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**ATTITUDES TO INVESTMENT RISK AMONGST WEST MIDLAND CANAL AND
RAILWAY COMPANY INVESTORS, 1760 - 1850**

by

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**A thesis submitted in fulfilment of the requirements for the degree of Doctor
of Philosophy in History**

University of Warwick, Department of History

October 2001

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DECLARATION

This thesis is the author's own work and has not been submitted for a degree at another university. No collaborative material has been included.

ABSTRACT

Attitudes to environmental and investment risk are examined to determine whether they were a defining characteristic of middle-class behaviour in the period 1760 to 1850. Approximately 6,000 investors in eleven canal companies and seven railway companies were investigated to determine whether evaluation and mitigation of investment risk is determined by socio-economic background and gender. Investment risk was defined as inadequate access to, and imperfect interpretation of, information. The effectiveness of information transfer through public and private spheres was examined and the effect of differential access to these information conduits, as a consequence of gender or socio-economic background, was investigated. Investors' response to the risk environment of early death, war and unpredictable economic cycles was examined. Each canal company and the group of railway companies was ranked according to the level of investment risk during both the construction and operating period, using a mix of quantitative and qualitative tests. The risk preferences of 'economic' and 'financial' investors were compared. The strategies used by each group of investor to mitigate risk were examined.

The study provides new evidence of the effective transmission of national market sentiment by the 1770s, but reveals that the physical market in canal company shares remained local and continued its separate existence long after the institutionalised national market for railway shares was established. Perceptible differences in the risk assessment and risk mitigation strategies of different groups of investors were observed. This was attributed to differential access to information, which in turn was attributed to gender and social, political and religious affiliation. The study provides evidence that although differences in behaviour were observed amongst groups within the sample population, it shared common investment strategies and that attitudes to risk and risk mitigation should be considered as valid criteria for class differentiation.

CHAPTER 1: INTRODUCTION AND SUMMARY

1.1 Research Objectives and Context

Risk assessment and the strategies used to mitigate risk are fundamental to the understanding of the development of a financially sophisticated middle-class elite in the mid-eighteenth to mid-nineteenth centuries. During this period the middle class became increasingly associated with a largely urban lifestyle which was differentiated from that of the landed and the artisan and labouring classes in terms of economic and cultural norms.¹ Dependence on income from business or investments left the middling sort more exposed than those with landed wealth to environmental and investment risk.² This study is based on the premise that the skills involved in risk evaluation and attitudes to risk-taking are defining characteristics of society.

Risk is a measure of the uncertainty arising from imperfect information or differential access to and interpretation of information.³ This research examines the availability and quality of financial information and the importance of gender and socio-economic status on an investor's ability to access and interpret this information. The study reviews a wide range of social, cultural and economic issues, using data from a large, homogenous population. Whereas much previous research has been based on smaller, heterogeneous populations, this study draws conclusions from the analysis of a population of nearly 6,000 individuals. This population was selected from investors in canal and railway companies and joint stock banks in the West Midlands between 1760 and 1850. The sample is broadly representative of the financially sophisticated, increasingly wealthy and dynamic members of the middle classes, who came to dominate commercial and economic life during this period.⁴

Canal and railway company investors were selected as the basis for this study for two reasons. Firstly, canal companies were amongst the first truly private sector enterprises to attract widespread investment 'by persons locally unconnected and, therefore, unable to derive collateral advantages'.⁵ These were commercially disinterested rentiers or 'financial' investors. The early canals in particular also attracted investment from 'economic' investors who derived additional commercial benefits from their investment, such as improved transportation for their products or lower freight

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costs.⁶ Railway promotions followed the same corporate structure as canal companies but sought a wider constituency of investors. The study of individual canal and railway companies, which operated exclusively or substantially in the West Midlands over a period of ninety years, revealed fundamental differences in these two constituencies and sheds new light on the development of a national capital market. Secondly, canal and railway projects were based on new technology and required financial and legal innovation. Investors participating in these new opportunities needed new skills to assess and mitigate new types of risk. These skills included the ability to access, evaluate and synthesise information about the project, the local environment and the wider national economy.

The revolution in transportation infrastructure, which took place in the eighteenth and nineteenth centuries, was entirely driven by the private sector. The serendipitous conjunction of political stability, growing private affluence, commercial and industrial development, technological change and the emergence of a national capital market contributed to, and was sustained by, the rapid growth of canals and later, railways.⁷ The first canals were developed by promoters, such as the Duke of Bridgewater and Josiah Wedgwood, who were intent on sweeping aside vested interests in order to achieve the economic benefits of lower transport costs for their businesses.⁸ The amount of capital required for these projects necessitated promoters raising finance through the mechanism of joint stock companies, from a wider constituency of investors, who were often disinterested rentiers. These 'financial' and 'economic' investors had different objectives and risk thresholds, although certainly many investors in the earlier canals may have combined both motivations.⁹ Businessmen who wished to use canals to transport their goods sought low tolls and even attempted to limit the level of dividends paid to shareholders. Financial investors sought higher dividends and supported higher tolls and successfully fought moves to restrict their income.¹⁰ The process was regulated by Parliament but the business of obtaining approval was dogged by vested interests, such as landowners, or the promoters of rival schemes.¹¹ The resulting canal system was a product of haphazard and piecemeal development by private commercial interests, as can be seen from the Schematic Plan of Canals and

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Railways, overleaf. There was no unified government planning, as there was in some European countries.¹² As a consequence, the resulting system contained duplications and inefficiencies. Investors in the early canals had to absorb a considerable amount of investment risk. Construction costs were generally substantially underestimated, and the length of the construction period meant economic conditions were often less favourable when the companies needed to raise additional capital.¹³ Nevertheless, the success of some of the early canals led to speculation, as financial investors gambled on the potential profits of new schemes. This reached a climax in the years 1792 to 1793. Canals initiated at the beginning of this period of 'canal mania' were generally 'those, which had a solid base in the increasing prosperity of the times'.¹⁴ The financial crisis of 1793, at the outbreak of the French Revolutionary war, put an end to the boom in canal shares. Nevertheless, canal building continued, albeit on a less frenetic scale. The successful companies raised considerable amounts of capital from a broad constituency of shareholders. By 1790, £2 to 3 million had been invested, and between 1788 and 1796 Parliament approved the raising of a further £10 million. It is estimated that by the 1830s about £20 million had been invested in canals.¹⁵ Investment in improvements and extensions continued long after the development of railways. At first railways were seen as feeders to the waterways, but soon canals came under increasing competition. Canal companies responded by reducing tolls, but many canals continued to exist and trade profitably until the 1840s.¹⁶

The first railway to compete directly with canals opened in 1830 with the completion of the Liverpool & Manchester Railway. The development of the railway system was also undertaken by the private sector and, as with canals, the process was characterised by speculation and anomalies caused by vested interests, duplication and redundancy. Nevertheless, railway investment, probably from the outset, represented a lower risk than in the equivalent stage of canal development, since more consistent and better quality information about the companies was available. The capital market was more liquid and more accessible to investors and by 1842, seventy railway companies comprised the most highly capitalised group of joint stock companies on the London market, with a combined value of £57.4 million.¹⁷ The speculative mania in railway

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shares of 1844 owed as much to the success of established lines as to low interest rates and favourable economic conditions.¹⁸ Even in the aftermath of the mania, contemporary opinion saw value in investing in railway shares.¹⁹

The West Midlands was selected as the basis of this study for its distinctive cultural and economic coherence rather than on its well-defined geographical characteristics. The catchment area of *Birmingham Gazette* was considered to be a more relevant criterion for the study area than a geographical construct, such as the catchment area of the River Severn. The *Birmingham Gazette* was 'the channel for the association between the merchants and manufacturers of Birmingham and the landowners of the surrounding counties'.²⁰ By 1760, the paper's circulation extended to Shrewsbury in Shropshire to the Severn at Worcester, to the Black Country, North Staffordshire, into the Cotswolds as far as Stratford and the Vale of Evesham, and even as far as London. This extensive cultural hegemony reflected the underlying economic links between the core areas of the 'West Midlands', namely the counties of Warwickshire, Worcestershire, Shropshire and Staffordshire, and its wider markets in England and Wales. Birmingham was a hub of the canal system, as described in Appendix VI, and early in the nineteenth century was linked to the major ports of Manchester and Liverpool, Bristol and London by trunk routes. The canals linking Birmingham to its hinterland and to wider markets were actively promoted and financed by investors from the local area. Although Birmingham itself never became the hub of the rail network to the same extent, the London & Birmingham and the Grand Junction Railways were amongst the first to obtain parliamentary approval in the early 1830s.

The West Midlands industrial area, as defined by Court, was an area of approximately 200 square miles and comprised parts of South Staffordshire, North Warwickshire and East Worcestershire. This area was connected to a larger West Midlands region, which embraced the coalfields of Shropshire, South Staffordshire and Warwickshire, the engineering industries, iron works and diverse manufacturing and service industries in the counties of Warwickshire, Shropshire, Staffordshire and Worcestershire.²¹ The economy of the West Midlands in the eighteenth and nineteenth centuries was sufficiently diverse to be broadly representative of the country as a whole

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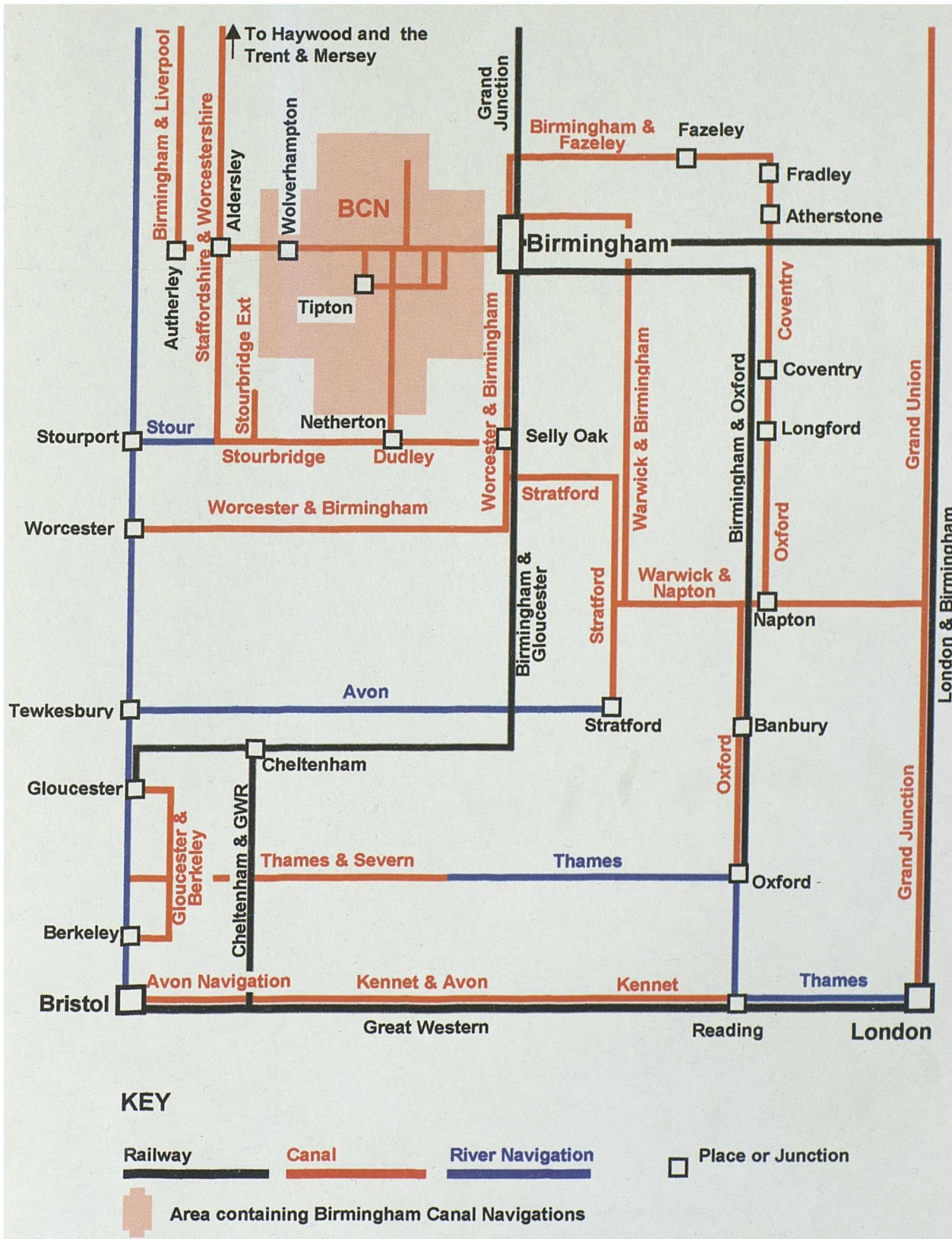
in its reaction to economic cycles and the effects of war. The present study used evidence from the West Midlands area to investigate the transition from provincial capital market to part of a national market. Earlier research is divided on when the national capital market was established.²² The present study contributes evidence to this debate using the correlation of the yield on a West Midland canal company stock with government stock, traded in London.

Apart from the evidence of the wide circulation of the *Birmingham Gazette* there does not appear to have been a strong sense of a West Midlands regional identity in the eighteenth century. In fact there is considerable evidence of competition between different towns and interests in the development of rival transportation schemes, as discussed in Appendix VI. Nevertheless, it was the development of canals and railways, which helped to define this area of the West Midlands, centred on Birmingham. The eighteenth and nineteenth centuries were a period of intense urbanisation. The population of Birmingham increased from 10,000 in 1714 to 60,000 in 1801 and to over 230,000 in 1851.²³ This was partially the result migration from the surrounding agricultural areas as employment in agriculture was replaced by trade, manufacturing and commerce.²⁴

New professions and services developed to support the changing economic environment.²⁵ Over the ninety-year period of this study, the socio-economic backgrounds of investors became more diverse. Investors in West Midland's transportation companies were selected as a *prima facie* middle-class population. Earlier research has sought to define the middle class in terms of social, religious, political and economic criteria,²⁶ and Birmingham was the focus of a major study by Davidoff and Hall.²⁷ In the present study the effect of social, cultural, religious and political affiliation on access to information and investment behaviour is investigated and the use of the term 'financial investor' as a criteria to define class is examined.

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Map1: Schematic Plan of Canals and Railways in this Study



Source: Drawn from information from Bartholomew 1998 Road Atlas of Britain. Not to scale.

CHAPTER 1: INTRODUCTION AND SUMMARY

1.2 Risk Environment and Attitudes to Gambling

The underlying risk environment is fundamental to an investigation of investor behaviour. Improvements in environmental health, disease control and housing, together with increasing wealth in the population as a whole during the eighteenth century stimulated the search for the means to protect this newly gained prosperity.²⁸ New opportunities arose for the moderately wealthy to invest surplus money, and the money market and long-term government securities were regarded as relatively low-risk investments during this period.²⁹ Canal shares and later, in the mid-nineteenth century, railway shares, provided the growing class of financial investors with alternative, but arguably more risky investment opportunities. These new types of asset were more liquid and ultimately more profitable investments than land or mortgages. Changes in the risk environment affected the security and performance of specific investments and individual investors in different ways.

This study evaluates the effect of the main environmental risks of disease and early death, war and the adverse consequence of trade cycles on investor behaviour. Earlier research has examined the behaviour of entrepreneurs and businessmen in the light of general economic trends. Markham Lester, for example, attempted to correlate the incidence of bankruptcy with phases in the economic cycle. He failed to find statistically significant results, probably because business failure is the result of many different factors.³⁰ This study simplifies the indicators of risk assessment to a single invest/divest decision. The purchases and sales of stock in two canal companies were examined over fifty-one and sixty-six year periods, respectively. The propensity of investors to select high, moderate or low-risk canal and railway stocks was compared to the peaks and troughs of the economic cycle. The present study also used the same data to examine differences in the behaviour of investors in peace and wartime conditions. The study attempted to explain differences in the behaviour of investors on the basis of their socio-economic background, gender and age.

Whilst certain sectors of society sought to reduce their exposure to risk, gambling and financial speculation were widespread.³¹ Clark argues that these

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seemingly contradictory tendencies were 'different manifestations of the same basic aspiration for social security or financial advancement'.³² Other researchers suggest that aristocratic attitudes to gambling were an anathema to a middle class who espoused prudence and credit-worthiness as a defining set of values.³³ The sample population was examined for evidence of involvement in financial speculation, share trading and risk-seeking behaviour. However, the study was primarily structured as an investigation of the long-term investment strategies rather than short-term speculative behaviour.

1.3 Investment Risk

Investors in the canal and railway companies had to accept an inherently high level of risk, particularly in the early years of a company's existence. Investment risk can be regarded as the uncertainty of both the income and capital value of the asset acquired. Uncertainty arises from imperfect access to information. Certain investors may have access to more or better quality information than others and different investors may interpret this information in different ways. The present study quantifies the relative levels of risk in each of the eleven canal companies and seven railway companies.

Measures of relative risk have been developed in studies of twentieth-century stock markets,³⁴ and the present study attempted to apply these techniques to the evaluation of canal and railway company shares. Time series of share prices for both canal and railway companies were compiled from the *Course of the Exchange* for the period 1811 to 1846. The quality of the underlying data invalidated the exclusive use of quantitative measures for comparing the risk of the selected stocks, so a number of qualitative measures of risk were also used. Each stock, at different periods in the company's life cycle, was classified into high, moderate or low risk. This classification was used to assess whether risk-seeking or risk-averse behaviour amongst investors was determined by their age, gender or socio-economic status.

The speed, accuracy and accessibility of information flow, and the degree of conformity in how investors assess and act on information is a measure of market efficiency. Some earlier research suggests that the eighteenth-century capital market was inefficient.³⁵ Later work maintains that all the elements of a modern efficient market

CHAPTER 1: INTRODUCTION AND SUMMARY

were already present in the eighteenth century. However, this research was restricted to work on government and quasi-government securities.³⁶ Research on the correlation of economic trends between the building sector and the yields on government stocks produced more relevant evidence that regional capital markets were still segmented in the mid-eighteenth century.³⁷ The market for securities of private sector companies in the eighteenth and nineteenth centuries was smaller in volume and less sophisticated than the government stock market. The present study correlates fluctuations in the yield of government stock and the shares of one of the canal companies for the period 1768 to 1840. This is new evidence that suggests capital market integration was well established by 1770. The present study also compares the prices of canal shares recorded in the London stock market to the transfer prices of stock in the local market to test efficiency of information transfer.

1.4 Information Transfer

Most previous researchers suggest that the investing public in the eighteenth century had access to relatively good information on the general economy, commodity prices and trading conditions through public news media.³⁸ In the absence of consistent, independently audited published accounts, the dissemination of company-specific information was far less reliable.³⁹ Company promoters and officials had access to privileged information, which was denied to other classes of investors on the basis of gender or class. In the eighteenth and nineteenth centuries both company-specific and market-sentiment information was transmitted through two principal media, the press and word of mouth. The press included newspapers, more specialised publications, such as the *Course of the Exchange* or the *Railway Gazette*, and pamphlets, often written by brokers as thinly disguised advertisements for a particular type of investment.⁴⁰ Opportunities to pass information by word of mouth occurred in both public and private spheres. Male investors had access to information in reading or newsrooms, or in the course of philanthropic, social or political activities. Women did not have access to many of these fora and have been deemed to have relied upon the advice of male relatives or bankers or brokers.⁴¹ Probably one of the most reliable information conduits

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for all investors was through informal family networks, which were often further strengthened by religious affiliations.

This study attempts to evaluate the relative importance of different methods of information transfer. The most effective way of testing the effectiveness of the dissemination of information about the macro-economy was through correlation of the fluctuations in yield between stocks traded in the local market and government stocks, which comprised the national market. However, suitable information was only available for one canal company. Dissemination of information from specific companies to a wider investing public was examined through circumstantial evidence. For example, investors were recognised as being potential disseminators of company information if they were committee members or attended annual meetings of proprietors. The potential means of communicating this information was through personal contact. This was further examined by collecting a database of information on the membership of thirty-three social, political, religious and philanthropic institutions that existed in Birmingham between the years 1761 and 1842. In total 1,291, individuals, predominantly male, were identified; of whom 318 were members of more than one institution. These individuals were compared with the database of 5,913 canal and railway company investors. The socio-economic status and risk-taking propensity of those investors, who were highly connected through access to these public spheres of potential information transfer, was examined.

Access to information and the ability to evaluate it reduced uncertainty and hence risk. Strategies for mitigating residual risk were already well developed by the late eighteenth century.

1.5 Risk Mitigation

A number of risk mitigation strategies developed quite early: for example in the twelfth century sellers at medieval fairs made contracts promising future delivery of goods. Options were used in the Dutch tulip bulb bubble of the seventeenth century and by the late-eighteenth century brokers in America were trading put and call options on stocks.⁴² Two main strategies of risk mitigation were examined in the present study,

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namely portfolio management and life insurance. Although the theory of portfolio management was only articulated in studies of twentieth- and twenty-first-century investors, it appears to have been used by eighteenth- and nineteenth-century canal and railway company investors.⁴³ The life insurance market developed in the eighteenth century and its use was becoming widespread amongst the middle classes at the same time that these individuals were actively investing in canal and railway stocks.⁴⁴

In the present study, the propensity of canal investors to hold portfolios of stocks was compared with that of railway company investors. The number of canal investors holding multiple canal company shares was found to be significantly greater than the number of multiple railway company investors. The present study investigated whether these differences in behaviour were the consequence of the perception of different levels of risk between canal and railway companies.

These multiple investors were then examined to determine whether they were more likely than other investors in the sample population to hold portfolios of other assets, such as life insurance, government stocks or land. The policy registers of the London Life Assurance Company for the years 1823 to 1850 were examined to determine the level of usage of life insurance amongst the population of investors in the present study. Similarly, the Bank of England's registers of holders of 3 per cent Consols between the years 1817 and 1827 were checked for the presence of canal and railway investors. The canal and railway investors were also compared with the records of substantial landowners identified by Bateman.⁴⁵ Some earlier researchers suggest there is little evidence that wealthy middle-class businessmen invested substantially in land.⁴⁶ Thompson disputed this conclusion, although his research appears to be based on evidence of second-generation investment in landed estates.⁴⁷ Evidence of the mix of assets held by canal and railway investors was used to contribute to this debate. The case for regarding land as one of a spectrum of potential investments, ranging from government stocks to shares in joint stock companies, to life insurance and mortgages, each with different risk/return parameters was examined. Thompson concedes, however, that investment in land for economic reasons declined from the late-seventeenth century and during the period of the present study land was acquired for

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non-economic reasons.⁴⁸ The social and cultural imperatives, which moulded middle-class aspirations, also determined membership of different spheres of social interaction. The present study investigates the effects of differential access to information and whether this explains varying attitudes to risk amongst different socio-economic groups. Evaluation and mitigation of investment risk is determined by many different factors. The present study attempted to identify some of the most important social and cultural influences.

