRICT	LONDON		
WHITECHAPEL	LON	PARISH			
WHITEHAVEN	CUM	TOWN	CARLISLE	38.0	SW
WHITTINGTON	DER	URB. DIST.	CHESTERFIELD	2.5	N

Location	County	Place typr	Nearest town/city	Distance	Direc-tion
WHITTINGTON HALL	DER	SEAT IN	WHITTINGTON		
WHITTINGTON, NEW	DER	VILLAGE	CHESTERFIELD	2.0	NE
WHITTINGTON, OLD	DER	VILLAGE	CHESTERFIELD	2.5	NE
WHITTON	DUR	PARISH	STOCKTON	4.0	NW
WIGAN	LAN	TOWN	PRESTON	15.0	S
WILMSLOW	CHE	URB. DIST.	STOCKPORT	6.0	SW
WILMSLOW GRANGE	CHE	URB. DIST.	STOCKPORT		
WILTON	WAR				
WIMBLEDON PARK	LON	ECCL. DIST.			
WINGERWORTH	DER	VILLAGE	CHESTERFIELD	3.0	S
WINGFIELD, SOUTH	DER	VILLAGE	ALFRETON	2.0	W
WIRKSWORTH	DER	TOWN	DERBY	14.0	NW
WITHINGTON	LAN	TOWN	MANCHESTER	4.0	S
WOBURN	BED	TOWN	LEIGHTON BUZZARD	6.0	NE
WOKINGHAM	BER	TOWN	READING	7.0	SE
WOLVERHAMPTON	STA	TOWN			
WOODBRIDGE	SUF	TOWN	IPSWICH	8.0	NE
WOODFORD	ESS	URB. DIST.	STRATFORD	4.5	NE
WOODSIDE	DER		CHESTERFIELD	5.0	E
WOOLFOLD	LAN	VILLAGE	BURY	2.0	
WORCESTER	WOR	CITY	BIRMINGHAM	22.0	SW
WORKSOP	NOT	TOWN	SHEFFIELD	18.0	SE

Table 4.63: English county classification

BED	BEDFORDSHIRE	LIN	LINCOLNSHIRE
BER	BERKSHIRE	LON	LONDON
BUC	BUCKINGHAMSHIRE	MID	MIDDLESEX
CAM	CAMBRIDGESHIRE	MON	MONMOUTHSHIRE
CHE	CHESHIRE	NOF	NORFOLK
COR	CORNWALL	NOH	NORTHAMPTONSHIRE
CUM	CUMBERLAND	NOT	NOTTINGHAMSHIRE
DER	DERBYSHIRE	OXF	OXFORDSHIRE
DEV	DEVON	RUT	RUTLAND
DOR	DORSET	SHR	SHROPSHIRE
DUR	DURHAM	SOM	SOMERSET
ESS	ESSEX	STA	STAFFORDSHIRE
GLO	GLOUCESTERSHIRE	SUF	SUFFOLK
HAM	HAMPSHIRE	SUR	SURREY
HFR	HEREFORDSHIRE	SUS	SUSSEX
HFT	HERTFORDSHIRE	WAR	WARICKSHIRE
HUN	HUNTINGDONSHIRE	WES	WESTMORLAND
KEN	KENT	WIL	WILTSHIRE
LAN	LANCASHIRE	WOR	WORCESTERSHIRE
LEI	LEICESTERSHIRE	YOR	YORKSHIRE

Table 4.64: Welsh county classification

ANG	ANGLESEY	GLA	GLAMORGAN
BRE	BRECON	MER	MERIONETHSHIRE
CAE	CAERNARVONSHIRE	MON	MONMOUTHSHIRE
CAG	CARDIGANSHIRE	MOT	MONTGOMERYSHIRE
CAR	CARMARTHENSHIRE	PEM	PEMBROKESHIRE
DEN	DENBIGHSHIRE	RAD	RADNORSHIRE
FLI	FLINTSHIRE		

Table 4.65: Scottish county classification

ABE	ABERDEENSHIRE	LAK	LANARKSHIRE
ANG	ANGUS (FORFAR)	MIL	MIDLOTHIAN
ARG	ARGYLL	MOR	MORAY
AYR	AYRSHIRE	NAI	NAIRNSHIRE
BAN	BANFFSHIRE	ORK	ORKNEY
BEW	BERWICKSHIRE	PEE	PEEBLESHIRE
BUT	BUTE	PER	PERTHSHIRE
CAI	CAITHNESS	REN	RENFREWSHIRE
CLA	CLACKMANNANSHIRE	ROS	ROSS & CROMARTY
DUM	DUMFRIESSHIRE	ROX	ROXBURGHSHIRE
DUN	DUNBARTONSHIRE	SEL	SELKIRKSHIRE
EAS	EAST LOTHIAN	SHE	SHETLAND
FIF	FIFE	STI	STIRLINGSHIRE
INV	INVERNESSHIRE	SUT	SUTHERLAND
KIN	KINCARDINESHIRE	WEL	WEST LOTHIAN
KIO	KINROSSHIRE	WIG	WIGTOWNSHIRE
KIR	KIRKCUDBRIGHTSHIRE		

Table 4.66: Irish county classification

ANT	ANTRIM	LIM	LIMERICK
ARM	ARMAGH	LOY	LONDONDERRY
CAL	CARLOW	LRD	LONGFORD
CAV	CAVAN	LOU	LOUTH
CLA	CLARE	MAY	MAYO
COK	CORK	MEA	MEATH
DON	DONEGAL	MOA	MONAGHAN
DOW	DOWN	OFF	OFFALY (KING'S)
DUB	DUBLIN	ROC	ROSCOMMON
FER	FERMANAGH	SLI	SLIGO
GAL	GALWAY	TIP	TIPPERARY
KER	KERRY	TYR	TYRONE
KID	KILDARE	WAT	WATERFORD
KIL	KILKENNY	WEM	WESTMEATH
LAO	LAOIGHIS	WEX	WEXFORD
LET	LEITRIM	WIC	WICKLOW
LEX	LEIX (QUEENS)		

Table 4.67: Locations outside Great Britain

CAN	CANADA	HOL	HOLLAND
EGY	EGYPT	IOM	
FRA	FRANCE	IOW	
GER	GERMANY	JER	JERSEY
GUE	GUERNSEY		

APPENDIX 4.3: Occupational Classifications

MANUFACTURING (MF)

			Manufacturer/ Maker	Manager/ Director	Employee Skilled/ Semi-Skilled
			(Owner)	(Employee)	(Employee)
			A	B	C
MF	1	Machinery			
MF	2	Tools			
MF	3	Cutlery			
MF	4	Iron & steel			
MF	5	Other metals			
MF	6	Gold & Silver			
MF	7	Earthenware			
MF	8	Coals & gas			
MF	9	Chemicals			
MF	10	Furs & leather			
MF	11	Glue, tallow, etc			
MF	12	Hair etc			
MF	13	Woodworkers			
MF	14	Furniture			
MF	15	Carriages & harnessses			
MF	16	Paper			
MF	17	Floorcloth, waterproofs, etc			
MF	18	Woollens			
MF	19	Cotton & silk			
MF	20	Flax, Hemp etc			
MF	21	Lace			
MF	22	Dyeing			
MF	23	Dress			
MF	24	Sundries			
MF	25	Food preparation			
MF	26	Baking			
MF	27	Drink preparation			
MF	28	Smoking			
MF	29	Watches, instruments, etc			
MF	30	Printing			
MF	31	Unspecified			

COMMERCE (CM)

CM	**1**	Merchant, Iron & Steel
CM	**2**	Merchant, other Metals and Metal Goods
CM	**3**	Merchant, Coal/Coke
CM	**4**	Merchants, specified
CM	**5**	Merchants, unspecified
CM	**6**	Brokers, specified
CM	**7**	Brokers, unspecified
CM	**8**	Agents, Metals
CM	**9**	Agents, coal/colliery
CM	**10**	Agents, specified
CM	**11**	Agents, unspecified
CM	**12**	Dealer, Metals
CM	**13**	Dealer, coal/colliery
CM	**14**	Dealer, specified
CM	**15**	Dealer, unspecified
CM	**16**	Retail, specified
CM	**17**	Retail, unspecified

MINING (M)

		Manufacturer/ Maker/Owner	Manager/ Director	Employee Skilled/ Semi-Skilled
		A	**B**	**C**
M	**1**	Mining, coal		
M	**2**	Mining, other		
M	**3**	Quarrying		
M	**4**	Brickmaking		

CONSTRUCTION (C)

		Management	Operative
		A	**B**

TRANSPORT (T)

T	**1**	Warehouses & docks
T	**2**	Railways
T	**3**	Roads
T	**4**	Canals

OTHER SERVICES (OS)

			Owner	Manager/ Agent	Employee
			A	B	C
OS	1	Insurance			
OS	2	Banking			
OS	3	Finance General			
OS	4	Hotel/Catering			
OS	5	Other			

PROFESSIONS (P)

P	1	Law	
P			A=Solicitor
P			B=Barrister/QC
P			C=Student/adviser/Clerk
P			D=JP
P	2	Medicine	A=Doctor of Medicine
P			B=Surgeon
P			C=Physician
P			D=Dentist
P			E=Medical student
P	3	Share/Stock Brokers	
P	4	Accountants	
P	5	Bankers	
P	6	Engineers	
P	7	Architects	
P	8	Surveyors	
P	9	Estate/Land Agent	
P	10	Auctioneer/Valuer	
P	11	Chemist/Druggist/ Pharmacist	
P	12	MP	
P	13	Education	
P	14	Religion	
P	15	Arts & Amusement	
P	16	Literature	
P	17	Scientist	

PUBLIC SERVICE (PS)

PS	1	Central administration	
PS	2	Local Administration	
PS	3	HM Services	(A=Officers B=Other)
PS	4	Police & prisons	

AGRICULTURE (A)

A	1	Farmer
A	2	Breeding
A	3	Land owner
A	4	Other- Gardener/Woodman

DOMESTIC SERVICES (DS)

DS	1	Indoor
DS	2	Outdoor

UNCLASSIFIED WORKERS (UW)

UW	1	Unskilled
UW	2	Skilled

UNCLASSIFIED MANAGEMENT (UM)

INDEPENDENT/UNOCCUPIED (I)

I	1	Gentleman
I	2	Peer
I	3	Male (No Occupation/retired/Mr/Esquire)
I	4	Female (no occupation/wife/widow/spinster/miss)
I	5	Children
I	6	Shareholder

COMPANY/INSTITUTIONAL HOLDING (IH)

UNKNOWN (U)

This occupational classification was largely based upon that used by W. A. Armstrong in 'The use of information about occupation' in Wrigley, E. A. (ed.) *Essays in the use of quantitative methods for the study of social data* (Cambridge, 1972).

Table 4.68: List of occupations and their classifications

Occupational description	Code		
FARMER	AG	1	
CATTLE DEALER	AG	2	
LANDSCAPE GARDENER	AG	4	
NURSERY MAN	AG	4	
WOODMAN	AG	4	
WOOD STEWARD	AG	4	
CONTRACTOR	C		A
BRICK LAYER	C		B
PAINTER	C		B
BUILDER	C		
GAS FITTER	C		
JOINER & BUILDER	C		
JOINER	C		
MASON (MARBLE OR STONE)	C		
MASTER BUILDER	C		
PLUMBER	C		
SHINGLER	C		
SLATER	C		
STREET PAVER	C		
IRON & STEEL MERCHANT	CM	1	
IRON MERCHANT	CM	1	
STEEL MERCHANT	CM	1	
CUTLERY MERCHANT	CM	2	
METAL MERCHANT	CM	2	
COAL FACTOR	CM	3	
COAL MERCHANT	CM	3	
COKE MERCHANT	CM	3	
MINERAL MERCHANT	CM	3	
CLOTH MERCHANT	CM	4	
CORN FACTOR	CM	4	
CORN MERCHANT	CM	4	
COTTON MERCHANT	CM	4	
FRUIT MERCHANT	CM	4	
HARDWARE MERCHANT	CM	4	
HORN MERCHANT	CM	4	
IVORY MERCHANT	CM	4	
LEATHER MERCHANT	CM	4	
LIME MERCHANT	CM	4	
OIL MERCHANT	CM	4	
PAPER MERCHANT	CM	4	
PEARL MERCHANT	CM	4	
POTATO MERCHANT	CM	4	
RAG MERCHANT	CM	4	
SLATE MERCHANT	CM	4	
SPIRIT MERCHANT	CM	4	
TEA MERCHANT	CM	4	
TIMBER MERCHANT	CM	4	

Occupational description	Code		
WINE MERCHANT	CM	4	
FACTOR	CM	5	
GENERAL FACTOR	CM	5	
MERCHANT	CM	5	
BRASS BROKER	CM	6	
ENGINEERS FACTOR	CM	6	
METAL BROKER & AGENT	CM	6	
SUGAR BROKER	CM	6	
WOOL BROKER	CM	6	
WOOL BUYER	CM	6	
BROKER	CM	7	
BUYER	CM	7	
IRON AGENT	CM	8	
IRON BROKER	CM	8	
COLLAGEN	CM	9	
MINE AGENT	CM	9	
MINING AGENT	CM	9	
COMPANY AGENT	CM	10	
COAL AGENT	CM	10	
RAILWAY AGENT	CM	10	
YARN AGENT	CM	10	
AGENT	CM	11	
TRAVELLER	CM	11	
IRON DEALER	CM	12	
COAL DEALER	CM	13	
BOOT & SHOE DEALER	CM	14	
BUTTER DEALER	CM	14	
CHEESE MONGER	CM	14	
WHOLESALE CONFECTIONER	CM	14	
CORN DEALER	CM	14	
COTTON DEALER	CM	14	
EARTHENWARE DEALER	CM	14	
FLOUR DEALER	CM	14	
FRUIT DEALER	CM	14	
FRUITERER	CM	14	
GLASS DEALER	CM	14	
GROCER WHOLESALE	CM	14	
HORN DEALER	CM	14	
HOSIER	CM	14	
IVORY DEALER	CM	14	
LICENSED VICTUALLER	CM	14	
MUSIC DEALER	CM	14	
SALT DEALER	CM	14	
SCRAP DEALER	CM	14	
SHOE DEALER	CM	14	
STATIONER	CM	14	
TEA DEALER	CM	14	
WASTE DEALER	CM	14	

Occupational description	Code		
WHOLESALER	CM	14	
WOOLLEN DRAPER	CM	14	
CELLARMAN	CM	15	
DEALER	CM	15	
GENERAL DEALER	CM	15	
HAWKER	CM	15	
IMPORTER	CM	15	
BOOK SELLER	CM	16	
BUTCHER	CM	16	
DRAPER	CM	16	
FISH MONGER	CM	16	
GROCER	CM	16	
GROCER & DRAPER	CM	16	
IRONMONGER	CM	16	
OUTFITTER	CM	16	
PAWN BROKER	CM	16	
SHOP KEEPER	CM	17	
STORE KEEPER	CM	17	
BUTLER	DS	1	
DOMESTIC SERVANT	DS	1	
HOUSE KEEPER	DS	1	
COACHMAN	DS	2	
FOOTMAN	DS	2	
GAME KEEPER	DS	2	
GARDENER	DS	2	
GROOM	DS	2	
GENTLEMAN	I	1	
BARONET	I	2	
EARL	I	2	
KNIGHT	I	2	
BACHELOR OF ARTS	I	3	
ESQUIRE	I	3	
RETIRED	I	3	
GENTLEWOMAN	I	4	
MARRIED	I	4	
MISS	I	4	
WIDOW	I	4	
WIFE	I	4	
INFANT	I	5	
MINOR	I	5	
SHARE HOLDER	I	6	
NO OCCUPATION	I	3or4	
PENSIONER	I	3or4	
RETIRED	I	3or4	
SPINSTER	I	3or4	
COMPANY (Occupational code C)	IU		

Occupational description	Code		
COLLIERY OWNER	M	1	A
COLLIERY PROPRIETOR	M	1	A
COAL PROPRIETOR	M	1	A
COAL MASTER	M	1	A
COAL OWNER	M	1	A
COAL MANAGER	M	1	B
COKE MANAGER	M	1	B
COLLIERY INSPECTOR	M	1	B
COLLIERY MANAGER	M	1	B
COLLIERY VIEWER	M	1	B
MINE MANAGER	M	1	B
COLLIER	M	1	C
MINER	M	1	C
ORE DRESSER	M	2	C
QUARRY PROPRIETOR	M	3	A
QUARRY OWNER	M	3	A
QUARRYMAN	M	3	C
BRICK MANUFACTURER	M	4	
FIRE BRICK MANUFACTURER	M	4	
BELLOW MANUFACTURER	MF	1	
BOILER MANUFACTURER	MF	1	
CHARTER MASTER	MF	1	
COOKER MANUFACTURER	MF	1	
FURNACE MANUFACTURER	MF	1	
HACKLE MAKER	MF	1	
MACHINE KNIFE MFR	MF	1	
MILL WRIGHT	MF	1	
SPINDLE MANUFACTURER	MF	1	
STAY MAKER	MF	1	
WHEEL MANUFACTURER	MF	1	
FILE MANAGER	MF	2	B
SAW MANAGER	MF	2	B
ANVIL BLADE GRINDER	MF	2	
BLADE FORGER	MF	2	
BLADE STRIKER	MF	2	
BRACE BIT FILER	MF	2	
DIEDINKER	MF	2	
DRAUGHTSMAN	MF	2	
DYE SINKER	MF	2	
FILE CUTTER	MF	2	
FILE HARDENER	MF	2	
FILE MANUFACTURER	MF	2	
MAGNET MANUFACTURER	MF	2	
PISTOL MANUFACTURER	MF	2	
RAZOR BLADE FORGER	MF	2	
SAW GRINDER	MF	2	
SAW MAKER	MF	2	
SAW SMITH	MF	2	

Occupational description	Code		
SCALE MANUFACTURER	MF	2	
SCISSOR MANUFACTURER	MF	2	
SCYTHE MAKER	MF	2	
SHEAR MANUFACTURER	MF	2	
TOOL GRINDER	MF	2	
TOOL MAKER	MF	2	
TOOL MANUFACTURER	MF	2	
CUTLERY MANAGER	MF	3	B
CUTLER	MF	3	
CUTLERY MANUFACTURER	MF	3	
FORK MAKER	MF	3	
KNIFE CUTTER	MF	3	
KNIFE MANUFACTURER	MF	3	
FORGE MANAGER	MF	4	B
IRON MANAGER	MF	4	B
STEEL MANAGER	MF	4	B
ARMOUR PLATE ROLLER	MF	4	
BLACKSMITH	MF	4	
CASTER	MF	4	
FENDER MAKER	MF	4	
FORGER & ROLLER	MF	4	
FORGEMAN	MF	4	
GRATE MANUFACTURER	MF	4	
GRINDER	MF	4	
IRON & STEEL MANUFACTURER	MF	4	
IRON & STEEL ROLLER	MF	4	
IRON FOUNDER	MF	4	
IRON MASTER	MF	4	
IRON MANUFACTURER	MF	4	
IRON ROLLER	MF	4	
IRON TURNER	MF	4	
NAIL MAKER	MF	4	
PIERCER & STAMPER	MF	4	
PLATE ROLLER	MF	4	
ROD ROLLER	MF	4	
ROLLER	MF	4	
ROLL TURNER	MF	4	
ROLLING MILL PROPRIETOR	MF	4	
SHEET ROLLER	MF	4	
SMELTER	MF	4	
SPRING MAKER	MF	4	
SPRING SMITH	MF	4	
STEEL & FILE MANUFACTURER	MF	4	
STEEL & WIRE MANUFACTURER	MF	4	
STAMPER	MF	4	
STEEL CONVERTOR	MF	4	
STEEL MELTER	MF	4	
STEEL MANUFACTURER	MF	4	

Occupational description	Code		
STEEL POT MAKER	MF	4	
STEEL REFINER	MF	4	
STEEL ROLLER	MF	4	
STEEL SMELTER	MF	4	
STEEL WEIGHER	MF	4	
STOVE MANUFACTURER	MF	4	
STOVE GRATE FILER	MF	4	
STOVE GRATE MANUFACTURER	MF	4	
WIRE DRAWER	MF	4	
WIRE MANUFACTURER	MF	4	
WIRE ROLLER	MF	4	
BRASS CASTER	MF	5	
BRASS FOUNDER	MF	5	
BRASS TURNER	MF	5	
BRAZIER	MF	5	
BRITTANNIA METAL MFR	MF	5	
BUFFER	MF	5	
CHASER	MF	5	
COPPER SMITH	MF	5	
ELECTRO PLATE MFR	MF	5	
ELECTRO PLATER	MF	5	
LAMP MANUFACTURER	MF	5	
LEAD MANUFACTURER	MF	5	
LEAD SMELTER	MF	5	
SCRAP PILER	MF	5	
SMITH	MF	5	
WHITE SMITH	MF	5	
ASSAYER	MF	6	
GOLDSMITH	MF	6	
JEWELLER	MF	6	
SILVER REFINER	MF	6	
SILVER PLATER	MF	6	
SILVERSMITH	MF	6	
SILVER STAMPER	MF	6	
SILVER PLATE MANUFACTURER	MF	6	
EARTHENWARE MFR	MF	7	
GLASS BLOWER	MF	7	
GLASS MANUFACTURER	MF	7	
COKE MANUFACTURER	MF	8	
CHEMICAL MANUFACTURER	MF	9	
MANUFACTURING CHEMIST	MF	9	
DRY SALTER	MF	9	
PAINT MANUFACTURER	MF	9	
POLISH MANUFACTURER	MF	9	
CURRIER	MF	10	
FELLMONGER	MF	10	
SADDLER	MF	10	
STRAP MANUFACTURER	MF	10	

Occupational description	Code		
TANNER	MF	10	
CHANDLER	MF	11	
TALLOW CHANDLER	MF	11	
HAIR SCALING MFR	MF	12	
HORN CUTTER	MF	12	
IVORY CUTTER	MF	12	
BOX MAKER	MF	13	
COOPER	MF	13	
CORK MANUFACTURER	MF	13	
SAWYER	MF	13	
WOOD CUTTER	MF	13	
WOOD TURNER	MF	13	
CABINET MAKER	MF	14	
FLUTER & CARVER	MF	14	
SEAT MANUFACTURER	MF	14	
UPHOLSTER	MF	14	
CARRIAGE MAKER	MF	15	
RAIL FINISHER	MF	15	
RAILWAY CARRIAGE MFR	MF	15	
WAGON BUILDER	MF	15	
WHEELWRIGHT	MF	15	
CARD MAKER	MF	16	
PAPER MANUFACTURER	MF	16	
JAPANNER	MF	17	
CARPET MANUFACTURER	MF	18	
FLOCK MILLER	MF	18	
KNITTER	MF	18	
WOOLLEN SPINNER	MF	18	
WOOL STAPLER	MF	18	
YARN FINISHER	MF	18	
COTTON MANUFACTURER	MF	19	
COTTON SPINNER	MF	19	
SPINNER	MF	19	
WEAVER	MF	19	
CLOTH FINISHER	MF	20	
CORDWAINER	MF	20	
LINEN MANUFACTURER	MF	20	
ROPE MANUFACTURER	MF	20	
BRAID MANUFACTURER	MF	21	
LACE MANUFACTURER	MF	21	
BLEACHER	MF	22	
CALICO PRINTER	MF	22	
DYER	MF	22	
BOOT CLOSER	MF	23	
BOOT MAKER	MF	23	
CLOTHIER	MF	23	
DESIGNER	MF	23	
HAT MAKER	MF	23	

Occupational description	Code		
HATTER	MF	23	
PATTERN MAKER	MF	23	
SHIRT MAKER	MF	23	
SHOE MAKER	MF	23	
SHOE MANUFACTURER	MF	23	
TAILOR & CLOTHIER	MF	23	
TAILOR & DRAPER	MF	23	
TAILOR	MF	23	
BUTTON MANUFACTURER	MF	24	
FLASK MAKER	MF	24	
TURNER	MF	24	
UMBRELLA MANUFACTURER	MF	24	
CONFECTIONERY MFR	MF	25	
CONFECTIONER	MF	25	
CORN MILLER	MF	25	
MILLER	MF	25	
SEED CRUSHER	MF	25	
SUGAR REFINER	MF	25	
WATER MANUFACTURER	MF	25	
BAKER	MF	26	
BREWER	MF	27	
MALTSTER	MF	27	
PIPE MAKER	MF	28	
TOBACCO MANUFACTURER	MF	28	
TOBACCONIST	MF	28	
HARMONIUM MANUFACTURER	MF	29	
WATCH MAKER	MF	29	
BOOK BINDER	MF	30	
LAW STATIONER	MF	30	
LITHOGRAPHER	MF	30	
PRINTER & PUBLISHER	MF	30	
PRINTER & STATIONER	MF	30	
PRINTER	MF	30	
MILL MANAGER	MF	31	B
COMPANY WORKER	MF	31	C
ENGINE DRIVER	MF	31	C
ENGINEMAN	MF	31	C
ENGINE TENDER	MF	31	C
FOREMAN	MF	31	C
OVERLOOKER	MF	31	C
OVERSEER	MF	31	C
BAILIFF	MF	31	
BUSINESSMAN	MF	31	
ENGINE TURNER	MF	31	
ENGINE WRIGHT	MF	31	
FURNMAN	MF	31	
HAMMER MAN	MF	31	
MACHINIST	MF	31	

Occupational description	Code		
MANUFACTURER	MF	31	
MASTER	MF	31	
MECHANIC	MF	31	
MERCHANT & MANUFACTURER	MF	31	
SUPERINTENDENT	MF	31	
SUPERVISOR	MF	31	
PATENTEE	MT	31	
ASSURANCE INSPECTOR	OS	1	
INSURANCE AGENT	OS	1	
UNDERWRITER	OS	1	
BANK CASHIER	OS	2	C
BANK CLERK	OS	2	C
COMMERCIAL AGENT	OS	3	
COMMERCIAL TRAVELLER	OS	3	
FINANCIAL AGENT	OS	3	
LOAN MERCHANT	OS	3	
SALESMAN	OS	3	
HOTEL PROPRIETOR	OS	4	A
HOTEL MANAGER	OS	4	B
INN KEEPER	OS	4	
PUBLICAN	OS	4	
PARK KEEPER	OS	5	C
HAIRDRESSER	OS	5	
SOLICITOR	P	1	A
BARRISTER	P	1	B
QC & MP	P	1	B
QUEENS COUNSEL	P	1	B
LAW ADVISER	P	1	C
LAW CLERK	P	1	C
LAW STUDENT	P	1	C
JUSTICE OF THE PEACE	P	1	D
DOCTOR OF MEDICINE	P	2	A
SURGEON	P	2	B
PHYSICIAN	P	2	C
DENTIST	P	2	D
MEDICAL STUDENT	P	2	E
SHARE BROKER	P	3	
SHARE DEALER	P	3	
STOCK BROKER	P	3	
ACCOUNTANT	P	4	
BANKER	P	5	
BANK MANAGER	P	5	
BANK TRUSTEE	P	5	
CIVIL ENGINEER	P	6	
ENGINEER	P	6	
MINING ENGINEER	P	6	
ARCHITECT	P	7	
SURVEYOR	P	8	