1.6 Social and Cultural Inferences

The sample population of canal and railway company investors was *prima facie* financially sophisticated and relatively wealthy. By self-selection, individuals without sufficient surplus wealth to invest in shares were excluded. Sample selection was intended to be independent of cultural, political, religious or gender bias. Inferences drawn from the investors' political, religious and social affiliations, their attitudes to risk and their strategies to preserve or enhance their lifestyle were used to inform the debate on the development of the middle class. Earlier research has sought to define the middle classes in terms of cultural, political or economic factors.⁴⁹ The Ricardian factors of production, namely land, labour and capital, have been used to differentiate sources of income in terms of class. Thus, rent, wages and profits have been attributed to a three-class social structure of landowners, labourers and capitalists.⁵⁰ Morris suggests that this differentiation fails to cope with the existence of groups who derived income from a variety of sources. He also questions the four mutually exclusive ideals of class behaviour suggested by Perkins, namely aristocratic paternalism, entrepreneurial middle-class competitiveness, working-class co-operation and professionalism.⁵¹ Neale proposed a model of nineteenth-century society, defined in terms of sources of income and attitudes to authority, based on five rather than three class. Although Neale appears to subscribe to the view that class-consciousness is defined by conflict he also suggests that social mobility occurs between his five classes through a 'middling class'.⁵² Hunt holds similar views on the existence of a distinct middling sort, comprising shopkeepers, manufacturers, better-off independent artisans, civil servant, professionals and lesser

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merchants.⁵³ The distinction between this group and Neale's middle class, which comprised industrial and commercial property owners, senior ranks of the armed forces and professionals⁵⁴ or Davidoff and Hall's separation of the higher and lower ranks of the middle class⁵⁵ could be challenged as counting angels on the head of a pin. The population used in the present study was selected on the basis of economic criteria defined by its common source of at least some of its income, namely that based on the employment of capital.

Nevertheless, the socio-economic background of the investors covered a wide spectrum of occupations and levels of wealth. Comparison of these groups with those identified by Colquhoun's occupational analysis of the population of Great Britain and Ireland in 1812, reveals the existence of a middle class comprising not only 'eminent' merchants, bankers and manufacturers but also more modest employers of capital such as shopkeepers and artisans and professionals.⁵⁶ The period of this study, 1760 to 1850, saw a rapid growth of these occupational groups. In 1812 nearly 46 per cent of the population of Great Britain and Ireland were from those socio-economic groups whose wealthier members made investments in canal and railway companies.

Middling sort or middle class, can these investors then be exemplars of a broad class identity based on common attitudes to wealth and investment? The definition of financial investor or rentier distinguishes this group from the labouring classes but does not, perhaps, adequately distinguish them from the landed aristocracy and the gentry. Stone and Stone suggest that class-consciousness did not solely depend on the acquisition of landed assets. They note the existence of an 'homogenized culture of gentility' where wealthy businessmen adopted the education and manners of the landed classes but retained their own preferences for investment in more liquid assets.⁵⁷

Other researchers suggest that the middle class adopted distinct social and cultural behaviour, although Wahrman challenges the view that domestic ideology was confined to the middle class.⁵⁸ Religious affiliation has been suggested as a defining characteristic of middle-class respectability.⁵⁹ Research has tended to concentrate on the importance of dissent amongst the industrial and commercial business community.⁶⁰ However Evangelical Anglicanism was also an important constituency amongst the

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wealthy middle class.⁶¹ Seed notes that although 'membership of an urban congregation was the insignia of middle-class status', the secular public sphere of exclusive voluntary associations were more important badge of class.⁶² The present study investigates the religious affiliations of the sample population and attempts to link membership of particular religious congregations to membership of voluntary societies and to political activities.

Religious sectarianism has been seen as the precursor of political division.⁶³ An Anglican/Tory and Nonconformist/Whig divide has been suggested as a factor in the differentiation of the landed and middle classes. However, Morris notes that the middle class, prior to 1832 tended to operate through extra-Parliamentary pressure groups on single issues.⁶⁴ Although the middle-class appear to have made common cause with working-class Radicals in the pursuit of Reform, this was only in towns such as Birmingham, where a system of small workshops rather than factories blurred the divisions of masters and men.⁶⁵ Elsewhere, in the towns of Lancashire and the West Riding, Reform was seen as a measure which would only benefit middle-class employers.

The present study investigated the political affiliations of investors and compared their voting record to that of the population as a whole for elections in the North Warwickshire constituency between 1774 and 1841. There is evidence that during times of economic hardship in the 1830s these middle-class investors joined with the working-class agitators of Birmingham to press for Radical political reform. On the other hand, analysis of religious and political affiliation amongst the investor group revealed evidence that with increasing wealth some individuals with dissenting backgrounds espoused Anglicanism and establishment political views.

The selection of the study population and the definition of a middle-class elite of financial investors was gender neutral. The present study assesses the importance of female rentiers in the capital market. Earlier research on canal and railway investors has noted the presence of female investors, but not attempted to investigate their motivation and processes of risk assessment.⁶⁶ This study examines the extent to which attitudes to investment risk were determined by gender. Davidoff and Hall characterise female

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investment as passive and suggest that women were often only entitled to a life interest in the income from assets.⁶⁷ This appears to have been the case for married women, who were legally prevented from owning shares, except through a trust.⁶⁸ Spinsters and widows were able to own and manage their investments. Thomas Mortimer expressed a jaundiced contemporary view of female investors in 1761, blaming the instability of the stock market on their use of brokers.⁶⁹ Although the numbers of female investors increased in the nineteenth century, earlier research suggests that economically and socially, they retreated into the private sphere of activity.⁷⁰ Whereas women from the aristocracy had frequented a coffee house in the City of London and openly participated in the market for South Sea Company shares, after the collapse of the Bubble women lost this freedom.⁷¹ This study tests these assumptions by observing the behaviour of over 800 female investors (14 per cent of the total investors in the study) over a ninety-year period. For the first time, a large population of female investors was selected and their behaviour examined on the same basis as their male counterparts.

The present research addresses a wide range of issues, many of which have been explored previously using small, independent populations. Research in the 1970s examined the geographical location and socio-economic classification of canal and railway company investors, but was largely confined to the analysis of initial subscribers.⁷² The present research extends this analysis throughout the life cycle of these companies, using a database of 6,528 separate shareholdings made by 5,913 individual investors. For the first time, the behaviour of individual investors has been followed, not only in both the canal and railway share market, but also in the market of other securities and assets. The following Chapters analyse information from this large and homogenous population, allowing for the first time conclusions to be drawn on the behaviour of a comprehensive cross section of eighteenth and nineteenth century members of a middle-class elite.

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2.1 Introduction

The substance of the present study of investor behaviour and attitudes to risk is derived from the analysis of 6,528 separate shareholdings made by 5,913 shareholders in eleven canal and seven railway companies. These companies operated either wholly or substantially in the West Midlands between 1766 and 1850. Canal and railway companies were selected as the potential source of a large, homogeneous population of financially sophisticated individuals with at least some surplus wealth to invest. Following the collapse of the South Sea bubble, Parliament took measures to prevent the formation of companies without its approval.¹ The quickening of interest in the development of inland waterways in the 1760s led to a reappraisal of the joint stock company as the preferred vehicle for raising the large amounts of finance required for the construction of canals.² Ward estimates that the total capital raised by 'First Generation' canals, that is those completed in the period 1755 to 1780, was £2,149,000 and that of the 'Second Generation' of commercial canals, completed between 1780 to 1815, was £13,049,000.³ The obvious success of the canal companies in raising finance from a broad constituency of investors, and the popularity of their shares, ensured that the same corporate model was selected in the late 1820s to finance the first railways.

Canal and railway companies in the West Midlands were selected as the basis of the present study in order to provide access to a large, geographically and functionally homogenous population. The eleven canal and seven railway companies used in the present study were the total number of companies operating in the West Midlands for which investor information was available. Investor behaviour was analysed over a period of nearly ninety years. This Chapter outlines the data sources, the sample selection criteria and the classification methodology used to construct a database of investors in canal and railway companies, the Canal and Railway Database (CARD). In addition, data were collected on shareholders in two joint stock banks established in the West Midlands in the 1830s. Information on 618 shareholdings in these banks by 597 individual investors was collected on a separate database, the Bank Database (BARD). In order to examine potential methods of information transfer and risk assessment

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amongst these investors in the canal, railway and bank companies, two further databases were constructed. The first of these subsidiary databases comprised 1,291 entries in respect to 973 individuals, who were members of 33 philanthropic, religious, political or social institutions based in Birmingham over the period 1761 to 1849, the Birmingham Database. The second subsidiary database contained information on monthly share prices and annual dividends of eleven canal companies and twelve railway companies operating in the West Midlands between 1811 and 1846. The methodology used to collect and analyse the share price data is described in detail in Chapter 4.5.2. The collection and analysis of data on investors in the canal, railway and bank companies are outlined below and described in detail in Appendix I. The methodology used to address specific research issues is described in the relevant chapters.

2.1.1 Canal Companies

Canal companies operating in the West Midlands in the period from 1766 to 1850⁴ were identified using contemporary sources such as Phillips⁵ and lists prepared by other researchers such as Hadfield.⁶ Eleven of these companies had suitable shareholder records in the form of shareholder registers, share transfer registers or minutes of annual general meetings of proprietors. These companies are listed in Table 2.1. The development of the canal system is outlined in Appendix VI.

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Table 2.1: Canal Companies Included in the CARD Database

	Code	Date Authorised	Original Share Capital in £s	Final Share Capital in £s
Birmingham Canal Navigations	BCN	1768	70,000	112,000
Birmingham & Liverpool Junction	BLC	1826	400,000	800,000
Coventry	CCC	1768	50,000	87,500
Dudley	DUD	1776	7,000	206,325
Grand Junction	GJC	1793	500,000	1,800,000
Stourbridge Navigation	SN	1776	30,000	43,000
Stourbridge Extension	SEC	1837	na.	49,000
Warwick & Birmingham	WCB	1793	69,300	160,000
Warwick & Napton	WBRC	1794	79,500	79,500
Worcester & Birmingham	WOBC	1791	180,000	610,000
Gloucester & Berkley	GBC	1793	112,000	440,000
Total			1,497,800	4,387,325

Source: Original share capital from Ward.⁷ Final share capital from Course of the Exchange, Date Authorised from Hadfield.⁸

Hadfield estimates that the total amount of capital raised by canal companies operating in the West Midlands amounted to £4,497,000.⁹ As can be seen from Table 2.1, the capital of the eleven companies in the present study amounted to £4,387,000, or 98 per cent of the total capital raised. However, it was not possible to identify all of the investors holding this capital. On average, shareholders were identified for only 50 per cent of the share capital of the eleven canal companies. Nevertheless, the number of canal investors included in this study was sufficient to provide the basis for a substantive analysis of their social and economic characteristics.

2.1.2 Railway Companies

Since railways often took the form of trunk routes serving an extended geographical area, the railway companies included in the present study were selected on the basis that they operated substantially within the West Midlands and that at least one of their termini was within this area. The Great Western Railway Company was included since it acquired a number of railways operating in the area during the period under review, as discussed in Appendix VI. The seven railway companies included in this study are given in Table 2.2.

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Table 2.2: Railway Companies Included in CARD Database

	Code	Authorised Share Capital in £s	Total Shares in Issue in 1849
Birmingham & Gloucester	BGR	950,000	9,500
Birmingham & Oxford	BOR	1,000,000	50,000
Cheltenham and Great Western	CGWR	750,000	7,500
Grand Junction	GJR	4,823,797	66,943
Great Western	GWR	2,500,000	25,000
Manchester & Birmingham	MBR	2,100,000	30,000
Oxford, Worcester & Wolverhampton	OWR	1,500,000	30,000
Total		13,623,797	218,943

Source: Authorised share capital from Course of the Exchange; Total shares issued in 1849 from Scrivenor.¹⁰

The seven companies listed in Table 2.2 above were the only companies in the West Midlands for which shareholder information was available. They account for 68 per cent of the £21.6 million of share capital authorised by Act of Parliament, listed in Table 2 in Appendix I. It was possible to identify the socio-economic groups of investors who held 56 per cent of the total share capital of the seven railway companies included in Table 2.2. This is a sufficiently large population of railway investors on which to base the analysis in the present study. The potential bias in the identification of investors and its effect on the analysis are discussed below.

2.1.3 Joint Stock Banks

Data were collected on the shareholders in two joint stock banks, which were established in the West Midlands in the 1830s. No attempt was made to produce a comprehensive database of investors in all the West Midland banks. As set out in Table 2.3, a total of 618 investors, holding £430,000 of the issued capital in the Coventry Union Bank and Stourbridge & Kidderminster Bank, were identified.

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Table 2.3: Investors Included in the BARD Database

	Code	Date	Issued Share Capital	BARD Database Investors Holdings		
				Number of Shares	Percentage of Total	No. of Investors
Coventry Union Bank	CUB	1836	200,000	200,000	100	262
Stourbridge & Kidderminster Bank	SKB	1834	250,000	230,375	92	356
Total			450,000	430,375	96	618

Source: Coventry Union Bank data from Deed of Settlement and List of Shareholders 1836,¹¹ Stourbridge & Kidderminster Bank data from Deed of Settlement.¹²

2.2 Data Sources

2.2.1 Distinguishing Between Speculators and Shareholders

This research investigates the behaviour of individuals who bought and held shares as part of a lifetime investment strategy. The procedures for promoting the initial offering of shares in both canal and later railway companies were broadly similar and provided considerable opportunities for speculation.¹³ Promoters of a scheme were required to advertise in local newspapers. For example, on 6 February 1792, the *Birmingham Gazette* carried advertisements for a special meeting for a new canal from Wyrley and Essington to Wolverhampton and for a proposed canal at Stratford. On 11 June it carried notices of meetings for the Monmouth Canal and the Basingstoke Canal and on 25 June, for a canal from Hampton Gay to London. In the issue of 10 September 1792, at the height of the mania, the *Gazette* carried notices for meetings regarding the Dudley Canal, extensions to the Birmingham Canal, the Manchester, Bury & Bolton Canal and for a canal from Ashby de la Zouch to Coventry.

After the initial meeting, subsequent meetings were held by promoters at which a subscription contract was signed, shares were allotted and the subscriber given a letter of allotment. As soon as a deposit was paid, the subscriber was given a scrip certificate. Both letters of allotment and scrip certificates could be traded. Julius Hardy, a buttonmaker described travelling to Gloucester from Birmingham on 5 November 1792

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for a meeting to promote a canal from Gloucester to Bristol. Hardy noted that no fresh subscribers were permitted to enter into the Gloster (sic) & Berkley scheme, but another was projected primarily by people from Birmingham and Worcester for a canal from Worcester to Bristol. Hardy subscribed one guinea towards a survey, which entitled him to ten shares. Fourteen days later, these shares 'bore a premium of £20 each share'. Regrettably, he did not take the opportunity to sell, since 'no sooner had the Bristol people resolved at a meeting in their town to take the whole into their own hands, and opened a subscription for that purpose, than our shares ... fell to twenty guineas the whole ten, and many considered them worth nothing. All this happened in less than six weeks'.¹⁴ In spite of this set back, in December 1792 Hardy travelled as far as Devizes to subscribe for shares in the Devizes to Southampton canal.

Following the initial meeting, the route of a proposed canal had to be surveyed and costs estimated. Before a petition could be presented to Parliament, a substantial proportion of the shares had to be subscribed.¹⁵ There was a natural tendency for subscription lists to be padded with individuals who were nominees or were even fictitious. In times of mania, speculators in the shares might be unable to fund calls and would seek to sell their shares prior to incorporation. For these reasons, in the present study, the subscription lists accompanying the Act of Incorporation have not in general been used as source material for identifying the initial shareholders in a company. In all but one case, the companies' own share registers or records of proprietors have been used to extract shareholder information. Earlier research into canal finance has been based on the earliest available list of shareholdings, that is, those made at the time of incorporation. Ward was confident that the issue of the high levels of trading in scrip and the problems of fictitious names which he suggests invalidate the use of railway subscription contracts do not apply to canal companies.¹⁶ In the light of Julius Hardy's experience, Ward's view may be over-optimistic. Reed, in his study of railway shares acknowledges the problems of speculators appearing in subscription lists and has used both subscription contracts and company records in his analyses.¹⁷

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2.2.2 Source Documents and Completeness of Information

The source documentation used to extract shareholder information comprised *inter alia*, the Register of Proprietors, Transfer Ledger or Minutes of General Meetings for each of the eleven canal and seven railway companies in the present study. The source material for each company and each year is given in Appendix III. The source document for the two banks was the Deed of Settlement. In both cases, however, these Deeds were signed by each shareholder and sealed by the company, which provides reasonable assurance that these shareholders were *bona fide* individuals.

The source documents have varying degrees of completeness. Most reliable were the shareholder ledgers, however even these had pages missing or some entries were illegible. Least reliable were the Minutes of General Meetings of Proprietors, which contained only the names of those who attended the meetings in person or by proxy. The proportion of shares for which shareholder information was available varies considerably between years and between companies. The overall coverage was 50 per cent for the canal companies and 56 per cent for the railway companies. The detailed analysis of coverage is given in Appendix I.

2.3 Classification

Information on the gender, occupations and addresses of individual investors in the eleven canal companies and seven railway companies was extracted from the source material and entered in a Lotus™ Approach Database, (the CARD Database). Where available, shareholder data were extracted for initial shareholders and those on the register at regular intervals throughout the fifteen socio-economic groups and one of twelve geographical areas for further analysis. Details of the type of information collected and the classification system are given in Appendix I.

Each individual was allocated a Personal Identification Number, which was used when carrying out multi-company analyses. In many cases, particularly in the canal companies, the records did not show either the investor's occupation or address. Investor names were checked against local directories in order to try to determine occupations. Where addresses were not indicated in the company records, it was

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virtually impossible to identify individuals with any certainty from directories. Where towns were specified and the investor's name was reasonably distinctive, it was sometimes possible to identify the investor from the directory. Directories did not include all individuals living in an area. Tradesmen appeared to be well represented, some professionals were included but gentlemen often did not appear. The investors in the canal companies were most often from the wealthier sections of society and proved elusive in the pages of most directories. The *Victoria County Histories* provided a means of identifying some of these individuals,¹⁸ but where identification was doubtful the investor was classed as Unknown.

Another problem of classification arose when an investor was not described consistently in each record. In the CARD Database as a whole there were 49 individuals, who owned shares in more than one company and who described themselves differently in each register. This problem was recognised by Morton who noted that 'members of this urban middle-class population tended to claim different occupational titles depending on the message they wished to convey'.¹⁹ For example, in the present study, Francis Rufford described himself as a clay merchant in the share register of the Stourbridge Extension canal in 1837.²⁰ By 1845, however, Rufford is describing himself as an esquire in the books of the Oxford, Worcester & Wolverhampton railway.²¹ In the present study, the Rentier category ('esquires' or 'gentlemen' with urban addresses) may be overstated towards the end of the period under review as a result of this creeping gentrification. Where shareholder information in the CARD Database is compiled into global statistics, information in respect of shareholders that held shares in more than one company (multiple shareholders) is included only once. In these circumstances, multiple shareholders are classified according to their description in their earliest appearance in a share register. In the example above, Rufford is included in the Merchant category.

A number of shares were held in the name of more than one individual. For example, fourteen per cent of the entries in the Birmingham Canal Navigation share register for 1840 were in joint names.²² In the CARD Database, joint shareholdings are recorded under the name, occupation and address of the first named individual. Scrutiny

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of the data relating to these names suggests that excluding them has not biased the information against any one social class, region or female shareholders. Where the shares are administered by a trustee or executor, the information relating to the original owner of the shares was entered on the CARD Database.

In the canal company records, socio-economic information was not available for 46 per cent of investors and addresses were missing for 59 per cent of entries. For the rail companies, the total percentage of unknown occupations and addresses was lower but this masks the fact that reasonably comprehensive information was only obtained for three rail companies. Nevertheless, socio-economic and address data were available for over 4,000 entries in the CARD Database. The size of these datasets means that analysis of the Database as a whole can be relied upon to produce reliable information on the socio-economic and geographical location of investors. Comparison of one company with another or one year with another however, may not produce such reliable conclusions.

The type of source document and the level of coverage give rise to the issue of bias. Many of the source documents are lists of proprietors who attended the annual general meetings either in person or by proxy. It is likely that those attending these meetings would have been those of higher social status, with the money and leisure to devote to this activity. Thus the CARD Database may contain bias towards such individuals. It might also be expected that women would be less well represented from data taken from these types of source documents. However, this does not appear to have been the case. Analysis of the investors in the BCN in 1790, 1800 and 1810 was based on records relating to shareholders of 40 per cent or less of the shares in issue, who attended the general meeting of proprietors. On the other hand, the records for 1840 were taken from the definitive list of proprietors and represent shareholders of 90 per cent of the shares in issue. In all four years, the levels of female shareholdings were broadly similar, suggesting that although women did not attend general meetings they were well represented by their proxies. Thus, the proportion of women investors in this study is unlikely to be significantly understated. On the other hand, it is more likely that selecting shareholder data from those who attended meetings has led to understatement

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of the proportion of shareholders who lived outside the local area. These investors may not have been so likely to travel to the meetings and may not have had local representatives to attend as proxies. It is thus quite possible that in the case of the canal companies, particularly, where the general meetings were usually held in the West Midlands, the proportion of local investors is overstated. Investors who were difficult to identify were more likely to have belonged to lower socio-economic groups and/or may have lived outside the West Midlands area. Consequently, in all analyses the proportion of investors in lower socio-economic groups is likely to be understated. The gender of investors was identifiable in almost all cases and reliance can be placed on conclusions drawn from the analysis of gender-specific behaviour.

2.4 The Birmingham Database

In order to investigate the social, cultural, political and religious backgrounds of the canal, railway and bank investors, data on the membership of 33 Birmingham societies or institutions were compiled on a Database, (the Birmingham Database). Table 2.4 lists the institutions included in the Birmingham Database and the years for which membership data were collected.

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Table 2.4: Institutions Included in the Birmingham Database

	Date	No. of Members
Abolition of Slavery	1790	8
Anacreontic Society	1793	105
Association against Republicans and Levellers	1792	18
Bean Club	1761	67
Birmingham Political Union	1817	48
Birmingham Political Union	1829	18
Birmingham Political Union	1830	36
Churchwardens	1790	19
Commercial Committee	1790	51
Conservative Association	1832	12
Deaf and Dumb Institution	1812	43
Eye Hospital	1823	17
Fever Hospital	1825	15
Friends Book Club	1840-1	24
General Dispensary	1793	16
General Dispensary	1840	15
General Hospital	1765	117
General Hospital	1839	61
Infant Schools	1825	20
Library	1799	159
Manufacturers Petition	1775	10
News Room	1822	9
Orthopaedic Hospital	1825	26
Poor Relief	1794	41
Protestant Dissenting Schools	1761	15
Society of Arts	1821	43
Street Commissioners	1769	50
Suffrage Union	1842	37
Unitarian Brotherly Society	1796	153
Water Works	1808	38
Total		1,291

Source: Details of the source documents for members of each of the above institutions are given in Appendix III.

Of the 1,291 individual members of the Birmingham Database, 318 were subscribers to or members of more than one institution. These individuals are only included once when comparisons are made with investors on the CARD Database.

2.5 Multiple Shareholders

The 6,528 individual entries in the CARD Database include investors who held shares in more than one company. Multiple investors were only included once in analysis of information from the CARD Database as a whole. These multiple shareholders were classified according to their socio-economic status in their first appearance in any share register. When the characteristics of investors in one company

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were analysed and compared to those in other companies or years the total number of investors, including multiple shareholders, was included. The total number of investor entries for each company including and excluding multiple shareholders is given in Appendix I. In total, 616 investors in the CARD Database held shares in more than one company, comprising 560 multiple canal investors and 56 multiple railway investors. In addition, 30 investors held shares in both canal and railway companies. These individuals are discussed in Chapter 4.4.5. In the present study, where the different characteristics of canal and railway company investors are being compared, the 30 investors who hold shares in both canal and railway companies are included in both sets of data.