Occupational description	Code		
ESTATE AGENT	P	9	
ESTATE VALUER	P	9	
LAND AGENT	P	9	
LAND VALUER	P	9	
AUCTIONEER	P	10	
VALUER	P	10	
CHEMIST & DRUGGIST	P	11	
CHEMIST	P	11	
PHARMACEUTICAL CHEMIST	P	11	
DRUGGIST	P	11	
MEMBER OF PARLIAMENT	P	12	
DRAWING MASTER	P	13	
GOVERNESS	P	13	
HEADMASTER	P	13	
PROFESSOR	P	13	
SCHOOLMASTER	P	13	
SCHOOL MISTRESS	P	13	
STUDENT	P	13	
MASTER	P	13	
TEACHER	P	13	
TUTOR	P	13	
CLERGYMAN	P	14	
CLERIC	P	14	
CLERK IN HOLY ORDERS	P	14	
MINISTER	P	14	
RECTOR	P	14	
REVEREND	P	14	
STEWARD	P	14	
ACTING AGENT	P	15	
ARTIST	P	15	
CASTING AGENT	P	15	
ENGRAVER	P	15	
PHOTOGRAPHER	P	15	
POTTER	P	15	
SCULPTOR	P	15	
JOURNALIST	P	16	
NEWSPAPER PROPRIETOR	P	16	
REPORTER	P	16	
SHORTHAND WRITER	P	16	
BOTANIST	P	17	
METALLURGIST	P	17	
VETERINARY SURGEON	P	17	
GOVT INSPECTOR OF MINES	PS	1	
REVENUE OFFICER	PS	1	
TAX COLLECTOR	PS	1	
INLAND REV. COLLECTOR	PS	1	
INCOME TAX SURVEYOR	PS	1	

Occupational description	Code		
POOR RATE COLLECTOR	PS	2	
EX MAYOR	PS	2	
POOR RATE COLLECTOR	PS	2	
REGISTRAR OF B,D,M	PS	2	
CAPTAIN	PS	3	A
COLONEL	PS	3	A
LIEUTENANT COLONEL	PS	3	A
LIEUTENANT	PS	3	A
MAJOR	PS	3	A
PORT MASTER	T	1	A
MESSENGER	T	1	B
PORTER	T	1	B
WAREHOUSE MAN	T	1	B
WHARFINGER	T	1	
BRIT RAIL MESSENGER	T	2	C
RAILWAY CARRIER	T	2	
RAILWAY CONTRACTOR	T	2	
RAILWAY DIRECTOR	T	2	
RAILWAY MANAGER	T	2	
RAILWAY STATION MANAGER	T	2	
RAILWAY SUPERINTENDENT	T	2	
STATION MASTER	T	2	
CAB PROPRIETOR	T	3	
CARTER	T	3	
CART OWNER	T	3	
COACH PROPRIETOR	T	3	
DRAYER	T	3	
LETTER CARRIER	T	3	
UNKNOWN	U		
ASSISTANT MANAGER	UM		
ASSISTANT SECRETARY	UM		
COMPANY DIRECTOR	UM		
DIRECTOR	UM		
MANAGER	UM		
MANAGING DIRECTOR	UM		
SECRETARY	UM		
LABOURER	UW	1	
ARTISAN	UW	2	
ASSISTANT	UW	2	
BOOK KEEPER	UW	2	
CASHIER	UW	2	
CLERK (UNION, BANK ETC)	UW	2	
COLLECTOR	UW	2	
DECORATOR	UW	2	
FITTER	UW	2	
INSPECTOR	UW	2	
JOURNEYMAN	UW	2	
MARKER	UW	2	

Occupational description	Code		
MARK MAKER	UW	2	
MERCHANT CLERK	UW	2	
RELIEVING OFFICER	UW	2	
STOCK KEEPER	UW	2	
STOCK TAKER	UW	2	
TIME KEEPER	UW	2	

CHAPTER 5: THE DEMAND FOR FINANCE: CASE STUDIES OF FIVE MANUFACTURING COMPANIES IN THE SHEFFIELD REGION

Having examined in general terms the supply of finance to manufacturing industry through consideration of both the activities of some provincial banks and the results of companies adopting limited liability, it is equally important to assess the demand for finance generated within manufacturing firms. Therefore, the surviving business papers of five companies have been analysed in order to gain some insight into the methods by which manufacturing firms raised funds and the reasons such resources were required - either to provide working capital or to finance expansion. The archives of five companies have been surveyed, all of which adopted limited liability at various times in the third quarter of the nineteenth century.[1] These firms belonged to the group of larger manufacturing establishments that existed in the Sheffield region and it could therefore be argued that they form an unrepresentative sample for manufacturing industry in that area as a whole. Unfortunately, as frequently occurs, the primary sources available dictate the nature of research.

First it is important to consider the reasons why finance was required by manufacturing companies in the period 1855 to 1885. The changing structure of Sheffield trades has been outlined in Chapter 2, where the impact of new technology and demand on the financial and organisational structure of industry was considered. Indeed, the period saw substantial changes in the technology of the iron and steel industry, with steel producers adopting the Bessemer process, the open hearth process and the basic process at varying stages in their developments during these years. The engineering sector was also changing

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1 These archives are located at the British Steel Corporation Northern Records Centre, Middlesborough [hereafter BSC, NRRC] and I would like to thank the archivist Mrs E. Green, and Mr. Dolphin for all their generous help and assistance.

rapidly; new methods of manufacture were adopted and the scale of production increased. The growing demand for iron, steel and secondary metal products was vital in the development of Sheffield's manufacturing industry, both domestic and foreign demand for railway products being especially important. Expansion, due to increased demand and the changing needs of new technologies, required finance, likewise the growth in physical size and scale of firms.

The financial impact of fluctuations in business conditions that occurred throughout the iron, steel and metal trades between 1855 and 1885 must also be considered. The period witnessed in particular a boom in the metals sectors in the early 1870s, but this proved to be a precursor to the opening phases of the 'Great Depression' during the mid-1870s to early 1880s. Many firms in the Sheffield region struggled in this harsh economic climate that then prevailed. In such an environment companies would have required finance if merely to provide working capital for their operations, or to ward off bankruptcy.

Thus, manufacturing companies in the Sheffield region between 1850 and 1885 would have required varying degrees of finance and for differing purposes. How great was this demand and how was it met? With these questions in mind, the fortunes of the five companies will now be examined; first by providing brief histories of the firms to give a background and then by analysing the methods by which they obtained funds during the mid-century, company by company.

The company archives consulted comprised those of the Park Gate Iron Co. Ltd., Samuel Fox & Co. Ltd., Yorkshire Engine Ltd., Hallamshire Steel & File Co. Ltd., and Steel Tozer & Hampton Ltd. Of these, only Yorkshire Engine was a new concern, all the other companies having been established before 1850. Furthermore, the Manchester and London promoter, David Chadwick, was involved with both Yorkshire Engine and Park Gate - establishing the former and

converting the latter to limited liability.[2] (His activities are discussed in detail in Chapter 4). All five companies were relatively large concerns and all adopted limited liability during the mid-century. Some indication of their various sizes can be seen in Table 5.1 which indicates the nominal capital of the companies at their incorporation.

Table 5.1: Nominal capital and share values of the five case studies			
Company	**Date of incorporation**	**Nominal Capital**	**Value of Shares**
Park Gate Iron Co. Ltd	1864	£300,000	£100
Yorkshire Engine Co. Ltd.	1865	£200,000	£100
Samuel Fox & Co. Ltd.	1871	£300,000	£100
Hallamshire Steel & File Co. Ltd.	1873	£60,000	£20
Steel, Peech & Tozer Ltd.	1875	£70,000	£100

The history of Park Gate Iron is well documented. The company began in 1823 as a small plant producing wrought iron bars, iron castings and tin plate. It had been established by Charles Sanderson and John Watson, two ironmasters from Sheffield.[3] The works were situated to the west of the main Rotherham/Barnsley road in the village of Park Gate, two miles north of Rotherham. Puddling furnaces were introduced in 1829, but the works encountered financial difficulties in the early 1830s. The concern was taken over by businessmen from the West Midlands who re-named it the Birmingham Tin Plate Company in 1833.[4] In 1840 the then existing partnership was dissolved and its assets were purchased by William Scholefield, who subsequently took into partnership Charles Geach and Samuel Beale. Geach was a banker who later moved into the iron industry and brought to the firm a wealth of connections in the iron and

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2 Cottrell, P. L. *Industrial Finance, 1830-1914: the finance and organisation of English manufacturing industry* [hereafter Cottrell, *Industrial Finance* ...] (1979), pp.115, 124 and 125.

3 'The Company from 1823 to 1856', In: *Steel Times Technical Survey of Park Gate Iron & Steel Co. Ltd.*, (1964) [hereafter '*Technical Survey of Park Gate.* ...'] p.7.

4 *ibid.*, p.7 and Birch, A. *An Economic History of the British Iron and Steel. Industry, 1784-1879* [hereafter Birch, *British Iron and Steel* ...] (1969), p.163.

railway industries.[5] Scholefield retired in 1847 and, when Geach died in 1854, Samuel Beale, with his son Lansdowne Beale and Geach's son, continued operations as Samuel Beale & Co.[6] On Samuel Beale's retirement in 1864, the firm was converted into a limited liability company under the direction of David Chadwick. It was re-named the Park Gate Iron Co. Ltd. with a nominal capital of £300,000, divided into 3,000 shares of £100 each.[7] The first call on these shares amounted to £20 resulting in the paid-up capital of the company in its first year being £60,000.[8] Lansdowne Beale served as a director until 1869.[9]

In the mid-nineteenth century, the Park Gate works underwent a steady expansion. The most important activities undertaken were the production of pig iron, rails and plates. Pig iron production had begun in 1839 when the first blast furnace was built in order to supply directly its puddling furnaces.[10] In 1841 the firm rented the Holmes ironworks in Rotherham (consisting of two blast furnaces and ancillary plant) to meet the increased demand for its products.[11] Further production capacity was obtained by purchasing the lease of the Chapeltown iron works (consisting of a blast furnace, a foundry and three collieries) in 1846.[12] The company branched out into new areas of production, successfully moving into the manufacture of iron plates in 1849.[13] Rising demand for iron plates, and other products, required further expansion of iron making capacity. It had become clear by 1849, under the leadership of Geach, that augmentation of the

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5 *ibid.*, p.164.

6 '*Technical Survey of Park Gate. ...*' p.7.

7 *ibid.*, p.7 and Public Record Office, Kew, London [hereafter PRO]: Board of Trade [hereafter BT] papers, file series 31 company number 1179C/14355.

8 BSC, NRRC: Parkgate Iron Co. Ltd. [hereafter PGI], 140/6, Box 6, 23511, Balance Sheet, 1865.

9 '*Technical Survey of Park Gate. ...*' p.7.

10 '*ibid.* and Birch, *British Iron and Steel. ...*, p.163.

11 '*Technical Survey of Park Gate. ...*' p.7.

12 *ibid.*

13 *ibid.*

company's operations necessitated the acquisition of new land which was purchased on the east side of the Rotherham/Barnsley road.[14] The company continued to acquire land in order to facilitate expansion. Furthermore, the Holmes works were purchased outright in 1854, while in 1872 two new blast furnaces were built at Park Gate.[15]

The land to the east of the Rotherham/Barnsley road was used to build a new plant for the production of iron plates, which, by 1849, had superseded the earlier production of tin plate.[16] The works consisted of puddling furnaces, a forge and two plate mills, the latter being the first reversing mills in the country - the plates that were manufactured were too heavy to pull over the rolls as had previously been the practice.[17] The company played an important part in the development of rolled iron armour plates - the first rolled armour plate to be used in British naval vessels being produced at Park Gate. The rolling plant was modernised in 1888 when the company introduced open hearth steel making facilities.[18]

The company also expanded in the area of rail production. The experience of Geach in the railway industry led to the decision to install a rail mill. He correctly predicted the expansion of domestic demand as a result of the development of railways during the 1840s, as well as the increase in foreign demand thereafter. The rail mill was a success and iron rails became the company's chief product. The rail mill continued to operate until 1876 when it was dismantled, demand for wrought iron rails having declined as steel rails

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14 *ibid.*

15 This expansion satisfied production until 1905 when two new blast furnaces were installed at Park Gate. The Holmes blast furnaces continued in production until 1920. '*Technical Survey of Park Gate. ...*' p.7.

16 *ibid.*

17 *ibid.*, pp.7-8.

18 *ibid.*

became recognised as superior.[19] However, Park Gate Iron Co. Ltd. did not undertake the production of steel at its works until 1888 when the Siemens open-hearth process was adopted. Three furnaces were installed and the first cast steel was produced towards the end of 1888, the name of the company also being changed at this time to the Park Gate Iron & Steel Co. Ltd. Wrought iron production continued until 1908.[20] However, the manufacture of steel by the company falls outside the period of this study, the focus of the company's activities until 1885 being the production of iron, rails and armour-plate.

The other company in this sample in which David Chadwick was involved was the Yorkshire Engine Co. Ltd. This was a new venture, established in 1865 as a limited company with a nominal capital of £200,000, divided into 2,000 shares of £100 each. The first call on the shares was £15, the initial called up capital of the company therefore totalling £30,000.[21] The company's works were located near Rotherham and the firm initially aimed to manufacture two to three locomotives per week, with an eventual target capacity of 300 to 400 per annum.[22] The company was essentially a private concern. Indeed, a letter from Chadwick, Adamson & Co., sent to his friends and associates in order to sell the remaining shares in the company in 1865 stated that:

> The management of the Company will be assimilated as nearly as possible to that of a private concern; and with this view it is intended that, unless by special permission of the Board, no proprietor shall hold less than 50 shares, that no transfer of shares shall be made within twelve months, and that all future transfers shall in the first instance be offered to the Board. There are only 800 shares now remaining to be allotted, and these we are desirous of offering to our friends - hence this communication to you.[23]

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19 *ibid.*, p.7.

20 *ibid.*, p.8.

21 PRO: BT31/1101/2124C.

22 BSC, NRRC: Yorkshire Engine Company Ltd [hereafter YEC], 023/12, box 2, 04930, BDM, date 6 Apr. 1865, letter contained in inside cover.

23 *ibid.*

The directors included David Chadwick, very much contrary to his usual practice of avoiding managerial involvement in the companies which he promoted, and William Lansdowne Beale of Park Gate.[24] Upon completion, the company's works were named the Meadow Hall Works and production began in 1866. However, the ambitious target set at the company's creation was never achieved.[25] The decision to wind up the company voluntarily was taken in 1880:[26] the original company was officially wound up in 1885 but none the less had been reconstituted as a new firm of the same name the previous year.[27]

Samuel Fox & Co. Ltd. and Steel Peech & Tozer Ltd. were both acquired by the United Steel Companies Ltd. in 1918, along with the Workington Iron & Steel Co. Ltd. and the Rother Vale Collieries Ltd. Shortly afterwards, the United Steel Companies also purchased Appleby Iron Co. Ltd. and Frodingham Iron & Steel Co. Ltd. Harry Steel, Chairman and Managing Director of Steel Peech & Tozer was the driving force behind the formation of the United Steel Companies[28] and Steel Peech & Tozer Ltd. was the leading member of this consortium. The company had been formed in 1875 by Henry Steel (Senior), who had previously been a successful bookmaker. He and his partner, William Peech, changed the direction of their interests in 1875 when they retired from bookmaking, returned to their native Sheffield, and joined with Thomas Hampton to purchase the Phoenix Bessemer Works in Sheffield.[29] These had been previously owned by Hampton in partnership with William Radcliffe, operating as Hampton, Radcliffe

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24 *ibid.*

25 Cottrell, *Industrial Finance...*, p.125.

26 PRO: BT31/1101/2124C.

27 BSC, NRRC: YEC 023/12, Box 2, 04930, BDM, 9 Jun. 1884.

28 Peddie, R. *The United Steel Companies Ltd., 1918-1968: A History* (Manchester, 1969) [hereafter Peddie *United Steel* ...], p.1.

29 BSC, NRRC: YEC 023/12, Box 2, 04930, BDM, 9 Jun. 1884.

& Co.[30], before being converted into the Phoenix Bessemer Steel Co. Ltd. in 1872.[31] The Phoenix Bessemer Steel passed a resolution to wind up in 1875.[32] Steel, Peech & Hampton Ltd. was then established, with a nominal capital of £70,000, later changing its name to Steel, Peech & Tozer Ltd., when Hampton retired and Edward Tozer, a well known local steel maker, joined the partnership.[33] Steel and Peech provided the finance for the company and Hampton and Tozer provided experience and a local reputation as respected steel makers.[34] The Phoenix Bessemer works originally consisted of a Bessemer shop, a cogging mill, a rail mill, a merchant mill and a small forge. The company expanded steadily, becoming particularly involved in the manufacture of railway materials such as tyres, wheel axles, locomotive and wagon springs and rails.[35]

Samuel Fox & Co. had been established in 1842 by Samuel Fox who began business as a wire drawer. This firm's works were at Stocksbridge, seven and a half miles north west of Sheffield. Wires were initially manufactured for the textile industry but the company later branched out into other somewhat comparable products, such as crinoline frames and the famous 'Paragon' steel umbrella frames, patented and manufactured from 1847 onwards.[36] The latter invention brought substantial profits to the firm and expansion and integration into steel making followed. Smelting crucible steel began in 1860, but in 1861 the

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30 Hampton & Radcliffe & Co. had also merged with Owens Patent Wheel, Tyre and Axle Co. Ltd in the early 1870s before converting to Phoenix Bessemer Steel Co. Ltd. See Erickson, C. *British Industrialists, Steel and Hosiery, 1850-1950* (Cambridge, 1959) [hereafter Erickson, *Steel and Hosiery* ...], pp.146-7.

31 PRO: BT31/1763/6597, Memorandum of Association.

32 *ibid.*

33 Jeremy, David, ed. *Dictionary of Business Biography: a biographical dictionary of business leaders active in Britain in the period 1860-1980,* Vol. 4 (1984-6) [hereafter Jeremy, *Business Biography*], p.294.

34 Peddie, *United Steel* ..., p.2.

35 *ibid.*

36 *ibid.* and Erickson, *Steel and Hosiery* ..., p.146.

company took out a license to produce Bessemer steel and Bessemer converters were installed in 1862.[37] By 1870 two converters with a capacity of three tons were employed by the firm and the product range had also expanded to include rods for cables and telegraph wires.[38] Samuel Fox & Co. became a limited company in 1871, with a nominal capital of £300,000, divided into 3,000 shares of £100 each.[39]

The final firm in this sample, Hallamshire Steel & File Co. Ltd., was established in 1873 by the conversion of the steel firm Earl, Smith & Co., owned by William Smith. The company began with a nominal capital of £60,000, divided into 3,000 shares of £20 each. The vendor, William Smith, became the Chairman and Managing Director, with a salary of £100 per annum.[40] The assets were purchased from Smith for £26,388, £15,000 of which was paid in vendors shares.[41] The works were situated in Neepsend, Sheffield.[42] There has been very little written about the firm; indeed, Joyce Bellamy, in her invaluable bibliography of Yorkshire business histories, only includes one reference to historical material concerning the company, a newspaper article in the *Sheffield Telegraph* written in 1949.[43]

Having briefly surveyed the histories of the five companies in question, in order to provide a background, it remains to discern how they financed expansion, and

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37 Barraclough, K. C. *Steelmaking before Bessemer, Volume 2. Crucible Steel: the growth of technology* (1984) [hereafter Barraclough, *Crucible Steel. ...*], p.116 and Erickson, *Steel and Hosiery ...*, p.146.

38 *ibid.*, p.146.

39 *Stock Exchange Yearbook* (1876).

40 Companies House, company number 7399, Memorandum of Association and Articles of Association, including Agreement between the Vendor and the Promoter of the company.

41 *ibid.*

42 *ibid.*

43 Bellamy, Joyce (ed.) *Yorkshire Business Histories: A Bibliography* (Bradford, 1970), p.142.

the adoption of new technologies that developed, during the period 1855 to 1885, and also how they acquired funds in order to survive the deep cyclical slump of the second half of the 1870s.

All the firms examined used internal finance, that is the 'plough back' of profits. The clearest evidence for this practice can be seen in the case of Samuel Fox & Co. Ltd., the annual profits for which are displayed in Chart 5.4 (page 336). The company expanded its operations during the period under consideration but there is little evidence that it turned to external sources of finance. Therefore, the substantial profits generated by the firm would presumably have been used as the means to fund the firm's growth. In contrast, Yorkshire Engine could not undertake such a method of finance as this new venture did not generate profits to re-invest. Directors' loans were also an important form of industrial funding for the companies examined, which can also be described as 'internal'. Hallamshire Steel & File Co. Ltd. and Steel, Peech & Tozer in particular used this form of finance, the latter to a very substantial degree. The most important form of 'external' finance obtained by the companies being considered was from local banks. Yorkshire Engine especially relied heavily on its bankers, probably due to the lack of profits generated by the company. Both Park Gate and Hallamshire Steel & File also obtained loans and overdrafts from their bankers, whereas Samuel Fox & Co. and Steel, Peech & Tozer did not use this form of funding at all. Calls upon shares was a further method for procuring funds that was employed by all the companies but in particular by Yorkshire Engine, again due to the lack of profits. This method of finance can not be properly described as 'external' as many shareholders were probably vendors of these limited concerns or linked to them through kinship, social or business ties (see Chapter 4). These means of industrial funding, both internal and external, will now be considered in detail, examining each company in turn.

The Park Gate Iron Co. Ltd. financed its growth by a number of methods. The company obtained funds from its bankers - the Sheffield & Rotherham Banking Company - through an overdraft and a fixed loan of £20,000.[44] It also raised money through the issue of debenture shares, loans from its directors and credit received from its suppliers.

Probably the most important source of finance for Park Gate Iron during the 1860s and 1870s was its bankers. The company appears to have had a congenial relationship with the Sheffield & Rotherham Bank. Its account fluctuated between being in credit and debit, which was how many nineteenth century provincial banks preferred their large industrial customers accounts to operate. The overdraft that was obtained in this way varied between a maximum of £57,474 in June 1870[45] to a minimum of £152 in November 1885[46]. Over the 15 years for which consistent overdraft figures are available - 1870 to 1885 - the average level of the company's overdraft was £14,337. (The company's general account balance is shown in detail in chart form in the appendix to the chapter.) The most prolonged period in which the account was continuously overdrawn was from September 1874 to February 1880, a period almost coinciding with the national cyclical depression in trade. Then the average size of the company's overdraft was £17,485, a figure higher than the overall average for the years 1870-1885. Therefore, it would seem that the overdraft from the Sheffield & Rotherham Bank provided Park Gate Iron with working capital, especially during cyclical downturns.

However, the bank also provided finance for expansion and, in particular, for building projects. The highest level of the overdraft was £57,474 in June 1870, the only recorded instance of the bank having cause to write to the company

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44 BSC, NRRC: PGI, 140/6, Box 11/12/13, 23731-36, BDM, Vol. 3, f. 378, 19 Mar. 1875.

45 *ibid.*, Vol.3, f.107, 14 Jun. 1870.

46 *ibid.*, Vol.5, f.377, 20 Nov. 1885.

regarding its limit.[47] The bank 'appeared to be satisfied with explanation given as to the speedy reduction of that amount' and the company duly reduced the debt to £28,149 by the following month.[48] The unusually large overdraft over this year was due to the expenditure undertaken by the company in order to expand operations and to reduce working expenses. This included 80 new puddling furnaces, 5 new boilers, 2 new punching and straightening presses, new blooming rolls and other machinery.[49] In addition, by May 1870, preparations were nearly complete for an 80 cwt steam hammer, 82 puddling furnaces and a large plate shearing machine to begin operating.[50] Furthermore, a special meeting was held in October of the same year when the directors decided to proceed immediately to build a furnace at the Holmes works and 2 additional furnaces at Parkgate.[51] Despite this extra construction work, the company secretary commented that he 'expected to have a credit at the Bank before the close of the year.'[52]

In addition to the overdraft from the Sheffield & Rotherham Bank, Park Gate Iron also received a fixed loan of £20,000, obtained in April 1875 from the bank at what proved to be the start of a general slump in industry.[53] This was granted for two to three years at a fixed interest rate of five per cent, the loan being subject to repayment with six months notice from either party. The directors accepted these terms but were unhappy about having to deposit the deeds of the company works with the bank as security (which particular works were not specified).[54] However, the bank would not consent to a loan without such

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47 *ibid.*, Vol.3, f.107, 14 Jun. 1870.

48 *ibid.*, Vol.3, f.114, 12 Jul. 1870.

49 *ibid.*, Vol.3, f.89, 24 May 1870.

50 *ibid.*

51 *ibid.*, Vol.3, f.151, 18 Oct. 1870.

52 *ibid.*

53 *ibid.*, Vol.3, f.382, 16 Apr. 1875.

54 *ibid.*, Vol.3, f.378, 19 Mar. 1875.

security and Park Gate duly agreed.[55] The reasons for the loan application were not stated in the directors' minutes. The company's annual general meeting in May 1875 and the half yearly circular to shareholders distributed in November of the same year reveal that the company may have used the loan to survive the 'depression in the iron trade'.[56] The slump had led to a strike with its workers attempting to resist a cut in wages. The directors explained that the company needed to reduce wages in order to compete with the 'North', presumably the iron trade in the North East of England and Scotland.[57] There had also been a strike at Earl Fitzwilliam's colliery, the principal supplier of fuel, which led to numerous problems, including the necessity to blow out three blast furnaces.[58] Such difficulties were likely to have increased financial requirements of the company. However, finance was also required for expansion. During the first half of 1875 Park Gate purchased Dodds Works at Holmes and two acres of land from Manchester, Sheffield & Lincolnshire Railway in order to give 'greater facilities for production.'[59] It may be more likely that the fixed loan was utilised for these purchases of land and buildings, rather than to supply working capital. However, as the company minutes fail to state specifically how the loan was applied, such a conclusion is merely supposition.

The period for which the £20,000 fixed loan was granted was extended by the bank and Park Gate only began repayment in 1880.[60] By January 1883 the bank had agreed to accept repayment of the remaining loan account - £10,000 - which raised it to £25,000.[61] Thus, the period of the fixed loan was eventually

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55 *ibid.*, Vol.3, f.382, 16 Apr. 1875.

56 *ibid.*, Vol.4, f.27, 26 Nov. 1875.

57 Payne, P. L. *Colvilles and the Scottish Steel Industry* (Oxford, 1979).

58 BSC, NRRC: PGI, 140/6, Box 11/12/13, 23731-36, BDM, Vol.4, f.27, 26 Nov. 1875.

59 *ibid.*, Vol.3, f.392, 21 May 1875.

60 *ibid.*, Vol.5, f.100, 4 Oct. 1880.

61 *ibid.*, Vol.5, f.237, 22 Jan. 1883.

extended to eight years, but the use to which it was put over this period has not been documented. Possibly the decline in demand during the late 1870s prevented the company from making an earlier repayment.

Another important method by which the Park Gate Iron Co. raised capital was through securities, by making both further calls on ordinary shares that had been previously issued, and issuing new debentures. In July 1870 the board noted that money was required for new furnaces and to pay the balance of the purchase money to the vendor - William Beale. In order to raise the funds it was agreed to issue debentures for three, five and seven years, with an interest rate of five per cent per annum, secured on the whole of the company's property and its uncalled capital.[62] In a letter from the Chairman of Park Gate Iron, explaining his absence from a directors' meeting, he also commented upon the scheme:

> the course proposed to borrow £60,000 upon debentures for 3, 5 or 7 years at 5 1/2 % will be the most convenient ways of raising the money requisite for the new furnaces and for the settlement of a/c with William Beale. To raise the whole amount by Calls might be inconvenient & would leave the margin of unpaid capital too small for good Commercial Security. Supplying debentures for £30,000 only & £30,000 raised by Call we should have to give the security for all the property for the smaller amount as if for £60,000 and the difficulty of getting a second mortgage in case it should be required would be great whilst we should have that much less unpaid capital to fall back upon.[63]

Thus, the scheme of issuing debenture appears to have been the preferred method of raising a substantial amount rather than placing too high a demand, via calls, on ordinary shares that had already been issued. The opinion expressed by the Park Gate Chairman conforms with the view held by Jeffreys, who stated that large amounts of capital were often left uncalled by joint stock companies, especially in the early days of limited liability, as this was seen as sound commercial practice (see Chapter 4). Furthermore, the uncalled capital

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62 *ibid.*, Vol.3, f.122, 19 Jul. 1870.

63 *ibid.*, letter enclosed in Vol.3, 11 Sep. 1871.

was also viewed as a form of security that could be utilised in future applications for loans.

Park Gate Iron also obtained a loan from one of its directors in 1880. Tenders for financing the production of 70 new 10-ton wagons were submitted and, after discussion, the offer of Markham, a company director, to lend £3,500 for five years on the security of the new wagons at seven per cent interest was accepted. The board stated that 'This was the most favourable offer.'[64] The loan was due for repayment in February 1885, but Markham proved quite willing for the money to remain on loan for an indefinite time at interest of five per cent per annum.[65] The loan was not large but probably of considerable benefit to the company in a year when the iron industry was still struggling to recover from a cyclical slump and in which the directors themselves accepted a decrease of £500 in fees per annum.[66] In such an environment, profits to be reinvested in the company, were low and obtaining further money from sources outside the company would probably have been difficult

Another source of finance was obtained from a wagon finance company, a common way of financing wagons and referred to as wagon leases. In April 1875 the directors resolved to finance the purchase of 40 new wagons with the North Central Wagon Co.[67], retaining the power to pay off at any time.[68]

Thus, from studying the board minutes of the Park Gate Iron Co. Ltd., it is apparent that this company used several methods to obtain finance - an overdraft and a fixed loan from its bankers, the issuing of debentures, and loans from one

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64 *ibid.*, Vol.5, f.46, 13 Jan. 1880.

65 *ibid.*, Vol.5, f.338, 19 Jan. 1885.

66 *ibid.*, Vol.5, f.76, 28 May 1880.

67 See Anon. *A History of the North Central Wagon and Finance Company Limited* (Rotherham 1961).

68 BSC, NRRC: PGI, 140/6, Box 11/12/13, 23731-36, BDM, Vol.3, f.382, 16 Apr. 1875.

company director and a wagon finance company. The first two methods were the most important as they yielded the greatest amount of finance for the company. This was required for expansion, improvements in production, and working capital, the latter being especially important during depressions experienced by in the iron industry.

The other company promoted by David Chadwick was Yorkshire Engine Co. Ltd. However, unlike Park Gate Iron Co., Yorkshire Engine was a new venture, and therefore its financial requirements were very different from those of an established concern. Before business could begin, funds were required to construct the company works and purchase machinery. Thus, in terms of financial requirements, this firm provides an interesting contrast to the others considered here.

Yorkshire Engine used several methods to raise capital in order to establish itself as a going enterprise. Like Park Gate Iron, the company turned to its bankers for an overdraft, which subsequently proved to be a very important medium. Making calls on shares was another significant mechanism, one which was so extensively used that it became very controversial with the company's shareholders. In addition, issuing debentures was discussed at length by the directors but the scheme was never undertaken. Loans from the company's directors constituted another source, though less important in terms of the amount provided. Chadwick also attempted to raise money for Yorkshire Engine by way of a mortgage but this proved unsuccessful.

Along with borrowings from the bank, the most important method by which Yorkshire Engine obtained finance for its operations was by calls upon its shareholders. Calls were made throughout the company's life-span, both to finance the initial construction of its plant and to provide working capital.

When the company was created, the first allotment of shares was discussed by the directors, with the policy agreed being that shares would be granted 'only to those who may be likely to prove most useful to the company.'[69] The company had been incorporated with a nominal capital of £200,000 divided into 2,000 shares of £100 each. It was estimated that the cost of buildings, and machinery required to make two engines per week, would amount to £126,427.[70] By the first annual general meeting in November 1865, 1,780 out of the 2,000 shares had been allotted, on which £18,625 had been received.[71] Of this first call, £7,644 was expended on land purchases, preliminary expenses, work, machinery, salaries, offices and incidental expenditure.[72] By May 1866 the amount of money received from calls totalled £54,000[73] and in the same month the directors decided to build a gasworks, a scheme requiring yet more finance.[74]

In July 1866 the directors calculated that the probable requirements of the company in the following three to four months, for the construction of the plant and the purchase of machinery, would be £83,825.[75] Part of this would be provided by the £30,000 overdraft allowed by the bank, but there remained a shortfall of £38,825. The board resolved that this should be met by a call of £20 per share.[76] However, this decision provoked a strong response from the company's promoter, David Chadwick:

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69 YEC, 023/12, Box 2, 04930, BDM, Vol.1, f.51, 24 May 1865.

70 *ibid.*, Vol.1, f.2, 22 Apr. 1865.

71 *ibid.*, Vol.1, f.112, 9 Nov. 1865.

72 *ibid.*

73 *ibid.*, Vol.1, f.150, 10 May 1866.

74 *ibid.*

75 *ibid.*, Vol.1, f.175, 12 Jul. 1866.

76 *ibid.*

> I am exceedingly sorry that the Directors have felt it necessary to make the Calls so rapidly. I have had occasion to confer with several of the proprietors of the company, and they are overall decidedly of the opinion that nothing but the most urgent necessity would justify the last call of £20 per share.[77]

This reaction may also have been influenced by the Overend, Gurney crisis of May 1866 which had seriously repercussions upon financial markets and the economy as a whole. Thus, there was disagreement within the company upon the best method to raise money to finance its physical assets. Indeed one shareholder called into the company and proclaimed that he wanted to dispose of his shares as he was 'so much annoyed at the proceeding of the Board'.[78] This shareholder stated that he believed it was good practice to call up 45 per cent of the issued capital during the first two years of a company's existence, and was appalled that Yorkshire Engine had called 50 per cent of its subscribed capital within 15 months.[79] Therefore, there appears possibly to have been something of an unwritten code of practice about how much issued capital of a limited company should properly be called within a given period of time, especially immediately subsequent to incorporation. Finance was obviously required to establish a new venture, but raising the majority by calls on shares seems not to have been seen as 'sound' practice by some of the businessmen involved in the company.

In July 1867, despite the views of Chadwick and certain shareholders, the directors, on the recommendation of the company's finance committee, decided to make a further call of £10 per share.[80] Chadwick suggested forcibly the alternative of a mortgage. The directors were persuaded by his argument and agreed to such a scheme, but it transpired that Chadwick was unable to raise a

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77 *ibid.*, Vol.1, ff.179-180, 9 Aug. 1866.

78 *ibid.*

79 *ibid.*

80 *ibid.*, Vol.1, f.261, 4 Jul. 1867.

mortgage under the conditions stipulated by the board.[81] With that option no longer available to Yorkshire Engine, the directors again turned to making calls. Following the recommendation of the finance committee, the board decided to make call of £5 per share in January 1868,[82] and in June 1868 the directors also resolved to make a further call of £10 per share, payable in instalments in June and July 1868.[83] These calls provoked further angry responses from share-holders. A series of letters were considered by the directors. One expressed dissatisfaction with the progress of the construction of the company's property and wished to be kept better informed of progress.[84] Another offered the hope that no further calls would be made.[85] A third stated: 'I consider the Manage-ment of the Company has been disastrous and certainly the reverse of able.'[86] Following such criticism, a shareholders' meeting was called in order to consider the best method of raising funds for working capital.[87] Three solutions were proposed: a loan from someone of £20,000 or £25,000 on debentures at a modest rate of interest; the issuing of preference shares amongst the proprietors; or advances from the company's bankers. However, no decision was made about the course of action to be taken. Thus, despite the objections of shareholders to the frequent calls, the alternatives were limited. The company was faced with these problems as it not only had to secure working capital, but had also to finance the continuing construction of the plant.

When it was reported to a meeting of shareholders in November 1870 that the company had not yet made a profit during the four years it had been operating, it was decided to employ someone to report upon the company's operations and to

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81 *ibid.*, Vol.1, f.265, 8 Aug. 1867.

82 *ibid.*, Vol.1, ff.284-285, 12 Dec. 1867.

83 *ibid.*, Vol.1, f.321, 4 Jun. 1868.

84 *ibid.*, Vol.1, ff.343-344, 15 Oct. 1868.

85 *ibid.*

86 *ibid.*

87 *ibid.*, Vol.1, f.382, 11 Jul. 1868.

make recommendations as to how it could be made profitable.[88] This led to the subsequent recommendation that to provide a much needed increase in working capital, no more calls should be made upon the existing shares in the company, but rather 2,000 preference shares of £10 each should be created, at six per cent interest per annum. These shares should be taken by present shareholders of the company, while it seemed that probably only £5 per preference share would have to be called.[89] When this report was aired at a meeting of the company's proprietors, the Chairman responded by stating that the directors had wanted to call £5 per share back in May 1870 in order to raise some much needed working capital, but the shareholders had objected. Since then the company had survived a difficult period but needed more finance. The Chairman concluded that he would prefer to call £5 on the company's ordinary shares, rather than creating preference shares, to raise £10,000.[90] In March 1871 it was decided that a further call of £5 per share should be made and thus the advice from the commissioned report was not heeded.[91]

However, in April 1873 Yorkshire Engine directors eventually decided to follow the recommendation to issue preference shares as the company was suffering from a burden of large, outstanding debts which were encroaching upon the availability of working capital. Much of this was due to orders from Russia not being paid. Thus, it was now considered necessary to create additional capital and the directors decided to ask the shareholders to authorise the issue of £2,000 preferential shares of £10 each.[92] However, this scheme was not carried out since the company's solicitor advised against the issuing of preferential shares as proposed.[93] This legal advice was connected with the over-capitalisation of the

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88 *ibid.*, Vol.2, f.43, 10 Nov. 1870.

89 *ibid.*, Vol.2, f.63, 15 Feb. 1871.

90 *ibid.*

91 *ibid.*, Vol.2, f.75, 1 Mar. 1871.

92 *ibid.*, Vol.2, f.257, 23 Apr. 1873.

93 *ibid.*, Vol.2, ff.260-261, 7 May 1873.

company. The directors acted to remedy this situation in June 1873 when a special resolution was passed to confirm the decrease in the company's capital by £15 per share. The nominal capital would thus be reduced from £200,000, with 2,000 shares of £1000 each, to £170,000 with 2,000 shares of £85 each. All shares that had been issued had calls made on them for £85: these would be considered as fully paid up, while all unissued shares would be five pound shares.[94]

The board decided to call the last remaining £5 on all issued shares in December 1876[95] but this decision was rescinded in January 1877[96] as the bank would not allow it. The company's bankers objected as they viewed the remaining uncalled capital as additional security for the sizeable overdraft on the company's account (see below). The decision concerning the final call was then postponed until October 1879 when the directors gained permission from the bank.[97] At the following annual general meeting in May 1880, they explained that this final call was made to avoid liquidation and in the belief that it was 'in the interest of shareholders to keep the works going until better times or other arrangements arrive.'[98] Until such a time, the shareholders were asked to raise £39,500 by taking preference shares of £20 each, which would entitle them to a preference dividend of ten per cent per annum and, if the company was to wind-up, preference shareholders would receive priority over existing shareholders concerning capital.[99] However, the plan of issuing preference shares never came to fruition as the decision to wind up the company voluntarily was made in May 1880. Yorkshire Engine continued as a going concern until it was bought out in 1884.

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94 *ibid.*, Vol.2, ff.275-277, 30 May 1873.

95 *ibid.*, Vol.2, f.429, 6 Dec. 1876.

96 *ibid.*, Vol.2, f.433, 10 Jan. 1877.

97 *ibid.*, Vol.3, f.129, 15 Oct. 1879.

98 *ibid.*, Vol.3, f.152, 27 May 1880.

99 *ibid.*

Therefore, Yorkshire Engine's means of raising finance by making calls provided a crucial source of funds for this fledging firm. However, this method was deeply unpopular with its shareholders. Indeed, the amount of money called was viewed as being 'unsound' business practice by some and the company's promoter, David Chadwick. Thus, it appears that making calls was considered to be a valid method of raising funds for such a firm but only to a certain degree. The extent of calls seems to have been the crucial issue, with calling all the capital being regarded as unwise by businessmen, shareholders and the bank. It seems that uncalled capital was looked upon as a form of security, or 'safety net', for the firm by all these parties.

The other major source of finance for Yorkshire Engine was its bankers. When the company was established in 1865, Yorkshire Engine had accounts with the Sheffield Banking Company and the Manchester & Liverpool District Banking Company, both being in credit.[100] Shortly afterwards, the directors transferred the business of the company to the Sheffield & Rotherham Bank, which granted an overdraft limit of £30,000, 'when required'.[101] In July 1866 the directors decided to apply for the use of this overdraft facility in order to finance constructing the works.[102]

In April 1867 Yorkshire Engine received a letter from the Sheffield & Rotherham Bank regarding alterations to the future conduct of the company's account.[103] These appear to refer to the security provided as the following month the deeds of the company were deposited with the bank as security for the overdraft, 'as requested by the bank'.[104] Since such substantial security had not previously

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100 *ibid.*, Vol.1, f.74, 20 Jul. 1865.

101 *ibid.*, Vol.1, f.76, 20 Jul. 1865.

102 *ibid.*, Vol.1, f.175, 12 Jul. 1866.

103 *ibid.*, Vol.1, f.231, 11 Apr. 1867.

104 *ibid.*, Vol.1, f.240, 16 May 1867.

been furnished for an overdraft of that size implies that the Sheffield & Rotherham had initially handled Yorkshire Engine's account in a very lenient manner. The normal security for an overdraft of over £10,000 was to deposit the deeds of the company works with a bank (see Chapter 3). By not demanding security from Yorkshire Engine of a similar value to the overdraft, the bank was following a policy with a high amount of risk to itself. However, the situation was rectified as the company deposited security with the bank totalling £42,260 and which consisted of deeds and leases of company property and an insurance policy.[105] Yet, there were further problems over this security in September 1867 when the bank wrote to Yorkshire Engine stating that it was now insufficient for the amount of overdraft allowed, implying that borrowings had exceeded the £30,000 previously set.[106] As a result the directors agreed to deposit with the bank further deeds relating to the company's works and premises in Sheffield.[107]

In January 1868 Yorkshire Engine attempted formally to gain permission to exceed the £30,000 overdraft limit set by the bank but the bank refused.[108] The purpose for which this extra finance was required was not stated. There was another application for further credit in May 1870 when Yorkshire Engine requested an increase of its overdraft facility for short periods due to the large amounts owing by the company's debtors.[109] Such accommodation was necessary, the board argued, until arrangements could be made to raise the money required by making a call, or by mortgage on the company's property.[110] The bank responded by increasing the company's overdraft limit to £35,000 until the end of the month, on the condition that it would be reduced to £20,000

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105 *ibid.*, Vol.1, f.259, 4 Jul. 1867.

106 *ibid.*, Vol.1, f.259, 18 Sep. 1867.

107 *ibid.*.

108 *ibid.*, Vol.1, f.288, 9 Jan. 1868.

109 *ibid.*, Vol.2, f.3, 11 May 1870.

110 *ibid.*

thereafter and should not go beyond this level again.[111] The directors agreed to these terms. However, the decline in the company's overdraft limit meant that the company was short of working capital and the directors therefore felt it necessary to obtain finance by other means, either by making a further call on shares or by obtaining a mortgage on the company's property.[112] No decision was quickly made about the matter as the shareholders were to be consulted at the next annual meeting as to the best course of action. This episode illustrates the extent to which the company was reliant upon its bankers.

Despite the insistence of the bank on decreasing Yorkshire Engine's overdraft limit to £20,000 by September 1870, the company's account was still £26,450 in debt in October 1870.[113] Reluctant to make further calls on the shareholders, the directors requested that the bank allow an overdraft of up to £31,344 until 1 October, from when they would reduce it to within the agreed limit.[114] The bank agreed, on the condition that £31,344 was the absolute maximum debit.[115] Money was required for the working capital, as was made clear at the company's interim shareholders meeting in November 1870. The directors then reported that the company had been operating for four years without making a profit, indeed a 'considerable' loss had been made in the six months ending September 1870.[116] By January 1871 the company's overdraft had fallen to £19,340[117] but rose again to £24,300 in February 1871 when the bank wrote to the directors

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111 *ibid.*

112 *ibid.*

113 *ibid.*, Vol.2, f.32, 12 Oct. 1870.

114 *ibid.*

115 *ibid.*

116 *ibid.*, Vol.2, f. 3, 10 Nov. 1870.

117 *ibid.*, Vol.2, f.51, 11 Jan. 1871.

objecting.[118] This appears to have had the desired effect as the company reduced its debt to £5,500 by June 1871.[119]

Thus, Yorkshire Engine had turned to its bank during a difficult period and survived. Yet despite the boom of the early 1870s the company was beset by further financial difficulties in 1872. In July, its finance committee reported that to meet the company's engagements for the coming months an extension of the overdraft by £5,000 was required. Therefore, the secretary requested a temporary extension from the bank, in addition to the existing credit limit of £20,000, to which the bank agreed.[120] In December of the same year the bank agreed to continue this temporary extension of £25,000.[121] As the depression gathered, from January 1873 until November 1876 Yorkshire Engine's overdraft fluctuated between £5,000 and £29,000. In November 1876 the company requested a temporary additional £10,000 above its limit for four to six months by mortgaging its property.[122] The bank required a personal guarantee from the directors as security for this extra credit, not being willing to take a mortgage.[123] Fresh security was deposited with the bank and a new limit of £40,000 confirmed.[124]

It is evident that Yorkshire Engine was becoming increasingly reliant upon its bankers for the provision of working capital necessary to continue operating. At the company's annual general meeting in May 1878 one of the directors expressed his worries about this dependence upon the Sheffield & Rotherham Bank. He commented that the company's reports showed a deficiency year after

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118 *ibid.*, Vol.2, f.54, 1 Feb. 1871.

119 *ibid.*, Vol.2, f.113, 1 Jun. 1871.

120 *ibid.*, Vol.2, f.210, 3 Jul. 1872.

121 *ibid.*, Vol.2, f.230, 4 Dec. 1872.

122 *ibid.*, Vol.2, f.428, 29 Nov. 1876.

123 *ibid.*, Vol. 2, f.429, 6 Dec. 1876.

124 *ibid.*, Vol.2, f.431, 20 Dec. 1876.

year and that the company was 'almost at the mercy of the Bank who might at any time withdraw their credit'.[125] Moreover, whilst money was cheap at the present time 'it might get dear and they [the bank] might have to close the doors if the difficulty continues.'[126] Indeed, in February 1879 the bank requested that Yorkshire Engine pay off its overdraft.[127] In response, the Yorkshire Engine board decided to visit the bank in order to ascertain how long the overdraft would be allowed to continue and whether even a temporary increase beyond the limit of £40,000 would be allowed.[128] The bank opposed any extension unless the directors gave their personal guarantee and insisted that a £40,000 limit would only be allowed to continue until July 1879. The bank directors added that they would not approve of any part of the company's uncalled capital being called, this apparently being viewed by the bank as further security for the overdraft.[129]

Therefore, by 1879 Yorkshire Engine was in very serious financial difficulties and heavily in debt to the Sheffield & Rotherham Bank. The main source of its working capital had been an overdraft but this facility was becoming sorely stretched and the bank demanding repayment. In addition, the hands of the Yorkshire Engine directors were tied as the bank would not let them raise further working capital by making calls. In October 1879 the company's directors asked their bankers whether, or not, they could make the last call but the bank refused unless the money raised reduced the overdraft.[130] Later that month, however, the bank relented to allow Yorkshire Engine to call up half of the outstanding

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125 *ibid.*, Vol.3, f.66, 30 May 1878.

126 *ibid.*

127 *ibid.*, Vol.3, f.90, 30 Mar. 1879. This decision by the bank may have been influenced by the City of Glasgow Bank crisis of 1878: see Collins, M. 'The Banking Crisis of 1878', *Economic History Review*, Second series, 42 (1989).

128 *ibid.*

129 *ibid.*, Vol.3, f.94, 7 Apr. 1879.

130 *ibid.*, Vol.3, f.126, 1 Oct. 1879.

unpaid capital without decreasing the overdraft, or to call up all the unpaid capital at £5 per share but to reduce the overdraft to £38,000.[131] The directors decided to call the full £5 per share and thus be obliged to reduce the overdraft.[132]

Yorkshire Engine's financial situation, and the extent to which it was relying on the bank for survival, was illustrated in May 1880 at the annual general meeting. Here it was reported that the directors were attempting to raise £40,000 to keep the company afloat, but, if this was not achieved, the company would probably go into liquidation.[133] The directors stated that 'the Bank has been exceedingly kind' and, as the leading creditor of the company, that the matter of the company's survival was in its hands.[134] Finally, in July 1880, the directors agreed that the company could no longer continue as a viable concern and the decision was taken to wind up voluntarily.[135] By August 1883 the shareholders had been informed that the bank was owed £31,500, but it was the only remaining creditor of the company. The shareholders commented that the bank had 'behaved very fairly all through.'[136] When a new limited company was formed in 1884 in order to purchase Yorkshire Engine Co. Ltd., the bank was owed £30,000 and became the only remaining creditor whose debt was taken on by the new concern.[137]

By recounting the progress of Yorkshire Engine's current account overdraft with the Sheffield & Rotherham Bank, the extent of the company's reliance upon its bankers for finance has been demonstrated. The bank provided a major source of funds for the company and such a heavy commitment actually ensured the

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131 *ibid.*, Vol.3, f.129, 15 Oct. 1879.

132 *ibid.*

133 *ibid.*, Vol.3, f.153, 27 May 1880.

134 *ibid.*

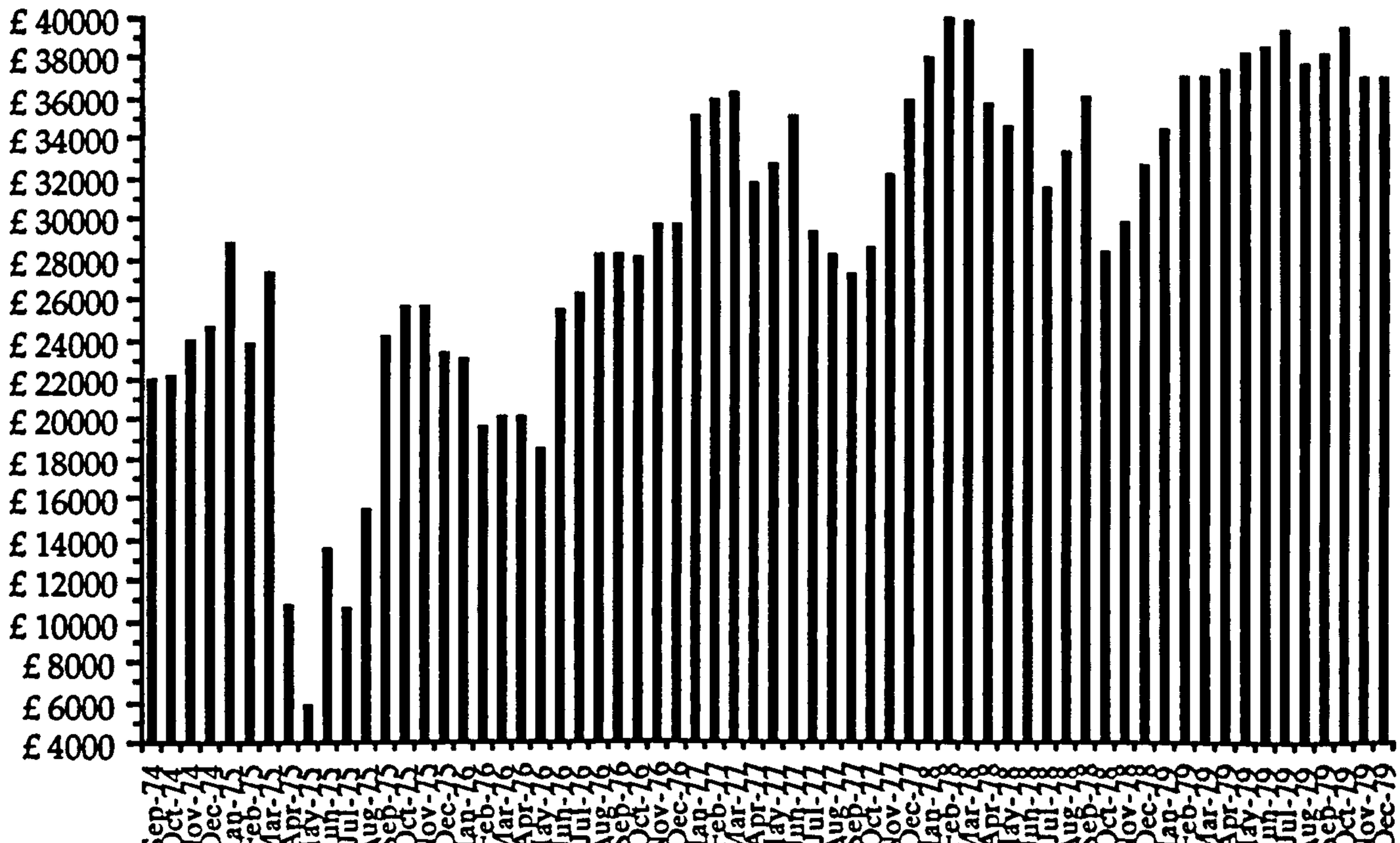
135 *ibid.*, Vol.3, f.162, 13 Jul. 1880.

136 *ibid.*, Vol.3, f.200, 27 Aug. 1883.