The criteria for selecting the sample population were designed to be neutral in terms of socio-economic status and gender. The population was selected on economic criteria and was intended to be representative of the class of financial investors. Common classification criteria were used throughout the analysis of investors in the canal and railway companies and banks, and members of the Birmingham voluntary societies. For the first time, the behaviour of specific individuals has been investigated across a wide spectrum of social and economic activity.

¹ G. H. Evans, *British Corporation Finance 1775-1850* (Baltimore, 1936), p. 1 and M. Paterson and D. Reiffen, 'The Effects of the Bubble Act on the Market for Joint Stock Shares', *J. of Econ. Hist.*, Vol. L, No. 1 (1990), p. 163.

² C. Hadfield, *The Canals of the West Midlands. The Canals of the British Isles: Vol. 5* (Newton Abbot, 1985), p. 23.

³ J. R. Ward, *The Finance of Canal Building in Eighteenth-Century England* (Oxford, 1974), p. 74.

⁴ This figure does not include minor extensions or junctions for which separate Acts of Parliament were obtained.

⁵ J. Phillips, *A General History of Inland Navigation, Foreign and Domestic; Containing a Complete Account of the Canals Already Executed in England with Considerations on those Projected* (London, 5th edition, 1805).

⁶ Hadfield, *Canals of the West Midlands*, pp. 318-29 and C. Hadfield, *The Canals of the East Midlands* (Newton Abbot, 1966), pp. 268-76.

⁷ Ward, *Finance of Canal Building*, pp. 29-54.

⁸ Hadfield, *Canals of the West Midlands*, pp. 318-29 and Hadfield, *Canals of the East Midlands*, pp. 268-76.

⁹ Hadfield, *Canals of the West Midlands*, pp. 318-329 and Hadfield, *Canals of the East Midlands*, pp. 268-76.

¹⁰ H. Scrivenor, *The Railways of the United Kingdom Statistically Considered, in Relation to their Extent, Capital, Amalgamation, Debentures, Financial Position, Acts of*

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Parliament by which they are Regulated, Creation and Appropriation of Shares, Calls, Dividends, and Various Other Minor Particulars (London, 1849).

¹¹ AB1, Deed of Settlement and List of Shareholders, 1836, Midland Bank Archive, London.

¹² T1, Stourbridge & Kidderminster Bank, Deed of Settlement, 25 March 1834, Midland Bank Archive, London.

¹³ The procedures were set out in Standing Orders to the House of Commons, which varied the information requirements, timings and the level subscription required for each stage. The general procedure however for obtaining a Private Bill remained the same throughout the period.

¹⁴ MS 839/53, Julius Hardy Diary, Birmingham Reference Library.

¹⁵ M. R. Reed, *Investment in Railways in Britain, 1820 - 1844* (Oxford, 1975), pp. 77 and 88-92. The level of subscriptions varied from time to time. For example, the required levels set out in the Standing Orders of 1830 called for 50 per cent of the shares to be subscribed before a petition could be presented and 75 per cent to be subscribed before the Bill could be reported.

¹⁶ Ward, *Finance of Canal Building*, p. 19.

¹⁷ Reed, *Investment in Railways*, pp. 139-40.

¹⁸ W. B. Stephens (ed.), *The Victoria History of the Counties of England, Vol. VII. The City of Birmingham* (London, 1964).

¹⁹ G. Morton, 'Presenting the Self: Record Linkage and Referring to Ordinary Historical Persons', *History and Computing* (1994), p. 16.

²⁰ PRO RAIL 873/17, Stourbridge Extension Canal, List of Subscribers to the Parliamentary Bill, 19 January 1837.

²¹ PRO RAIL 558/4, Oxford, Worcester & Wolverhampton Railway, General Meeting of Proprietors, 22 February 1845.

²² PRO RAIL 810/182, BCN, List of Proprietors, 8 May 1840.

CHAPTER 3: RISK ENVIRONMENT

3.1 Introduction

The underlying risk environment affects the lives of all individuals, but it may influence the behaviour of different groups in particular ways. An understanding of how gender and socio-economic background determine responses to environmental risk is fundamental to the analysis of investment risk. Individuals in the present study by definition had surplus wealth to invest. They belonged to a section of society, which was in the process of differentiating itself from the landed and labouring classes. The possession of property and the generation and employment of capital were amongst the defining characteristics of this affluent middle class.¹ The prospect of 'sinking' from this elysium was a pressing preoccupation. Langford suggests that 'bankruptcy was the nightmare of the eighteenth-century bourgeoisie'.² In some respects those environmental risks, which most acutely affected the owners of businesses and property, were declining by the beginning of the eighteenth century and the quality of life for many sectors of the population in Great Britain improved significantly. Political stability, arising from the peaceful Hanoverian succession in 1714 increased public confidence. As a result, interest rates on government stocks fell.³ Cheaper credit, the growth in trade consequent upon success in war, and burgeoning colonial markets resulted in increased wealth amongst those engaged in trade and manufacturing. The growing affluence of the middle classes contributed to an urban renaissance.⁴ Generally improved public health had reduced the risks of disease and mortality, although contemporary research highlighted the risks of urbanisation.⁵ The middle classes now had growing levels of surplus wealth and some expectation of being able to survive to enjoy or employ it.⁶

Nevertheless, the middle class of the eighteenth century was still beset by almost constant threats to their new-found affluence. For forty-six of the years between 1700 and 1800 England was at war. The American colonies were lost and the French Revolution, at first welcomed by middle-class radicals, was soon seen as a potential model for working-class revolution at home. Trade was disrupted and the effects of urbanisation and industrialisation, which most acutely affected the welfare of the labouring classes, led to civil disturbance. This was the environment of risk surrounding

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middle-class investors.

An individual's attitude to risk is informed both by that individual's personal circumstances and by the environment. Investment decisions may be driven by the relative wealth, age, or family circumstances of the investor,⁷ but the overall state of the economy or political situation may be a more important factor. This Chapter considers these environmental risks which informed the decisions made by eighteenth- and nineteenth-century investors. The three most significant risks were those of early death, war and unpredictable business cycles.

3.2 Life Expectancy

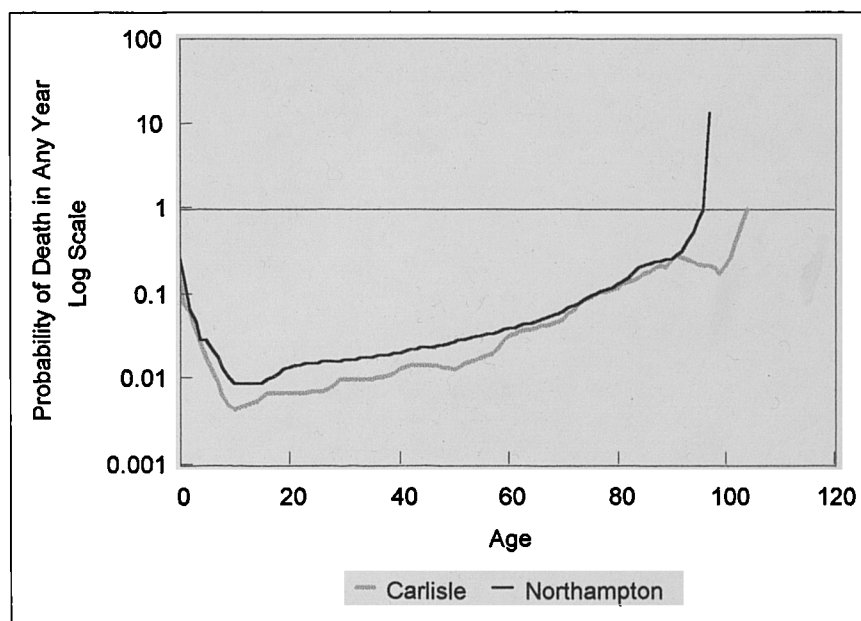
Life expectancy had an important influence on attitudes to risk. In the period 1750 to 1799, the average life expectancy at birth for males and females was estimated to be between 36.5 and 45 years.⁸ Mortality rates did improve in the nineteenth century but on average were still below 40 years in 1851.⁹ Perhaps a more useful indicator was the expectation of life at the age of 30, which, for the latter half of the eighteenth century was for a further 32.1 years for men and 32.4 years for women.¹⁰ There was a very real prospect that a father might die before his daughters were sufficiently provided for by marriage or his sons had sufficient capital to enter their chosen professions or business. Members of the professional middle class must have been particularly anxious, if the family had to rely upon the salary of the breadwinner and had no income from land, businesses or other investments.

Perceptible differences in the life expectancy of different social classes became apparent with the use of actuarial life tables for life insurance. The life tables used in the eighteenth century were based on work by Johann de Witt and Edmond Halley, who produced the first mortality table derived from statistics of births and deaths. Abraham de Moivre later applied these principles to the calculation of annuities.¹¹ By 1756, James Dodson had developed the use of mortality data for calculating life insurance premiums. The first company to apply this idea was the Society for Equitable Assurances on Lives and Survivorships, (the Equitable). By the 1780s, the Equitable started to use the Northampton mortality data. The Northampton data, taken from a single urban parish,

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tended to over-estimate mortality, particularly among younger people and those in more affluent social groups. Premiums calculated in accordance with this data tended to be too high. On the other hand, the government used the Northampton Tables to calculate annuity rates. As the data overstated the rate of mortality, the annuity rate was too generous and the government paid out too much money. The Northampton data were later replaced by data from Carlisle, which were more representative of the mortality rates in the country as a whole.¹² It is reasonable to suppose that educated and wealthy people, who used life insurance and who bought annuities, would have been familiar with the contemporary calculations of mortality. The *Gentleman's Magazine* published London Bills of Mortality from the 1740s.¹³ The life expectancy based on the Northampton and Carlisle data has been calculated and is given in Figure 3.1.

Figure 3.1 Probability of Death in Any Year Using Data from Carlisle and Northampton Mortality Tables



Source: *Society of Actuaries*.¹⁴

Figure 3.1 shows that the Carlisle data predicted mortality levels below that for Northampton for all years. Its predictions were found to be more accurate, particularly for the middle class. By the mid-nineteenth century the differences in life expectancy

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between individuals living in rural and urban areas and from different social groups were well documented. The work of Chadwick, published in 1842, revealed significant variations in mortality. For example, the average age at death of labourers in Manchester was 17 years, compared with that of professionals or gentry in Rutland, who survived to the age of 52. Professionals living in Manchester, however, had an average age at death of 38 years.¹⁵ Even without the bald data in life tables and statistics, middle-class investors in the canal and railway companies would have been well aware of the probability of early death. The need to provide for wives and families in an uncertain future must have been a major determinant of behaviour. This is illustrated in the investment decisions of Robert Hale, a young attorney from Bristol. In June 1763 he approached his uncle in London for a £4,000 loan to finance the purchase of a partnership in the Bristol Exchange Bank. His uncle agreed to provide the money at 4.5 per cent for four years maturity or for 4.25 per cent for five years. Robert Hale was concerned that he might die and declined the offer of a longer maturity loan, which might burden his estate and be 'disadvantageous to me in making a Proposal to any Woman of Fortune'.¹⁶

As late as 1841, 46 per cent of the population were under twenty years old.¹⁷ For the middle class, provision for this group of dependants was of critical importance. The support of family, prudent investment and use of life insurance were key strategies to mitigate the risks relating to early death. At the same time, gambling was firmly entrenched in the national psyche.¹⁸ Jane Austen permits the genteel Bennett sisters to participate in a noisy game of lottery tickets,¹⁹ and gambling was the ruination of cohorts of fictional younger sons. As will be discussed in Chapter 5.3, the use of life insurance grew out wagering on the probabilities of death. During the manias of canal investment in the 1790s and railway investment in the 1840s prudence was abandoned. The willingness to indulge in speculation may have been a consequence of the high-risk environment of early death, war or economic disruption, or it may be an essential and inevitable component of a viable stock market.²⁰ Nevertheless, gambling was an important part of the risk environment, which affected government policy and private behaviour, as discussed below.

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3.3 Attitudes to Gambling

Speculation was embraced by all social groups. Subscribers to railway bills in 1845 were 'a combination of peers and printers, vicars and vice-admirals, spinsters and half-pay officers, MPs and special pleaders, professors and cotton spinners, gentleman's cooks and QCs, attorney's clerks and college scouts, waiters at Lloyd's, relieving officers and excisemen, barristers and butchers, Catholic priests and coachmen, editors and engineers, dairymen and dyers, braziers, bankers, beer sellers and butlers, domestic servants, footmen and mail guards, and almost any calling under the sun'.²¹ Railway mania was 'the most wonderful era of gambling in modern times'.²² Shiller observed in relation to more recent examples of mania that 'investing in speculative assets is a social activity'.²³ In the eighteenth century 'playing with chance went far beyond the card table and into the coffee houses, insurance offices, and other abodes of business'.²⁴ Borsay suggests that gaming permitted competition for prestige without incurring unacceptable levels of social conflict; it enabled women to enhance their status and to engage in monetary transactions where they could compete on equal terms with men.²⁵ Certainly the aristocratic ladies of the Court who speculated in South Sea Company securities were exercising a freedom to gamble and speculate which disappeared when the Bubble burst.²⁶ Even the respectable middle class shared the view that speculation was 'the means of repairing ...capital, now sadly reduced by the increase in ... family and the expenses of their education'.²⁷

Even the government exploited potential investors' gambling instincts by issuing debt in the form of a lottery, and *tontines* were a common method of raising finance for a variety of projects, including the Birmingham Library.²⁸ The enthusiasm with which certain individuals embraced investment in the new technology of canals and railways certainly owes something to contemporary obsessions with speculation and gambling. The investors in the CARD Database were deliberately selected from sources which excluded speculators in scrip. Nevertheless, those investors who were original subscribers to a project or held shares during the construction period were often taking a significant gamble on the potential success of the enterprise. Certainly the potential for rapid capital gain for a small initial outlay on successful shares may have seemed a

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better gamble than the odds offered by government lotteries.²⁹ For example, in the course of fourteen days in November 1792, Julius Hardy saw his 10 shares in the proposed Bristol to Worcester canal make a notional gain of £200 on his initial investment of one guinea. This compares with the average annual salary of professionals in 1812 of £300 to £400 (see Chapter 7, Table 7.1).

3.3.1 Lotteries

The return on eighteenth-century lotteries was substantially better than those offered by their modern equivalents. In effect they were more akin to modern Premium Bonds where the participant does not lose his stake and the government undertakes to pay out an expected return in line with prevailing interest rates. The first English public lottery was in 1566, backed by recommendations of the Lord Mayor of London and the Crown. Lotteries continued to be used to finance public projects and in 1694, the government issued the *Million Adventure* to raise £1 million, divided into 100,000 £10 tickets.³⁰ Parliament provided an annual sum of £140,000, £100,000 of which was to pay interest at 10 per cent on each ticket for 16 years. The remaining £40,000 was divided amongst the prizewinners. After 16 years all payments ceased and the capital was not repaid.³¹ Clearly this formula was successful since the government raised a further lottery loan for £1.4 million in 1697. Lotteries did, however, engender the same queasiness in feelings of public morality, as did the use of life insurance for purely speculative purposes. In 1699 lotteries were suppressed by Act of Parliament but state lotteries began again in 1710 when a loan of £1.5 million was raised through a lottery of £10 tickets. In this case, 9 per cent was paid on the money raised for 32 years and the prizes were annuities ranging from 14 shillings a year, paid on the 'blanks' or non prize-winning tickets, to a top prize of £1,000.³² This lottery was also quickly subscribed. This mechanism was so useful to the government that even though private lotteries were again banned in 1721, public lotteries continued to be sanctioned by Parliament on an annual basis until 1826.³³

Lotteries were a mechanism for issuing stock at a discount.³⁴ Most of the government loans raised between 1720 and 1784 were associated with a lottery.

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Sometimes the lottery tickets were given free to the purchasers of stock, and sometimes they were in the form of a rights issue with the purchaser gaining the right to buy the tickets on favourable terms. The prizes were usually in the form of stock of the same kind as the loan. As early as 1755 the cash subscriptions exceeded the sum distributed as prizes, with the surplus going to the Treasury. From 1769 these were a regular feature of government finance and remained so until 1826. Lotteries were not used in conjunction with long-term loans after 1784, but other techniques were used, such as annuities to provide sweeteners. The loans raised during the American War commonly took the form of an offer of Consols, an annuity and a lottery. For example, subscribers of £100 to the loan of 1779 received £100 of 3 per cent Consols and either an annuity of £3.75 per cent for 29 years or a life annuity. For every £1,000 advanced the subscriber gained the right to buy 7 lottery tickets at £10 per ticket.³⁵ After 1784 the sale of lottery tickets was a considerable source of revenue to members of the Stock Exchange.

Brokers underwrote the whole issue and retailed it to the public at a profit to themselves.³⁶ Advertisements for lottery tickets regularly appeared in the pages of the *Birmingham Gazette* in the late 1760s. Tickets were retailed in fractions to make them more affordable. For example, on 6 October 1766, A. and C. Corbett, booksellers of London, were advertising the sale of one sixty-fourth of a ticket for 4 shillings or up to half a ticket for £6. On 6 April 1767 the annual lottery for 60,000 tickets at £10 each was advertised. Prizes were allocated as follows:

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Table 3.1: Lottery Prizes in the 1767 State Lottery

Number of tickets	Prize
1	20,000
3	10,000
4	5,000
10	2,000
18	1,000
42	500
200	100
610	50
20,950	20
First drawn	1,000
Last drawn	500
Total	600,000

Source: Birmingham Gazette, 6 April 1767.

The lottery was one and a half blanks to a prize. The odds for lotteries were explained in an editorial in the *Birmingham Gazette* on 2 November 1767. It notes that the odds on winning the lottery were 66:1 against winning £50 or better, down to 14,999:1 against winning £10,000. The editorial concludes that 'now is it not very strange the Public should be so infatuated, when the Chance is so small, to give 12£ 18s for a Ticket, which, as the stocks now are, is not worth more than 8£ 18s? That is to say, to give 4£ to game for 8£ 18s? So that by winning a person gains only 5£ whereas, if he loses, his Loss is 12£ 18s'.

Since lotteries were ephemeral, it is unlikely that any record of an investor's participation in them would have survived in any tangible form. So it is not surprising that no evidence was discovered as to the extent, if any, that the CARD Database investors were involved in lotteries. There is, however, evidence that these investors participated in tontines, which were another form of investment where participants gambled on the amount, if any, of the potential return.

3.3.2 Tontines

Tontines were a form of betting based on life expectancy. They were the invention of Lorenzo Tonti, who in 1652 proposed that the French crown should raise money by selling annuities. A fixed sum of annual interest was paid out to subscribers based on the survival of a named nominee or on the subscriber's own life. Survivors

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would benefit from a successively higher and higher share of the interest.³⁷ By 1674 Thomas Wagstaffe was proposing a similar scheme to provide finance for the City of London. The first English State tontine was in 1692-3, when £1 million was raised through a tontine and sale of annuities.³⁸ The tontine provides for a fixed annual sum to be divided between the lenders in proportion to their subscriptions for the duration of any life they should nominate. All subscribers received 10 per cent per annum until 1700, then a fixed sum of £70,000, representing 7 per cent per annum on £1 million, which was to be divided amongst those with surviving nominees until there were only 7 survivors. The subscribers with survivors continued to receive £10,000 apportioned between them until the death of the last nominee when the state's liability would cease. The alternative was a generous 14 per cent single life annuity. This tontine did not prove to be very popular since only £108,000 was subscribed. Not surprisingly, the majority of investors opted for annuities.³⁹

The development of the life insurance companies in the early-eighteenth century saw a renewed interest in tontines. The mortuary tontine was developed to provide payments to beneficiaries on the death of members subscribing to a life insurance fund. The beneficiaries of all those members who died in any one year received an equal share of the contributions made to the fund over the preceding year.⁴⁰ As a result, the level of payout fluctuated depending on mortality levels each year. This became the model for new life insurance schemes, such as the Amicable Society for a Perpetual Assurance office, which was founded in 1706.⁴¹

Tontines never became a popular method for raising government finance, but they appear to have been used to raise money for philanthropic purposes. For example, when the sponsors of the Birmingham Library wanted to raise money for the Union Street Building in 1799, they used a tontine. The Library tontine comprised 158 subscribers of whom 48 (30 per cent) were found to be investors in the CARD Database.⁴² This was a very high proportion; the average proportion of CARD and BARD Database investors in the Birmingham Database as a whole was only 20 per cent. The Library tontine was purely for charitable purposes. Nevertheless, the fact that a tontine was selected to raise finance and was well subscribed indicates familiarity with

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this form of investment and a wide spread acceptance of this form of gambling. The only other record of a tontine held by a CARD Database investor was that for Elizabeth Lovatt, a widow from Birmingham who died in 1827. She had an interest in two lives in the Royal Hotel, Birmingham tontine.⁴³

The use of lotteries and tontines as financial instruments indicates that gambling and speculation was an accepted part of investment activity. Nevertheless, there is little evidence that the sample population indulged in speculative activities. Analysis of the two sources of evidence of share transfers for the canal companies in the study revealed that there was little additional activity during the peak of the mania in 1792 to 1793. In the case of the BCN, a total of 663 shares, excluding those disposed of as a result of the owner's death, were transferred between 1768 and 1834.⁴⁴ Only 27 of these were transferred during the period of mania (4 per cent), which is only slightly higher than that to be expected in any two-year period (3 per cent). In the Stourbridge Navigation there is some evidence that a greater than expected number of shares were transferred during the period of mania. The transfer ledger shows 55 shares changed hands between 1792 and 1793 (10 per cent) out of a total of 540 in the period 1776 to 1827.⁴⁵ The expected number of transfers in a two-year period would have been 4 per cent. This raised level of activity may have been the result of share trading by Matthias Mogridge, a Birmingham attorney, who speculated in the shares of number of canal companies during the 1790s.⁴⁶ Between March 1792 and March 1798 he bought and sold twelve Stourbridge shares in nine separate transactions and made a total profit of £1,800. On average he held them for just under a month, although in most cases it was only seven days. Mogridge is the only investor to be positively identified as a trader.

Over the period 1776 to 1827, seven other individuals were identified who actively bought and sold Stourbridge Navigation shares but they held them for relatively long periods of time and rarely made much of a profit.⁴⁷ A similar picture emerges from the BCN transfer ledger. The lack of evidence of speculative behaviour suggests that the sample population conformed to Davidoff and Hall's vision of prudence and respectability defining the emerging middle class.⁴⁸ However, contemporary opinion suggests that all classes indulged in speculation.⁴⁹ Canal mania was mainly confined to

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speculation in new projects in the process of gaining parliamentary approval, rather than in established shares. This was probably due to the lack of a national market in canal shares at that time. Nevertheless, speculation in railway shares was also largely a function of the new issues market. Although during the 1840s there were provincial stock exchanges as well as a national exchange in London, speculative activity was mainly confined to London and Lancashire.⁵⁰

Even though the sample population of investors appear to have eschewed speculative activities, they would have been unlikely to have avoided the increasing levels of risk associated with unstable financial markets. In times of mania, positive feedback must have substantially contributed to levels of risk in the financial environment. Governments sought to reduce the risk of speculative bubbles but were largely ineffectual in managing the economy. Economic cycles were not only a consequence of the business-related factors of supply and demand and investment cycles but also political disruption, such as war.

3.4 War

3.4.1 Effect of War on the National Capital Market

Contemporary economists, commentators and investors were aware of the disruption that wars caused to debt and capital markets. This is evidenced by the increase in government borrowing and taxation to fund wars between 1750 to 1850. Spackman illustrates this in a table showing additions to the National Debt and taxation that he compiled in 1843. An extract of Spackman's table is shown below in Table 3.2.