137 *ibid.*, Vol.3, f.221, 28 Nov. 1883.

bank's continued support for the ailing company. By 1870 it had become clear that having involuntarily 'invested' so much in Yorkshire Engine since its establishment, the bank would have to continue to grant facilities in order not to risk loosing its already substantial interest in the venture. Chart 5.1 shows the company's overdraft with the bank between September 1874 and December 1879 in order to illustrate more clearly the extent of Yorkshire Engine's reliance upon its bankers. These dates were used as during this period the directors' minutes books contain consistently recorded monthly figures of the company's overdraft. Moreover, they show the period in which the company's overdraft was consistently highest and, therefore, when it was most reliant upon the bank.

Chart 5.1: The overdraft of Yorkshire Engine Co. Ltd. with the Sheffield & Rotherham Bank , September 1874 to December 1879 (monthly)



September 1874 - December 1879 (monthly)

Source: YEC, 023/12, Box 2, 04930, BDM, vols. 1, 2 and 3.

It has been shown that the most important techniques used by Yorkshire Engine to acquire finance were to make calls and to use advances, in the form of an

overdraft, provided by the Sheffield & Rotherham Bank. It was by these methods that the majority of funds required to physically construct the company and commence business was obtained. However, the company attempted to raise finance by other methods, both successfully and unsuccessfully. In January 1878 the board, realising that they were having problems staying within their overdraft limit of £40,000, therefore instructed the secretary to call on the directors of the company for a temporary loan of £500 each to be secured on the tank engines then being built at the works.[138] Three directors obliged with the amount requested and two other directors provided £1,000 each.[139]

A less successful scheme was the plan to procure finance by mortgaging the company's property. In May 1867 the directors asked Chadwick to arrange to raise £50,000 to £70,000 by debenture mortgage on the company's property for seven to ten years at five per cent interest per annum.[140] At this time money was still needed for the physical construction of the company. Chadwick agreed to organise such a mortgage, charging one and a half per cent commission, adding curtly that he believed that this method of raising capital would have been preferable to making repeated calls on shares.[141] Chadwick was an experienced businessman and a promoter of limited companies, but appeared to prefer to fund the building-up of a new limited company by loans rather than calling its nominal capital. However, it transpired that Chadwick could not raise the money on mortgage under the conditions stipulated by the board.[142]

Therefore, the majority of the money required to give substance to Yorkshire Engine and to commence production was obtained from the Sheffield &

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138 *ibid.*, Vol.3, f.42, 7 Jan. 1878.

139 *ibid.*, Vol.3, f.46, 6 Mar. 1878.

140 *ibid.*, Vol.1, f.242, 16 May 1867.

141 *ibid.*, Vol.1, ff.247-248, 30 May 1867.

142 *ibid.*, Vol.1, f.265, 8 Aug. 1867.

Rotherham Bank, in the form of an overdraft, and from calls upon the company's shares. Funds were raised from loans by the company's directors but the value of these advances was small compared to those received from the bank and from shares. The demands of the calls placed upon its shareholders were unpopular and viewed as 'unsound' business practice. The company's reliance upon its bankers was very substantial and probably detrimental for the bank. Yet once the bank had 'invested' so much money into the firm, it had to continue supplying advances so as not to loose completely in the eventuality of the company failing. However, despite continued advances from the bank and the payment of calls by shareholders, Yorkshire Engine could not survive profitably. It appears that the strain placed on available avenues of finance by the necessity to raise money to construct a new limited company, in addition to bad management of the concern, led to Yorkshire Engine's downfall. The slump of the late 1870s and particular difficulties in the early 1880s were probably also a contributory factors to the company's demise. However, the liquidators eventually managed to right the firm and sell it as a going concern in 1884.

The two companies that were eventually absorbed into the United Steel Companies - Steel Peech & Tozer Ltd. and Samuel Fox & Co. Ltd. - will now be considered. The provision of finance for Steel, Peech & Tozer by two of its owners, Henry Steel and William Peech, has been alluded to above when reviewing the company's history. The Board of Directors minute books allow the extent of this provision to be illustrated more precisely. They reveal that Henry Steel provided considerable amounts of finance in the form of secured loans between 1875 and 1883. The first instance occurred in December 1875 when Henry Steel offered to lend £40,000 at five per cent interest, secured by a mortgage of the land, buildings and plant machinery of the company - the directors duly agreed.[143] Over the next eight years further loans were accepted

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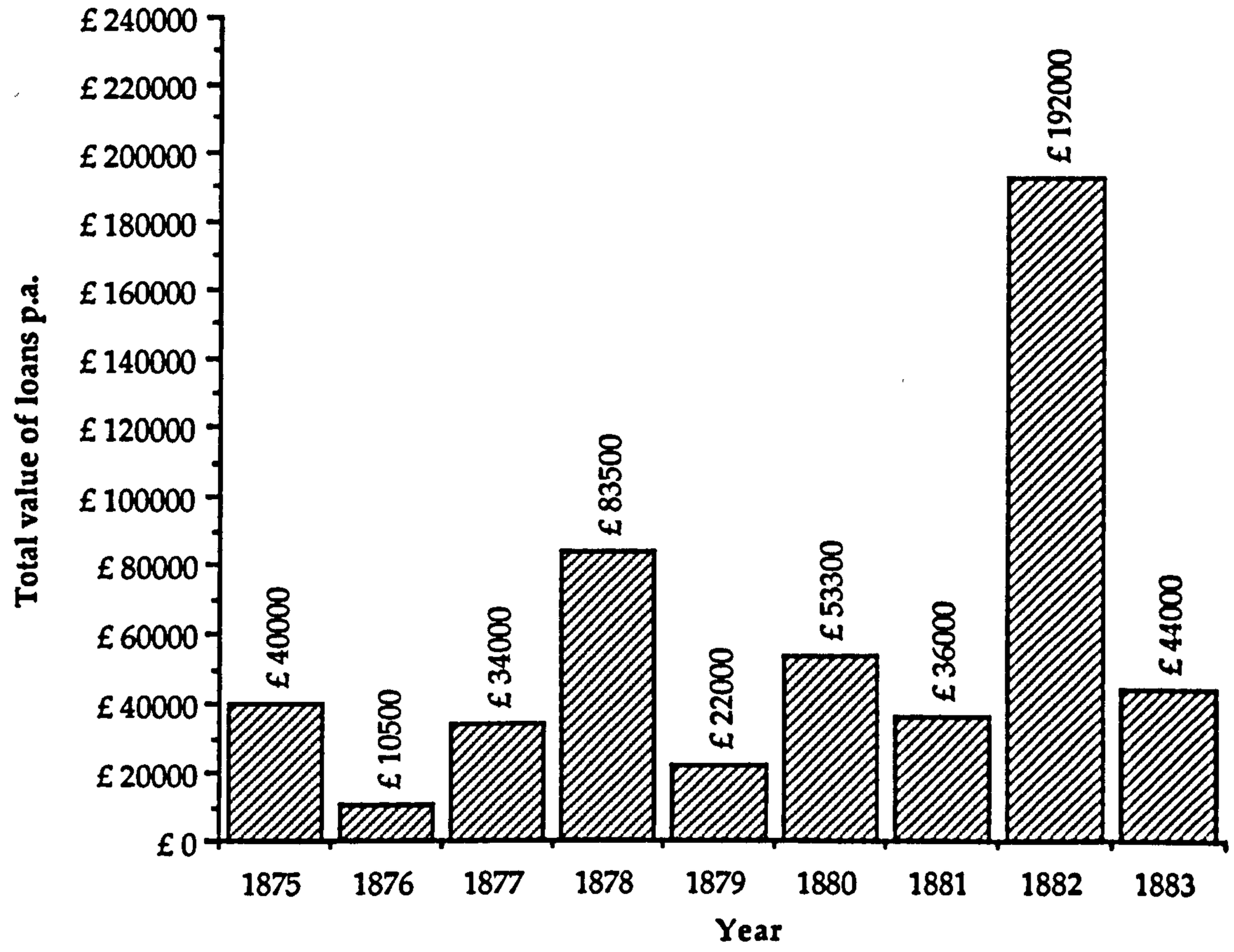
143 BSC, NRRC: Steel, Peech & Tozer Ltd. [hereafter SPT], 140/9, Box No. 17, 00864, BDM, f. 4, 15 Dec. 1875.

from Henry Steel on the same, or similar, conditions. In total Steel provided 39 loans totalling £608,300, with the largest single loan being the original £40,000 extended in December 1875.[144] All loans granted in such a manner were repaid by the company. Chart 5.2 illustrates the annual totals of these loans.

Chart 5.2: Aggregate annual totals of loans to Steel, Peech & Tozer from Henry Steel



Source: BSC, NRRC: Steel, Peech & Tozer Ltd., 140/9, Box No. 17, 00864, BDM.

The reasons why the company required finance from Steel, or elsewhere, were not usually stated in the minutes. The only instance of financial requirements for expansion was recorded in April 1876 when it was proposed to build a new Bessemer shop for 2-ton vessels, (estimated cost £2,000), and new offices, (estimated cost £1,000).[145] Other references to instances when funds required

144 *ibid.*, various folios.

145 *ibid.*, f.19, 7 Apr. 1876.

merely concerned the purchase of raw materials, i.e. working capital.[146] However, the period during which Henry Steel provided capital to Steel, Peech and Tozer was one of depression in the iron, steel and secondary metal trades. In founding the venture in 1875, Steel entered the steel and iron trade after a period of great prosperity in the early 1870s but at the beginning of a period to be named by contemporaries the 'Great Depression'. Finance was presumably required to carry the company through the difficult times from the mid-1870s to the early 1880s. However, funds were also needed to enable the acquisition of new technology developed during the period and required to be adopted in order to compete successfully in the iron and steel sector . Henry Steel, not an expert in the iron and steel industry, certainly appears to have been amply endowed and also was willing to act as a source of readily available finance to meet such needs. The greatest volume of his loans occurred in 1882, although the board minutes fail to indicate whether or not the company was then experiencing financial difficulties. However, in the same year shareholders were called upon to make financial contributions to the company (see below).

The value of the loans provided by Steel, the security on which they were granted and receipts given for them were meticulously recorded by the board. However, the time periods for which the loans were granted were not recorded and it is therefore difficult to gauge the exact nature of the finance he provided, be it long-term or short-term advances. Only one reference provides an indication of the duration of loans advanced to the company and also the manner in which such credit was repaid. In December 1878, the total amount of advances from Steel to the company stood at £30,000 and the directors requested a further advance from Steel of £30,000, on the security of a large stock of rails, in order to repay the original sum.[147] The new loan was to be repaid from remittances for

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146 For example, the directors agreed to purchase 1,500 tons of grey 'Bessemer' pig iron at £5 per ton, at 2.5 % discount for cash, *ibid.*, f.40, 12 Feb. 1877.

147 *ibid.*, f.93, 23 Dec. 1878.

steel rails in stock and Henry Steel agreed to lend the further £30,000 on these conditions.[148] When the company next turned to Steel for an advance in June 1879[149], the minutes refer to the £30,000 loan advanced in December 1878, stating that £25,000 of it had been repaid to Steel.[150] Therefore, after a period of six months, the majority of this £30,000 loan had been repaid. It would be improper to generalise about all the advances provided by Steel on the basis of this one piece of evidence. However, given the volume and frequency of loans to Steel, Peech & Tozer, it appears unlikely that one man could consistently supply such relatively large amounts of money for long periods of time. Indeed, when Henry Steel died in 1915 he left £625, 418 gross, a figure only slightly larger than the total value of loans he supplied to Steel, Peech & Tozer.[151] This possibly indicates that even a man of his significant means could not have provided advances on the scale he did, especially £192,000 in 1882, on a long-term or permanent basis. The provision of short term loans, subsequently repaid by the company over a period of months, would be a more probable scenario. Thus, there are some grounds for it to appear that Steel was not providing long-term investment capital, but rather working capital for the concern.

Steel, Peech & Tozer received finance from sources other than Henry Steel. One was the company's shareholders. A call of £75 per share was made in February 1876, shortly after the incorporation of the company.[152] This was likely to have been the first call upon the shares of the newly formed limited company and thus would have been intended to provide capital for the new venture. However, in August 1876 shareholders of the company were invited to supply finance not merely by paying calls. The directors recorded that:

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148 *ibid.*

149 *ibid.*, f.101, 21 Jun. 1879. The advance requested and agreed to by Steel was for £10,000 at 5 % interest per annum and on the security of the steel rails which the company stocked.

150 *ibid.*

151 Jeremy, *Business Biography*, Vol. 4 p.294.

152 BSC, NRRC: SPT, 140/9, Box No. 17, 00864, BDM, f.14, 21 Feb. 1876.

> Advances to be received from shareholders willing to make them, at 5% interest, subject to one months notice to withdraw, & such advances be secured by a promissory note of the company.[153]

It was recorded that advances had been made to the company by William Peech and Edward Tozer in January of the following year, but the amounts lent were not specified.[154] The provision of advances by any other shareholder was not recorded. Thus, shareholders appear to have been expected to supply money to the firm by offering loans as well as by investing in the shares of the company.

Shareholders of Steel, Peech & Tozer were again called upon in February 1882 when the directors resolved that an increase in the depreciation fund by £27,302 was to be financed by a contribution from each member of the company willing to:

> provide out of his own moneys a sum of money bearing the same proportion to the said £27,302 as the number of shares standing in his name in the Books of the Company bears to the entire number of shares issued.[155]

At the same board meeting it was recorded that the depreciation fund had also been increased in December 1881 from £76,030 to £103,332 and the directors agreed that:

> further increase to be provided by the following contributions to be made by the members of the Company out of their own money.

Henry Steel	£6,768	Edward Tozer	£6,711
William Peech	£6,768	Edward S. Tozer	£56
Emma Steel	£56	William Tozer	£56
Henry Steel jr.	£56	Thomas Hampton	£6,825[156]

The sums listed above were put in a general account and referred to as 'absolute voluntary contributions'.[157] They were supplied on the condition that members

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153 *ibid.*, f.27, 19 Aug. 1876.

154 *ibid.*, f.37, 9 Jan. 1877.

155 *ibid.*, f.144, 7 Feb. 1882.

156 *ibid.*

157 *ibid.*

were not entitled to repayments by the company or any other claim against the company for the contributions.[158] An increase in the company's depreciation fund, already a sizeable one, illustrates that shareholders in Steel, Peech & Tozer were not being called upon to provide finance for other immediate company expansion or investment in new technology, but rather securing a future source of finance for such requirements. Shareholders also appear to have been quite willing to make such investments.

Furthermore, from the list of shareholders contributing to the company depreciation fund, it appears that the firm was a 'private' limited company - one in which control was closely retained by a few men as a result of selling shares only to family and friends, rather than making 'public' appeals for capital. Indeed, the records of Steel, Peech and Tozer give the impression of a very self-contained operation, financed by an ownership group within the company and, to a far lesser degree, their relatives. One would also presume that profits would have been re-invested to the company. There are no indications of any approaches being made for accommodation to either the company's bankers - the Sheffield & Rotherham Banking Company[159] - or any other sources of finance 'outside' the company's directors and shareholders. Therefore, Steel, Peech & Tozer was a company that relied upon itself or its proprietors to finance its operations. It appears to have survived successfully by following such a policy - the company expanded and by 1914 its turnover was £1.4 million and it had a steel making capacity of 200,000 tons.[160] Furthermore, the policy of 'internal' financial provision adopted by Steel, Peech & Tozer would provide some backing for those arguing that it was not banks which failed to supply finance for

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158 *ibid.*, f.145, 7 Feb. 1882.

159 It has not been possible to examine the Sheffield & Rotherham Banking Company records to confirm this. However, in examining other company archives, any contact with, or sizeable credit from, a company's banker is usually recorded in the minutes of board meetings.

160 Jeremy, *Business Biography*, Vol. 4, p.294.

industry in the second half of the nineteenth century, rather that companies did not demand financial support from their banks.

The other company in this sample that became part of the United Steel Companies Ltd. was Samuel Fox & Co. Ltd. The records available consist of the board minute books and balance sheets from 1871, the year in which the company was incorporated. Unfortunately, the minutes reveal very little about how the financial demands of the company were met. Many of the reasons for which the company required funds were recorded, but details concerning financial provision for such needs were not kept in such detail. The company received finance from its bankers - the Sheffield & Rotherham Banking Company - and in the form of loans from directors. Therefore, in studying the case of Samuel Fox & Co., there will be a greater emphasis upon its demand for funds and, where possible, how this demand was met will also be reviewed.

Samuel Fox & Co. Ltd banked with the Sheffield & Rotherham Banking Company, like the three other companies already discussed. The company may have received advances from the bank but details of the actual amount of accommodation granted were not included in its minute books. It considered turning to the bank for finance in August 1876 when the board discussed the best course of action for:

> raising money to meet the requirements of the company in connection with the extensions and additions now being made and contemplated to this Company's works as well as the construction of the Stocksbridge Railway.[161]

It was decided to apply to the Sheffield & Rotherham Bank for an advance of £25,000 to £30,000.[162] However, the outcome was not recorded and there is no further mention of an overdraft or loan from the bank thereafter. It is therefore

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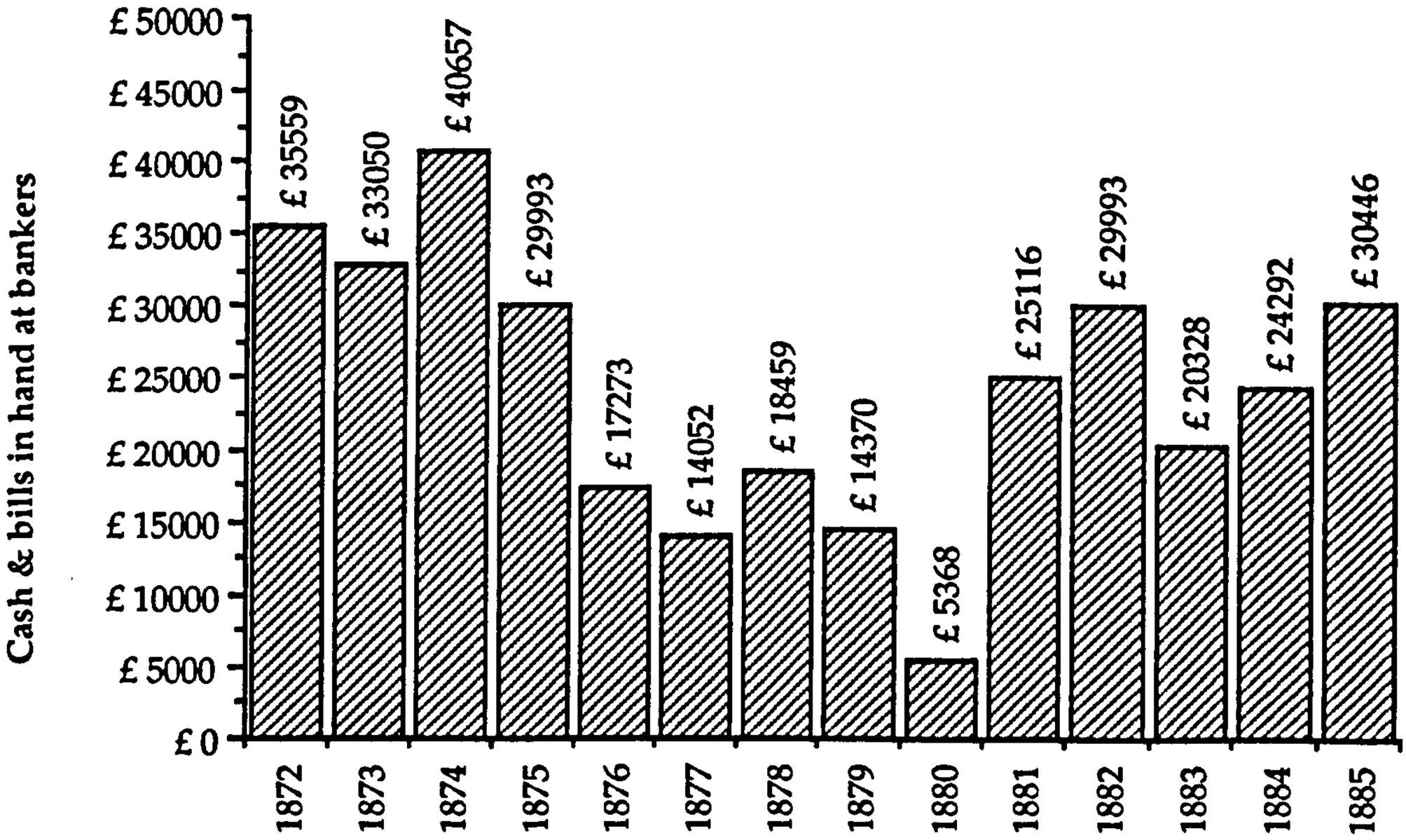
161 BSC, NRRC: Samuel Fox & Co. Ltd. [hereafter SFC] 003/2, 21108, BDM, Vol.1, f.158, 8 Aug. 1876.

162 *ibid.*

unlikely that the company received credit from the Sheffield & Rotherham as such large advances were usually recorded in directors' minutes books.

Some indication of the company's circumstances at the bank was given in its balance sheets. Chart 5.3 displays the cash and bills in hand at the bank between 1872 and 1885 and shows that generally the company was in credit rather than debit. Therefore, from the evidence available, it appears that the Sheffield & Rotherham Bank did not provide any sizeable advances to Samuel Fox & Co. and that probably only one request was made by the company to the bank for such accommodation.

Chart 5.3: Cash and bills in hand on the Samuel Fox & Co. Ltd. account at the Sheffield & Rotherham Banking Company, 1872-1885



Source: BSC, NRRC: Samuel Fox & Co. Ltd., BDM.

Apart from its bankers, Samuel Fox & Co. Ltd. also turned to its founder for funds. In May 1877 the directors agreed that the company should borrow £7,708

from Samuel Fox with the deeds of the Stocksbridge Works given as security.[163] Furthermore, continuing evidence of Fox's financial support to Samuel Fox & Co. was given in August 1882, at the company's annual general meeting, when the following was reported:

> Mr. Fox drew attention to the large profits which had been made during the last two years and stated that he had for the sole benefit of the Company individually taken shares in several limited companies and had lent moneys to customers of this Company and that these transactions had resulted in bringing large profit to the Company but in great loss to himself and that he estimated such loss at a sum exceeding £10,000.[164]

He also stated that 'the extension of the premises and the largely increased business had made a very extended demand upon his mind and energies' and believed that this entitled him to an increase in remuneration.[165] His previous salary had been just over £2,000 per annum which the board believed to be 'quite commensurate with the valuable services he has rendered', yet the directors decided to increase his salary by £2,000 per annum, when profits allowed.[166] Fox also received, in addition to his salary, half of the surplus profits after paying shareholders a dividend of 15 per cent per annum but in total he was not to receive more than £10,000.[167]

Another method by which the company could have obtained finance was the formation of a limited company specifically to provide funds for the construction of a railway line for the works. In July 1872 the board of Samuel Fox & Co. discussed the desirability of constructing a direct railway connection for the Stocksbridge works initially by a spur to the Lancashire & Yorkshire.[168] Plans progressed so that, in November 1873 the company's solicitors were asked to

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163 *ibid.*, Vol.1, f.175, 3 May 1877.

164 *ibid.*, Vol.1, f.280, 7 Aug. 1882.

165 *ibid.*

166 *ibid.*

167 *ibid.*, Vol.1, f.281, 7 Aug. 1882.

168 *ibid.*, Vol.1, f.47, 12 Jul. 1872.

take the necessary steps to obtain an Act of Parliament authorising construction in the ensuing Parliamentary session. The line was now to run from the Stocksbridge Works to Deepcar Station of the Manchester, Sheffield & Lincolnshire Railway.[169] The construction of the railway involved negotiations to purchase land, leases and property. The Bill for the line went before the Commons on 5 May 1874 and, after small alterations, was passed and was also passed the House of Lords in June 1874, when it received Royal Assent.[170] The directors' report for the general meeting in August 1874 stated that the board believed that its construction would be 'of great advantage to this company.'[171]

In order to fund the laying of the railway line, the Stocksbridge Railway Co. Ltd, was established and all its shares were purchased by proprietors of Samuel Fox & Co.[172] Samuel Fox & Co. paid £6,600 deposit on 3,300 shares in the Stocksbridge Railway Co. with a nominal value of £10 per share, thus amounting to £2 per share. Of these, 3,200 were allotted to the company and the remaining 100 to various other parties.[173] In January 1875 £5,600 was withdrawn from the Stocksbridge Railway Co. account with the Sheffield & Rotherham Bank in order to pay a deposit on land owned by Lord Wharncliffe required to build the line.[174] Shares in the Stocksbridge Railway Co. were fully paid up in February 1876.[175] Six months later it appears that more funds were needed for the line as directors of Samuel Fox resolved that, in the interests of the company, the whole of the money that the Stocksbridge Railway Co. was authorised to borrow should be utilised. It was not possible to borrow unless Samuel Fox & Co. guaranteed the

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169 *ibid.*, Vol.1, f.87, 1 Nov. 1873.

170 *ibid.*, Vol.1, ff.108-9, 6 Aug. 1874.

171 *ibid.*, Vol.1, f.111, 6 Aug. 1874.

172 *ibid.*, Vol.1, f.113, 27 Aug. 1874.

173 *ibid.*

174 *ibid.*, Vol.1, f.122, 14 Jan. 1875.

175 *ibid.*, Vol.1, f.147, 29 Feb. 1876.

repayment of the principal , plus interest, a scheme Samuel Fox's directors agreed to, provided that the terms were satisfactory.[176]

In May 1877 the board discussed the question of the best mode of raising further funds necessary for the Stocksbridge Railway under their Parliamentary and other powers, especially the legal powers of the Samuel Fox directors themselves, to give a valid guarantee for the repayment by the railway company of all of such money, whether raised by shares, debentures or mortgage.[177] Legal opinion was taken on the matter and the company's solicitor advised 'abundant caution'.[178] Eventually it was agreed that the directors of Samuel Fox & Co. were authorised to guarantee, on behalf of the company, the repayment of all, or any, of the borrowings of the Stocksbridge Railway. Moreover, the directors were authorised to guarantee any capital raised by new shares or new stock and the payment of dividends.[179] Thus, Samuel Fox & Co. Ltd duly guaranteed £11,000 to be raised under the borrowing powers of the Stocksbridge Railway Act 1874, plus interest, and £36,000 to be raised by issuing new shares.[180] This was repayable after five years at an interest rate of five per cent per annum.

In September 1877 the mortgage deeds of the Stocksbridge Railway Co. were sealed and signed, the principal and interest being guaranteed by Samuel Fox & Co. Ltd, and the participants were listed as shown in Table 5.2. A deed poll was also signed and sealed whereby Samuel Fox & Co. Ltd., at the request of the Stocksbridge Railway Co., guaranteed the repayment of the £36,000 capital raised through 360 £100 preference shares.[181]

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176 *ibid.*, Vol.1, f.154, 20 Jul. 1876.

177 *ibid.*, Vol.1, ff.175-176, 3 May 1877.

178 *ibid.*, Vol.1, f.177, 9 Jun. 1877.

179 *ibid.*, Vol.1, f.180, 19 Jun. 1877.