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Table 3.2: Additions to National Debt and Taxation (In £ millions)

	Started	Number of Years	End	Taxes	Loans	Total
Seven years war	1756	7	1763	52	60	112
American War	1775	8	1783	32	104	136
French Revolution	1793	9	1802	263.5	200.5	464
Against Napoleon	1803	12	1815	770.5	388.5	1,159

Source: Spackman.⁵¹ Table shows the year the war started and finished and its duration in years. Spackman distinguishes taxation and loans. Taxation was the cash paid in duties and taxes, loans refer to the creation of national debt.

Playford produced a similar table in 1855, and although his numbers for increased debt are slightly higher than those of Spackman due to timing differences, the same effect is evident, as shown in Table 3.3.

Table 3.3: Increases in the National Debt of Great Britain 1727 - 1854 (In £ millions)

	Additions to and (Repayments) of National Debt	Total National Debt
Accession of George II in 1727		52
Additional to Peace of Paris 1763	87	139
Paid off Peace 1763-75	(10)	
Debt at Start of American War		129
Additional During War 1778-84	121	
Debt at End of War		250
Paid off During Peace 1784-93	(11)	
Debt at Start of French War		239
Additional During War 1793-1815	602	
Total on Consolidation of English and Irish Debt in February 1817		841
Cancelled 1817 - January 1854	(67)	
National Debt at 5 January 1854		774

Source: Playford.⁵²

Table 3.3 shows the accelerating cost of war. The American War increased debt by approximately £20 million a year, and by the time of the French Wars this had risen to £27 million per year. Julius Hardy, a button maker from Birmingham, was in no doubt of the ruinous effects of a 'continental' war. The value of his holding of £100 of 3 per cent Consols fell from £97 before the start of the French War to £73 by February 1793. He noted that 'war must necessarily be ruinous to England. Loans there must be, to enable Ministry to carry it on; by this means the nation will be drained of its circulating cash, the very sinews of trade'.⁵³ Hoppit suggested that war was the most important risk factor in

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the incidence of bankruptcies in the eighteenth century, citing closed markets, increased the level of risk to business, changed the pattern of demand, and increased uncertainty and distortion of the government finance market. Taxation, as well as government borrowing, generally increased in wartime, putting more stress on entrepreneurs.⁵⁴ Other researchers have found little evidence that business investment was adversely affected by increased yields on government stock, suggesting that capital markets were segmented and that government borrowing did not compete with private investment.⁵⁵ However, as discussed below, this was probably not the case in the market for competing financial investments, such as canal company shares. As the yield on Government stocks rose to attract investment in new issues of debt, private sector attempts to raise debt and equity for projects may have been 'crowded out'.⁵⁶ This may have increased the risk of both new schemes and those in the course of construction, as discussed in Chapter 4.5.3.1.

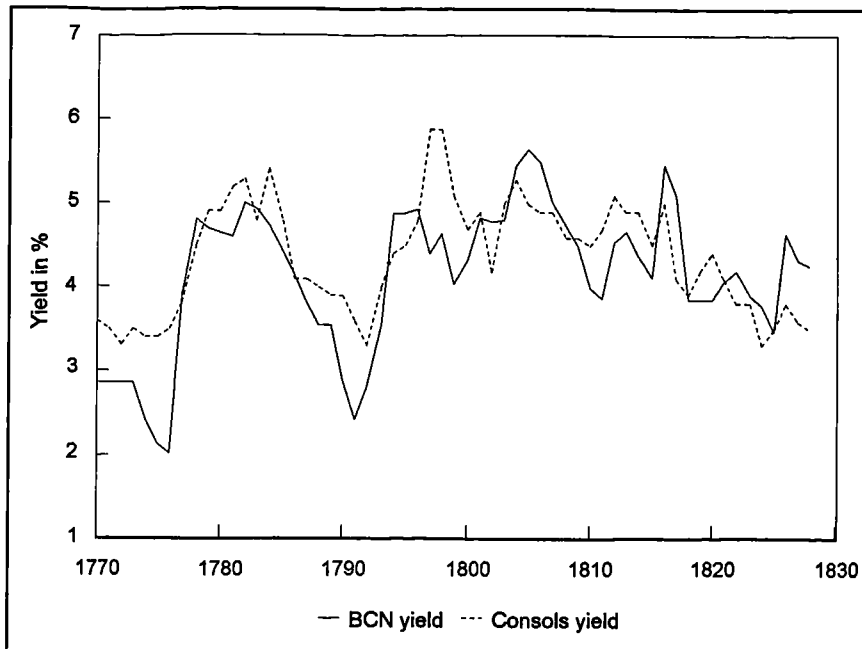
3.4.2 Effect of War on Canal and Railway Investor Behaviour

Contemporary opinion varied on the effect of political events on investment in non-government securities. Whereas Playford was a staunch advocate of investment in Funds⁵⁷, Whitehead argued that guaranteed railway stock had, 'security of that which is tangible'.⁵⁸ He suggested that in times of violent political upheaval a holder of government stocks would suffer to the extent of the change, whilst an investor in railway stock would feel, 'the blighting effects for a period comparatively brief: the reality of Railways would be his safety; their necessity under all states of society his security'.⁵⁹ In the present study it was not possible to extract a sufficiently long and complete series of railway company stock prices to test Whitehead's premise. Earlier research on the behaviour of securities on the Boston stock exchange between 1835 and 1897 indicated that 'risk-free' government and quasi-government stocks such as the Massachusetts and New England Municipal securities provided a better return than railway stocks.⁶⁰ The period examined included that of the American Civil War. In the present study, comparison of the yield on Consols and a leading canal company share between 1770 and 1830 revealed a significant correlation. Figure 3.2 shows the yield on Consols and

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BCN shares during this period, which includes the French Wars.

Figure 3.2: Comparison of Yield on Consols and BCN



*Source: BCN share price and dividend information from *Income and Expenditure Summary* used to calculate annual yield.⁶¹ Annual Consols yield from Mitchell.⁶²*

As can be seen from Figure 3.2, the yield on Consols from the start of the war was over 3 per cent and therefore the price would have been below par. This continued until the end of the war in 1815 when the price started to improve. During this period, the fluctuation in the BCN yield closely mirrored that of Consols, suggesting that the canal shares were affected by the same market sentiment as that for Consols.

Gayer et al. suggest that the business cycle of 1788-93, with its peak in 1792, and the cycles with peaks in 1825, 1836 and 1845 were essentially the same in nature, but those in the war years were distorted.⁶³ During the war years new investment was channelled into government securities and heavy capital exports in the form of loans, subsidies and military expenditure were made at the expense of domestic investment. The collapse of the new issues market for canal companies at the outbreak of the French Wars is well documented.⁶⁴ This was sustained until hostilities ceased and a new wave of canal building began. It also appears that those canals which were initiated during the mania of 1792-3 and were uncompleted by the outbreak of hostilities were at

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the higher end of the risk spectrum as shown in Chapter 4, Table 4.6. In the present study, there is evidence that the disruption caused to the economy by war had an effect on the behaviour of investors. The data were examined to see whether the behaviour of shareholders during periods of war was affected by gender or socio-economic background. The inertia of investors, due in part to the cumbersome procedures for buying and selling shares, and in part to the generally high income derived from holding the shares blurred evidence of trends in the analysis of changes in existing shareholdings over the period of the study. Examination of the socio-economic mix of new purchasers of stocks from data taken from transfer ledgers produced clearer results, as set out on Table 3.4.

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Table 3.4: Socio-economic Status of Buyers of BCN Shares

	Pre-war	American War	Inter-war	French War	Post-war	Total
Number of Investors						
Landed	3	0	0	0	0	3
Rentiers	39	3	1	2	2	47
Clergy	7	1	0	1	2	11
Professional and Bankers	18	4	4	3	2	31
Manufacturers	15	3	1	7	1	27
Merchants	23	8	5	4	0	40
Artisans and Shopkeepers	30	4	3	3	0	40
Women	23	5	10	9	9	56
Unknown	30	7	22	25	12	96
Total	188	35	46	54	28	351
Normalised						
Landed	1.87	0.00	0.00	0.00	0.00	1
Rentiers	1.55	0.64	0.16	0.28	0.53	1
Clergy	1.19	0.91	0.00	0.59	2.28	1
Professional and Bankers	1.08	1.29	0.98	0.63	0.81	1
Manufacturers	1.04	1.11	0.28	1.69	0.46	1
Merchants	1.07	2.01	0.95	0.65	0.00	1
Artisans and Shopkeepers	1.40	1.00	0.57	0.49	0.00	1
Women	0.77	0.90	1.36	1.04	2.01	1
Unknown	0.58	0.73	1.75	1.69	1.57	1
Total	1.00	1.00	1.00	1.00	1.00	1

Source: Data set of socio-economic groups of the holders of 934 shares sold by 102 original subscribers to the BCN to 351 buyers over the period 1768 to 1834.⁶⁵ Transfers allocated to Pre-war (1768-1777), American War (1778-1784), Inter-war (1785-1793), French War (1794-1815) and Post-war (1816-1834). Data normalised to account for the different number of transfers in each period. Normalised data show the relative propensity of different socio-economic groups to buy shares in each period. A score of 1 means the number of investors buying shares in the socio-economic group is the expected level. A score of less than 1 means this socio-economic group made less than the expected number of transfers. A score of more than 1 means this socio-economic group made more than the expected number of transfers in the period. Thus the normalised score for Merchants buying shares during the American War is 2.01, i.e. twice the expected level.

The analysis set out in Table 3.4 shows the effect of sectoral change as well as the effect of war on the behaviour of different socio-economic groups. The American War appears to have had less effect on the behaviour of investors than the French War.⁶⁶ This is not surprising since the French War lasted more than three times as long and closed the important European markets to British merchants and manufacturers. Financial investors, most particularly Rentiers, bought fewer shares than expected

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during the American War and substantially less than expected during the French War. This may reflect the increase in yields on government stocks during wartime, making them relatively more attractive to financial investors who were reliant on interest income. The Clergy exhibited risk-averse behaviour showing a much greater propensity to buy in Pre- and Post-war periods. Economic investors such as Manufacturers and Merchants were affected differently by wartime conditions. Both groups continued to be relatively more active buyers during the American War. Merchants, in particular, seem to have been active buyers of stock during the American War, although this group was severely affected during the French War. As trade was disrupted Merchants presumably had to liquidate investments and apply all their credit and cash to maintaining their businesses. Manufacturers, on the other hand, were more active purchasers than expected, reflecting the boom conditions which many manufacturers experienced in wartime. The reduction in the proportion of Landed investors buying shares from the pre-war period could be the result of sectoral changes which are discussed in Chapter 4.2.1. The increasing yields on Consols may also explain the slight reduction in the number of female buyers in wartime, although the reduction is so slight that it is unlikely to be significant. Merchants do not feature at all among the post-war transferees, so their decline may be a secular trend. Both Manufacturers and Rentiers and Landed return to pre-war levels of activity in the post-war years.

This analysis of BCN transfers suggests that investment activity of certain socio-economic groups was affected by wartime conditions. The direct economic effects of war seem to have been the key influence on investor behaviour. General risk factors appear to have been less important since it would be expected that this sentiment would have particularly affected female investors and clergy, who have been identified as being particularly risk averse. Transfers of 540 Stourbridge canal shares in 300 separate transactions between 1776 to 1827 was analysed in a similar way.⁶⁷ The number of transfers and the number of years in each of the periods of war and peace between 1776 and 1827 are compared in Table 3.5.

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Table 3.5: Stourbridge Navigation Share Transfers in each Period of War and Peace 1776-1827

	Pre-war	American War	Inter-war	French War	Post-war	Total
Number of Transfers	48	10	54	122	66	300
Number of Years	9	6	8	21	18	62
% of total purchases	16	3	18	41	22	100
% of total years	15	10	13	34	29	100

Source: Transfers of 540 Stourbridge Navigation shares in 300 transactions between 1776 and 1827 from the Stourbridge Navigation Transfer Ledger.

The socio-economic groups of the 300 buyers and sellers of the shares were analysed and the results were normalised to show which groups were proportionately more active in each of the periods of peace and war. The results of this analysis are given in Tables 3.6.1 and 3.6.2.

Table 3.6.1: Socio-economic Status of Stourbridge Navigation Sellers

	Pre war	American War	Inter-War	French War	Post War	Total
Number of Investors						
Landed	6	1	9	10	9	35
Rentiers	11	0	17	37	16	81
Clergy	0	0	2	2	3	7
Professional and bankers	0	0	5	11	9	25
Manufacturers	8	3	4	11	2	28
Merchants	14	2	4	10	4	34
Artisans and shopkeepers	6	3	6	18	6	39
Women	3	0	1	9	4	17
Unknown	0	1	6	14	13	34
Total	48	10	54	122	66	300
Normalised						
Landed	1.07	0.86	1.43	0.70	1.17	1
Rentiers	0.85	0.00	1.17	1.12	0.90	1
Clergy	0.00	0.00	1.59	0.70	1.95	1
Professional and bankers	0.00	0.00	1.11	1.08	1.64	1
Manufacturers	1.79	3.21	0.79	0.97	0.32	1
Merchants	2.57	1.76	0.65	0.72	0.53	1
Artisans and shopkeepers	0.96	2.31	0.85	1.13	0.70	1
Women	1.10	0.00	0.33	1.30	1.07	1
Unknown	0.00	0.88	0.98	1.01	1.74	1
Total	1.00	1.00	1.00	1.00	1.00	1

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Table 3.6.2: Socio-economic Status of Stourbridge Navigation Buyers

	Pre-war	American War	Inter-war	French War	Post-war	Total
Number of Investors						
Landed	2	1	2	5	18	28
Rentiers	5	0	9	41	11	66
Clergy	0	1	0	8	7	16
Professional and Bankers	1	0	12	11	0	24
Manufacturers	6	1	9	7	2	25
Merchants	17	2	2	9	2	32
Artisans and Shopkeepers	14	4	12	19	12	61
Women	3	0	8	20	11	42
Unknown	0	1	0	2	3	6
Total	48	10	54	122	66	300
Normalised						
Landed	0.45	1.07	0.40	0.44	2.92	1
Rentiers	0.47	0.00	0.76	1.53	0.76	1
Clergy	0.00	1.88	0.00	1.23	1.99	1
Professional and Bankers	0.26	0.00	2.78	1.13	0.00	1
Manufacturers	1.50	1.20	2.00	0.69	0.36	1
Merchants	3.32	1.88	0.35	0.69	0.28	1
Artisans and Shopkeepers	1.43	1.97	1.09	0.77	0.89	1
Women	0.45	0.00	1.06	1.17	1.19	1
Unknown	0.00	5.00	0.00	0.82	2.27	1
Total	1.00	1.00	1.00	1.00	1.00	1

Source: Socio-economic groups of holders of 540 shares from 300 transfers of Stourbridge Navigation stock between 1776 and 1827.⁶⁸ Transfers allocated to Pre-war (1768-1777), American War (1778-1784), Inter-war (1785-1793), French War (1794-1815) and Post-war (1816-1834). Data normalised to account for the different number of transfers in each period. Normalised data show the relative propensity of different socio-economic groups to buy shares in each period. A score of 1 means the number of investors buying shares in the socio-economic group is the expected level. A score of less than 1 means this socio-economic group made less than the expected number of transfers. A score of more than 1 means this socio-economic group made more than the expected number of transfers in the period.

The Stourbridge data show that three groups bought more shares than they sold during the period: Clergy, Woman and most significantly, Artisans and Shopkeepers. Over the study period, these groups became more comfortable with the level of corporate risk in owning these types of asset. They also became relatively more affluent as the result of overall improvements in living standards over the period.⁶⁹ The remaining socio-economic groups of investors were either marginally net purchasers or sellers. For example, the relative level of purchases and sales amongst the Merchant group was

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effectively neutral, namely 32 purchases and 34 sales. However, the pattern of purchases and sales revealed that although both the Merchant and Manufacturer groups were active purchasers of shares during the American War, they were greater than expected net divestors of shares in wartime as a whole. The Landed group showed a greater propensity to sell shares in peacetime but they were also active buyers in the post-war period. As a whole, however, the Landed group were net sellers of shares, which confirms other evidence, discussed in Chapter 4.2, that the Landed group owned relatively and absolutely fewer shares throughout the period of the present study.

Rentiers were most active during the French Wars, with 41 of their 66 transfers (62 per cent) taking place during this period, which only accounts for 34 per cent of the number of years in the period 1776 to 1827. The period of the French Wars also saw Rentiers actively selling shares, with 37 transfers out of a total of 66 (56 per cent) taking place during that time. There is other evidence that Rentiers switched from private sector investment to government stocks during the French Wars, but this group of financially sophisticated individuals no doubt also took advantage of buying joint stock shares at depressed prices. Women were also active buyers and sellers during the French Wars, with approximately half of transfers involving female investors taking place during this time. In this respect, their behaviour closely mirrors that of the Rentier group, probably for the same reasons.

In conclusion, it seems that war did increase the perceived financial risk environment, but it affected different sectors of the economy in different ways. In the same way that the French Wars never ruffle the pages of Jane Austen, beyond the orthogonal mention of 'officers', women's investment activities do not appear to have been adversely affected by war. Empirical evidence of activity in the shares of the BCN and the Stourbridge Navigations indicates that Merchants and Manufacturers were active buyers and sellers during wartime. Wartime conditions affected different sectors in different ways. Certainly, contemporary commentators report the disruption to trade caused by the continental blockade. Manufacturers, on the other hand, if they were involved in procurement for the armed forces may have benefited from war and have suffered during the post-war return to peacetime conditions. Wartime disruption to the

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economy undoubtedly contributed to the pattern of business cycles, which are discussed below.

3.5 Business Cycles

Although contemporary commentators were aware of the alternating cycles of boom and depression, it is debatable whether the causes of business cycles were well understood at the time. These cycles affected groups of investors differently. The causes of the cycles were generally attributed to external factors such as war or speculation. Modern economists recognise that business cycles, caused by economic factors, were probably occurring in the nineteenth century.⁷⁰ They may have occurred earlier, but statistical data on prices and capital inputs are scarce and unreliable.⁷¹

3.5.1 Economic Factors Affecting Business Cycles

Trade cycles, in the modern sense, are characterised by a sequence of collective business optimism leading to investment, which results in over capacity and falling prices, and unemployment, followed by collective business pessimism. This causes investment to cease. In the fullness of time, demand begins to outstrip supply, optimism returns and the cycle starts again. Deane suggested that trade cycles in this modern sense were identifiable in the nineteenth century. She concluded that the trade cycles, which had their peaks in 1825, 1836 and 1845, were modern in form. Gayer, Rostow and Schwartz studied nineteenth-century business cycles between 1790 and 1850. They recognised six major cycles, namely 1797-1803, 1808-11, 1816-19, 1819-26, 1832-7 and 1842-8 which demonstrated the characteristics of modern cycles where the optimism or pessimism of entrepreneurs and industrialists in one industrial sector quickly spread to all sectors of the economy. This characteristic depends on improved communications and integration of national capital markets. Gayer et al. regarded conditions in the money market as crucial for the spread of confidence or pessimism after 1820. British business cycles are attributable to two main causes: the volume of exports and the volume of domestic investment.⁷² In the eighteenth and early- to mid-nineteenth centuries exports were primarily textiles. Cotton, woollens and linen,

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comprised 76 per cent of the value of total domestic goods exported in 1815.⁷³ Domestic investment, defined as construction of fixed equipment, included investment in canals which peaked in the canal building boom of 1791-3. Another major period of domestic capital formation occurred as a consequence of the flotation of new joint stock companies in 1824-5, the railway and joint stock flotations of 1835-6 and railway flotations in 1844-5. Business cycle booms tended to be export led, with the domestic investment taking place towards the end of the cycle.⁷⁴ Nevertheless, Deane argued that there were few eighteenth-century cycles, which were caused by economic rather than political events, such as war. Gayer et al. suggest that at least in part, the troughs in business cycles in 1793, 1803, 1807, 1811 were attributable to wars in which Britain was a participant and those in 1823 and 1848 to fears of war on the continent or continental revolutions.⁷⁵

Jevons is regarded as the first economist to recognise the cyclicity of economic prosperity and depression. He linked these to solar cycles. Beveridge, in his study of wheat prices found evidence for cycles based on the weather.⁷⁶ The effect of weather was an important economic factor in the eighteenth and early to mid-nineteenth centuries. In 1750, half the country's labour force worked in agriculture. By 1812 this had reduced to 35 per cent of the population of Great Britain and Ireland,⁷⁷ but even as late as 1850 approximately 20 per cent worked in the agricultural sector and agricultural products were an important export.⁷⁸

Researchers have suggested that, superimposed on the weather-related cycle and the investment cycle, are 'long waves' of economic activity. In the 1920s, Kondratieff developed a theory of long cycles in economic life. He identified two to three cycles, since the development of capitalist economies in western countries, each of 50 to 60 years' duration. The first wave is identified as beginning in the 1780s; its crest was 1810-17, with a trough in 1844-51. The second wave ended in the 1890s.⁷⁹ Kondratieff's analysis was purely statistical and it can be questioned, given the inadequacy of the data and the lack of significance testing, whether the evidence of the long wave is conclusive. Schumpeter attributes the long wave phenomena to the adoption of significant innovations by industry. He believed the 1787 to 1842 long wave was set off

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by innovations in the cotton industry, which spilled over into the iron industry and resulted in the widespread use of the steam engine. Initially fast industrial growth turned down in the aftermath of the French Wars. During the 1820s and 1830s the cotton and iron industries were large and grew more slowly, with economic activity rising again in the rail boom of the 1840s. The next wave was triggered by the adoption of steam power over the period 1842-97.⁸⁰

As the industrial and financial sectors became more closely integrated over the period from 1750 to 1850 investors were exposed to greater risk. Further, as the economy moved from dependency on agriculture to greater dependency on the life cycle of man-made items, cyclicity became more pronounced. At the same time, the national market became more integrated and the periodicity of regional cycles coalesced and became more marked.⁸¹ As the economy became more national, the strategy of mitigating risk by diversifying investment into different regions or industries could not diminish the consequences of the increasing cyclicity of the economy as a whole. The factors effecting the economy were poorly understood in the eighteenth and early nineteenth centuries. The government was reluctant to intervene in the management of the economy and the tools at its disposal were rudimentary. It was not until 1844 that the Bank Charter Act attempted to regulate the money supply through restricting the level of the fiduciary issue.⁸² The lack of a public sector meant that there was no mechanism for quickly stimulating the economy in times of recession through the provision of public works.

Earlier research on the relationship between economic cycles and the risk of bankruptcy has failed to find a significant correlation. Markham Lester compared the incidence of bankruptcy amongst fifteen occupational groups with the pattern of trade cycles between 1805 and 1913. He did not find a statistical relationship and concluded that other factors specific to the particular trade or business were more important determinants of business failure than the general economic environment.⁸³ Hoppit also investigated bankruptcy as a manifestation of risk. He estimated that 33,000 businesses were declared bankrupt in the eighteenth century and suggested that bankruptcy increased after 1760 because competition became more intense and businessmen had

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to take greater risks. Although Hoppit was not able to demonstrate a significant correlation between different stages in the economic cycle and the rate of bankruptcy, he suggested that there was a positive relationship between upturns in the cycle and increases in business failure. In periods of growth, low capital requirements for starting commercial or industrial enterprises allowed competition to increase. More credit was available to more speculative businesses and the rates of failure increased. Conversely, the rates of bankruptcy declined with stagnation of the economy.⁸⁴ Businessmen were generally not good at assessing risk, they had poor access to information and the track record of these new firms was short.