180 *ibid.*, Vol.1, f.181, 19 Jun. 1877.

181 *ibid.*, Vol.1, ff.189-190, 21 Sep. 1877.

Table 5.2: Mortgage Deeds of the Stocksbridge Railway Company (interest rate five per cent per annum)	
Name of Mortgagees	**Amount of Money**
John Edward Sale	£1,000
William Atkinson	£500
William James Le Tall	£100
George Robbins	£200
Thomas Richard Harding	£500
William Langster	£500
Edward Hudson	£1,000
William Wild	£1,000
William Fisher	£500
James Russell Robson	£500
Edwin Alonze Parsons	£300
George Haywood	£500
Joseph Hicks Buckingham	£1,000
Samuel Cocker jr.	£600
Joseph Buxton	£800
Rev. Edward Wilson	£500
William Hugill Walker	£500
James William Harrison	£1,000

Source: BSC, NRRC: Samuel Fox & Co. Ltd. BDM, Vol. 1, ff. 190-191, 21 Sep. 1877.

In August 1881 the revenue account of Stocksbridge Railway Co. was in debt for £6,794, a situation caused by meeting interest on debentures and dividends on preference shares without the railway having earned enough to cover such payments. The debt was held at the Sheffield & Rotherham Bank. These payments had been guaranteed by Samuel Fox & Co. Ltd. and therefore, under the relevant terms, it was agreed to pay £6,794 to the Stocksbridge Railway Co.[182] Moreover, £11,000 debentures of the Stocksbridge Railway Co., guaranteed by Samuel Fox & Co., were due for redemption the following month but the railway company was unable to amortise them.[183] The board of Samuel Fox & Co. agreed to take up the debentures when they were due and this loan was

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182 *ibid.*, Vol.1, ff.256-257, 1 Aug. 1881.

183 *ibid.*

eventually paid off by Samuel Fox & Co.[184] Therefore, Samuel Fox & Co. was, in fact, the provider of finance for the new railway line. Even though a limited company had been formed to obtain funds for the scheme, in reality Samuel Fox & Co. was providing funds directly for the construction of the railway.

There are very few further available details of where finance for the company was obtained. During the period in question it required funds to expand, or adapt, its manufacturing operations and also to survive the depression of the mid-1870s to early 1880s. Aspects of some of the schemes for which finance was required will now be discussed.

There is substantial evidence concerning the company's wish to expand its operations, in particular during the early 1870s boom. In August 1872 Samuel Fox, as Managing Director of the firm, was empowered to purchase an engine and machinery which he believed to be suitable and necessary for a new wire mill, though details concerning the construction of this mill were not given.[185] In June 1873 the directors discussed the question of purchasing the Forest of Dean Iron Co., which manufactured pig iron.[186] They compared the advantages of producing pig iron at the Forest of Dean Iron Co., as opposed to those possessed by other large limited iron companies in Sheffield from using phosphorous free Spanish ore, and as compared to the company's existing method of purchasing iron. The financial aspects of the scheme were considered in addition to the question of the extent to which the two concerns could be amalgamated.[187] However, no decision was reached. The company employed two individuals to make an evaluation of the Park End Iron Works Co. in August 1873, implying that Samuel Fox & Co. was still looking to expand by adding iron production to

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184 *ibid.*, Vol.1, f.268, 1 Feb. 1882.

185 *ibid.*, Vol.1, f.53, 29 Aug. 1872.

186 *ibid.*, Vol.1, f.73, 27 Jun. 1873.

187 *ibid.*

its operations.[188] In June 1873 a lease was signed with the Eckland Bridge Steel works for which Samuel Fox & Co. was to pay an annual rent of £300.[189] Moreover, in January 1875, at the start of the cyclical downturn, the Chairman of Samuel Fox & Co. reported that 'overtures' had been made to him by Cocker Bros. for the sale to Samuel Fox & Co. of their whole concern and business.[190] After some consideration, it was decided that it was not desirable to purchase Cocker Bros. outright[191] but when the company was converted into a limited company, the directors of Samuel Fox agreed to purchase shares with a value of £2,000.[192] Certain plans to enlarge Samuel Fox's operations appear to have been curtailed by the slump.

Expansion also occurred despite the prevailing adverse economic climate of the late 1870s. In November 1876 the board agreed to purchase Horsley Farm due to the minerals that lay underneath its land but the arising costs were not detailed in the minutes.[193] In addition, the advisability of constructing a new mill for the production of Bessemer steel boiler plates was discussed in October 1877 and the board decided that it would be in the company's interest to erect it.[194] Eight years later in August 1884 it was agreed to purchase a mill at Deepcar for £7,500.[195] Therefore, the company was still able to expand during the mid-1880s depression, though the funds required for such expansion were not discussed.

Expansion continued in the 1880s. In February 1883 Fox reported that the company was using 1,000 tons of coal per week but that its own collieries were

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188 *ibid.*, Vol.1, f.78, 1 Aug. 1873.
189 *ibid.*, Vol.1, f.75, 27 Jun. 1873.
190 *ibid.*, Vol.1, ff.122-23, 14 Jan. 1875.
191 *ibid.*, Vol.1, f.125, 22 Feb. 1875.
192 *ibid.*, Vol.1, f.127, 25 Feb. 1875.
193 *ibid.*, Vol.1, f.167, 9 Nov. 1876.
194 *ibid.*, Vol.1, f.192, 6 Oct. 1877.
195 *ibid.*, Vol.2, f.8, 20 Aug. 1884.

only yielding 150 tons per week. The coal purchased to make up for this shortfall was also felt by Fox to be of an inferior quality to that supplied within the company itself. Therefore, he advised the board to acquire another small coal field, or colliery, a suggestion which the other directors agreed to investigate.[196] However, the outcome of these enquiries were not reported.

Despite the evidence of expansion, Samuel Fox & Co. Ltd. also experienced difficulties as a result of depression. The directors' report for the annual general meeting in August 1875 stated that during the previous year the company had had to contend with 'greatly reduced prices, most especially in steel rails' and that, rather than continuing production at a loss, the production of steel rails had been suspended.[197] Streamlining of production was required in order to contend with the difficult economic climate. In February 1876 it was decided to lease out the company's works at Eckland Bridge, only acquired in 1873, to Messrs Hayward & Hoyland, on condition that materials used by the latter for their business should be purchased from the Stocksbridge works.[198]

The report of the directors for the company's General Meeting in August 1876 highlighted the problems the iron and steel trade were then confronting. The directors stated that:

> Bearing in mind the extreme depression of trade throughout the country during the past twelve months the Directors believe that you will regard the results of the year's working as very satisfactory.[199]

The profit for Samuel Fox & Co. for the year ending June 1876 was £28,080 and, after the costs met during the past five years and provisions for depreciation and for bad debts were deducted, £14,000 remained. This was added to the reserve

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196 *ibid.*, Vol.1, f.290, 17 Feb. 1883.

197 *ibid.*, Vol.1, f.127, 19 Aug. 1875.

198 *ibid.*, Vol.1, f.127, 10 Feb. 1876.

199 *ibid.*, Vol.1, ff.158-159, 8 Aug. 1876.

fund which consequently totalled £33,219.[200] Profits for the year ending June 1878 were £24,379, a result that the directors thought satisfactory when considering the 'extreme depression of trade which has prevailed throughout the whole of the year.'[201]

The prolonged depression during the late 1870s resulted in the company having to adapt its production to suit the demands of the market. Samuel Fox & Co. decided to alter its operations to include the production of railway carriage springs in August 1879,[202] a move first muted by Samuel Fox in May 1878 due to the unsatisfactory state of the steel rail trade.[203] The company was prompted into action after an offer of sale by the Railway Springs works and the business of the Railway Springs Co. undertaken by Messrs Barker & Hansell at Millsands in Sheffield.[204] The board had decided that it was not advisable to make this purchase, but wished to secure the services of Hansell at the Stocksbridge works in order to supervise their own production of railway springs.[205] After lengthy negotiations, Hansell was employed as the manager of Samuel Fox's proposed railway spring department, and plans for the construction of a necessary plant were ordered.[206]

Having examined the types of expenditure incurred by the company, it is important to consider the methods by which such schemes were financed. It has been shown that the company received loans from its Managing Director, but these were hardly adequate to fund the expansion and alteration of production already detailed. The most likely source for such expenditure was the plough-

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200 *ibid.*

201 *ibid.*, Vol.1, f.205, 5 Aug. 1878.

202 *ibid.*, Vol.1, f.208, 4 Aug. 1879.

203 *ibid.*, Vol.1, f.198, 28 May 1878.

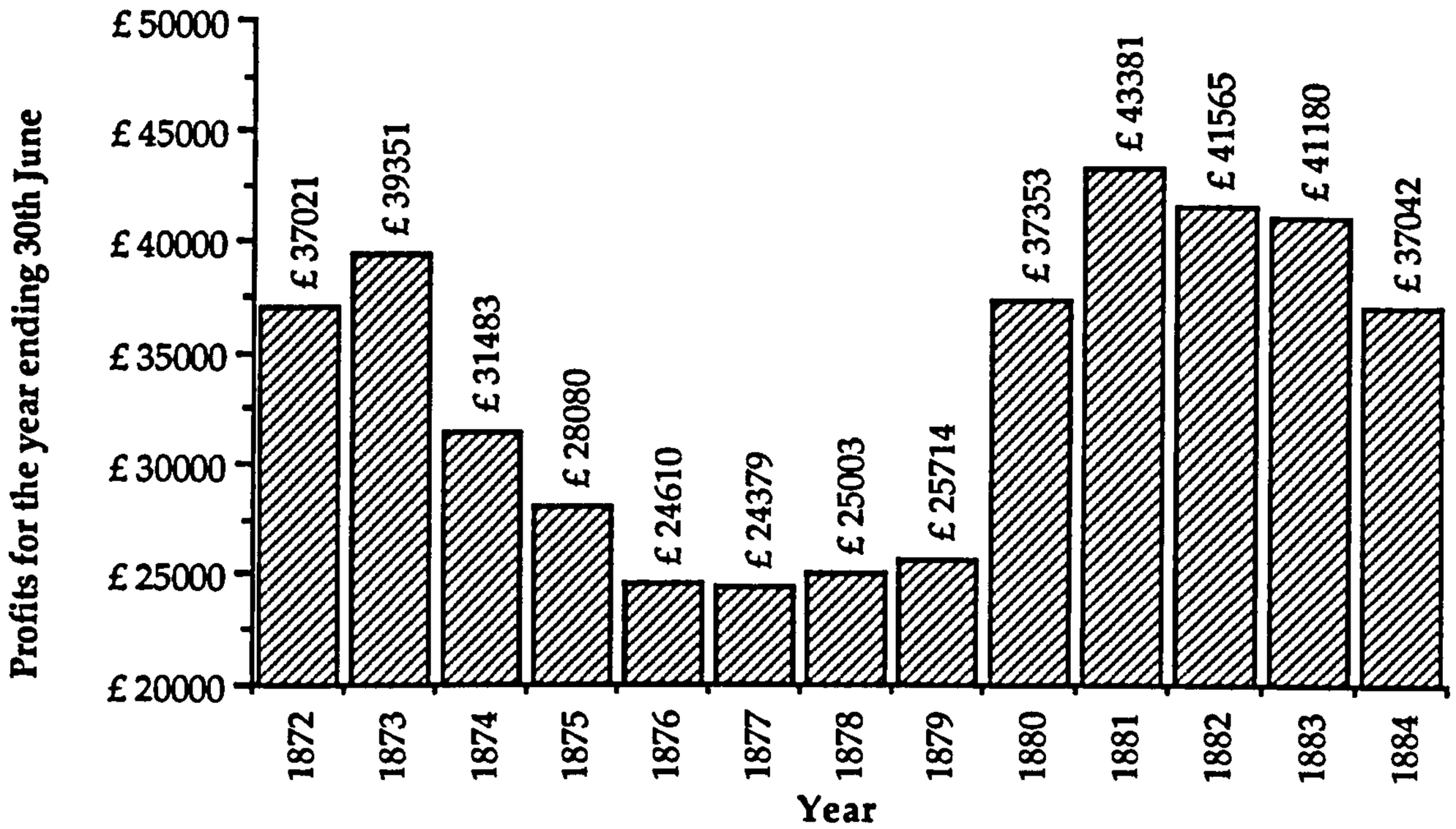
204 *ibid.*, Vol.1, f.218, 29 May 1879.

205 *ibid.*

206 *ibid.*, Vol.1, ff.219-220, 4 Aug. 1879.

back of profits. Chart 5.4 illustrates profits between 1872 and 1885 and indicates that it would have been possible to finance expansion from this source. Therefore, it would appear that Samuel Fox & Co. Ltd. financed its expansion and obtained working capital mainly through the re-investment of profits. Certainly, there is little evidence to suggest that external sources provided funds to any substantial degree.

Chart 5.4: Annual Profits of Samuel Fox & Co. Ltd for the year ending 30th June, 1872-1884



Source: BSC, NRRC: Samuel Fox & Co. Ltd., 003/2, 21108, BDM.

It remains to examine the final company in the sample, the Hallamshire Steel & File Co. Ltd. This firm, like Steel Peech & Tozer, secured substantial amounts of finance through a loan from one of its directors. William Smith, the Chairman and owner of the company before its conversion, advanced £8,000 to Hallamshire File & Steel in October 1874, just over a year after the company's incorporation in

June 1873.[207] The loan was secured by a mortgage on freehold property owned by the company.[208]

Such an extension of finance to the company by a one of its directors was not a solitary occurrence. In 1875 an extension of the mill and file shops was proposed, estimated to cost £11,000. However, the directors were unable to raise the full amount, falling short of the total by £2,000, and therefore, deciding that 'materials and wages are still high and trade generally quiet and unsettled', they postponed the extensions.[209] The directors subsequently agreed to erect a new mill, although the decision was not recorded in the minutes, and still in 1879 they were engaged in detailed discussions of how best to fund the building. In February of that year Smith offered to advance £5,000 to the company, on the same terms as the £8,000 loan.[210] However, the decision concerning this further loan from Smith was adjourned, the directors not appearing to be willing to become further indebted to the Chairman to such an extent.[211] Smith proposed an alternative means of finance at the following months board meeting. He suggested that:

> the Capital of the company withdrawn by the erection of the New Mill should be provided for by the issue of Debenture Bonds up to the limit of £10,000 the same to be allotted privately as required.[212]

The suggestion of issuing debenture bonds to finance this expansion was not a public call for funds, even though the limited liability status of the company potentially allowed such a scheme. The board seemed to be attempting to devise a method of obtaining finance, whilst keeping control of the firm, that is not

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207 BSC, NRRC: Hallamshire Steel & File Co. Ltd. [hereafter HSF], 1406/1, Box No.3, 24220, BDM, f.33, 20 Oct. 1874.

208 *ibid.*

209 *ibid.*, f.52, 21 Dec. 1875.

210 *ibid.*, f.93, 18 Feb. 1879.

211 *ibid.*, f.94, 18 Apr. 1879.

212 *ibid.*

selling any form of financial interest in the company whatsoever to those not already proprietors of the company.

In June 1879 the board finally resolved to accept the offer of their Chairman for a loan of £2,000 to the company, 'taking twenty Debentures of £100 each for the same with 5% interest payable yearly and the principle repayable at the end of 5 years'[213]. The offer of another director, Joseph Denton, to lend the company £500 on the same terms was also accepted.[214] More money was raised when Mark Dixon took up 15 of the £100 debentures on the same terms, making a loan of £1,500, and a further £6,000 in all was lent by William Smith when he took 10 debentures of £100 each in October 1879 and 50 debentures in March 1880. Therefore, privately raised capital coming from members of the board was clearly a preferred policy of the directors, rather than turning to outside sources of finance.

The debentures were discussed in April 1884 as the period for which they were issued (five years) was due to expire on 30 June that year.[215] The directors suggested that it would be much more convenient for the company if it could be 'arranged for the amount to remain on mortgage and for an unlimited time.'[216] Two months later an indenture between the Hallamshire Steel & File Company and William Smith was signed and sealed. The indenture agreed to the 'postponement of £7,000 on 70 Debentures from 30 June 1884 when the Debentures fall due to such a time that will be initially agreed on. Interest 5% p.a.' It was obviously convenient for the company to extend further the loan already provided by their Chairman; re-negotiation with another party,

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213 *ibid.*, f.99, 18 Jun. 1879.

214 *ibid.*,

215 *ibid.*, f.167, 22 Apr. 1884.

216 *ibid.*

especially one outside the company, being more troublesome and risky for the directors.

However, the Hallamshire Steel & File Co. Ltd., unlike Steel, Peech & Tozer, also requested and received accommodation from its bankers - the Sheffield Union Banking Company. A credit of £750 was granted in April 1877 from the Sheffield Union, for 12 months and on the security of 50 shares in the company.[217] Furthermore, in May 1878 the secretary of the company, John Hunt, was sent to request a £5,000 overdraft from the bank, but the reason for the approach was not stated in the minute books.[218] The bank agreed to the request, setting the company's overdraft limit at £5,000 for six months, at which time the account was to be reconsidered.[219] The overdraft was probably also used to finance the building of the new mill. There was no further mention in either the bank, or the company, minute books of advances provided to Hallamshire Steel & File. The overdraft could have run on for a number of years, but there is no evidence to prove this. The balance of the company's bank account is referred to again in May 1885, when it is recorded it was in credit. This money was then used to repay £2,000 lent by William Smith in exchange for debentures.[220]

The minutes show further evidence of the expansion of Hallamshire Steel & File Co. Ltd. when the board announced the intention to purchase Neepsend Tannery for £5,500 in January 1882. The directors attempted to arrange for the present mortgage of the tannery to continue on condition that it was at four per cent. However, the trustees of the Tannery declined.[221]

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217 Midland Bank Archives, Pepys Street, London: Sheffield Union Bank [hereafter SUB], BDM, AD 4, 19 Apr. 1877.

218 BSC, NRRC: HSF, 1406/1, Box No.3, 24220, BDM, f.85, 21 May. 1878.

219 MBA: SUB, BDM, AD 4, 23 May 1878.

220 BSC, NRRC: HSF, 1406/1, Box No.3, 24220, BDM, f.178, 19 May 1885.

221 *ibid.*, ff.143-144.

Thus, the Hallamshire Steel & File Co. Ltd. obtained funds from members of their own board of directors, the most substantial sum from its Chairman, and also from its bank.

The five company case studies reveal the variety of ways in which relatively large limited iron, steel and engineering concerns in the Sheffield region obtained finance for expansion, diversification, the adoption of new technology and to survive cyclical slumps. Park Gate Iron obtained funds from its bankers, by issuing debentures, from one of its directors and from a wagon finance company. This was required not for the adoption of new technology - the company continued to produce iron during the period considered rather than undertake a shift to steel manufacturing - but for expansion during the early 1870s boom and, subsequently, survival during the late 1870s/early 1880s depression. Yorkshire Engine had a very different financial history due to its incorporation as a new venture. This company struggled to become established, its problems being severely exacerbated by the railway crisis in 1866, a year after the company's incorporation.[222] The firm undertook a 'double strategy' in order to survive - calls upon shares and the heavy use of the overdraft with its bankers - as it lacked the profits to provide internal funding. Steel Peech & Tozer also used calls upon shares but the main source of funding for this firm was loans from its directors. These were required for the uptake of new Bessemer steelmaking technology and also to survive the late 1870s slump. Internal finance was the sole method of finance utilised by Samuel Fox & Co., the plough back of profits being the main source of capital. Hallamshire Steel & File utilised loans from its directors and debentures to fund expansion but also turned to its bankers during the late 1870s slump. However, large sums were not obtained from these sources which suggests that profits were the major source of finance.

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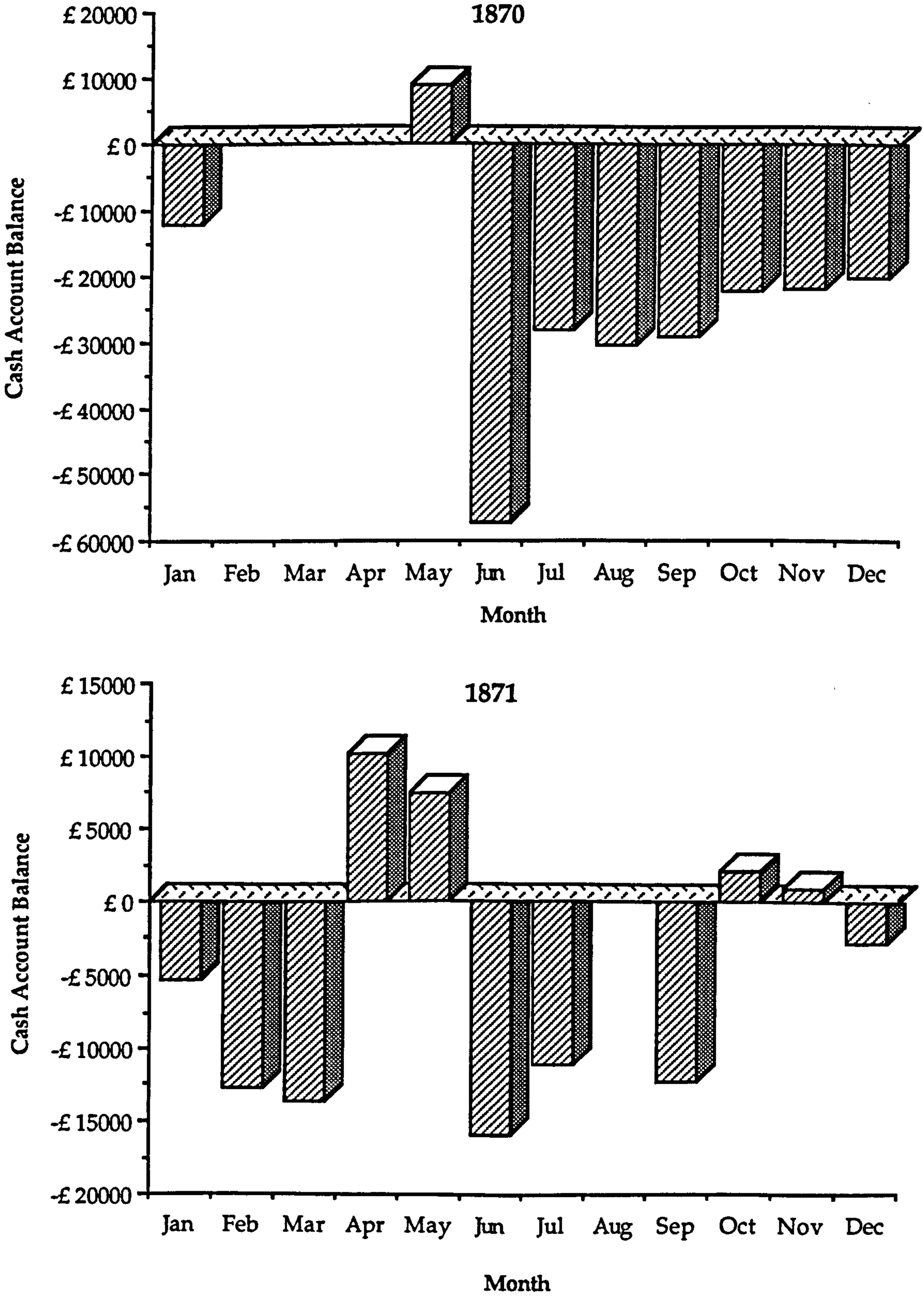
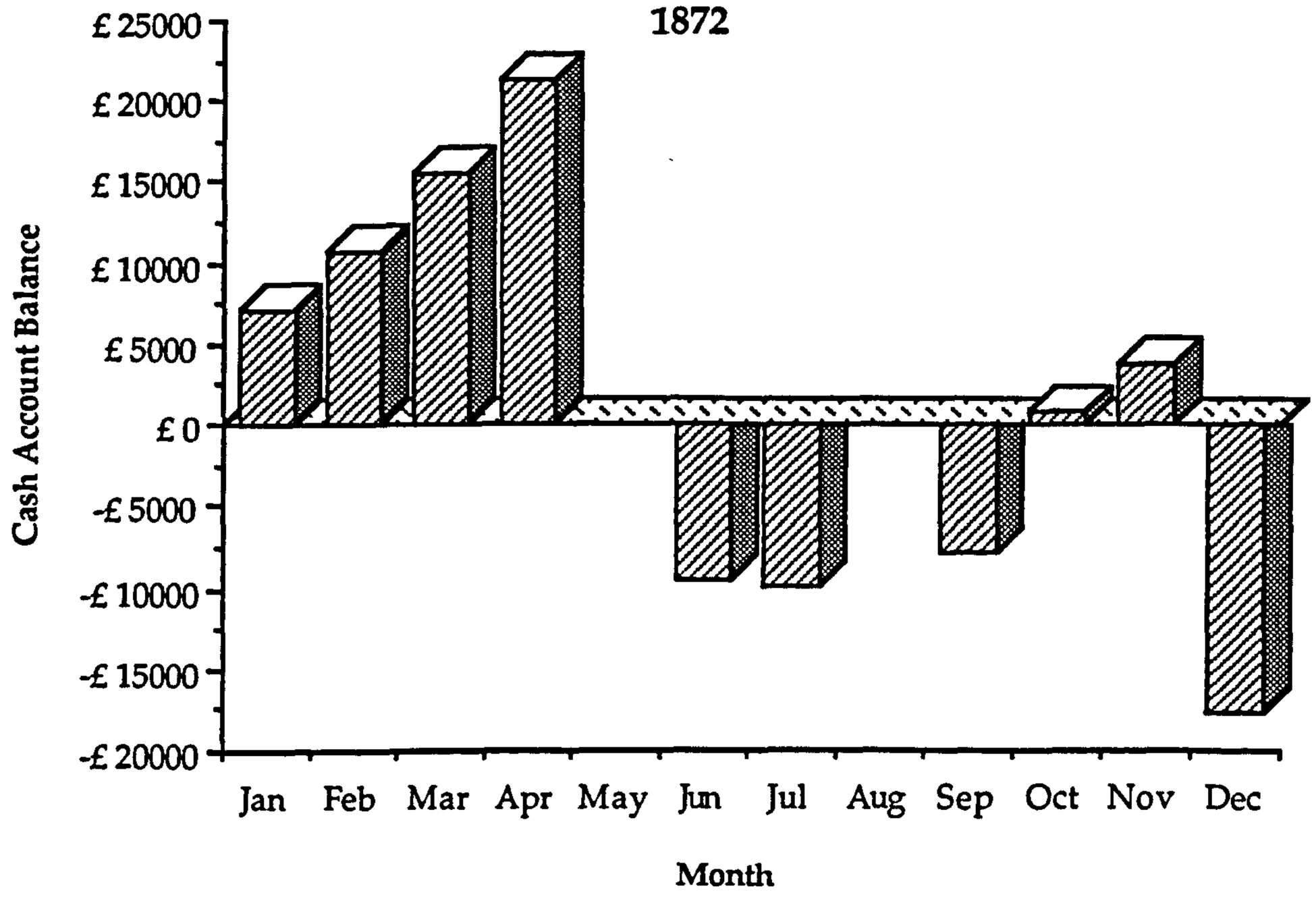
222 See Cottrell, P. L. 'Railway Finance and the Crisis of 1866: Contractors' Bills of Exchange and the Finance Companies', *Journal of Transport History*, new series, III (1975).