Scrivenor was aware of the increasing interdependence of different sectors of the capital market in the mid-nineteenth century. The collapse of railway shares after the mania of 1845 was followed by the mercantile world suffering 'calamitous reverses'.⁸⁵ Stocks were liquidated to meet business commitments, so depressing prices even more. At the same time, the pressure on the money market increased as credit tightened and 'convulsion after convulsion rent and shook the delicate fabric of commercial credit'. In an early reference to the developing global market he notes that 'England's stability is the key-stone in the arch of commerce', and the effects were felt 'more or less in every market in the known world'.⁸⁶

Business cycles affected the ability of canal and railway companies to obtain funding. As discussed in Chapter 4, those canals, which were authorised in the 1760s, such as the BCN, and the Coventry canal, generally found it easier to raise funds. Whereas, canals authorised in the height of the business boom of 1792 struggled to attract investment in the succeeding trough. Once canal and railway companies were operating they continued to be affected by cycles in economic activity but to a lesser extent. Goods and passengers still required transport even if the level of economic activity might have been reduced. Nevertheless, individual investors were affected by business cycles and different socio-economic groups responded to risk in different ways as discussed below.

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3.5.2 The Effect of Business Cycles on Canal and Railway Investors

Share transfer data from the BCN were used to investigate the behaviour of investors during business cycles. Each year between 1790 and 1850 was designated as a 'Peak', 'Trough' or 'Neutral' year in the business cycle based on the composite economic indicators of Gayer et al.⁸⁷ The resulting allocation is set out in detail in Appendix IV and summarised in Table 3.7 below.

Table 3.7: Number of Years Designated as Peaks, Troughs and Neutral 1790-1850

	Number of Years	Per cent of Total
Neutral	30	49
Peak	15	25
Trough	16	26
Total	61	100

Source: Years designated Peak, Trough and Neutral in accordance with Gayer, Rostow and Schwartz.⁸⁸

The analysis set out in Table 3.7 suggests that on average the cycles were symmetrical, with peaks and troughs of similar length and about half the period in the neutral phase. A total of 120 shares belonging to original subscribers to the BCN were transferred in 47 separate transactions between 1790 and 1833.⁸⁹ These transactions were allocated to peak, trough and neutral periods according to the Gayer et al. classification. The results are set out in Table 3.8.

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Table 3.8: BCN Shares Transferred in Each Phase of the Business Cycle 1731-1834 (Number of shares)

	Neutral	Peak	Trough	Total
1791		12		12
1792		9		9
1793			18	18
1794			8	8
1795	5			5
1797			2	2
1802		4		4
1803			8	8
1804	1			1
1806		2		2
1808			4	4
1809	3			3
1823	2			2
1826			24	24
1833	2			2
1834	16			16
Total	29	27	64	120
Per cent of Total	24	23	54	100
Average Number of Transfers p.a.	1.8	2.25	3.2	2.5

Source: Data from 47 transfers by original subscribers to BCN of 120 shares in the period 1791 to 1834, taken from the BCN Share Transfers Ledgers.⁹⁰ Years allocated into Peak, Trough and Neutral in accordance with Gayer, Rostow and Schwartz.⁹¹

Table 3.8 indicates that on average, a greater number of shares were transferred during troughs in the business cycle. Although 26 per cent of years were designated as Troughs, approximately double the expected number of transfers took place in those years (54 per cent). Conversely, the number of transfers in the Neutral period was half that of the expected level (24 per cent of transfers compared with 49 per cent of the number of years). However, the proportion of transfers in Peak years was close to the expected level. The results should be regarded with some caution since they are based on a small number of transactions. The results are also affected by the crude categorisation into peak, trough and neutral and do not take into account the intensity of different cycles. Nevertheless, it seems that there was substantially more activity in the low point of the economic cycle. The socio-economic groups of those selling and buying BCN shares in different phases of the economic cycle are shown in Table 3.9. This analysis was used to determine which groups might have been most vulnerable in times of economic downturn.

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Table 3.9: BCN Shares Bought and Sold by Socio-economic Group in Each Phase of the Business Cycle 1791-1834 (As a Percentage of total shares bought or sold at each stage of the cycle)

	Neutral	Peak	Trough	Total
Sellers				
Rentier	0	15	0	3
Clergy	0	0	0	0
Professional and Bankers	0	4	0	1
Manufacturers	75	26	39	44
Merchants	7	37	46	35
Artisans and Shopkeepers	0	7	0	2
Women	14	0	0	3
Unknown	4	11	15	12
Total Sellers	100	100	100	100
Buyers				
Rentier	3	11	38	23
Clergy	14	0	0	3
Professional and Bankers	0	44	3	12
Manufacturers	3	4	3	3
Merchants	7	7	8	8
Artisans and Shopkeepers	0	0	0	0
Women	35	4	13	16
Unknown	38	30	36	35
Total Buyers	100	100	100	100

Source: Shares sold comprise socio-economic analysis of the sellers of 120 BCN shares in 48 different transactions between 1791 and 1834, excluding transfers on death. Sellers are the original subscribers who acquired shares on flotation in March 1768. Shares bought comprise purchases from the original subscribers. Data taken from Share Transfer Ledger of the BCN.⁹²

Table 3.9 shows that sellers, regardless of the phase of the business cycle, were overwhelmingly from the Manufacturer and Merchant groups. In total, 79 per cent of sellers were from these two groups. This is partly a sectoral change as the constituency of economic investors declined and was replaced by purely financial investors, as has already been identified in Section 3.4.2 above. Amongst the initial subscribers to the BCN were a number of economic investors. Later, these Manufacturers and Merchants sold their shares to financial investors, such as Rentiers and Professionals, who made up 35 per cent of the new purchasers. In addition, many members of the economic investor groups may have retired to a rentier existence themselves. Women, who were also financial investors, made up an important group of net buyers over the period. In order to show more clearly the differences in behaviour of sellers over each phase of the business cycle, the number of shares sold by each socio-economic group during each

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phase was expressed as a percentage of total shares sold by that group over the whole period. The results of this analysis are set out in Table 3.10.

Table 3.10: Total Sales by Each Socio-economic Group During Different Phases of the Business Cycle 1791-1834

	Neutral	Peak	Trough	Total
	%	%	%	%
Rentier	0	100	0	100
Professional and Bankers	0	100	0	100
Manufacturers	40	11	48	100
Merchants	5	23	71	100
Artisans and Shopkeepers	0	100	0	100
Women	100	0	0	100
Unknown	7	21	71	100
Total	23	22	54	100

Source: Data comprise socio-economic analysis of the sellers of 120 BCN shares in 48 different transactions between 1791 and 1834, excluding transfers on death. Table entries show transfers as a percentage of total transfers for each Group for the whole period. Data taken from Share Transfer Ledger of the BCN.⁹³ Shares sold by the original subscribers who acquired shares on flotation in March 1768.

Table 3.10 shows that Merchants and the Manufacturers sold shares during the troughs of the economic cycle. Since only 26 per cent of the years were trough years, Merchants were three times more likely to sell at the bottom of the economic cycle (71 per cent of sales by Merchants took place in troughs) than at the peak. Manufacturers were four times as likely to sell in trough years than peaks. Daunton notes that the position of manufacturers in the 'credit matrix' deteriorated significantly at the end of the eighteenth century. Whereas at the beginning of the century they had been able to obtain raw materials on six to eighteen months credit, this had reduced to two to four months by the 1830s. Manufacturers were also having to grant credit to customers by the end of the eighteenth century. As a consequence, they had to replace internal credit with funding from banks, which was more likely to be withdrawn in times of economic downturn.⁹⁴ Thus, liquid investments were likely to be an important source of cash when the availability of credit dried up. Merchants were also dependent on the availability of credit and were affected by downturns in the economic cycle. As can be seen from Table 3.7, trough years and peak years occurred with much the same frequency during the period

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of the analysis. Neutral years occurred with twice the frequency and it is thus significant that only a small proportion of sales by Merchants took place in neutral years. Because the Gayer et al. analysis of the economic cycle is a composite of many different indicators, the arbitrary allocation of 'Peak', 'Trough' and 'Neutral' status to a particular year probably masks differentials in the timing of economic trends, which would have affected different socio-economic groups at different times. This might explain the slight differences in behaviour between Merchants and Manufacturers. A more definitive analysis would require the correlation of a larger sample of sales with a number of discreet economic indicators. Nevertheless, the behaviour of the financial investor groups of Rentiers, Professionals and Women differs significantly from that of Merchants and Manufacturers, with all sales taking place in the Peak or Neutral periods. The financial investors were less likely to have to liquidate their holdings to provide cash for ailing businesses. They could probably afford to pick the most advantageous moment to liquidate their holdings.

The behaviour of buyers, as can be seen from Table 3.9 is much less polarised than that of sellers. The proportions of Unknowns is much higher than that in the Seller group so some caution should be exercised when making comparisons between socio-economic groups. Just over 50 per cent of the buyers were financial investors, namely, Rentiers, Professionals, Bankers and Women. An analysis of the proportion of each socio-economic group of buyers acquiring shares in each phase of the business cycle is given in Table 3.11.

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Table 3.11: Total Purchases by Each Socio-economic Group During Different Phases of the Business Cycle 1791-1834

	Neutral	Peak	Trough	Total
	%	%	%	%
Landed and rentier	4	11	86	100
Clergy	100	0	0	100
Professional and bankers	0	86	14	100
Manufacturers	25	25	50	100
Merchants	22	22	56	100
Women	53	5	42	100
Unknown	26	19	55	100
Total	24	23	53	100

Source: Data comprise socio-economic analysis of the buyers of 120 BCN shares in 47 different transactions between 1791 and 1834, excluding transfers on death. Table entries show transfers as a percentage of total transfers for each Group for the whole period. Data taken from Share Transfer Ledger of the BCN.⁹⁵ Shares bought from the original subscribers who acquired shares on flotation in March 1768.

Table 3.11 is based on the analysis of only 120 transfers so some caution in the interpretation of the results from this small sample is necessary. The Rentier group made 86 per cent of their purchases during the period in troughs, just as they managed to make 100 per cent of their disposals in peaks. This suggests a level of sophistication and freedom to maximise their returns. Interestingly, the Professional and Banker group seems to exhibit less skill with 86 per cent of their purchases being made in peaks. About half the shares bought by Manufacturers and Merchants were purchased during troughs, but these groups bought nearly a quarter of their shares in peaks and at neutral times in the cycle. The Merchant group experienced the greatest turnover of shares during troughs. Women had a slight tendency to buy as well as sell in neutral periods but also bought a substantial proportion of their total purchases in troughs.

In conclusion, it seems that business cycles did have a substantial influence on investor behaviour, particularly in those socio-economic groups, which were most vulnerable to economic downturns. Financial investors such as the Rentier group seemed to manage their purchases and sales with some degree of sophistication. Female investors tended to transact business during neutral periods when, it might be argued, the risk of making a wrong decision might have been less.

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The underlying risk environment of early death, war and economic cycles had a demonstrable effect on the behaviour of the investors in the study population. Investors had also to assess the specific risks of a particular stock. This process of evaluation was affected by the investors' own personal circumstances, including their socio-economic background, gender and age. Although access to information was important in the evaluation of environmental risk, it was arguably more important in the assessment of new investment opportunities. The ability to control access to financial information and to evaluate it efficiently was an important characteristic of the developing class of sophisticated financial investors. In the next Chapter the evaluation of investment risk and the effect of investors' socio-economic background and gender on the type and mix of assets they held is discussed.

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⁴ P. Borsay, *The English Urban Renaissance. Culture and Society in the Provincial Town 1660-1770* (Oxford, 1989), pp. 205 and 210.

⁵ G. Clark, *Betting on Lives. The Culture of Life Insurance in England, 1675-1775* (Manchester, 1999), p. 40, L. Colley, *Britons. Forging the Nation 1707-1837* (London, 1996), p. 68-76 and H. Perkin, *The Origins of Modern English Society, 1780-1880* (London, 1969), p. 171.

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¹⁹ J. Austen, *Pride and Prejudice* (first published 1813, World Classics edition published Oxford, 1980), Vol. I, Chapter XVI.

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CHAPTER 4: ASSESSMENT OF INVESTMENT RISK

4.1 Introduction

Risk, as discussed in the previous Chapter, was a very palpable part of the environment in the eighteenth and nineteenth centuries. The worst effects of early death or of disruptions caused by war or unforeseen economic fluctuations were mitigated through mechanisms as diverse as inoculation and life insurance. On the other hand, risk was also courted. Cards, wagers, lotteries, or share speculation were the diversions of different sectors of society. Even some of Davidoff and Hall's models of middle-class rectitude were amongst the canal and railway investors in the present study.¹ The eighteenth- and nineteenth-century canal and railway companies were relatively high-risk projects, which attracted capital from a wide range of investors. A nineteenth-century commentator on the earlier South Sea Bubble speculation remarked that 'men were no longer satisfied with the slow but sure profits of cautious industry. The hope of boundless wealth for the morrow made them heedless and extravagant for today'.² Investment risk is the uncertainty of both the receipt of income, measured by dividends or interest, and the maintenance of capital value.³ Uncertainty arises from imperfect access to information. For example, the transmission of information may be inefficient; some investors may have access to more or better quality information than others; or investors may interpret information in different ways, depending on their personal circumstances. On this basis, investors make individual decisions on whether to buy or sell a particular stock. The sum of these individual decisions results in collective market sentiment. This Chapter investigates both the collective and individual interpretation of investment risk. The canal and railway company investors in the present study were exemplars of the growing class of financial investors. Since investment decisions are made by weighing relative risk and reward, the alternative investment opportunities, which were available to these investors, are also examined. For example, in addition to investment in canal and railway companies, investors could place their money on deposit with banks; buy land or lend money on mortgages; purchase government stocks, or invest in other joint stock companies. The relative importance of these sectors of the economy in 1799 and 1865 is shown in Table 4.1.

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Table 4.1: Present Value of the Capital of Great Britain in 1799 and 1865

	Beeke 1799		Giffen 1865	
	£ million	% of Total	£ million	% of Total
Cultivated Land	795	35	1,864	30
Farming Capital	125	5	621	10
Houses	200	9	1,031	17
Mines, Canals, Timber, Tolls, etc.	100	4	83	1
Railways	0	0	414	7
Present Value of Income from Public Debt	300	13	200	3
Home Trade	120	5	789	13
Foreign Trade and Shipping	80	3	100	2
Total	1,720	75	5,102	83
Unproductive Assets	280	12	500	8
Total Private Capital	2,000	87	5,602	92
Public Capital	290	13	511	8
Total of Public and Private Capital	2,290	100	6,113	100

Source: Based on Beeke and Giffen.⁴ Figures based on analysis of Income Tax Returns. Taxes levied were used to extrapolate total income from each class of asset and the capital value of that asset.

Beeke based his assessments of capital value, as set out in Table 4.1, on the present value of income generated by different classes of asset. He considered his calculations were correct to within plus or minus 10 per cent. He estimated the total capital investment in Great Britain in 1799 to be between £2 and £2.5 billion. Table 4.1 shows that 49 per cent of capital was invested in land and buildings and that agricultural investment dominated this sector. Investment in commercial and industrial activities such as 'Home and Foreign Trade' and 'Canals, Mines etc.' only amounted to only 12 per cent of total capital invested.

Colquhoun largely confirms Beeke's calculations, estimating that the total capital of Great Britain and Ireland in 'Productive Private Property', was £2.25 billion in 1812.⁵ Fifty-three years later, the size and structure of the economy had changed substantially. In 1865, Giffen also estimated the capital of the United Kingdom based on Income Tax Returns and calculated that the total capital investment in 1865 was £6.1 billion.⁶ Comparison of Beeke and Giffen's analysis must be viewed with caution since the categories are unlikely to have been compiled in exactly the same way. Nevertheless, Table 4.1 shows that although investment in land and buildings increased by nearly £2.4

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billion over the period from 1799 to 1865, the relative importance of agricultural land decreased. The main investments in this sector were in farm improvements, which rose from 5 per cent to 10 per cent and, most significantly, housing. The rise in investment in 'Houses' from 9 per cent to 17 per cent reflected the rapid growth of urbanisation over the period. The proportion of the population of England and Wales living in towns with more than 2,500 inhabitants rose from 23 per cent in 1750 to 48 per cent in 1841.⁷

Table 4.1 shows that investment in public debt was never a dominant sector of the economy as a whole and declined over the period. On the other hand, investment in private sector companies and trade assets increased substantially. An analysis of employment patterns shows that by 1801 40 per cent of families were involved in trade, commerce or manufacturing and only 36 per cent in agriculture. The vast majority of these families were the middling sort.⁸ The relative risk and return from investment in different sectors of the economy: land, mortgages, government stocks and joint stock companies are investigated in this Chapter. The socio-economic background and gender of investors holding each type of asset were analysed and the propensity of different classes of investor to take risks was examined.

4.2 Land, Real Property and Mortgages

The importance of land and buildings in the economy of the eighteenth and nineteenth centuries is clearly illustrated in Table 4.1. Both Beeke and Giffen estimated that around half of the capital investment in Great Britain was in land, farm improvements and houses. The extent to which this accumulated capital was the result of conscious investment decisions or the inertia of hereditary land holding and how changes in social structure over the course of the nineteenth century were reflected in the ownership of these assets was the subject of contemporary debate and of more recent historical research.

Although Beeke and Giffen may have produced reasonably accurate estimates of the size of different sectors of the economy, there was little evidence of which sectors of the population owned land, buildings or houses. Contemporary opinion was based on speculation, informed by different political agendas. The Radical view, exemplified by

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John Bright, held that ownership of land in the 1860s was becoming ever more concentrated in the hands of a few men. The view of the Tory, Lord Derby, was that land was increasingly being held in middle-sized estates.⁹ The argument was finally resolved in the 1870s with the compilation of the *Return of Owners of Land*. Whilst the *Return* does show that land ownership was highly concentrated in the hands of a very few individuals, it also revealed nearly a million people outside London owned a freehold of some description.¹⁰

Mingay suggests that the landed interest was at the height of its power in the eighteenth century, when two-thirds of MPs were landowners and this declined over the next century.¹¹ This view is confirmed by Stone and Stone who noted that it was not until 1886 that members of the landed elite held less than half the seats in Parliament.¹² This view is modified by Corfield who suggests that Tory attempts to dominate Parliament through the use of property qualifications were ineffectual and that between 1734 and 1832, 51 per cent of MPs had commercial and professional interests as well as land.¹³ The evidence from the *Return of Owners of Land* reveals that land ownership was still concentrated in the hands of the 'Territorial Aristocracy' in the second half of the nineteenth century.¹⁴

The extent to which the owners of this land regarded it an investment, or an hereditary asset or an adjunct to a particular lifestyle has been the subject of considerable research. Although land remained politically important, its value as a secure, income-generating asset has been questioned. Mingay suggests that the landed elite saw increased incomes in the eighteenth century.¹⁵ Dr. Johnson believed, like many contemporaries, that 'it is better to have five per cent out of land, than out of money, because it is more secure; but the readiness of transfer, and promptness of interest, make many people rather choose the funds.'¹⁶ Researchers point to the substantial fall in land values during the American War, from 31 to 22 years purchase, which may have weakened the previously held perception that land was a secure investment with a stable capital value.¹⁷ Johnson died in 1784 and may well have been referring to the period before the war. Stone and Stone suggest that the principle economic advantage of holding land was not profit but security but by the eighteenth century, the security of

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government stock matched that of land.¹⁸ Dr. Johnson was also over optimistic in his expectation of a yield of 5 per cent on land. Net yields on land between 1744 and 1814 were generally below 3 per cent.¹⁹ Playford, writing in 1855, noted that the price of Consols and price of 'good Freehold Land in England' moved *pari passu*, yielding nearly the same, at 33 ½ years' purchase, as Consols at par.²⁰ Ward, writing in the mid 1850s, recorded that the annual return on land was 3 per cent, a first mortgage on real property yielded 4 per cent and ground rents yielded 4.5 per cent.

Although most researchers are agreed that landed estates were not generally acquired as investments in the eighteenth and nineteenth centuries, the extent to which land was acquired at all by the newly wealthy is the subject of conflicting opinions. Although Perkin was convinced there was an influx of wealth into the landed elite from the middle ranks, this view is challenged in research by Rubinstein and the Stones.²¹ Rubinstein used Bateman's *Great Landowners of Great Britain and Ireland* to calculate the real property assets of the very wealthy. Using this information, together with Probate Inventories and records of Inhabited House Duty, Rubinstein compiled lists of the millionaires, half millionaires and the 'lesser wealthy', that is those leaving over £160,000, in the period 1809 to 1858. Wealth was highly concentrated in this period, with 50 per cent of the wealth held by less than 2 per cent of the population. The vast majority of the wealthy inherited rather than acquired land. Rubinstein found little evidence that middle-class businessmen invested in landed estates. As Colquhoun confirms in his 1812 analysis of the family incomes, the majority of non-landed wealthy in Great Britain and Ireland were employed in commerce or finance.²² The Stones investigated 'the myth of upward social mobility' by examining the background of over 2,000 owners of substantial country houses and estates.²³ They also found little evidence of businessmen buying landed estates.

Thompson challenged these conclusions and suggested that there was evidence of the wealthy industrialists and merchants buying estates and that their heirs adopted an aristocratic lifestyle.²⁴ Thompson does concede, however, that land as a safe investment for the savings of businessmen declined from the late-seventeenth century onwards as other more liquid and higher yielding investments became available

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and that the only rationale for investment in land was the satisfaction of social aspirations.²⁵ Rubinstein's robust reappraisal of his earlier research in the face of Thompson's critique failed to find evidence of even moderately wealthy businessmen acquiring land to any extent. He examined the estates, valued at between £50,000 and £100,000, of businessmen who died in the years 1873 to 1875. The vast majority (96 per cent) owned less than 300 acres and 65 per cent owned no land at all.²⁶ The lower threshold of £50,000 for Rubinstein's study can still be criticised since it still excludes all but the wealthiest businessmen. The present study examines the propensity of a wide range of socio-economic groups to invest in land, through analysis of the CARD investors. The study also examines the extent to which the landed classes invested in the shares of the joint stock transportation companies.