Therefore, nearly all the funds employed by the firms examined were 'internal', either in the form of profits, which tended to move with the trade cycle, or directors' loans. When such sources of finance were not adequate for the firms' requirements, they tended to turn firstly to their bankers, secondly to their shareholders by calls, and lastly to issuing debentures. The latter provided a cheap form of fixed interest finance and introduced an element of 'gearing' to the financial structure of company. The use of calls could run into problems when profits did not provide sufficient funds to pay dividends. The firms considered required funding in order to survive cyclical slumps, when poor markets resulted in non-payment by customers, and also for the shift to steel production occurring during this period, with the expenditure on new technology this entailed. The most important observation from these finding is that, despite being relatively large, limited concerns, the five companies were run on the basis of 'partnerships', confirming the findings of Chapter 4.

Appendix: Park Gate Iron Company overdraft with the Sheffield & Rotherham Bank, 1870-85 (See pages 301-304)

Source: BSC, NRRC: PGI, 140/6, Box 11/12/13, 23731-36, BDM.

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£ 20000
£ 15000
£ 10000
£ 5000
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-£ 5000
-£ 10000
-£ 15000
-£ 20000
Cash Account Balance
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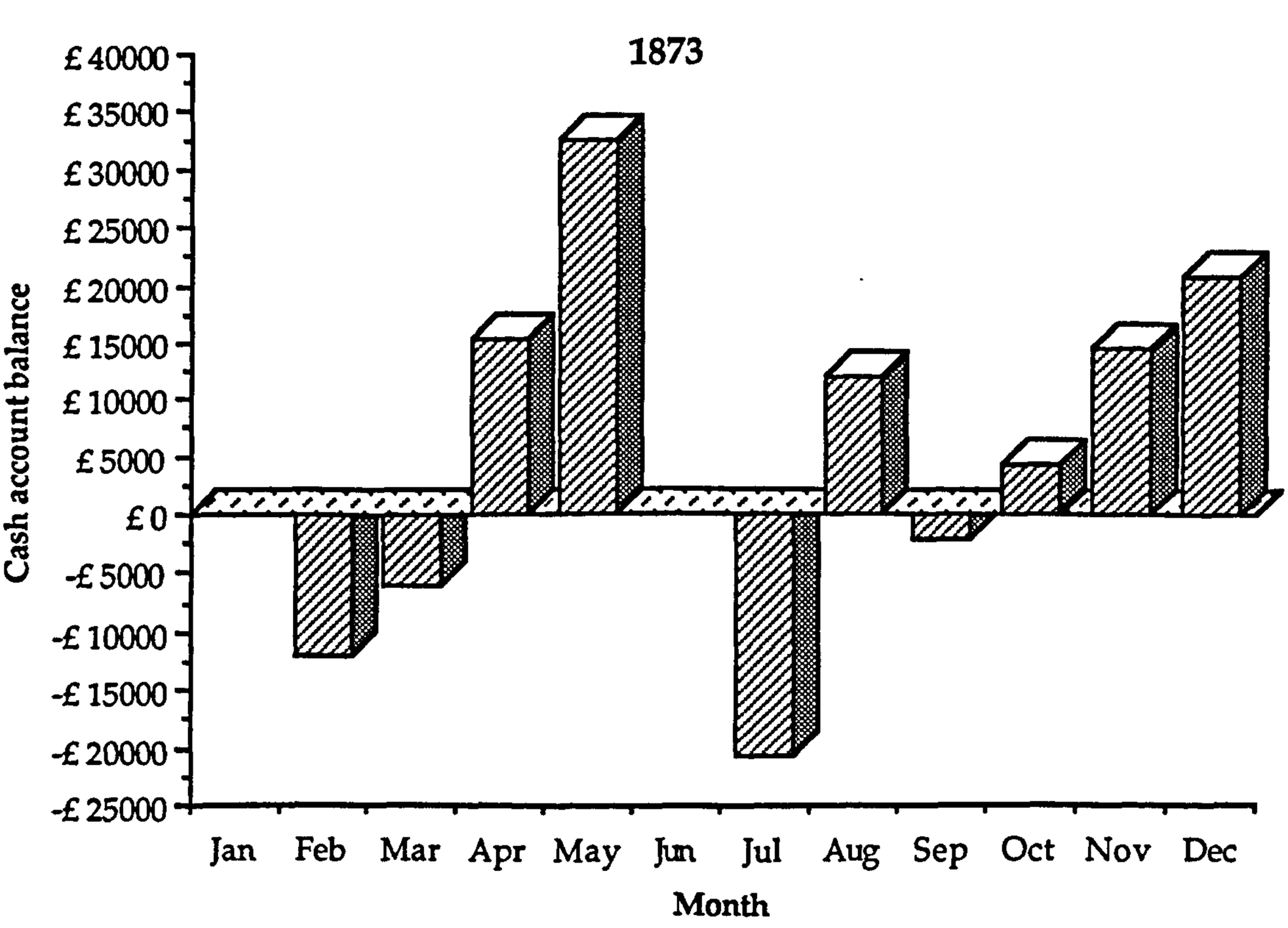
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£ 40000
£ 35000
£ 30000
£ 25000
£ 20000
£ 15000
£ 10000
£ 5000
£ 0
-£ 5000
-£ 10000
-£ 15000
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Cash account balance
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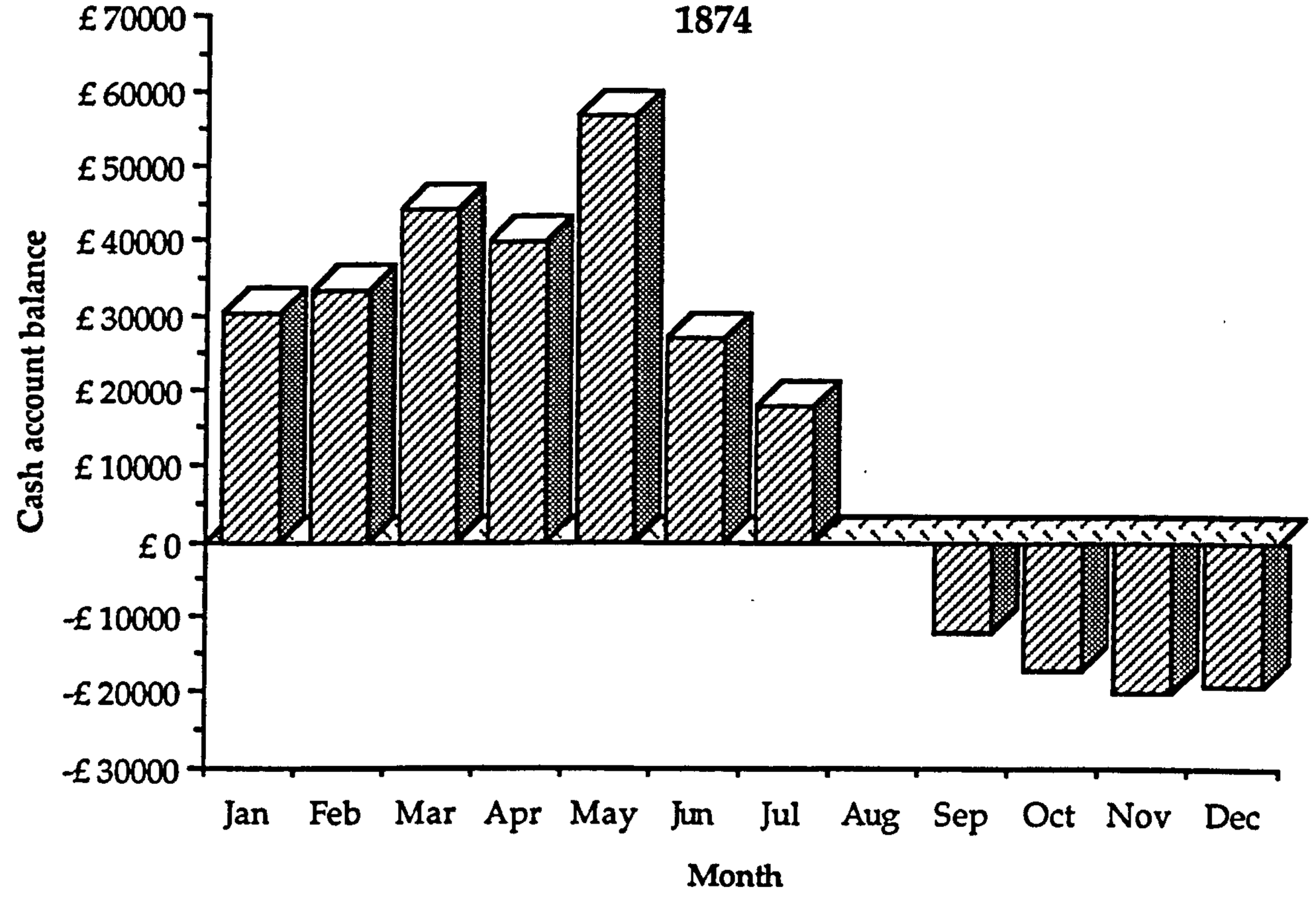
1874
£70000
£60000
£50000
£40000
£30000
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£10000
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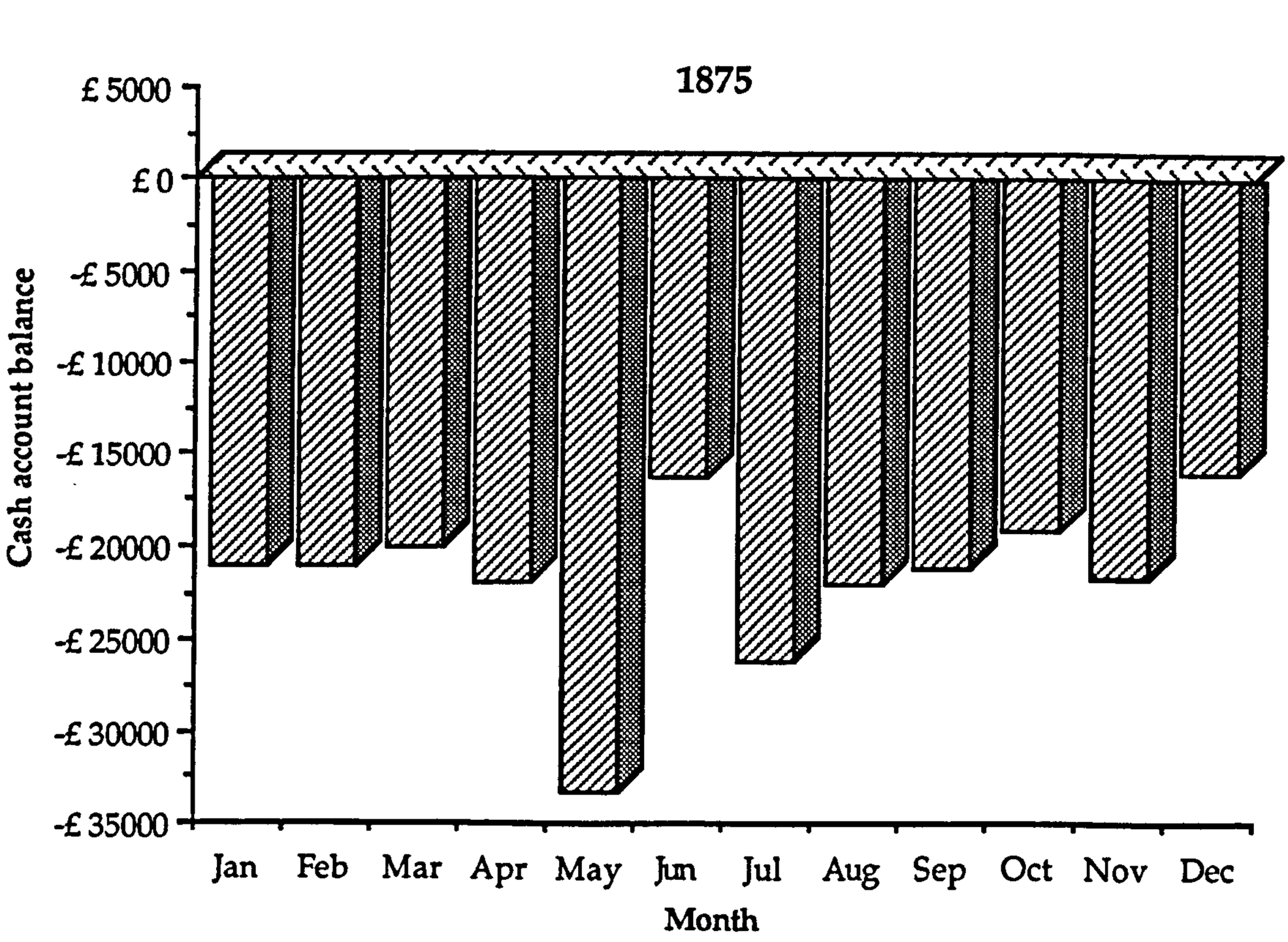
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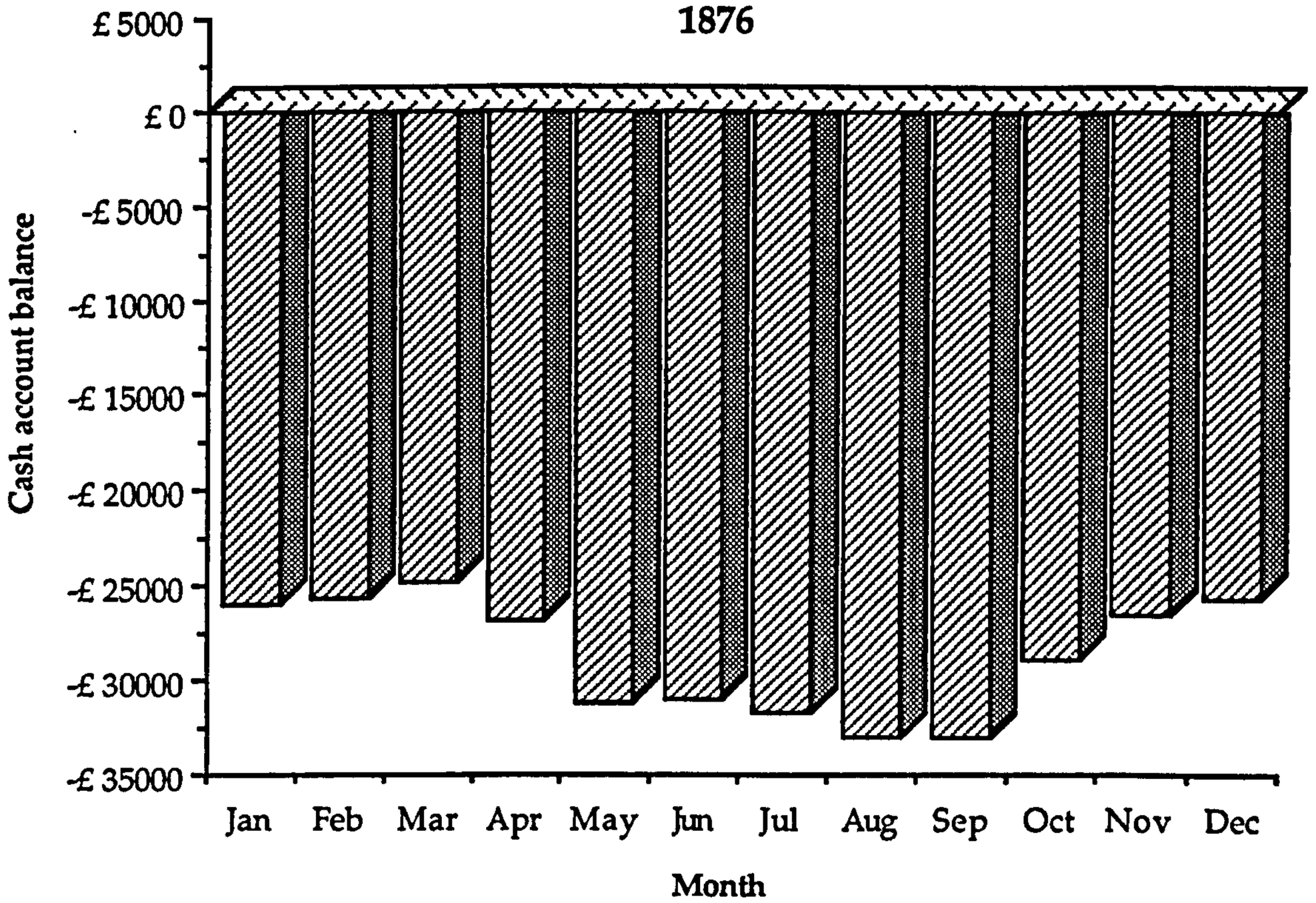
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Cash account balance
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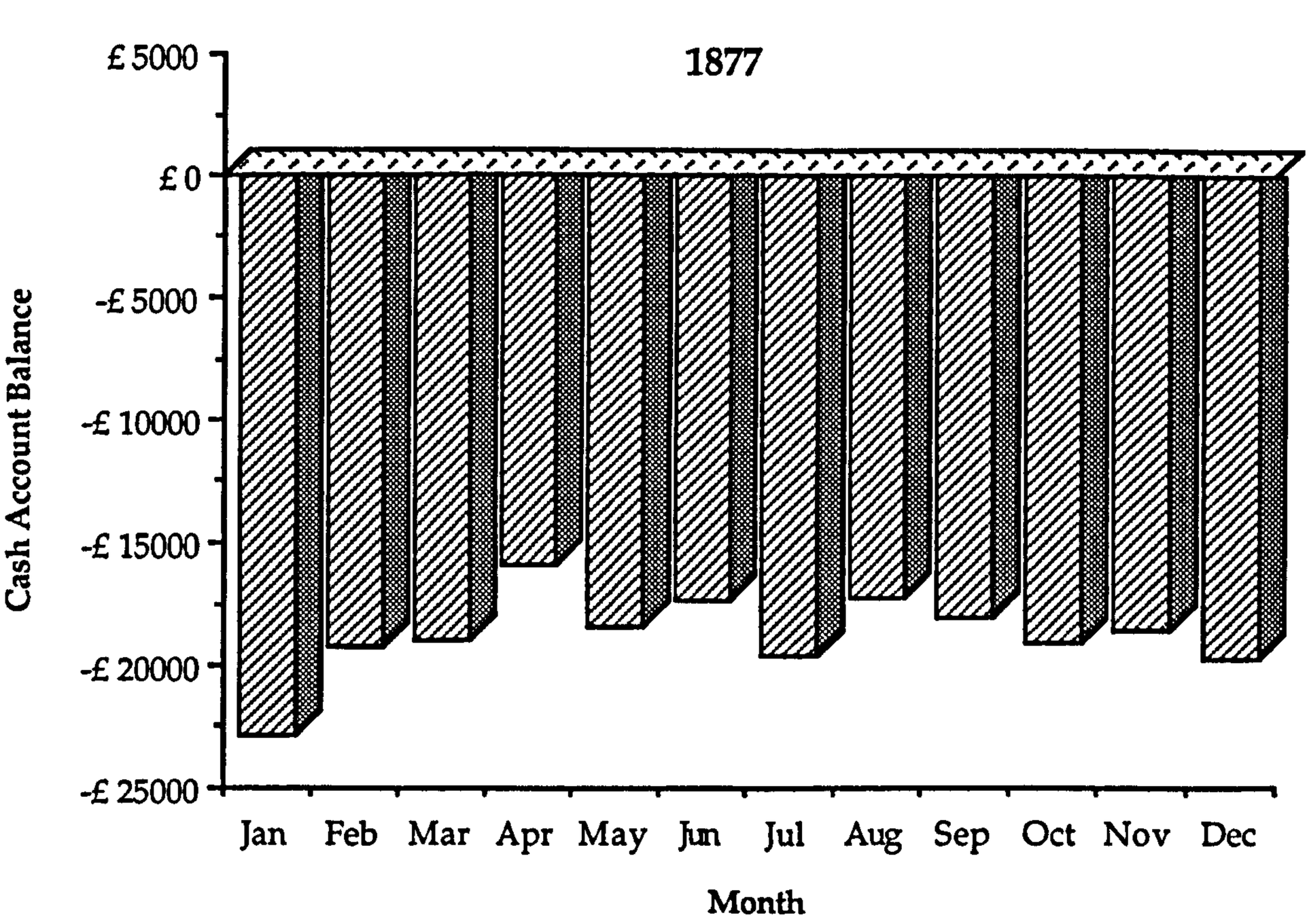
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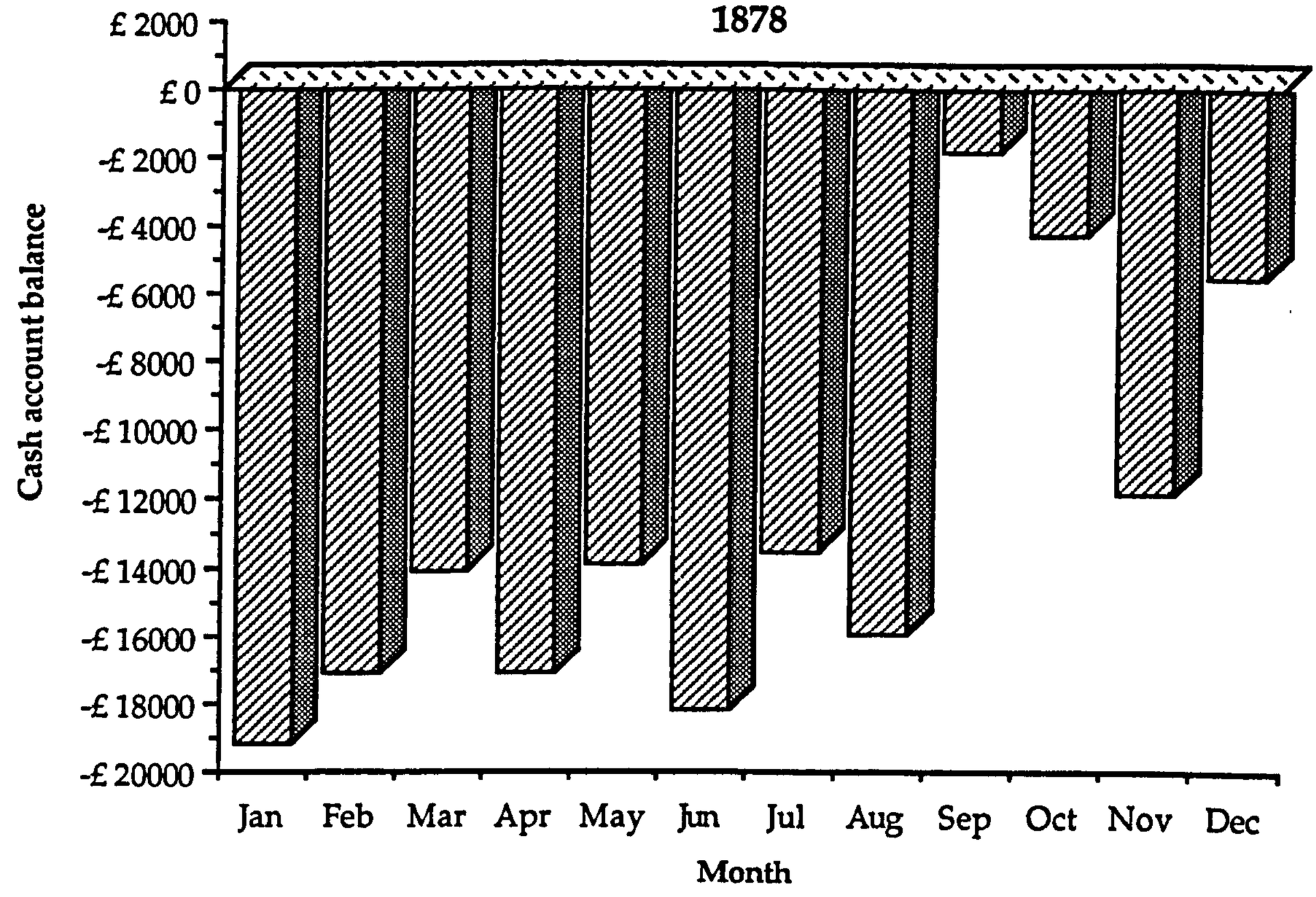
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-£ 10000
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-£ 14000
-£ 16000
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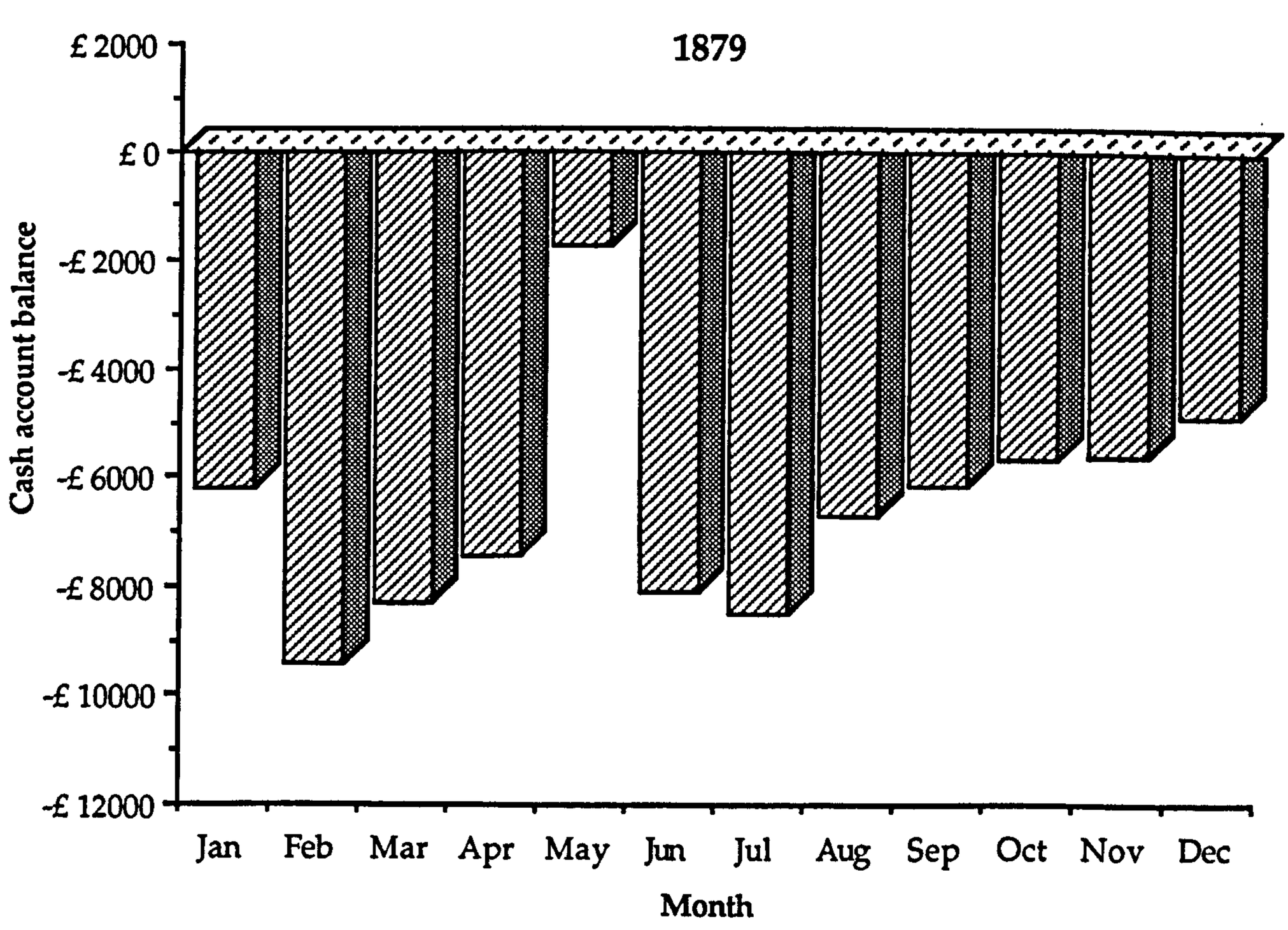
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£ 2000
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-£ 2000
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-£ 6000
-£ 8000
-£ 10000
-£ 12000
Cash account balance
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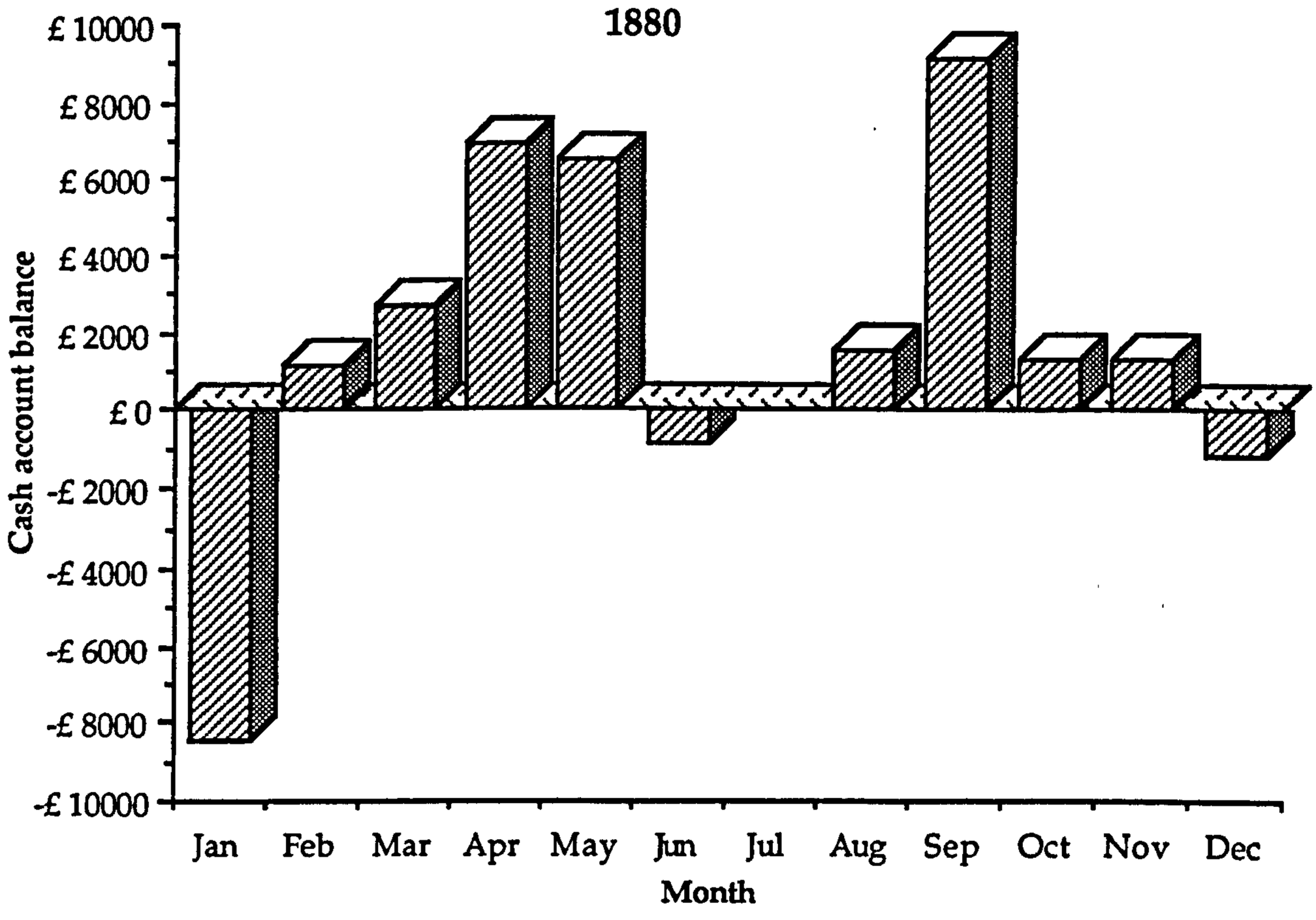
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£ 4000
£ 2000
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Cash account balance
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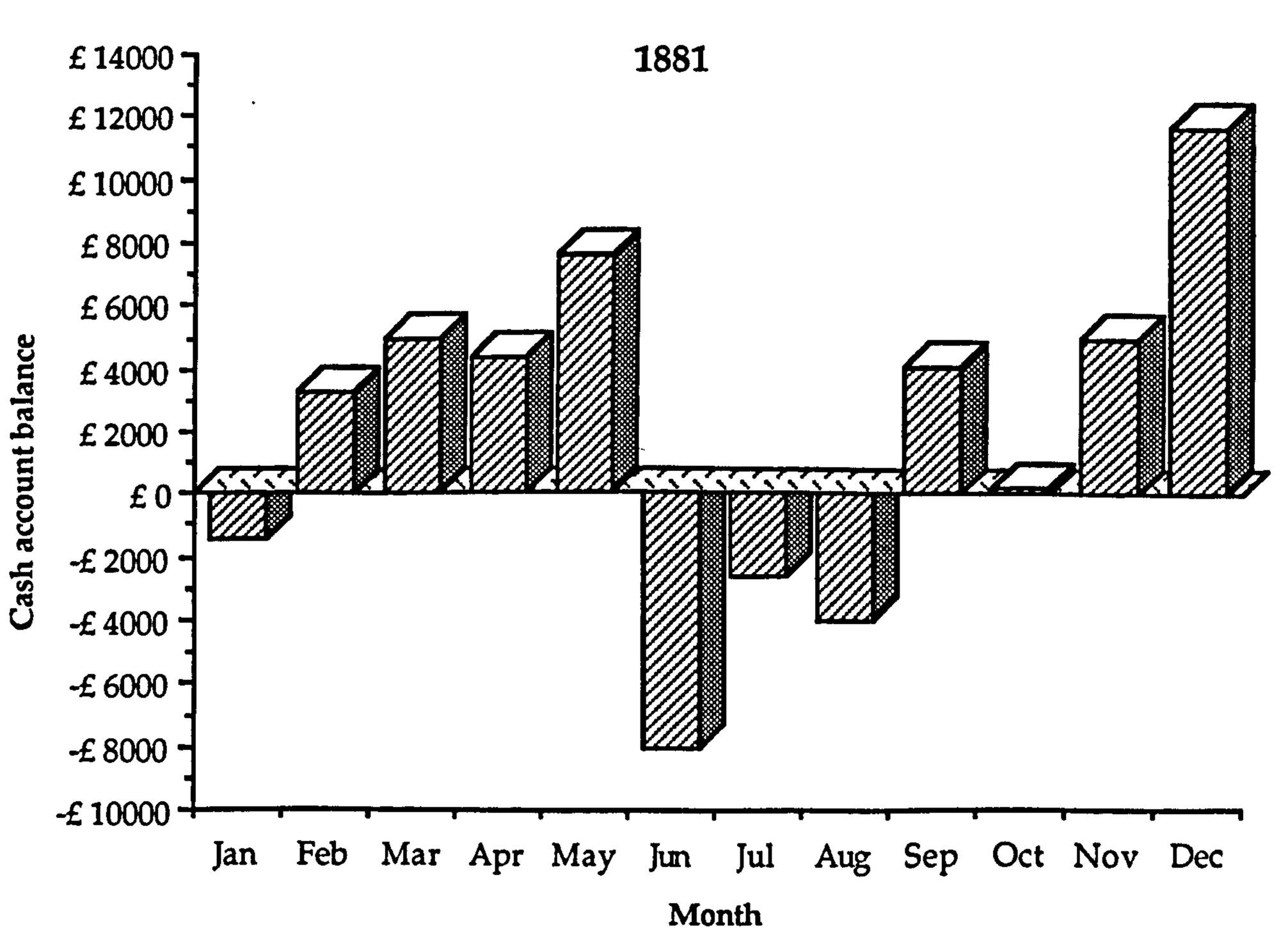
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£ 6000
£ 4000
£ 2000
£ 0
-£ 2000
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-£ 6000
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Cash account balance
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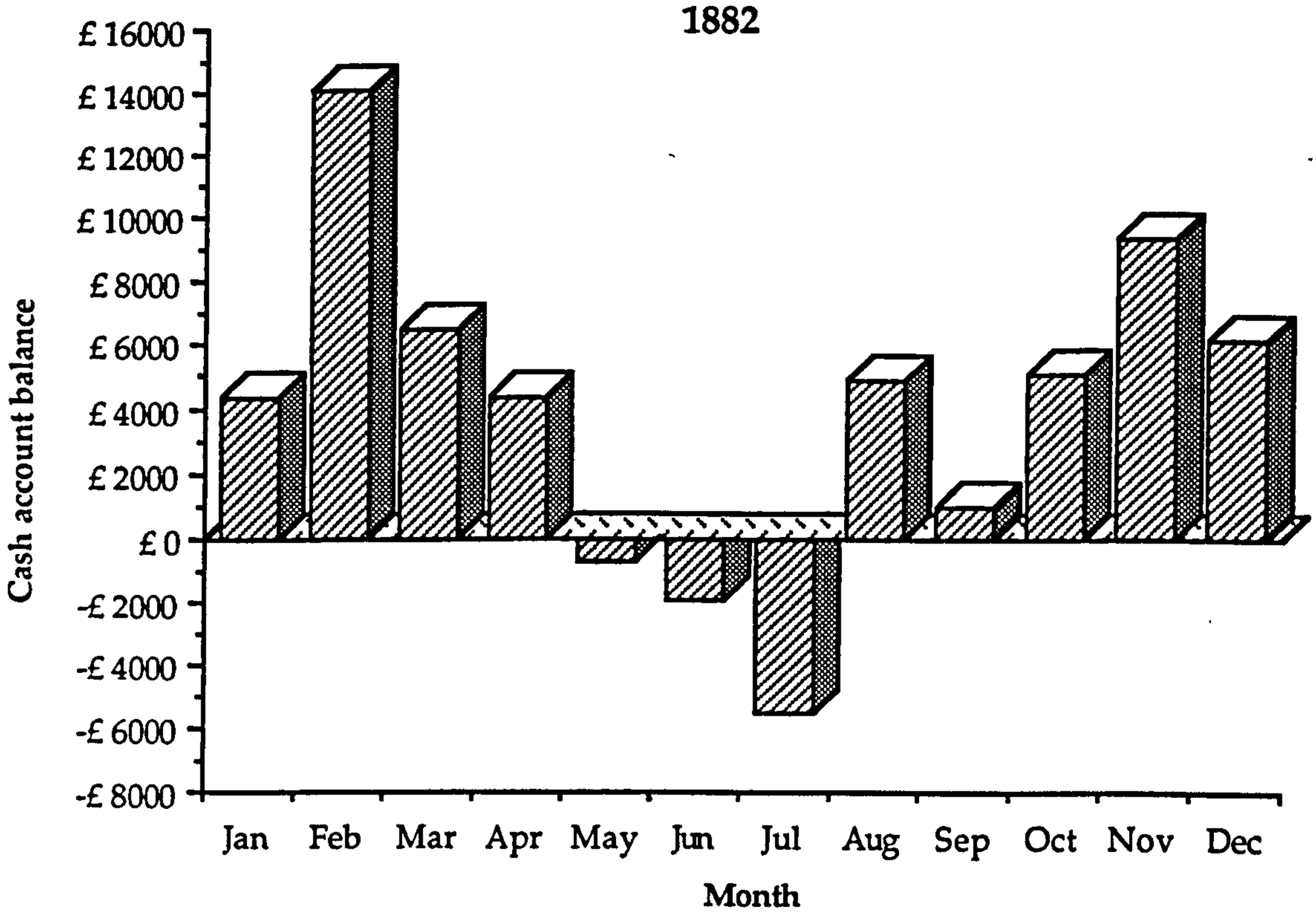
1882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£ 12000
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£ 8000
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£ 4000
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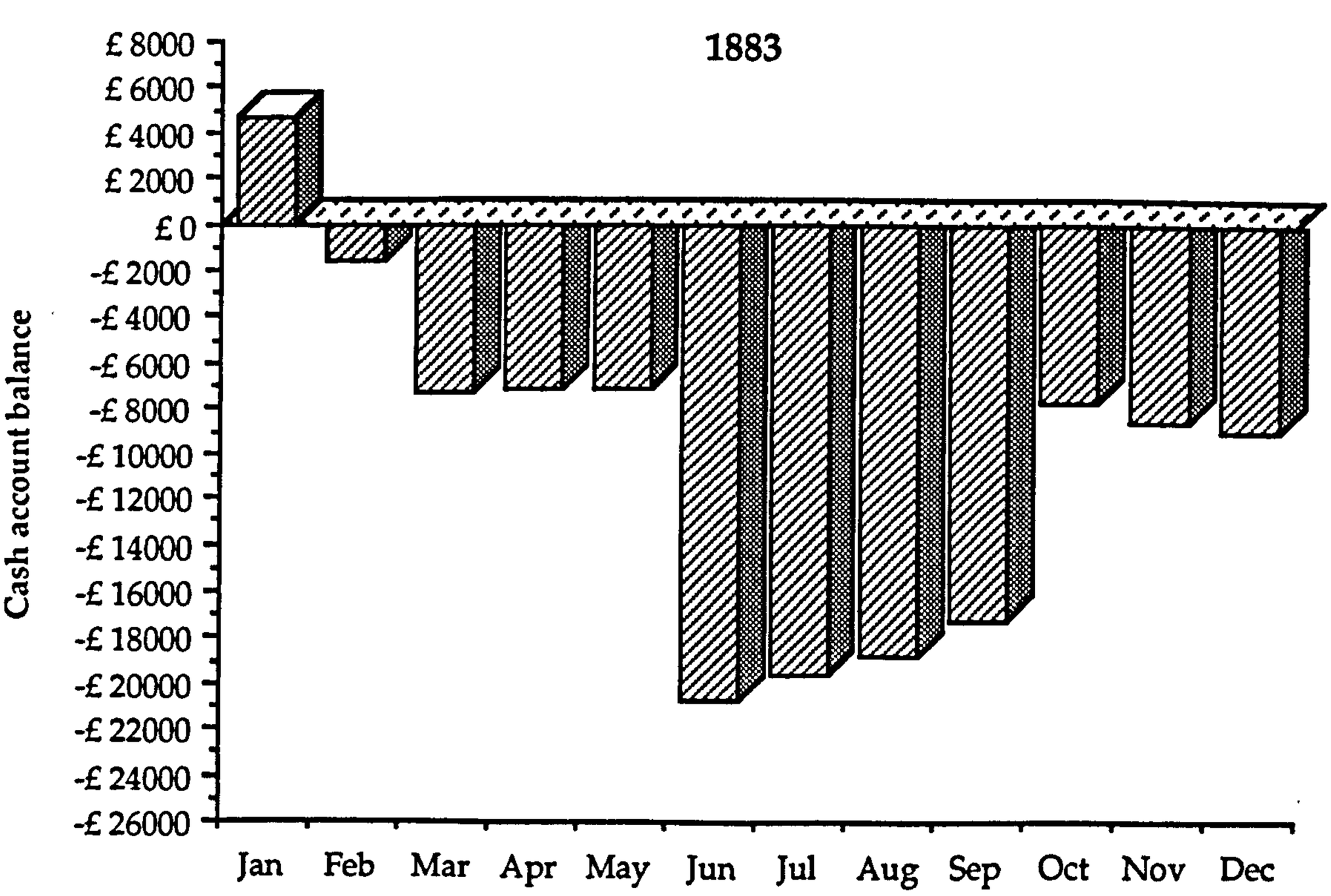
1883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-£ 16000
-£ 18000
-£ 20000
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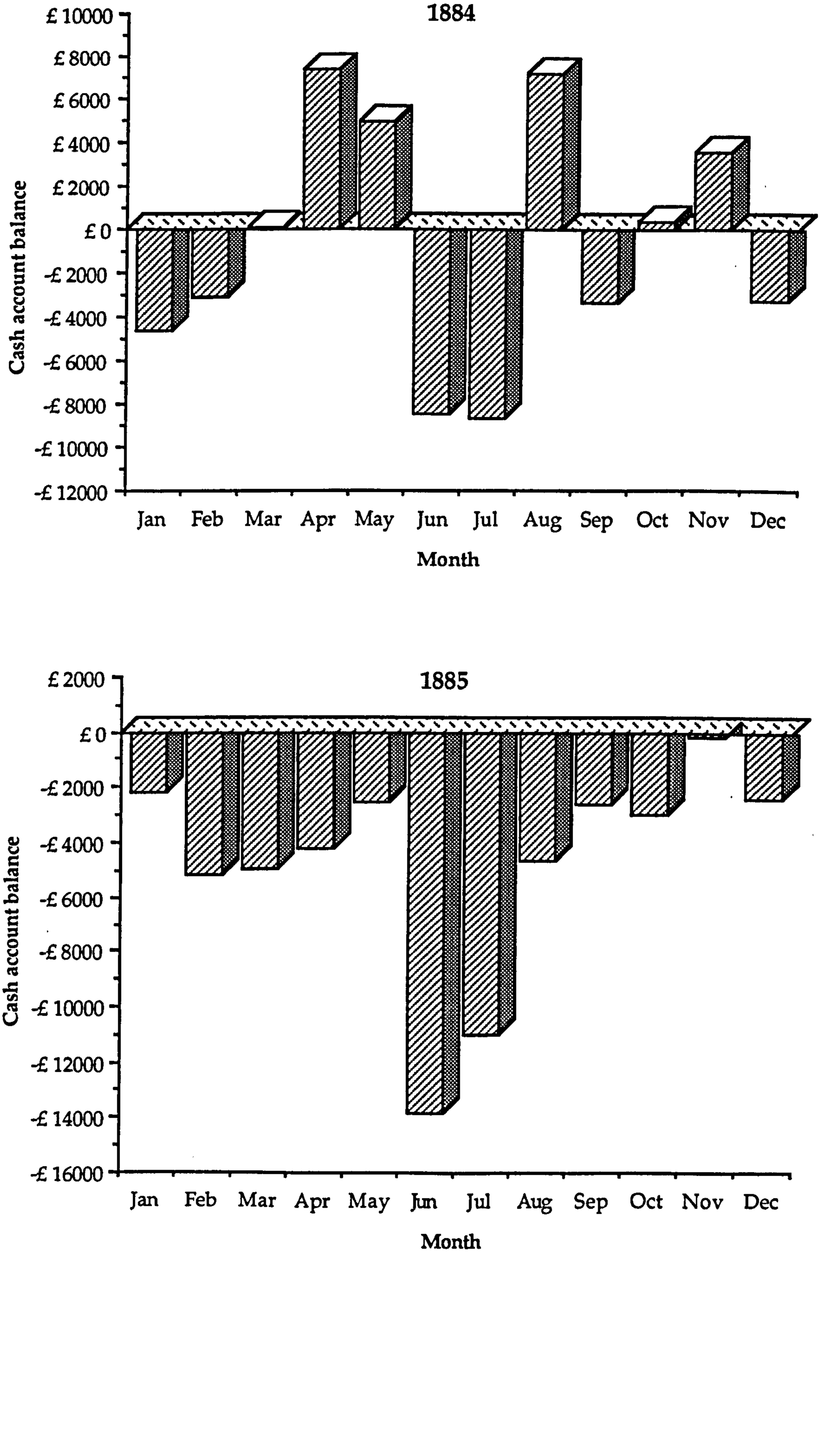
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£ 8000
£ 6000
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-£ 8000
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Cash account balance
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1885
£ 2000
£ 0
-£ 2000
-£ 4000
-£ 6000
-£ 8000
-£ 10000
-£ 12000
-£ 14000
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Cash account balance
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CHAPTER 6: CONCLUSIONS: FIRM SIZE AND A PROVINCIAL FINANCIAL MARKET