4.2.1 Investment in Land by CARD Investors

The study compared Bateman's list of the owners of estates of more than 3,000 acres and an income of over £3,000 per annum with the investors in the CARD Database. Since Bateman's list was compiled from information collected in 1873, most of the owners of the estates would have been from a subsequent generation to those individuals who held shares in the period up to 1850. Thompson maintained it was these subsequent generations, the descendants of wealthy businessmen, who actually acquired estates. However, only 21 investors, or their descendants, out of a total of nearly 6,000 investors in the CARD Database, were found to own estates. This number may be understated by the omission of descendants with different family names, since the present research did not attempt to trace the family trees of all the CARD investors. Nevertheless, only a very small proportion of investors appeared to have owned substantial estates of over 3,000 acres. Fifteen out of the 21 landed investors were from the established landed aristocracy and their estates were inherited and not purchased by new commercial wealth. Of the six estates, which appeared to be owned by newly wealthy business interests, three were owned by bankers. These included members of the extended Lloyd and Taylor families. For example, Osgood Hanbury, the son of Osgood Hanbury and Mary Lloyd, and Joanna Winnington, daughter of James Taylor,

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were both owners of estates. The fortunes which were invested in these estates were originally earned by a previous generation and in the case of Joanna Winnington her estate was inherited from her husband, who was a member of the landed classes. Other researchers have noted the greater propensity of bankers to form connections by marriage to the landed elite and to invest in large landed estates in comparison to manufacturing and trading families.²⁷ This may have been because bankers found it easier to withdraw cash from the business and that ownership of an estate was a visible enhancement of their banking credentials.²⁸

This evidence from the analysis of the large population of CARD Database investors confirms Rubinstein's conclusion that businessmen did not invest to any extent in landed estates. Evidence may be missing, however, for the criterion for inclusion in Bateman's *Great Landowners*, namely an income of at least £3,000 and over 3,000 acres was in his own admission one which was likely to exclude 'mill-owners ... all the Cheshire soapboilers, Stafford potters, Durham and Northumberland coal-masters, Warwick hardwaremen, Nottingham hosiers, Yorkshire clothiers, and Glamorgan iron-masters'.²⁹ These were occupations typical of a substantial proportion of the CARD Database investors. It is possible that investors may have owned smaller estates. Nevertheless, an examination of the will extracts of a sample of 98 testators who owned shares in the BCN in the years 1787 to 1797 and 1820 to 1828 failed to reveal the ownership of any landed estates.³⁰

It was not possible to establish the relative value of real estate investments within the portfolio of total assets held by the CARD investors. A study by Earle of 375 individuals from the London middle class in the period 1660 to 1730 revealed that real estate made up 21 per cent of the total value of their estates. Just under 50 per cent of these real estate assets were London properties or suburban villas.³¹ It is likely that the CARD investors, drawn as they were from largely similar socio-economic groups would have held a similar portfolio of assets.

Habakkuk suggests that in the eighteenth and nineteenth centuries only the very wealthy could afford to buy an estate of the size which would yield a sufficient income to maintain a life-style they would have enjoyed if they had continued to hold a portfolio of

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higher yielding paper assets. As a consequence, the wealthy began to hold a higher proportion of their assets in government and other stocks.³² Certainly the cost of acquiring even a modest estate would have been beyond the means of most of the CARD investors. The average gross annual value of estates over 1,000 acres in Warwickshire was calculated to be £2.28 per acre.³³ The cost of buying an estate of 500 acres at 33 ⅓ years' purchase would thus have been around £35,000 in 1876. Although this was within the capability of some of the CARD investors, for the vast majority it was not an option. For example, as is shown in Table 7.4, only 108 investors left estates of £10,000 or more and only 20 had estates of over £50,000, excluding the value of any real property.

If wealthy businessmen chose to hold most of their assets in stocks and shares rather than land, did the landed elite also hold a substantial portion of their wealth in financial assets? The extent to which the landed held financial assets does not appear to have been extensively investigated by earlier researchers. This study shows that very few landed proprietors owned shares in the canal and railway companies in the present sample and that the shares they owned in these companies were not an important part of their total assets. For example, one of the 21 landed investors was the Earl of Dartmouth. In 1768, the Earl was an active promoter of the BCN³⁴ and later, in 1791, of the Warwick & Birmingham canal.³⁵ On his death in 1802 his shares in the BCN were sold. At this time, the value of his ten £100 shares, for which he subscribed at par, was £7,300, an insignificant part of his total wealth, since the gross annual income from the Dartmouth estates in 1883 was £58,000.³⁶ The four landed proprietors who were among the original subscribers to the BCN in March 1768 are listed in Table 4.2. Only the Earl of Dartmouth retained his shares for any length of time. On death, neither his shares nor those of Sir Lister Holte were transferred to family members.

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Table 4.2: Disposals of BCN Shares by Landed Proprietors

	Shares	Disposed of
Earl of Hertford	10	June 1772
Earl of Dartmouth	10	April 1802
Sir Lister Holte	10	July 1770
Francis Farquharson	5	May 1769

Source: Data from BCN Share Transfer Ledger.³⁷ Analysis of the transfers of 495 shares of 102 original subscribers to the BCN.

Some proprietors, such as the Earl of Dartmouth were prepared to support new projects, because they opened up mines on their estates to urban markets or they recognised their general development potential.³⁸ However, the present study shows that even these landowners soon disposed of their holdings and did not pass them on to their heirs. The landed class did not appear to take a dynastic view of share ownership. Very wealthy landed proprietors may have had competing uses for their capital in developing their estates. They may not have been interested in investing in companies largely managed by middle-class entrepreneurs. Lord Calthorpe, for example, in 1883 was earning £54 per acre gross annual value for his 2,073 acres in Warwickshire largely through development of land in Edgbaston for housing.³⁹ His distaste for industrial development on his land may have extended to investment in canals and railways,⁴⁰ although his ancestor, Henry Gough was an initial subscriber to the Warwick & Braunston, the Warwick & Birmingham and the Worcester & Birmingham canals.⁴¹

In total only 3.4 per cent of canal investors and 5.6 per cent of railway investors were clearly identifiable as landed proprietors and the majority of these did not own substantial landed estates.⁴² The increasing wealth of the middle classes throughout the period of this study did lead to wider investment, albeit on a modest scale, in real property assets. By 1856, £6 million of the total £40 million annual capital expenditure was invested in the construction of dwellings.⁴³ Previous research suggests that the lower middle classes preferred to invest in property for rental, where they could provide personal supervision, rather than invest in what they perceived as more risky stocks and shares.⁴⁴ Modest purchases of land towards the end of a commercial career were a safe and traditional hedge against the commercial failures of the nineteenth century and the

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more affluent would have acquired properties for their own use, often separate from their places of work.⁴⁵ However, the wealthy businessman was more likely to buy a suburban villa than a country estate.⁴⁶ Davidoff and Hall suggest that affluent middle-class businessmen moved from the centre of Birmingham from the late-eighteenth century onwards and adopted a suburban existence where they could still identify themselves as part of the town's elite. As a consequence Edgbaston grew from a population of 1,000 in 1801 to around 16,500 in 1841.⁴⁷ Certainly, the behaviour of the BCN investors confirms this movement from the centre of Birmingham. In 1768, 60 out of the 105 shareholders (57 per cent) came from Birmingham. Most of them had addresses in the city centre, such as Bull Street, High Street or Colmore Row. No one lived in Edgbaston.⁴⁸ By 1840, the shareholders in the BCN were spread over a much wider geographical area. Of the 131 investors who lived in the Birmingham area, 19 (15 per cent) came from Edgbaston.⁴⁹ A typical example of professionals moving out from the centre of town and living in houses separate from their place of business was Thomas Lee, an attorney. In 1768 he lived in Colmore Row but he died a resident of Edgbaston.

Mortgages were another mechanism whereby investors could participate in the real estate market. This securitisation of real estate investment might have been expected to prove attractive to the typical CARD investor, since it combined aspects of lending money, which were familiar to many businessmen, on the security of a real asset.

4.2.2 Investment in Mortgages

Previous research suggests that in the 1750s the mortgage market was extremely important in the provinces, in comparison to investment in government securities, which was largely a metropolitan habit.⁵⁰ Earle, in his analysis of the estates of middle-class Londoners in the period 1660 to 1730 found that around 30 per cent of their assets (real and financial) were held in mortgages and loans. Thus, even in London mortgages were an important investment. Mortgages were considerably more risky than investing in land or government stock. In the eighteenth century it was difficult to foreclose on a mortgage. Allen, in his model of land prices, attributes a 75 basis point

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premium over the yield on government stocks to the yield on mortgages to compensate for the increased risk.⁵¹ Ward's observations in the 1850s, discussed above, reveal an even larger risk premium between the 3 per cent yield on land and the 4 per cent yield on a mortgage.

Examination of the wills of 98 CARD Database investors revealed little evidence of investment in mortgages (see Chapter 5.2.2). Only two references to investors holding mortgages were found. The first was Elizabeth Lovatt, a widow from Aston, who held six shares in the BCN, and also owned at her death in 1827 a mortgage for £1,500 to Thomas Parry, a pawnbroker.⁵² The mortgage constituted an important part of her total estate of £4,000. The only other reference to mortgages was in the will of Samuel Galton, the gunmaker from Birmingham, who died leaving £150,000 in 1799. It appears he did not own any land, but he did own urban properties in the form of houses at Duddeston and Birmingham and cottages in Somerset. There is also a reference to his ownership of mortgages. However, the bulk of Galton's assets seem to have been held in government stocks and canal company shares.⁵³

The evidence of the present study indicates that in the West Midlands, there was an elite of financially sophisticated capitalists who aspired to an urban rather than a rural, landed lifestyle. The investor population, particularly in the later years included similar individuals based in London, suggesting there may have been a cohesive urban elite of middle-class investors united by similar attitudes to risk and financial prudence. These investors showed a preference for holding financial assets, whether they were government stocks, canal and railway company shares or the shares of joint stock banks, discussed below.

4.3 Bank Deposits and Shares

Most previous research has concentrated on the role of banks as providers of credit, primarily to business, rather than as investment opportunities for personal customers and shareholders.⁵⁴ However, it was on the basis of funds provided by customer deposits, Notes and, in the case of joint stock banks, shareholders' equity that banks could provide those credit facilities. In the early-eighteenth century money

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markets were local. Intermediaries with specific skills, such as attorneys might arrange a mortgage for a landowner, or a loan to a manufacturer.⁵⁵ These loans were funded by individuals with surplus cash to invest, who often knew the credit-worthiness of the borrower. For example, on 20 July 1770, Mary Galton of Taunton, a spinster daughter of Samuel Galton I, provided a loan of £400 to Joseph Barker, a Birmingham surgeon, on the security of three shares in the BCN. Barker was also known to John Galton, Mary's uncle, who was a merchant in Bristol and who acted as adviser to Mary in the transaction.⁵⁶ The transfer ledger of the BCN for the 1770s revealed that Mary probably made a series of such loans. She bought a further two shares from Joseph Barker for £250 on 11 October 1770. She also bought five shares from Matthew Boulton for £600 on 15 March 1770 and resold them to him for the same value on 25 July 1772. Mary provided the loan and in return the shares transferred into her name. The market value of the shares was less than the amount of the loan, allowing Mary a margin should the value of the stocks fall over the life of the loan. The borrower agreed to pay interest on the amount borrowed and any calls on the shares during the life of the loan. Mary agreed to sell the shares back to the borrower at the same price at which she acquired them when the loan matured. For example, the market value of the shares which Mary bought from Boulton was £715, giving Mary a margin of 16 per cent to cover any fall in the value of the collateral. When the loan matured the shares were worth £1,230, although they were transferred back to Boulton at the agreed price of £600.⁵⁷

This was a fairly typical transaction of this period where loans were made between parties who were known to each other.⁵⁸ As transportation and communication improved, other mechanisms to link investors and borrowers were established. Country banks were established and surplus funds could be moved over greater distances. Investors and borrowers were no longer personally linked. Banking services for most of the period 1750 to 1850 were carried out by thinly capitalised partnerships, relying upon the personal credit of the individual partners. These country banks provided a mechanism which enabled individuals and firms to remit funds to other parts of the country. This cash generally flowed into and out of London through correspondent banks in the City. The country banks provided a relatively safe repository for idle funds for their

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local customers and notes for paying wages and other cash transactions, in the absence of available coinage.⁵⁹ The early banking partnerships comprised merchants, manufacturers, tax collectors, attorneys and landed proprietors. For example, Robert Hale, a young attorney from Bristol bought a partnership in the Exchange Bank in Bristol with £4,000 lent to him by an obliging uncle.⁶⁰ Cameron estimates that the average capitalisation of the country banks by the end of the eighteenth century was £10,000.⁶¹ This low capital requirement and lack of regulation meant that the barriers to entering the banking business were low, explaining the rapid expansion of the country banks. From less than twelve country banks in England and Wales in 1750, the number rose to more than 100 by 1780, over 300 by 1800 and 684 in 1825.⁶² The capital of country banks alone increased from less than £1 million in 1775 to at least £6 million by 1825. If the capital of the London banks is included, investment in the banking sector rose from £2.5 million to £8.5 million in the same period.⁶³ The West Midlands had the highest density of banks, with one office for every 12,000 inhabitants. In Birmingham alone by the 1820s there were at least eight banking partnerships.⁶⁴ However, the banking crisis 1825 caused over sixty country banks to fail, including the partnership of Gibbins, Smith & Goode of Birmingham. Elizabeth Anne Galton, the daughter of Samuel Tertius Galton, who was a member of another Birmingham banking partnership, recalled in her memoirs how her father's bank narrowly avoided the same fate. Samuel Tertius's experiences in 1825 persuaded him to run down the partnership and close the bank in 1831.⁶⁵

4.3.1 Assessment of Bank Risk

Following the 1825 crisis, the government attempted to improve the capital adequacy of the country banks, which were still limited to six partners.⁶⁶ In 1826 joint stock banking was permitted outside a sixty-five mile radius of London, enabling banks to raise more adequate levels of capital. In 1833, joint stock banks were permitted within this zone, provided they did not issue notes. By the early 1840s there were 600 joint stock banks in England and Wales with capital of between £25,000 and £100,000. The Bank Charter Act of 1844 required new joint stock banks to have a minimum capitalisation of £100,000.⁶⁷ This new generation of banks offered investors a less risky

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opportunity to place money on deposit than had been available with the under-capitalised banking partnerships. For example, the partnership of Gillet & Gibbins in Banbury had 175 depositors in 1822 with combined balances of £35,498, on average just over £200 per customer. Joseph Gibbins, one of the partners, contributed the £6,000 capital for himself and his brother-in-law, Joseph Ashby Gillett.⁶⁸ Gillett was the working partner, and although he started the partnership with no assets his personal net worth in 1840 was just under £30,000.⁶⁹ Gibbins was a high net worth individual, whose personal assets would have been available to creditors in the event of the partnership failing. For example, he owned 150 shares in the Coventry Union Bank in 1836,⁷⁰ and he died in 1870 with assets of £300,000.⁷¹ Nevertheless, in general, banking partnerships such as Gillett and Gibbins's could not offer the same level of capital adequacy and depositor security as a joint stock bank. Rae, writing in 1885, suggests the level of prudent reserves should be based on a 'current ratio' of one-third of immediately available resources (i.e. cash, money at call and short notice and Consols) to liabilities to the public (i.e. deposits, current accounts, notes in circulation, drafts after date, acceptances by the bank and bills for collection).⁷² Analysis of the semi-annual Balance Sheets of the Stourbridge & Kidderminster Bank between 1838 and 1862 reveals that current assets exceeded current liabilities by an average of two to one over the period.⁷³ Clearly, the Bank was managed on a very conservative basis. This is confirmed by calculation of the more generally used Capital Adequacy Ratio, which was on average 69 per cent over the period 1838 to 1862.⁷⁴ This compares to the Capital Adequacy Ratio of the Gillett & Gibbins partnership of 16 per cent. Collins notes that the average Capital Adequacy Ratio of banks in the period 1840 to 1849 was 35 per cent. A decade later this had fallen to 20 per cent when the size of banks had increased substantially, and were able to take a portfolio approach to risk asset management.⁷⁵ As a consequence, the capital adequacy ratio could be reduced without necessarily increasing risk. Although both the Coventry Union and the Stourbridge & Kidderminster Banks survived and later were amalgamated into the Midland Bank, other joint stock banks did not prove to be such a sound investment. In Elizabeth Gaskell's *Cranford*, published in 1853, the failure of the fictional Town and County joint stock bank, which

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had so reliably paid an over-generous eight per cent return, illustrated the spectre which haunted many middle-class spinsters and widows.⁷⁶

In general, banks paid a low interest rate for their funds. Richards noted that in 1832 banks were paying 3 per cent interest on time deposits of over 6 months. No interest was paid on demand deposits or deposits of less than 6 months.⁷⁷ Given that even joint stock banks were not without risk, a 3 per cent yield might not seem to be very attractive. However, the rapid growth of the banking sector after 1825 reflects the demand for these services. Capital employed in banking at the end of 1849 was estimated to be £190 million.⁷⁸

4.3.2 Investment in Bank Shares

This growth demonstrates that bank shares were popular investments. In some cases, the shares could only be purchased on the condition that a banking account was opened at the same time.⁷⁹ The Coventry Union Bank (CUB), which was established in 1836, had a share capital of £200,000 comprising 10,000 shares of £20 each.⁸⁰ Bank shares were generally for lower denominations than those for the canal companies. By the time joint stock banks were being established, proprietors had to compete for capital with railway stocks. They appear to have adopted some of the techniques to encourage investment from a broader, and perhaps less wealthy constituency.⁸¹ However, the Bank Charter Act of 1844 imposed a minimum nominal value of £100 on new issues of bank shares. This was an attempt to ensure that in future bank capital would be provided by substantial investors who were theoretically capable of paying the calls.⁸² The socio-economic background of the investors in the CUB was compared to that of the investors in the CARD Database. The results of the analysis are set out in Table 4.3 below.

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Table 4.3: Socio-economic Groups of Investors in the Coventry Union Bank and the CARD Database

	Coventry Union Bank		CARD Database	
	Number	% of Total	Number	% of Total
Landed	17	6	503	9
Rentier	52	20	1,502	25
Clergy	6	2	467	8
Professional and Bankers	31	12	849	14
Manufacturers	45	17	307	5
Merchants	23	9	509	9
Artisans and Shopkeepers	67	25	935	16
Women	21	8	841	14
Total	262	100	5,913	100

Source: CUB investors comprise 262 investors holding 10,575 shares.⁸³

Table 4.3 shows that there was a higher proportion of investors from lower income groups in the CUB, represented by the Artisan and Shopkeeper group, than amongst CARD Database investors as a whole. The relatively low nominal value of the CUB shares may have encouraged these groups to invest. Manufacturers are also better represented amongst the bank shareholders than in the CARD Database. Many of the Coventry ribbon manufacturers were initial investors in their local bank. Sixty of the 262 CUB investors (23 per cent) were also investor in the CARD Database. Not surprisingly, these individuals belonged almost exclusively to the more wealthy Rentier and Professional groups, which dominated the share registers of the canal and railway companies.

The Stourbridge & Kidderminster Bank, established in March 1834 with £250,000 capital made up of £25 shares, also appears to have actively pursued less wealthy investors. The promoters intended to issue £50 shares which would be 'highly advantageous to the Manufacturing, Trading and Agricultural Interests ... as well as beneficial to the Monied Interests'.⁸⁴ By the time the bank was floated, the nominal value of the shares had been halved, presumably to provide wider appeal. In addition, only £10 per share was called in two instalments in the first year and the remaining £15 could not be called until 21 months after the Deed of Settlement was signed. The occupations of the Stourbridge & Kidderminster shareholders are not known but the proportion of female shareholders was 16 per cent, which was very similar to that in the CARD

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Database. Ollerenshaw also notes the importance of female shareholders in joint stock banks with the observation that two-thirds of the 2,100 shareholders of the West of England Bank were reported to be spinsters or widows.⁸⁵ The requirement that the potential investor should also open a bank account did not appear to rule out female shareholders. There is also evidence that 22 out of the 228 customers of the Gillet and Gibbins partnership were women.⁸⁶

The importance of preserving stability in the banking sector meant that banks were subject to greater legislative control by the government and supervision by the Bank of England than other sectors of the economy. In spite of a few spectacular collapses, depositors and shareholders must have had a considerable degree of confidence in the banking sector. This is evidenced by growth of banks as investment opportunities. By 1843 banks were the second largest category of public companies traded on the London Stock Exchange in terms of market capitalisation. The top four groups, which had a total capitalisation of £106 million, were railway companies, joint stock banks, canals and turnpike trusts. The turnpike trusts accounted for 20 per cent of the total. Banks accounted for another 20 per cent and canal companies for 17 per cent, although railway companies dominated the market with 54 per cent of total capitalisation.⁸⁷ Although investment in public companies was, of course, insignificant in comparison to the market in government stocks.

4.4 Government Stocks

By the start of the eighteenth century there was a well-developed and well-organised government debt market.⁸⁸ This was due to the availability of largely homogenous tranches of securities, which were familiar to the investing public. In spite of the disruption caused by the South Sea Bubble early in the eighteenth century, the market continued to grow and interest rates tended to fall, indicating growing economic stability and confidence.

The government debt market developed from initially disorganised government spending. Up to the end of the seventeenth century, many government departments issued tallies or bills. These were short-term debts, which were gradually consolidated,

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and this process was accelerated by the stop on the Exchequer in 1672. The Treasury ceased repayment of £1.3 million of fiduciary notes and converted the debt into an irredeemable stock paying interest, first at 6 per cent, later reduced to 3 per cent.⁸⁹ This created substantial tranches of long-term debt. Another mechanism for raising long-term government debt was demonstrated in 1694 when the Bank of England was established. The Bank's share capital of £1.2 million was lent to the government in return for a 'perpetual fund of interest' of £100,000 secured on excise duties.⁹⁰ This process of 'in-grafting' the share capital of joint stock companies was commonly used to raise government debt at this time. It reached its climax in the restructuring of the South Sea Company debt in 1721. The concept of hypothecating specific taxes or excise duties for the payment of interest was also a characteristic of issues of government stocks in the early-eighteenth century. The 'funded' debt may have provided additional comfort to stockholders seeking a low-risk investment. Public debt tended to grow rapidly in times of war as can be seen in Table 4.4.

Table 4.4: Growth of the National Debt 1727-1854 (In £ millions)

	Additions to and (Repayments) of National Debt	Total National Debt
Accession of George II in 1727		52
Additional to Peace of Paris 1763	87	139
Paid off Peace 1763-75	(10)	
Debt at start of American War		129
Additional during war 1778-84	121	
Debt at end of War		250
Paid off during peace 1784-93	(11)	
Debt at start of French War		239
Additional during War 1793-1815	602	
Total on consolidation of English and Irish debt in Feb 1817		841
Cancelled 1817 - Jan 1854	(67)	
National Debt at 5 Jan 1854		774

*Source: Playford.*⁹¹

Throughout the period, the process of consolidating issues and the reducing interest continued. The bellwether 3 per cent Consolidated Bank Annuities (Consols) were created in 1751 from a series of earlier issues, the oldest dating from 1731. The total amount of Consols in issue in 1751 was only £9 million, but Consols became the

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main medium for government borrowing for the next century. By 1843 there were £369 million, 3 per cent Consols in issue, which comprised 50 per cent of the total Public Funded Debt.⁹² Throughout the period 1750 to 1850, the government successfully reduced the nominal interest rate on existing stocks. For example, after the end of the War of the Austrian Succession, interest on 4 per cent annuities was renegotiated down to 3.5 per cent until December 1757 and thereafter to 3 per cent. Although new issues were at par, the yield was often enhanced with annuities and lotteries, to reflect the prevailing market rate of interest. Various researchers have noted the downward trend in long-term interest rates throughout the eighteenth century.⁹³ Rates tended to rise during wars when the government was issuing new debt, but overall the trend was downwards. This trend continued for the first half of the nineteenth century and is shown below in Figure 4.3. The decline in interest rates was the result of both economic factors and the growing confidence of investors in the credit-worthiness of the government, as evidenced by its management of the national debt and the efficiency of the government stock market.