The objective of this thesis was to examine how manufacturing industry in the Sheffield region was financed over the period 1850 to 1885, with specific consideration being given to the effects of changes in the scale of company operations and the adoption of new technologies. In order to provide indications the following areas were considered: the nature of manufacturing industry in the Sheffield region, namely in terms of its structure and size, to enable an estimation of the demand for funds; the provision of finance by local banking institutions; the adoption of limited liability as a form of company organisation and as a means of raising finance; the origins and nature of share holdings in such limited companies; and the demand for finance by particular local companies. It therefore remains to assess the extent of the changes in the scale of Sheffield's trades between 1851 and 1881; the 'success' or 'failure' of banks in providing funds for local firms; the 'public' or 'private' nature of limited companies in the region; and the ability of concerns to obtain finance within the continuing provincial financial market, whether for expansion or survival.

Having examined the structure and size of manufacturing firms engaged in the main Sheffield trades on the eve of limited liability - the outset of this study - in Chapter 2, it is now important to re-examine these elements at the end of the period under discussion in an attempt to gauge any changes that occurred in the size and structure of manufacturing industry and thereby the demand for finance. The analysis is based on the same methodology as that applied in Chapter 2, using trade directories to estimate the number of firms in Sheffield, and the Census in order to estimate the number of workers in each industrial branch. In order to indicate the average size of firms constituting each trade, the number of employees, taken from the 1881 Census,

was divided by the number of firms in each trade, as shown in the 1879 *White's Sheffield District Directory*. The results are shown in Table 6.1 below. This method has been applied to estimate firm size as it very difficult to measure by output or capital per trade.

In examining the structure of Sheffield's trades in 1881, as compared with 1851, it is important to consider total employment in the area, differences in employment in the light and heavy trades, and, most importantly, firm size. A glance at Table 6.1 reveals that the largest firms measured by employment in Sheffield in 1881 were file, cutlery, and tool manufacturers and those processing, manufacturing or producing iron and steel or iron, steel, gold, silver, metal plated or metal goods. These are the same group of manufacturing trades that collectively represented the most sizeable employers in 1851 (see Chapter 2), the only difference being that in 1851 manufacturers of horn, bone and related products were also major employers. By 1881, however, firms within the horn, bone, pearl and ivory trades in Sheffield had declined in size and number due to the introduction of new materials, such as celluloid and vulcanite, into the handle making trades.

In total more workers were employed in the light trades in 1881 than in the heavy industries: 33,288 in the light trades as against 16,508 in the heavy industries. In 1851 the light trades had also employed more labour, the comparative figures being 13,796 workers in the light trades as against 11,709 in the heavy industries. Therefore, between 1851 and 1881, employment increased by 141 per cent in the light trades and by 41 per cent in the heavy industries. These data do not conform with those calculated by Pollard who

Table 6.1: The major manufacturing industries of Sheffield, 1881				
Class	**Trade**	**No. of persons**	**No. of firms**	**Average size of firm**
V 10.1	Agricultural implement manufacturers	374	10	37
V 10.2	File & rasp manufacturers	5,541	243	23
V 21.8	Other Iron & Steel manufacturers	9,657	504	19
V 10.1	Boiler manufacturers	275	16	17
V 21.7	Goldsmiths, silversmiths, gold & silvers goods manufacturers	3,149	202	16
V 21.12	Metal refiners, workers	334	23	14
V 10.4	Surgical instrument makers	250	20	13
V 10.2	Cutlery	15,290	1,285	12
V 12.1	Railway carriage, wagon etc. manufacturers	689	59	12
V 10.1	Spinning/weaving machinery manufacturers	45	4	11
V 11.2	Gas fitters and gas related goods manufacturers	143	15	10
V 19.1	Comb manufacturers	275	28	10
V 21.12	Wire makers, workers, drawers, weaver	535	58	9
V 10.1	Engine/machine manufacturers	1,547	184	8
V 10.1	Millwrights	97	8	8
V 10.6	Musical instrument manufacturers	75	9	8
V 19.3	Brush makers	177	21	8
V 10.2	Sawyers	1,237	174	7
V 18.1	Button manufacturers	156	21	7
V 20.1	Japanners & bronzers	42	6	7
V 21.12	Nut, bolt & screw manufacturers	217	32	7
V 18.1	Umbrella manufacturers	194	30	6
V 19.2	Leather goods manufacturers	304	55	6
V 21.12	White metal & plated goods manufacturers	1,438	226	6
V 12.1	Coachmaker	206	41	5
V 20.3	Coopers & hoop makers	208	44	5
V 21.12	Brass, bronze manufacturers & braziers	496	99	5
V 21.8	Blacksmiths/farriers	1,576	327	5
V 10.7	Types, dies, medals & coins	248	63	4
V 10.2	Domestic implement manufacturers	449	133	3
V 10.2	Tools manufacturers	2,138	782	3

Class	Trade	No. of persons	No. of firms	Average size of firm
V 10.3	Philosophical instrument manufacturers, opticians	141	41	3
V 11.3	Carvers, gilders	101	40	3
V 14.3	Manufacturing Chemists	62	20	3
V 21.10	Tin plate workers & braziers	225	87	3
V 21.11	Lead manufacturers, merchants & smelters	40	16	3
V 21.12	Clasp & hinge manufacturers	14	3	3
V 21.12	Lamp & candlestick manufacturers	30	10	3
V 21.4	Glass manufacturers	153	53	3
V 20.3	Wood turners & carvers & wooden goods manufacturers	263	170	2
V 10.3	Weighing and measuring apparatus	114	52	2
V 21.8	Whitesmiths, locksmiths & bellhangers	117	58	2
V 21.8	Coppersmiths	14	7	2
V 10.1	Domestic machinery manufacturers	15	14	1
V 10.2	Needle manufacturers	21	26	1
V 10.3	Electrical apparatus manufacturers	15	12	1
V 10.3	Watch & clock makers	145	153	1
V 12.1	Bicycle manufacturers	12	9	1
V 12.1	Wheelwrights	191	226	1
V 18.1	Boot & shoe manufacturers	1,216	980	1
V 19.1	Bone, horn & ivory workers & dealers	282	195	1
V 21.12	Metal goods manufacturers - other	70	74	1
V 21.12	Steel toy manufacturers	2	2	1
V 21.2	Coal/coke merchants/manufacturers	360	352	1
V 21.8	Chain manufacturers	5	13	1
V 21.8	Nail manufacturers & cutters	42	50	1

Source: 1881 Census; *White's Commercial and General Directory of Sheffield* (Sheffield, 1879)

had compared 1851 with 1891; he found that employment rose by 300 per cent in the heavy trades as compared with 50 per cent in the light trades.[1] This discrepancy is probably due to differences in definition of trades as used by

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1 Pollard, S. *A History of Labour in Sheffield* (Liverpool 1959) [hereafter Pollard, *History of Labour* ...] p.159

Pollard and those employed here, and also the use of different base years - Pollard using 1891 rather than 1881.