Today, British government debt is regarded as risk-free. This does not mean that the investor is protected against changes in economic conditions, which may cause the capital value of the stock to fall. Rather, risk-free means that the government can be relied upon to repay the debt on maturity and pay the interest when it becomes due. The concept of freedom from risk also encompasses the mechanism of a deep and active market, which allows investors to sell the security when required. This is particularly important in the case of holdings of perpetual or irredeemable securities. It could be argued that by 1750 government stocks were regarded as risk-free investments within the definition set out above. Certainly by 1855 the opinion of brokers was that 'Public Funds [were] the safer means of employing spare money, particularly in small sums and for uncertain periods'.⁹⁴ It seems that a wide spectrum of investors bought government stocks, including 'Duchesses, domestic servants, noble Dukes, liveried flunkies, Bankers and millionaires, humble shopkeepers or merchant clerk and warehouseman'.⁹⁵ The number of investors rose from 10,000 in the Reign of Queen Anne to 60,000 at the accession of George III, and to over 500,000 by 1815. Investors were overwhelmingly

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from London.⁹⁶ The contemporary view was that such investments were particularly suited to widows and children, who held small amounts of stock. Playford analysed the interest paid on funded debt in 1851 and concluded that nearly half of the investors in government issues held stock with a total nominal value of less than £334.⁹⁷ This view is confirmed by Roseveare who calculated that only 2 to 3 per cent of government stockholders held balances of more than £10,000. He also noted the existence of an important group of male investors, who owned 40 to 50 per cent of the total government debt in balances of between £1,000 and £4,999. The present study also found evidence that government stocks were held by some of the wealthiest socio-economic groups amongst the CARD investors.

The market in government securities in the eighteenth and nineteenth centuries was made up of private individuals and later firms of brokers and jobbers. The government did attempt to regulate it, but these attempts were largely ineffectual.⁹⁸ In spite of the appointment of a government broker in 1786 to carry out the redemption of securities under Pitt's sinking fund arrangements, there was little government interference in the market. As a consequence, the yield on government stocks reflected the prevailing economic conditions.

4.4.1 Investment in Government Stock

There is evidence that investors in the CARD and BARD Databases were also active investors in government stocks. A small sample of holders of 3 per cent Consols for the period 1817 to 1827 was checked against investors in the CARD and BARD Databases.⁹⁹ Although only three ledgers were examined for stockholders with surnames beginning with the letters 'G' or 'L', 25 accounts for investors in the CARD and BARD Databases were identified. This suggests widespread investment in government stocks amongst the CARD and BARD Database investors. The sample was very small, but all the account holders were from the wealthier socio-economic groups. The average size of the 25 holdings was £5,500, which is substantial. Half of the accounts were held by bankers, such as Samuel Galton and his son Samuel Tertius. These accounts were often held jointly with other bankers, for example, Samuel Galton held one account with

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Charles Lloyd, another Birmingham banker and a further account with Robert Barclay, a London banker.¹⁰⁰ This suggests that government stocks may have been held as assets in banking partnerships or by bankers in their capacity as trustees, although there is no direct evidence for this. Rae's advice to country bankers unequivocally recommends investment of surplus funds in Consols because they, 'stand unrivalled and alone in the supreme quality of convertibility. They are the one security, which you can, with absolute certainty, turn into cash at any hour of any business day in the worst throes of panic'.¹⁰¹

Three of the 25 accounts were held by women. The diversified holdings of financial assets owned by Christiana Geast, a widow from Moseley, are discussed in detail in Chapter 5.2.2. Geast maintained a holding of over £4,000 of Consols between 1818 and 1827.¹⁰² The probate value of her estate, excluding real property, was £14,000.¹⁰³ In Geast's case, her holding of Consols comprised about 30 per cent of her total financial assets. The holdings by the wealthy Galton banking family accounted for a much smaller proportion of their total net worth. Geast's investment strategy conforms to the norm that government stock was the investment of choice for risk-averse widows and orphans. Strategies to mitigate investment risk through techniques such as portfolio diversification are discussed in detail in Chapter 5.2.

The liquidity of the deep market for government stocks was undoubtedly attractive to financial investors as well as businessmen who might be required to sell their holdings at short notice. In the present study, Consols were selected as the exemplar of a risk-free government stock. Cotterell's view, already discussed above in Section 4.2.2, that investment in government stock was predominantly a metropolitan habit cannot be challenged on the basis of the restricted investigation of investment in government stocks in the present study.¹⁰⁴ Nevertheless, there is evidence to suggest that relatively affluent middle-class investors from urban provincial environments were just as likely to invest in government stocks as their counterparts in London.

The market for canal and railway shares was also relatively liquid in comparison to that for land or mortgages. Railway companies in particular were traded on a national market and had large numbers of shares in issue. However, investment in canal and railway companies represented a considerably greater risk than that in government

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stock. The relative risk of investment in canal and railway companies is examined below.

4.5 Investment in Canal and Railway Shares

Investment in a fledgling canal or railway company, particularly before construction was completed, was potentially risky. The present study attempted to discover how and on what criteria the CARD Database investors could distinguish between different levels of risk. It has already been established that these investors eschewed illiquid, low yielding investments in land and mortgages. Were these prudent rentiers dazzled by the potential rewards of high dividends and spiralling share prices? The CARD Database of 5,913 investors was analysed to provide socio-economic profiles of investors for each of the eleven canal and seven railway companies in the study. A number of methods were explored for ranking the individual companies in terms of the relative levels of risk. The study reviewed the propensity of investors from different socio-economic groups to hold shares in companies with varying levels of risk.

4.5.1 Measures of Risk

The yield of an investment is determined both by its income and capital value. Throughout this work, yield is defined as the annual income stream divided by the price at the time of measurement (the Current Share Price Yield). The amount and variability of the Current Share Price Yield on a particular stock can be used as a measure of its relative risk. However, since yield is defined both by the income stream and the price of a stock, yield alone cannot be used to evaluate relative risk. For example, newly established companies often pay low dividends or none at all, but the expectation of future dividends may result in demand for their shares driving up the share price. These companies are characterised by a high Price/Earnings (P/E) Ratio.¹⁰⁵ Generally companies with a high P/E ratio are higher-risk investments. In contrast, companies with a predictable cash flow but little growth potential are likely to have a low P/E ratio, a high yield and to be generally regarded as low-risk investments. In the eighteenth and nineteenth centuries investors were just as keen as current investors to gamble on investments in high-risk companies.¹⁰⁶ Then as now, government stock was regarded as

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a low-risk investment.¹⁰⁷ Investors expect a higher yield or 'risk premium' when investing in non-government stocks. The higher the perceived risk, the greater the required premium over government stock yields to compensate for that risk.

The second measure of risk is the variability of the yield on an investment. This variability must be measured in comparison to the volatility of the market as a whole, or to a sector of the market. This measurement is often referred to the stock's *beta*.¹⁰⁸ A high *beta* indicates that a stock is more volatile than the market and low *beta* means the converse. For example, in today's stock market, utility companies are characterised by a reliable cash flow but have little potential for growth. They tend to have relatively low leverage and thus perform better than the market in times of recession and worse in booms. This means that their share price rises more slowly in a bull market and falls less in bear conditions. Their low *beta* reflects their relatively low risk. In contrast, companies such as modern technology stocks, which are the equivalent in many ways of the eighteenth-century canal companies, are highly geared and produce little or no positive cash flow. They may enjoy high share prices in boom times but are vulnerable to market downturns. These stocks have high *betas* reflecting the riskiness of shareholder returns. Calculation of *beta* is predicated on the construction of a reliable index of share prices from which to measure the variability of a particular stock in comparison to the market.

An index has already been attempted for nineteenth-century railway shares,¹⁰⁹ although no index of canal shares seems to have been completed. In the present study, an index of yields on canal shares for the period 1811 to 1846 was calculated using data from the *Course of the Exchange*, as described below. However, the unreliability of the underlying data invalidated the calculation of the *betas* of individual canal company stocks. Although canal share prices were quoted on the London Stock Exchange from 1811, the prices recorded in the *Course of the Exchange* were based on thin markets and the series is not complete. For example, discrepancies were discovered in the timing of prices recorded in the *Course of the Exchange* and actual transfer prices recorded in the books of two of the companies in the series. Recorded prices often remained suspiciously unchanged for significant lengths of time suggesting that no trades had taken place. In addition, there was no data at all for the period before 1811,

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since prices were only recorded in the *Course of the Exchange* after that date. As a consequence, quantitative assessment of canal company risk using *betas* was not attempted. Instead, several qualitative measures were used to assess the relative risk of each stock.

The overall risk assessment for each canal company was derived from a combination of yield and volatility data, together with a series of qualitative measures of the construction and operating risks for each company. Share price data for the railway companies were also incomplete, although they were probably more reliable than that for the canal companies. The railway share price index of Gayer et al. was based on annual averages and was not sufficiently sensitive for use in quantitative analysis using *betas*. Analysis of various performance indicators for each of the railway companies revealed a high degree of homogeneity and it proved impossible to differentiate levels of risk among the group of railway companies.

4.5.2 Data Sources

In the present study, share price data for eleven West Midland canal companies were collected for the years 1811 to 1846. Data for twelve West Midland railway companies were collected, where applicable, for the years 1826 to 1846. All data for the years 1819 and 1820 were missing. The data were taken from the *Course of the Exchange*, which records *bona fide* bargains made by members of the Stock Exchange.¹¹⁰ By 1811 it was published by James Wettenhall, 'by authority of the Stock Exchange Committee'.¹¹¹ The recorded prices are those for current settlement, since the *Course of the Exchange* did not publish prices of bargains made for time.¹¹² The price of each of the eleven canal and twelve railway companies' shares were extracted on a monthly basis from the edition of the *Course of the Exchange* published on the day nearest to the middle of the month.¹¹³ Values for months when no price was recorded were left blank and not interpolated. The annual dividend rate was taken from the edition of the *Course of the Exchange* selected for the month of March.

Previous research on eighteenth- and early- to mid-nineteenth-century stock prices has used the *Course of the Exchange* as the source for share price data.¹¹⁴

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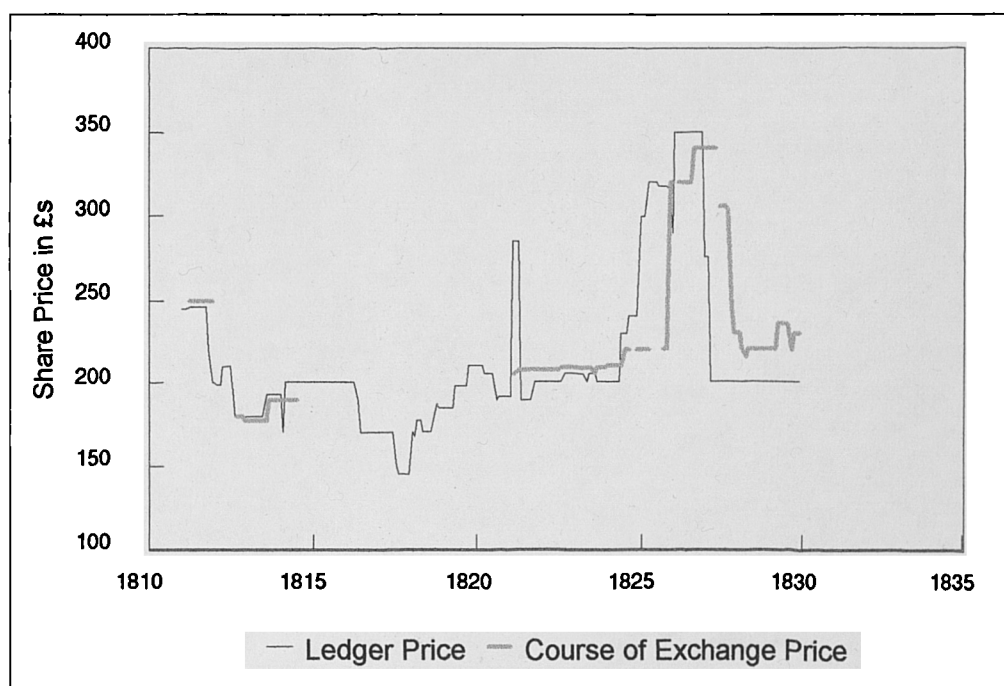
However, this earlier research, with the exception of Gayer et al.'s railway share price index, analysed the behaviour of government and quasi-government stocks rather than that of joint stock companies. Whilst the *Course of the Exchange* may probably be regarded as a reasonably reliable source for data on prices of these stocks, or even that of railway companies, where there was a relatively deep and active market, less reliance can be placed on the quotes for shares of canal companies. Five of the canal companies examined in the present research had less than one thousand shares in issue. The majority of these canal shares appear to have been traded in the local market rather than on the London Stock Exchange. The prices quoted for in the *Course of the Exchange* may not therefore accurately reflect the market price of the shares. For some companies, the same fixed price is quoted for long periods of time. For example, a constant price of £800 per share is quoted for the Coventry Canal for the twelve months between March 1813 and February 1814. In other instances, there are no quotes at all for several months at a time. In order to check the accuracy of the quotes in the *Course of the Exchange*, share prices for two of the canal companies were compared with the actual prices of share transfers, which had been recorded in the books of those companies.

There are continuous records of share transfers in the archives of the Stourbridge Navigation for the years 1776 to 1827,¹¹⁵ and the BCN archive for the period 1768 to 1824.¹¹⁶ Three hundred separate share transactions were analysed for the Stourbridge Navigation and 887 for the BCN. The Dudley Canal has a less complete record covering 45 shares transferred between 1776 and 1779.¹¹⁷ The transfer share prices in the books of the companies were screened to remove all sales of stock at nominal value. These prices were generally in relation to transfers on death by trustees to legatees. The BCN share prices were adjusted to take into account scrip issues.¹¹⁸ All share transfers had to be registered by the company concerned. In the present study, the transfer information was extracted from bound ledgers or numbered transfer deeds, providing a complete series for the periods examined. The transfer deeds had to be signed by the parties to the transfer in the presence of officers of the company. Apart from the administrative constraints of gathering the parties to the transaction together to

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sign the papers, there cannot appear to have been any advantage to delaying the formal transfer process. There is no evidence to suggest that transfers were entered on the ledgers at the next accounting dates or dates of meetings of the committee or assembly. The date of transfer in the books of the company was thus assumed to be close to the date the shares were sold. The share prices obtained from the *Course of the Exchange* and the Stourbridge Navigation Transfer Ledger were plotted on Figure 4.1.

Figure 4.1: Stourbridge Navigation Transfer Prices of Shares versus Course of Exchange Prices



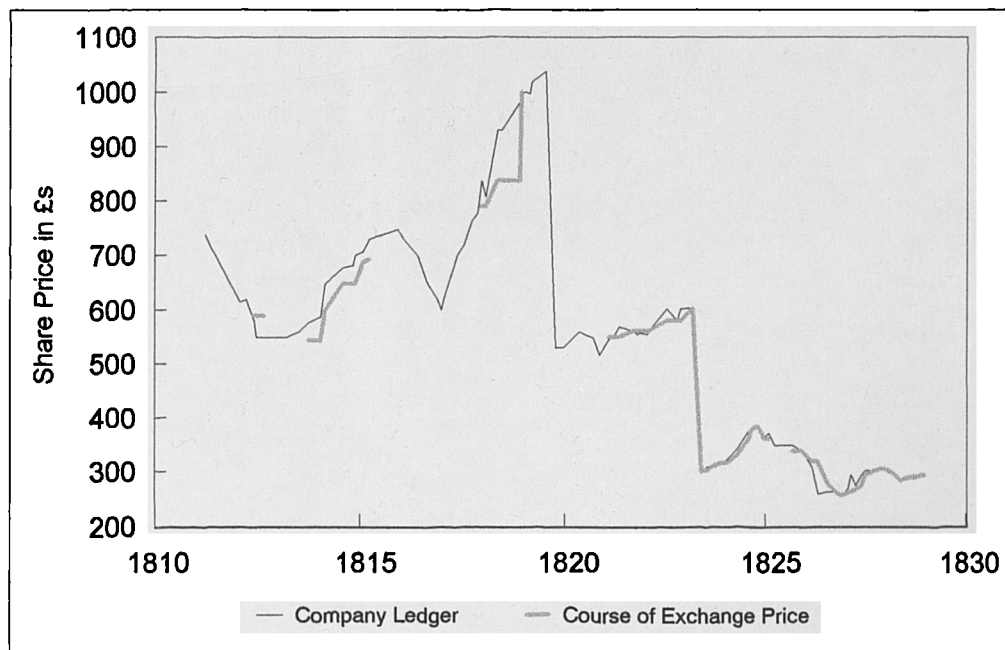
Source: Ledger price extracted from the Share Transfer Ledger.¹¹⁹
Course of Exchange Prices extracted from *Course of the Exchange*
nearest day to the middle of the month.

Figure 4.1 shows that although the prices quoted in the *Course of the Exchange* follow the same cycle as those recorded by the company, they lag the price of the actual share transfers by approximately twelve months. The lack of information in London about the Stourbridge shares may be explained by the fact there were only 300 such shares in issue. Analysis of shareholdings of the Stourbridge Navigation in 1809 indicates that only 16 of these (5 per cent) were held by shareholders based in London.¹²⁰ In contrast, Figure 4.2 shows that the BCN share prices taken from the *Course of the Exchange* are

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closely correlated with those recorded in the company's own transfer ledger. This suggests that information about the BCN was readily available in London. In Figures 4.1 and 4.2 the large gaps in the *Course of the Exchange* prices shows the poor quality of the series reported in this source.

Figure 4. 2: BCN Transfer Prices of Shares versus Course of Exchange Prices



Source: Course of Exchange Prices extracted from Course of the Exchange nearest day to the middle of the month. BCN share prices from Memorandum of Income and Expenditure.¹²¹

Analysis of the BCN shareholdings in 1840 shows that fewer than 8 per cent of the shares were held by Londoners.¹²² Assuming that London-based investors were more likely to use London brokers to sell their shares, rather than seeking buyers in the local Birmingham market, approximately 640 BCN shares were potentially available to be traded in London. In general, however, share turn-over was low and in 1828, the last year for which BCN company records exist, only six shares in total changed hands.

In the case of the BCN, the *Course of the Exchange* appears to have given an accurate record of share prices. The disparity between Stourbridge share prices recorded in the company books and those recorded in the *Course of the Exchange* casts some doubt on the accuracy of price data taken from the *Course of the Exchange* for the

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remaining nine canal companies. Unlike the Stourbridge Navigation, however, all the other companies for which data were available had larger issued share capitals of between 500 and 11,500 shares. Inspection of the data confirms that the market in the shares was very thin, with the possible exception of Grand Junction canal shares. This is evidenced by the gaps in the series and the tendency for share prices to remain constant over long periods of time. For example, the share price of the Coventry Canal remained constant at £730 between January and December 1832. Although this was a year with little price movement, the more actively traded Grand Junction Canal did show evidence of some fluctuation between a high of £232.50 and a low of £224 over the same period.

There were no railway company share transfer records against which to check the accuracy of prices recorded in the *Course of the Exchange*. However, railway share prices were probably more reliable than those for the canal companies as there were more shares available for trading. With the exception of the Cheltenham Railway Company, all the railway companies in the study had at least 5,000 shares in issue, up to 25,000 in the case of both the London & Birmingham and the Great Western Railway. In addition, railway company shares were actively traded on the London Stock Exchange. Examination of the *Course of the Exchange* revealed a number of prices recorded each month for each of the most actively traded railway companies.

An index of the relative investment risk of each of the eleven canal companies and the group of seven railway companies for which investor information was available was calculated using the share prices data and other measures. This study then compared the propensity of investors with different socio-economic backgrounds to take different levels of risk.

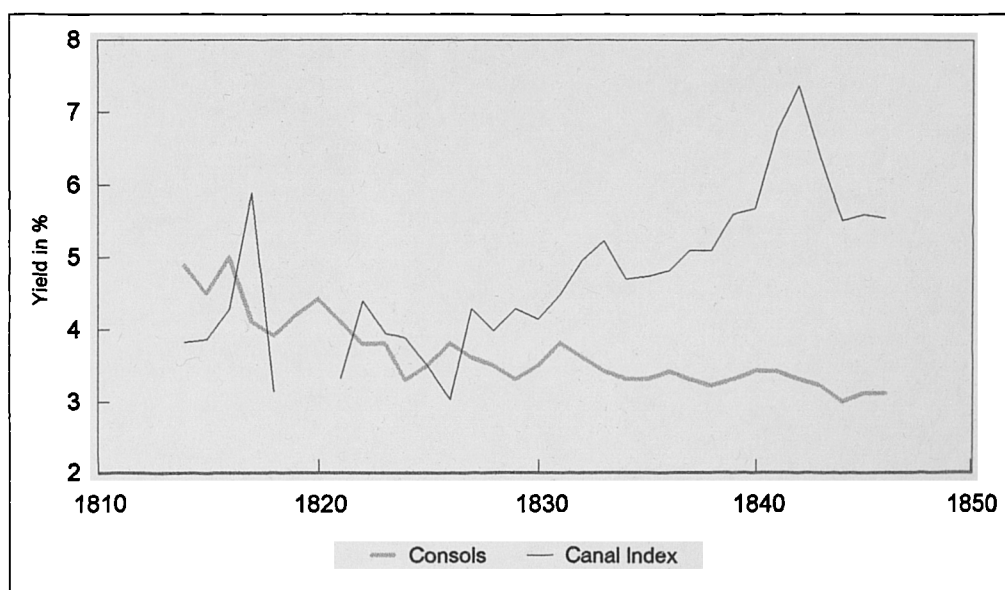
4.5.3 Investment Risk of Canal Shares

The share price and dividend data from the eleven canal companies were used to construct an index of the yield on canal company shares over the period 1814 to 1846. The index is set out in Table 1 of Appendix II. The index was weighted by the amount of nominal share capital in issue in 1834 to take account of the relative size of

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each of the companies. The Grand Junction Canal Company contributed 38 per cent of the weighting. The weighting of each of the canal shares is given in Table 2 of Appendix II. The canal index of yields was compared to the yield on Consols for the period 1814 to 1846 in order to determine whether the canal stocks exhibited a premium over the risk-free rate of government stocks. The result of this analysis is given in Figure 4.3.

Figure 4.3: Canal Index Yield versus Consols Yield



*Source: Monthly canal share price and annual dividend from *Course of the Exchange*, Guildhall Library. Consols quarterly prices from Weiller and Mirowski.¹²³*

Figure 4.3 reveals that the yield on canal stocks only starts to diverge markedly from Consols in the late 1820s. At this point, canal companies were starting to feel the effects of competition with railways. Investors were probably not expecting much growth in future earnings, perhaps even the reverse. As a consequence, the share price declined, although dividends remained relatively high. In the eighteenth and nineteenth centuries, there was no corporate taxation to distort the distribution policy of companies. It was customary to distribute nearly all the surplus cash generated in a year rather than retain it in the business. There was also no distinction between capital and revenue expenditure.¹²⁴ In the period after 1820, canal companies still had surplus cash since the rate of new building or improvement was much reduced. The canal companies were

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also, in many cases, scaling down their maintenance expenditure. Although tolls were reduced, there was still surplus income for distribution to shareholders. This meant that even when the canals were under strong competition, dividends were maintained at a high level, as can be seen from Table 4.5.

Table 4.5: Canal Company Dividends - Five year Average (In per cent per annum on the nominal value of the shares)

	1813-1815	1816-1820	1821-1825	1826-1830	1831-1835	1836-1840	1841-1845	Average
Birmingham Canal Navigations	27.5	36.0	47.0	50.0	50.0	40.8	40.0	41.6
Coventry	40.0	44.0	44.0	44.0	40.6	45.4	24.0	40.3
Staffordshire & Worcestershire Canal	44.0	38.7	40.0	39.6	34.8	38.4	32.8	38.3
Warwick & Birmingham	13.3	11.5	8.3	11.6	13.2	15.8	11.8	12.2
Stourbridge Navigation	12.3	15.0	8.3	13.0	8.8	9.2	17.8	12.1
Warwick & Napton	13.7	9.3	8.0	11.7	11.6	13.0	9.8	11.0
Grand Junction canal	7.0	6.0	9.5	13.2	12.4	11.4	7.2	9.5
Dudley	2.0	1.3	3.0	3.9	2.8	4.0	5.0	3.1
Worcester & Birmingham Canal	0.0	0.0	0.3	2.0	3.6	3.9	4.0	2.0
Stratford upon Avon Canal	0.0	0.0	0.3	1.2	1.4	1.9	1.7	0.9
Birmingham & Liverpool Junction	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.3

Source: Dividends from Course of the Exchange as recorded in the edition for the day in March nearest to the middle of the month.