Tables 6.2 and 6.3 below give a more detailed picture of employment in both the light and heavy sectors. The data in these tables have been taken from Table 6.1 and the categories of light and heavy trades displayed are those for which an accurate comparison can be made, in terms of trade definition, between 1851 and 1881. Therefore, some branches of both trade types have not been included due to inconsistencies of definition between 1851 and 1881 which made comparisons unfeasible.

Table 6.2: Employment in the Sheffield heavy trades, 1851 and 1881

Trade	Total employed in 1851	Total Employed in 1881	% of 1851
Iron & Steel manufacturers	10,180	10,061	99
Brassfounders, braziers and tinners	434	721	166
Blacksmiths	423	1,576	373
Machine manufacturers, millwrights, engineers	390	1,644	421
Carriage makers etc.	128	895	699
Wheelwrights	81	191	236
Wire manufacturers and workers	80	535	669
Boiler makers	35	275	786

Source: 1851 and 1881 Census.

The most important point of comparison between 1851 and 1881 is the number of firms in each trade and their size (the estimates for 1881 being displayed in Table 6.1) which provide an indication of the changes in the structure and scale of Sheffield's trades during this period with implications for financing. The trades in which the largest numbers of firms existed in 1881 were iron and steel manufacturing, cutlery, tool and file manufacturing, blacksmithing and farriering, goldsmithing, silversmithing and gold and silver goods manufacturing, and other metal plated goods manufacturing.

Table 6.3: Employment in the Sheffield light trades, 1851 and 1881			
Trade	Total Employed 1851	Total Employed 1881	% of 1851
Cutlery	5,428	15,290	282
File	3,343	5,541	166
Goldsmiths, silversmiths, gold & silver goods manufacturers	1,112	3,149	283
Tools	1,080	2,138	198
White & plated metals	574	1,438	250
Comb (horn) manufacturers	524	557	106
Button manufacturers	204	156	76
Philosophical instrument makers, watch makers, opticians	102	286	280
Nail manufacturers	85	42	49
Umbrella manufacturers	34	194	570
Needle	31	21	68

Source: 1851 and 1881 Censuses.

Cutlery, file and iron and steel producers were also the most numerous types of firm in 1851. The main difference between the two bench mark years is the importance in 1851 of those dealing with grease and bones (1,005 persons) as compared with their decline in prominence by 1881 (282 persons). This was due to the replacement of horn and bone in the manufacture of handles for cutlery products, as already mentioned. In addition, in 1881 there was a greater range of trades in which large numbers of firms existed. This is probably due to there being larger numbers of firms *per se*, but also because the number of different types of trades existing had increased between 1851 and 1881, with the development of new products and materials.

The estimates of the average size of firms, as displayed in Table 6.1, show that in 1881 very small-scale producers, i.e. those firms employing between one and ten people, were still characteristic of the mainly craft based industries, such as tool manufacturing, small instrument makers, needle, nut, bolt and nail manufacturing, etc.: i.e. Sheffield's light trades. The majority of these trades continued to operate on a small scale, even in 1881; indeed, Pollard has

commented that the 'large firm was still the exception in the light trades in 1893' [my emphasis].[2] He also pointed out that certain firms among the light trades were larger in size, namely silver-platers and file and heavy tool makers, as production in these branches was frequently undertaken by the major steel-making firms.[3] Thus, the estimates in Table 6.1 conform to Pollard's generalisations: that the majority of small-scale firms were in the light trades, while file manufacturers and silver platers (the latter being included in the category with goldsmiths, silversmiths, gold and silver goods manufacturers) were indeed much larger concerns, with average numbers of 23 and 16 employees respectively.

However, the results in Table 6.1 fail to conform completely with the view that light trades generally operated on a small-scale and, conversely, the heavy trades tended to consist of large-scale concerns, as was found to have generally been the case in 1851. Those firms which appear, from the table, to represent the relatively larger-scale operations (those employing over ten people) include agricultural implements, comb, cutlery and surgical instrument manufacturers: all of these would be classed as belonging to the light trades. One explanation could be that the data contained in the census and/or the trade directory were inaccurate. Other explanations are that some large individual firms existed in the light trades, such as the cutlery firms Mappin and Webb, Walker and Hall, and George Wostenholme, and that the production of such products was also undertaken by large-scale steel and iron firms. Firms in the heavy trades might be expected to have had a large average size, as was the general pattern in 1851. It would also be reasonable to assume that there was a shift to large-scale production in Sheffield between

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2 *ibid.* p.132.

3 *ibid.*

1851 and 1881 as the available literature indicates such a trend.[4] Of the heavy trades in 1881, some appear as large employers of labour - manufacturers of iron and steel, boilers, railway carriages, railway wagons, spinning/weaving machinery and metal refiners and workers - all having an average of 11 or more employees. Yet, many other trades that would be classed as belonging to the heavy industries appear in Table 6.1 as employing an average of ten or less, including engine and machine manufacturers, brassfounders, wheelwrights, and producers and workers of other types of metals. From these results, it appears that many firms engaged in heavy industry were of a similar size, or actually were smaller, as compared to 1851. It is also important to note that the average size of these 'large-scale' firms, as represented in the table, ranged from ten to 37 employees and therefore does not indicate the existence of manufacturing, either heavy or light, on a very large-scale. Such firms only represent the larger scale in this table.

The estimates in Table 6.1 are surprising, given the results for 1851 in Chapter 2, in which the same method was used to calculate the average size of firms. In 1851 the highest average size of firm in any industrial branch, as measured by employment, was 38 while in 1881 it was 37. Given the development of Sheffield's manufacturing industries over the intervening period, the firm size by employment in 1881 might have been expected to have been larger than in 1851. Yet this is clearly not the case. Furthermore, in 1851 31 per cent of trade categories employed an average of ten or more people, whereas in 1881 this had fallen to 22 per cent. More strikingly, the percentage of trade categories which employed an average of 19 or more was 19 per cent in 1851, but decreasing to five per cent in 1881. It would appear that, far from the scale

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4 For example *ibid.*, p.162 and Mathias, Peter *The First Industrial Nation: An Economic History of Britain, 1700-1914* (1980 edition) [hereafter Mathias *First Industrial Nation*...] pp.269-271.

of industry measured employment increasing over the period being considered, the small-scale firm actually increased in importance.

One explanation for these results could be that during the 1860s and 1870s firms in the heavy industries became more mechanised and therefore came to employ less workers. The 1870s depression also resulted in fewer numbers being employed by many concerns in an attempt to reduce costs. Another explanation for these apparently ill-fitting results could be the nature of the sources consulted. There is a degree of inaccuracy within both the trade directories and the censuses. It is also difficult to compare two bench mark years, even while using the same sources, as both the census and the trade directories were collected and classified on a different basis in 1851 and 1881. Furthermore, the trade directories and censuses used very different definition of trades, again making comparisons between the two difficult and possibly inaccurate. The geographical location of firms may also have influenced the results in Table 6.1. By the 1880s the growing number of manufacturers in Sheffield resulted in firms increasingly locating their operations outside the city or borough boundaries, especially those of a larger scale.[5] Indeed, companies such as Park Gate Iron and Samuel Fox & Co., which were large concerns, had located their works outside the city boundaries since the 1840s. These companies were not included in the census data.

Probably more important for the estimates in Table 6.1, however, was the inclusion of individual companies in more than one trade classification in the 1879 trade directory: i.e. the same company appeared under several different trade headings in the directory. Unfortunately, due to the constraints of time, it has not been possible to list all the companies that appeared in this trade

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5 See Simmons, Richard 'Land Development and the Steel Companies of Eastern Sheffield, 1850-1900', PhD thesis currently in progress, University of Leicester, and Pollard, *History of Labour* ..., p.162, footnote 1.

directory and thereby ascertain the occurrence of company names which appeared repeatedly within different trade types. However, it is clearly evident from even a cursory inspection that many firms appeared in several different trade categories, far more so than in the 1852 trade directory, implying that individual companies were becoming increasingly diversified in terms of product ranges. For example, John Brown & Co. Ltd. was listed in 1879 under the following trade categories: tool manufacturers; steel rail manufacturers; steel converters, refiners and manufacturers; steel castings manufacturers, iron manufacturers, railway tyre and axle manufacturers, railway wheel manufacturers, railway spring manufacturers, railway point and crossings manufacturers, railway buffer manufacturers, and merchants and manufacturers. John Brown & Co. was, admittedly, a very large firm, yet as an example it illustrates clearly the problems of merely counting the number of firms listed under each trade category in the directory, especially considering the array of types of product produced by a single firm in 1879. Such an expansion in the ranges of products manufactured by firms could have been a strategy employed to combat the 1874-79 depression (a feasible speculation given that the trade directory dates from 1879). Such a supposition is strengthened by the evidence found in the five company case studies contained in Chapter 5. The companies analysed there deliberately diversified their product ranges in order to withstand the financial pressures exerted by the depression.

However, it is also important to consider the continuing importance of small scale industry in 1881, rather than attempting to justify results that fail to indicate a significant growth in the average size of firms between 1851 and 1881. In analysing Sheffield's industrial structure between 1880 and 1901, Lewis measured the size of firms by rateable values and discovered that small firms 'formed a significant part of the industrial structure', especially in the cutlery and tools trades where, in 1880, 72 per cent of firms were classified as

small.[6] Even in the heavy industries, as with iron and steel producers, Lewis found that 46.7 per cent of firms were small-scale.[7] Lewis explained the prevalence of small firms in Sheffield's industries by the flexibility that small-scale production allowed in meeting changes in demand; the extensive continuing use of out-work in the light trades which encouraged a business system suited to small-scale production; low capital costs required to establish a small business; and the rentier base of Sheffield's business system.[8]

By 1880 large scale firms existed in Sheffield. Heavy industry had expanded greatly after 1850, being stimulated by increased demand and facilitated by the development of large-scale methods of steel production. Pollard considered that the 'typical firm in the heavy *industries was large, both in respect to the* amount of capital and of the amount of labour employed',[9] while Lewis concluded that by 1880 'Sheffield could boast some of the largest steel and heavy engineering firms in the world.'[10] These included Vickers & Co. Ltd., Charles Cammell & Co. Ltd., John Brown, and Firths. There was also growth in the size of firms in the light trades, as with the large cutlery companies already cited as examples above. However, despite the development of large-scale industry, Lewis found:

> The structural features of Sheffield's iron and steel sector in this period would however suggest the retention of a thick undergrowth of small-scale and medium firms which together accounted for 85.9 per cent and 84.3 per cent of the total population of firms in 1880 and 1901 respectively.[11]

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6 Lewis, M. J. 'The Growth and Development of Sheffield's Industrial Structure, 1880-1930', unpublished Ph.D. thesis (Sheffield City Polytechnic 1989) [hereafter Lewis, Sheffield's Industrial Structure ...], p.34.

7 *ibid.*

8 *ibid.*, pp.39-41.

9 Pollard, *History of Labour* ..., p.162.

10 Lewis, Sheffield's Industrial Structure ..., p.28.

11 *ibid.*, p.43.

Moreover, Mathias has pointed out that:

> At the end of the century, and even in the mid-twentieth century, the small firm prospered among the giants more easily in Sheffield and Birmingham trades than almost anywhere else.[12]

Therefore, although the estimates in Table 6.1, showing a continuing dominance of small scale industry, may be flawed/overstated due to the method of calculation used, it appears that the majority of manufacturing industry operated on such a scale even in 1881. By 1885 a very complex industrial structure had developed in the Sheffield region, whereby small-scale firms which required only low levels of capital investment, existed in considerable numbers alongside a relatively few large joint stock concerns, mainly in heavy industries, which required large capital investments.

An interesting exercise is to compare the results from the Sheffield metal industries with those for Great Britain as a whole, and also other industries in different regions, in order to ascertain the 'typicality' of manufacturing in Sheffield. Clapham has provided data for the metal working industries of Great Britain in 1870-1 and these are shown in Table 6.4.

The data were taken from the 1871 Census and the results clearly show the large-scale nature of firms involved in heavy industry and the small-scale character of those in the light trades. Of the results in the Table 6.4, Clapham commented:

> The last three groups illustrate the Sheffield, Birmingham, and Black Country trades, with a rare factory to swell the average and a host of small workshops, or factories by definition only - i.e. small power-using, probably power-hiring, businesses - to keep it down. The figures must exaggerate the size of the average unit somewhat, because

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12 Mathias, *First Industrial Nation ...*, p.271.

> inspectors who seldom missed a factory no doubt failed to learn about many workshops.[13]

Thus, in 1871 it appears that small-scale firms dominated Great Britain's light metal trades. Even in engineering size by employment seems relatively low and, as Clapham stated, implies 'that the little country machine shops are cancelling out the great firms of the industrial area.'[14] However, he also points out that 'as the Lancashire average (80) is below the national average, the main cause is evidently the existence of many small specialised shops in the industrial areas themselves.'[15] Therefore, the evidence presented here does not show the dominance nationally of a large-scale factory system of production in the metal industries, but rather a mixture in the scale on which manufacturing was undertaken, and also a broad range of products being created.

Table 6.4: Metal-working industries of Great Britain, 1870-1

	No of works	No of work people	Average
All metal manufacturers	18,000	622,000	34.5
Iron making	761	166,700	219.0
Iron ship-building	78	44,500	570.5
Manufacture of machinery	1,933	163,600	85.0
Nails and rivets	1,604	13,200	8.0
Cutlery, files, saws, tools	1,143	24,600	21.5
Miscellaneous articles of metal	7,900	75,400	9.5

Source: Clapham, J., *An Economic History of Modern Britain: Free Trade and Steel, 1850-1886* , (Cambridge 1963), p.117.

The manufacturing trades of Birmingham correspond most closely with those undertaken in Sheffield, as mentioned above by Clapham. Mathias

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13 Clapham, J. *An Economic History of Modern Britain: Free Trade and Steel, 1850-1886* (Cambridge 1963) [hereafter Clapham, *Economic History: Free Trade and Steel ...*], p.117.

14 *ibid.*

15 *ibid.*

pointed out that in Birmingham, from the 1860s onwards 'as older trades and some processes were absorbed into massive production, small businesses expanded into new lines'. Crouzet commented that the secondary metal trades in and around Birmingham:

> remained the domain of the small firm, but the introduction of automatic machines, often of American origin, after 1890, squeezed out many independent craftsmen. None the less, most firms remained quite small. [my emphasis]

What of other regions with different industrial bases? Was large-scale factory production more important in other industrial sectors? Having already referred to Lancashire when discussing Clapham's data, an examination of the size and structure of cotton firms in this county provides a comparison with Sheffield's industry.[16] The Manchester cotton industry and the development of the large-scale production in this area was once seen as the prime example of the dominance of the factory system in a sector of British industry. However, in his examination of the English cotton industry between 1815 and 1896, Farnie has concluded that 'The representative unit of enterprise in the cotton industry was small rather than the large firm'.[17] He continued:

> The seductive but misleading belief that large factories were typical of the industry stemmed from the obvious contrast between workshop and mill, from the impressions of the visitors to the large but unrepresentative mills of Manchester [and] from the Victorian disposition to reify and magnify the power of 'capital'.[18]

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16 The dates referred to when considering the measurement of cotton firm size in Lancashire are those found in the available literature and do not always correspond with the period being examined in relation to Sheffield's trades. However, the work consulted is the most informative available concerning the size of manufacturing firms and was considered to provide some valid comparisons.

17 Farnie, D. A., *The English Cotton Industry and the World Market, 1815-1896* (Oxford 1979) [hereafter Farnie, *English Cotton ...*], p.209.

18 *ibid.*

Estimates derived by Clapham, Chapman, Gatrell and Farnie[19] all show that cotton mills in the mid- to late-nineteenth century tended to employ an average of 100 to 200 people, with the average for Manchester tending to be higher than elsewhere. Even in Manchester, the giant cotton factories appear to have been surrounded by a multiplicity of small and medium sized firms. Indeed Lloyd-Jones and Le Roux argue (but for 1841) that the 'representative cotton firm was the medium-sized firm' and emphasise the need to focus more attention on this scale of operation when discussing the Lancashire cotton industry.[20] Therefore, as found here with regard to Sheffield's metal industries, a mixed industrial structure also appears to have existed in the cotton industry, not just in Manchester but in Lancashire as a whole.

Having examined the changing nature of manufacturing industry in the Sheffield region between 1850 and 1885 and drawn some comparisons with other industries, it is necessary to assess the methods by which the arising demand from Sheffield's industry was met. Such funds were required for the expansion of operations and/or the adoption of new technology or, conversely, for the survival during cyclical trade slumps. This thesis has examined in detail two methods by which firms acquired finance, namely borrowing from a local bank and the adoption of limited liability to issue shares.

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19 Clapham, *Economic History: Free Trade and Steel* ..., p. 117; Chapman, S. *The Cotton Industry in the Industrial Revolution* (1987), pp.26, 29, 32; Gatrell, 'Labour, power and the size of the firms in Lancashire cotton in the second quarter of the nineteenth century', *Economic History Review*, Second Series, XXX(1), (1977), pp.98, 125, 127; Farnie, *English Cotton* ..., pp.214-215.

20 Lloyd-Jones, R. and Le Roux, A. A., 'The Size of firms in the Cotton Industry: Manchester, 1814-1841', *Economic History Review*, Second Series, Vol.XXXIII, No.1, (February, 1980), pp. 72-82.

In Chapter 3 it was argued that, although the two local banks examined (the Sheffield Union Banking Company and the Sheffield & Hallamshire Bank) were by no means investment banks, they provided some significant degree of support to local manufacturing industry. Credit was provided through loans, overdrafts and discounting bills of exchange. Advances were usually made on a short or medium-term basis, although longer-term credit was also *provided by the continued* renewals of short-term overdrafts. The resulting provision of finance was not substantial *but was of importance for local* industry, especially when considering that overdrafts provided by the banks could often mean the difference between the success and failure of a firm. Indeed, when examining individual company case studies in Chapter 5, Yorkshire Engine provides a vivid illustration of one company's reliance for survival upon their bankers, in this case the Sheffield & Rotherham Bank. Therefore, although financial provision extended by the local Sheffield banks examined here probably did not occur on the same scale as their counter-parts in countries such as Germany,[21] such lending should not be underestimated.

Nineteenth century banks have been widely criticised by both contemporaries and historians for their reluctance to provide sufficient medium and long-term funds to domestic industry.[22] Yet from this study, it can be seen that far from withholding finance to local manufacturing industry, Sheffield banks provided a significant volume to local firms even, in the case of the Sheffield Union, to the detriment of the bank itself. In many instances both the Sheffield Union and the Sheffield & Hallamshire were exceedingly accommodating to their manufacturing customers. Moreover, this thesis

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21 Cottrell, P. L. *Industrial Finance, 1830-1914: the finance and organisation of English manufacturing industry* (1979) [hereafter Cottrell, *Industrial Finance ...*], pp.236-244.

22 Pressnell, L. S. *Country Banking in the Industrial Revolution* (Oxford, 1956) and a review of critical contemporary opinion is given in Cottrell, *Industrial Finance ...*, pp.236-241.

only contains the analysis of loans and overdrafts extended by two Sheffield banks. (It was not possible, with the primary material available, to calculate the discounting of bills of exchange.) Therefore, the results in Chapter 3 are, in fact, an underestimation of the amount actually advanced by the banks to local industry, the discounting of bills forming an further important source of credit for companies. Furthermore, strong links between manufacturing industry and the banks has been clearly illustrated: interlocking relationships and directorships existed between bank directors and local manufacturing concerns.

From the demand side of the equation, it is important to consider the scale of manufacturing industry, a factor crucial for the volume of industrial lending undertaken by the banks. It has been argued above that, even by 1885, the scale of Sheffield's industry was predominantly small. This corresponds with the evidence that has shown that the relatively small, local banks were usually able to cope with the demands for funds from local businesses - the local banks examined being able to meet such small- and medium-scale requests. Problems in such a financial system only arose when substantial lending to very large manufacturing concerns ultimately placed the banks in a dangerous position, as occurred with the Sheffield Union Bank and Naylor, Vickers & Co. and the Albion Steel & Wire Co. Therefore, for the majority of the period under study, the system of industrial lending by local banks appears to have functioned effectively and beneficially for both parties involved. The system was threatened, however, when the demands of a large-scale firm placed too great a strain on a bank's financial resources, a circumstance that did not just occur towards the end of the period, with the growth in size of certain iron and steel firms, but also took place in the 1860s and 1870s - for example, the Sheffield Union and its relationship with Naylor Vickers and Albion Steel & Wire.

The other main form of industrial finance analysed here has been the adoption of limited liability by companies in the Sheffield region. It was found that relatively few companies in the region adopted limited liability and that those which did were predominately large-scale iron, steel, coal and engineering companies. Consideration was also given as to whether such joint stock concerns actually made public calls for capital. It has been argued that even large limited liability concerns were, in fact, run like 'partnerships' and/or family firms, such a phenomenon being termed 'private' limited liability.[23] Indeed, the evidence from the five case studies in Chapter 5 confirms that the 'large' limited firms examined were run on such a basis and the adoption of limited status did not significantly alter their managements. Some limited companies actually stated their aim of remaining a privately run concern with no intention of relinquishing control of the company by offering shares to the general public, as, for example, Yorkshire Engine.

One result of the existence of 'private' limited companies was the dominance in both their management and shareholders of individuals from the local area. Indeed, the shareholders in the 90 'Sheffield' companies examined were predominantly from the locality and many were probably known to the company directors. It is likely that a personal network of family and friends existed, so that individuals purchased shares in companies with which they had 'connections'. Moreover, the local nature of shareholdings in the companies actually increased over the period examined. This trend was influenced by the existence of a trio of company promoters, all accountants, two from Sheffield and one from Manchester. The connections of such men proved crucial for the uptake of shares in the conversions in which they were

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23 Payne, Peter, 'The Emergence of Large-Scale Company In Great Britain', *Economic History Review*, vol.XX ,no.3 (1967); Lloyd-Jones, 'Innovation Structure and the Long Wave: the British Economy 1873-1914', *Journal of European Economic History*, vol.XVI, no.2, p. 332.

involved. This can be illustrated by the Sheffield companies in the 1860s of Manchester promoter, David Chadwick, in which consequently, there was an influx of funds from the Manchester region to Sheffield. Conversely, the two Sheffield promoters, John Unwin Wing and Alfred Allot, undertook their promotions in the 1870s and the geographical origin of shareholdings consequently became increasingly localised. Some limited companies in the Sheffield region were quoted on the London Stock Exchange, the majority during the 1874-79 depression, but their shares continued to be mainly dealt in at a local level. The social origins of the shareholders in all 90 companies was predominately bourgeois, comprising mainly manufacturers and merchants engaged in local industries and also those engaged in the professions.

From the demand side of the provision of industrial finance, the examination of five specific companies revealed four main recourses for funds: loans or an overdraft from the company's bankers; loans from company directors; the 'plough-back' of company profits; and the issuing of shares. The companies usually took more than one of these options. In the cases where existing concerns converted to limited liability, finance was required in order to fund expansion and diversification, the adoption of new technology and also to survive depression. In the case of Yorkshire Engine, funds were necessary in order to establish a completely new concern. When the companies in question chose to request accommodation from their bankers, there was no arising evidence of banks refusing it. Thus, from this admitted restricted study, it could be suggested that the extent of finance provided by banks to manufacturing concerns was largely the product of demands made by the companies, rather than an unwillingness displayed by the banks. The banks were only hesitant to lend when accommodation was substantial and long outstanding.

In conclusion, the work undertaken for the thesis has revealed the continuous very localised nature of manufacturing industry, banks, and the provision of finance to industrial concerns in the Sheffield region. Indeed, the provincial financial system mirrored the local industrial system of the city and its economic region in terms of scale and organisation. The thesis has unveiled a local financial network which appears, along with the plough-back of profits, to have provided local industry with adequate funds necessary to expand, no evidence having been found to suggest that the growth of firms' was restricted by an inability to obtain finance. Thus, the iron, steel, engineering, secondary metal and coal companies, that were the mainstay of Sheffield's manufacturing capacity, appear to have been able to cope with the increase in demand for their products between 1850 and 1885 and the resulting need for changes in technology and scales of production. Banks, company profits, the issuing of shares on a local capital market, and the wealth of individual manufacturers all played a role in this achievement. However, also important was the continuing existence of small-scale firms which were still able to survive and compete successfully even in 1885 (especially in the light trades) and which required low levels of capital investment. Such firms constituted the majority of operations in the Sheffield region, no less in 1885, and consequently the overall demand for finance remained relatively low due to the minimal demands they placed upon the system.

However, the provincial financial market did not always operate smoothly throughout this period. From a banking point of view, the system came under strain when an increase in the scale of certain firms resulted in local banks being unable to supply the needs of such large-scale operations. From the viewpoint of the Sheffield's manufacturers, of all sizes, the most serious financial difficulties that beset them occurred with the depression between 1874 and 1879 and local banks appear to have played a significant role in pro-

viding funds allowing companies to survive this difficult period. This was a prolonged and deep slump, the severity of which was made even greater by the previous cyclical peak of the early 1870s. The provision of finance to companies also often failed to operate successfully with the establishment of new businesses. This also had much to do with the movement of the trade cycle - new ventures were often started during boom years which were then shortly followed by a slump and a consequent 'drying up' of both available funds and orders. Yorkshire Engine was a prime example of this type of failure in the local financial market, but coupled with failures in management and unfounded expectations.

This thesis has examined the structure and finance of manufacturing industry in the Sheffield region and found that, even by 1885, numerous small, traditional craft-based trades existed located in a multitude of workshops. The production undertaken within these facilities was highly specialised and consequently minute subdivisions existed among the local trades. A few large-scale steel and iron manufacturing firms had developed over the mid-century, some of which also produced files, saws, tools etc., or undertook other forms of forward integration into steel processing, rail production, engineering etc. Under these conditions a complex division of operations occurred and only within very few firms was there fully integrated production. This combination of business types explains, to a large degree, the character of the local financial market which changed only little over the mid-century. Furthermore, the examination of manufacturing in Sheffield, *and comparisons* drawn with other industrial centres, indicates that national trends were, in fact, an amalgam of regional *developments, both in terms of* industrial organisation and financial provision. Whereas Sheffield may have appeared as an early centre of joint-stock capitalism to contemporary financial commentators, the city's trades, like those in Birmingham, were still largely

workshoped based for which credit and circulatory capital was more important.

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