Table 4.5 shows that for most of the companies dividends were declining slowly by 1841 to 1845. Whereas in modern stock markets, as risk increases, companies are under pressure to maintain or increase dividends to bolster flagging stock prices and retain shareholders, this seems not to be the case in for the companies in the present study. Share prices did remain relatively high, but this was probably more attributable to contemporary income distribution practices rather than the result of a conscious effort by the company directors.

As discussed above, the quality of the share price data from the *Course of the Exchange* was not considered to be adequate to make any quantitative assessment on the relative risk of each canal company based on either the absolute or relative

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variability of yields from that of the canal yield index. In order to differentiate the risk level of each canal company various qualitative measures were used. Qualitative risk assessment needs to take into account both construction and operating risks. Since the present study is confined to investors who were shareholders after the company had obtained its parliamentary consents, the risks incurred by speculators in scrip are not considered here.

4.5.3.1 Evaluation of Construction Risk

The main risks for investors during the construction period are those of failure to complete the project and cost over-runs. All eleven canal companies suffered from over-optimistic cost estimates and the initial amounts of share capital were insufficient to complete construction. Companies used different methods to overcome this problem. The Coventry Canal Company and Stratford-upon-Avon Canal Company decided to curtail construction and only open sections of the proposed line.¹²⁵ Others, like the BCN, raised additional money through borrowing,¹²⁶ or like the Grand Junction Canal Company, through issuing additional share capital.¹²⁷ The Stourbridge Canal made additional calls on the existing shareholders.¹²⁸ Depending on the drafting of the original Act of incorporation, the companies often had to reapply to Parliament for powers to raise this additional finance. The risks to the investor during the construction period were that the value of their shareholding could be diluted by the issue of new shares; existing shareholders might be required to invest more money, or risk forfeiture of their shares. In a worst case scenario, the project might be abandoned and the shares become completely worthless. Although the risk of unlimited liability was tested in the courts and found to be unlawful, additional calls could be made with the consent of the shareholders under parliamentary approval.¹²⁹

Construction periods were generally lengthy, not only as a result of technical problems but because finance was usually inadequate and it was sometimes very difficult to raise additional money in adverse economic conditions.¹³⁰ The canals authorised during the 'mania' of 1792-3 typically fell foul of the recession during the Napoleonic Wars and considerable time passed before they were completed. The Grand

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Junction Canal was an example. Approved in 1793, it was finally completed in 1815, after successive Acts authorised the raising of new tranches of finance. An issue of half shares was approved in 1796; loan notes, which were convertible in shares, were approved in 1801 and 1803; further new shares were issued in 1803 and 1811, and further loan notes in 1804-5.¹³¹

In order to compare the risks of each of the canal companies during the construction period, two measures were devised. The degree of risk was assessed by the length of time required to complete the canal and the amount of extra finance required over the original share capital. The eleven canal companies were ranked by the mileage completed per year as a measure of the time taken to complete the project and the total duration of the construction period. The difference, in per cent, between the final construction cost and the initial share capital, was used to measure the degree of underfunding of the project. These risk factors are ranked in Table 4.6.

Table 4.6: Ranking of Canal Companies in Terms of Construction Risk

	Year Authorised	Duration in Years	Miles/Year	% Under Funded	Rank on Mileage	Rank on Funding	Rank on Duration	Total Rank
Staffordshire & Worcestershire	1766	6	7.69	40	2	2	4	2.7
BCN - Birmingham to Aldersley	1768	4	5.66	60	3	4	2	3.0
Stourbridge Navigation	1776	3	2.38	43	7	3	1	3.7
Warwick & Napton	1794	6	2.50	0	6	1	4	3.7
Birmingham & Liverpool Junction	1826	9	4.39	100	4	6	7	5.7
Warwick & Birmingham	1793	7	3.23	131	5	7	6	6.0
Grand Junction	1793	12	7.79	260	1	10	8	6.3
Coventry	1768	22	1.48	75	8	5	9	7.3
Stratford upon Avon	1793	23	1.13	150	10	8	11	9.7
Worcester & Birmingham	1791	24	1.27	239	9	9	12	10.0
Dudley	1776	22	0.73	2,848	11	11	9	10.3

Source: Share capital taken from Course of the Exchange. Mileage and dates authorised and completed from Ward, Hadfield and Phillips.¹³²

On the basis of the results of the analysis set out in Table 4.6 the eleven canals were grouped into three levels of risk. Low-risk canals were those with a combined risk rating of below 4, medium risk canals were those with a risk rating of 5.7 to 7.3 and high-risk

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canals were those with a risk rating of 9.7 to 10.3.

4.5.3.2 Evaluation of Operating Risk

Operating period risks are those, which reduce revenue or increase, cost. Such risks include technical problems, such as lack of water, competition, litigation, over-estimation of volume of traffic or mispricing of tolls. In an environment where additional finance was often in the form of revolving short-term credit from banks, there was also the additional financing risk that the lender, for reasons relating to its own liquidity problems, might require repayment on demand. This was more likely to take place in periods of economic downturn where obtaining alternative forms of finance was difficult. Some of these operating risks were specific to particular canals; others relate to the changing economic environment. For example, there was continuous competition between the Warwick & Birmingham canal and the BCN. In 1816, the BCN reduced the tolls on the transport of iron by almost half. The Warwick & Birmingham immediately lost all its iron traffic and had to institute a system of rebates on both iron and salt traffic.¹³³ The Warwick canals also suffered from early competition with the railways, particularly the opening of the London & Birmingham railway, which caused tolls on the Warwick & Napton canal to be reduced by two-thirds by 1844. Reduced profitability caused their bankers to refuse the company an overdraft to pay the dividends in 1845.¹³⁴ Technical problems were also an operating risk. For example, the Dudley canal suffered from mining subsidence in the Lappal tunnel and from traffic congestion in the Dudley tunnel.¹³⁵

It is difficult to find meaningful measures by which to rank the relative operating risk of individual canal companies. Since canal companies tended to distribute nearly all surplus income in the form of a dividend, the level of annual dividends is probably the most accurate indicator of a company's performance. Companies paying consistently high dividends would have been regarded by contemporary investors as lower risk investments than those paying low dividends. The dividend was also arguably the most important criterion for investors. The average dividends paid between 1813 and 1845 are shown in Table 4.7.

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Table 4.7: Ranking of Canal Companies in Terms of Operating Risk (Based on dividends paid in per cent p.a. on the nominal value of the shares)

	Average	Ranking
Birmingham Canal Navigations	41.6	1
Coventry	40.3	2
Staffordshire & Worcestershire	38.3	3
Warwick & Birmingham	12.2	4
Stourbridge Navigation	12.1	5
Warwick & Napton	11.0	6
Grand Junction	9.5	7
Dudley	3.1	8
Worcester & Birmingham	2.0	9
Stratford upon Avon	0.9	10
Birmingham & Liverpool Junction	0.3	11

Source: Annual dividends from Course of the Exchange, 1811 - 1845, excluding 1819 and 1820.

Interestingly, the ranking shown in Table 4.7 largely mirrors the ranking of risk for the construction period. The canals with low risk during the operating period were the BCN, the Coventry and the Staffordshire & Worcestershire canal, which all averaged dividends of over 30 per cent during the period. The medium risk canals averaged dividends of 9 to 13 per cent and comprised the Warwick & Napton, the Warwick & Birmingham, the Stourbridge Navigation and the Grand Junction. The high-risk canals were the Worcester & Birmingham, the Stratford upon Avon and the Dudley. The combined results of the risk assessment are set out in Table 4.8.

Table 4.8: Combined Risk Assessment of Canal Companies

	Construction Risk	Operating Risk	Combined Risk
Birmingham Canal Navigations	L	L	L
Staffordshire & Worcestershire	L	L	L
Stourbridge Navigation	L	M	L
Warwick & Napton	L	M	L
Coventry	M	L	L
Grand Junction	M	M	M
Warwick & Birmingham	M	M	M
Birmingham & Liverpool Junction	M	H	M
Dudley	H	H	H
Stratford upon Avon	H	H	H
Worcester & Birmingham	H	H	H

Source: Ranking taken from Tables 4.6 and 4.7 above.

The combined ranking of risk in both the construction and operating period was

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used to allocate a risk rating to each of the eleven canal companies. The Dudley, Stratford and Worcester & Birmingham canals were classified as high risk. The Stourbridge, Warwick & Napton and Grand Junction canal together with the BCN and the Staffordshire and Worcestershire were classified as low risk. The remaining canals were placed in the medium risk group.

4.5.3.3 Canal Investor Behaviour in Different Risk Scenarios

The CARD Database of 2,980 canal investors who held shares in the eleven West Midland canal companies was used to establish whether different socio-economic groups had differing propensities to take risk. Previous research has distinguished between 'economic' and 'financial' investors.¹³⁶ Financial investors expect a return purely from the investment itself, whereas economic investors expect an additional benefit to their businesses from the project. Given these distinctions, financial investors might be expected to make their choice purely on their evaluation of the risk/ return of the investment. The Manufacturing, Merchant and Trade related categories of the socio-economic classification used in the present study are *prima facie* economic investors. The Landed, Rentier, Clergy, Professional and Woman categories are more likely to be financial investors. It is likely, however, that some individuals in the economic investor group would have made their investment decisions on the same basis as the financial investors. The socio-economic profile of investors in each of the eleven canal companies was analysed and each group's ownership of shares was categorised into high, medium or low risk in accordance with the risk assessment set out in Table 4.8. The risk profile of investors during the construction period was examined first. Table 4.9 shows the number of investors in each socio-economic group holding shares during the construction period for each of the companies in each of the risk categories. The Table includes the number and percentage of investors in each socio-economic category.

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Table 4.9: Risk Characteristics of Socio-economic Groups of Canal Company Investors - Construction Period

	Low	Medium	High	Total Construction Period
Number of Investors				
Landed	33	82	12	129
Rentiers	87	380	103	551
Clergy	17	181	7	181
Professional and Bankers	26	98	24	144
Manufacturers	46	25	22	110
Merchants	35	10	31	92
Artisans and Shopkeepers	30	32	45	118
Women	32	56	28	116
Total	305	864	272	1,441
% of Total Investors				
Landed	11	10	4	9
Rentiers	28	44	38	38
Clergy	5	21	3	13
Professional and Bankers	8	11	9	10
Manufacturers	15	3	8	8
Merchants	11	1	11	6
Artisans and Shopkeepers	10	4	17	8
Women	10	6	10	8
Total	100	100	100	100

Source: Data from eleven canal companies, in 14 different periods, from CARD Database. Allocation of low, medium and high risk in accordance with analysis in Table 4.8.

Table 4.9 shows that amongst the financial investors the Clergy and the Landed were the only significantly risk-averse groups during the construction period. Only 3 per cent of the investors in the highest risk companies were Clergy, compared to an average of 13 per cent across the whole of the company risk profiles during the construction period. Similarly, the Landed group exhibited some tendency towards avoiding high-risk companies. Conversely, amongst the economic investors, the Merchant and Artisan and Shopkeeper groups appeared to have been risk seekers. Manufacturers, Merchants and Shopkeepers and Artisans were more likely to be aware of commercial and economic risks. These investors had their own businesses and were attuned to the economic conditions prevailing in the local and national environment. These groups would have been in the best position to evaluate these risks and make informed decisions. The financial investors may have been equally well aware of the commercial environment but might be expected to be less well equipped to evaluate risk and make informed decisions. Interestingly, the analysis shows that Women, who are regarded as financial

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investors tended to exhibit behaviour consistent with that of the economic investor group.

In order to examine these trends more closely, the analysis was normalised to take into account the differing number of investors in each of the risk categories. The analysis was then ranked in order of the propensity of investors to take risk. The methodology of this analysis is described in more detail in Appendix I. The results of the analysis are set out in Table 4.10.

Table 4.10: Normalised Propensity of Canal Investors to Take Risk in Each Social Group - Construction Period

	Company Risk Category			Combined Risk Propensity
	Low	Medium	High	
Clergy	0.38	1.47	0.19	3.89
Landed	1.23	1.08	0.50	4.87
Professional and bankers	0.82	1.11	0.86	5.61
Rentiers	0.72	1.11	0.96	5.81
Women	1.30	0.81	1.28	6.75
Manufacturers	2.34	0.45	1.23	6.93
Artisans and shopkeepers	1.31	0.50	2.26	9.07
Merchants	2.19	0.21	2.18	9.14

Source: Data from eleven canal companies, in 14 different years, from CARD Database. Allocation of low, medium and high risk in accordance with analysis in Table 4.8. Methodology used to normalise the data and rank the propensity to take risk is described in Appendix I.

The analysis set out in Table 4.10 confirms that Clergy were highly reluctant to invest in high-risk companies. This aversion to risk was shared with other financial investors in the Landed, Professional and Rentier groups. Women are an anomaly in this analysis as they exhibit an equal propensity to invest in high-risk and low-risk companies. The economic categories of investors all rank higher than the financial investors in terms of their propensity to take construction period risk.

The data for the operating periods for the eleven canal companies were analysed in the same way to determine whether investors took a different view of operating period risks. The data used to analyse the construction periods, with the exception of that relating to the Birmingham & Liverpool Canal, are all from the last four decades of the eighteenth century. The operating periods of the eleven companies covers a much wider and later time period. Differences in the risk preferences of

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investors between the construction and operating periods may thus reflect to some extent secular changes in socio-economic conditions. Table 4.11 shows the number of investors holding shares during the operating period for each of the companies in each of the risk categories. The Table includes the number and percentage of investors in each socio-economic category.

Table 4.11: Risk Characteristics of Socio-economic Groups of Canal Company Investors - Operating Period

Number of Investors	Company Risk Category			Total
	Low	Medium	High	
Landed	82	20	19	122
Rentiers	177	120	26	323
Clergy	84	110	14	208
Professional and Bankers	101	67	23	191
Manufacturers	48	53	9	110
Merchants	36	27	7	70
Artisans and Shopkeepers	41	57	4	101
Women	220	185	8	413
Total	790	639	110	1,539
% of Total Investors				
Landed	10	3	18	8
Rentiers	22	19	24	21
Clergy	11	17	13	14
Professional and Bankers	13	10	21	12
Manufacturers	6	8	8	7
Merchants	5	4	6	5
Artisans and Shopkeepers	5	9	3	7
Women	28	29	7	27
Total	100	100	100	100

Source: Data from six canal companies, in 17 different years, from CARD Database. Allocation of low, medium and high risk in accordance with analysis in Table 4.8.

Table 4.11 shows markedly different investor behaviour in the operating period from that during the construction period. Financial investors appear to have thrown caution to the winds and exhibited risk-seeking behaviour, whilst the economic investors appear to have become more conservative. Women in particular appear to have been highly risk averse during the operating period. The indicator used to differentiate risk during the operating period was dividend distribution. Low dividends indicated poor performance and higher risk. Financial investors who relied on income might be expected to seek low-risk investments, which paid a good return. This behaviour was further examined by

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normalising and ranking the data in terms of propensity to take risk. The methodology used is described in Appendix I.

Table 4.12: Normalised Propensity of Canal Investors to Take Risk by Social Group - Operating Period

	Company Risk Category			Combined Risk Propensity
	Low	Medium	High	
Women	1.04	1.08	0.27	4.01
Artisans and Shopkeepers	0.79	1.35	0.48	4.94
Clergy	0.79	1.27	0.94	6.17
Rentiers	1.07	0.90	1.14	6.28
Manufacturers	0.85	1.17	1.12	6.53
Merchants	1.01	0.92	1.41	7.08
Professional and Bankers	1.03	0.84	1.68	7.74
Landed	1.32	0.40	2.22	8.78

Source: Data from eleven canal companies, in 17 different years, from CARD Database. Allocation of low, medium and high risk in accordance with analysis in Table 4.8. Methodology used to normalise the data and rank the propensity to take risk is described in Appendix I.

The ranking of the risk propensity of investors during the operating period reveals a less clear cut differentiation of the behaviour of financial and economic investors. The combined risk rating covers a smaller range than that of the construction period. This is not surprising since once a canal was operating the overall level of risk was greatly reduced. Women were confirmed as the most risk-averse group during the operating period, with Artisans and Shopkeepers, Clergy and Rentiers also avoiding risk and seeking higher yielding investments. Women, Clergy and Rentiers undoubtedly relied more heavily on the income from their investments than Manufacturers, Merchants or the Landed groups. Professionals appear to be an anomaly since although they would have been reliant on their earned income, it was less reliable than the profits from a family manufacturing or trading enterprise. Professionals might be expected to have sought a low-risk, high-return investment.

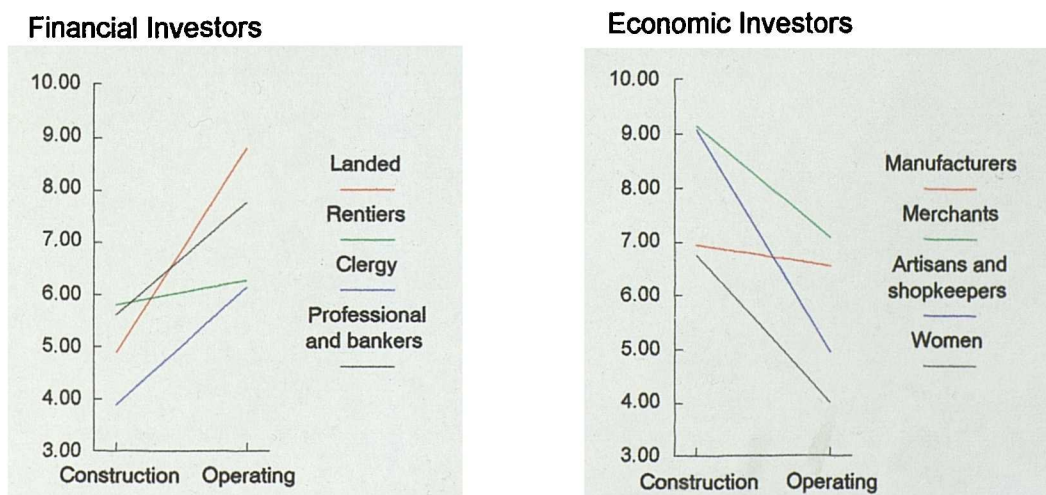
The risk-seeking preference of the Landed group is somewhat surprising. A possible explanation is that this group derived most of its income from land. Investment in the canal companies was very peripheral to their main activities and expertise. In addition, the Landed group may well have acquired shares as an inducement to support the parliamentary approval process. There is some evidence that this group tended to

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dispose of their shares more quickly than other shareholders. For example, the Warwick & Birmingham Canal Company allotted 134 shares to 53 landowners at the first General Meeting in 1793.¹³⁷ After five years only 24 (45 per cent) of these landowners remained on the register whereas, a total of 139 investors, 58 per cent of the original subscribers, still remained shareholders in 1798. This suggests that Landed shareholders were inclined not to retain shares for their future income potential but disposed of them as soon as they could make a capital gain.

The distinction between the behaviour of financial and economic investors is shown graphically in Figure 4.4.

Figure 4.4: Change in Risk Propensity of Investors



Source: Data from eleven canal companies, in 31 different years, from CARD Database. Allocation of low, medium and high risk in accordance with analysis in Table 4.8. Methodology used to normalise the data and rank the propensity to take risk is described in Appendix I.

Figure 4.4 illustrates the difference in behaviour of financial and economic investors. Investors in the Landed, Rentiers, Clergy and Professional groups are all risk averse in the construction period and become less so in the operating period. The converse is true of the economic investors. Interestingly, Women exhibit the same behaviour as economic investors although they are generally regarded as financial investors. This behaviour may be evidence that they were advised by male relatives from the economic investor groups. However, as is discussed in Chapter 7.5.1, a significant number of

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female investors were related to members of the Rentier, Professional and Banker groups. The most reasonable explanation is that Women, more than any other group were attracted by the potential for high yields since they were more likely than men to be reliant upon the income from assets which might be held in trust for them.¹³⁸ This preference manifested itself in the selection of high-risk investments with the potential for capital growth during the construction period and low-risk investments, which exhibited high dividends and often high capital growth, during the operating period. This analysis shows interesting changes in attitudes to risk in the different socio-economic groups. However, the quality of the data and the semi-qualitative nature of the analysis means that the conclusions cannot be subjected to the robust statistical tests which might validate the findings.

4.5.4 Investment Risk of Railway Shares

The market for railway shares in the mid-nineteenth century was deeper than that for canal company shares both in the number of shares and the number of buyers and sellers. Nevertheless, attempts to apply quantitative methods to define the relative level of risk were again found to be inapplicable. Share price data were available for 12 companies operating in the West Midlands in comparison to the 7 companies included in the CARD Database for which investor information was available. The companies for which share price data were available are listed in Table 2 in Appendix I.

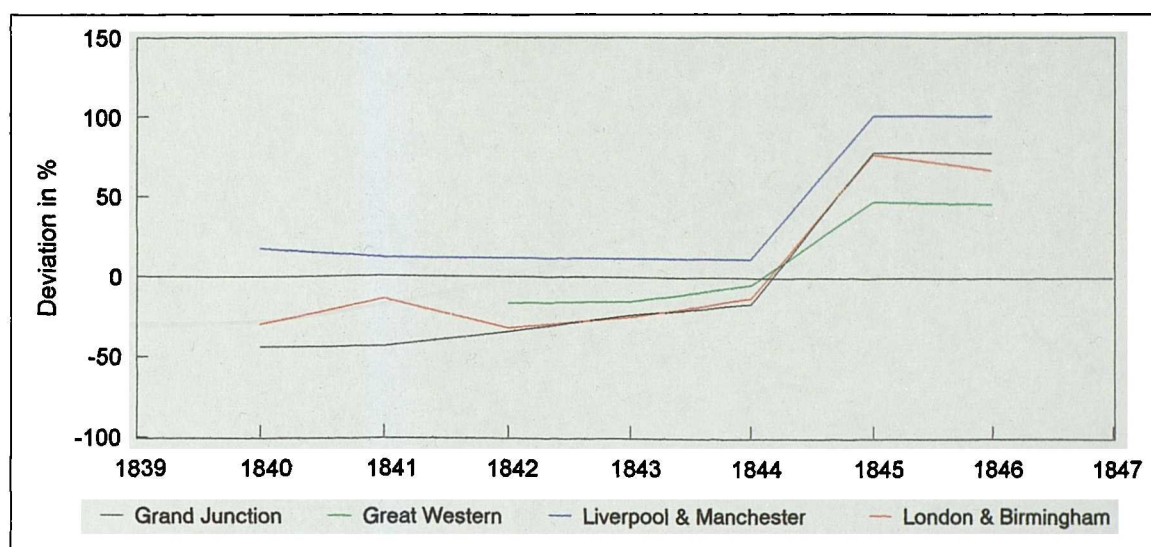
Data series were collected for share prices of twelve companies, between 1826 and 1846 in the same way as that described for canal companies. The first quoted railway share in the sample of twelve companies was that of the Liverpool & Manchester Railway.¹³⁹ Both this company and the Cheltenham Railway were regularly quoted in the *Course of the Exchange* from 1827, although it was not until 1833 that the London & Birmingham and the Grand Junction were quoted. The Great Western Railway was first quoted in 1834. Quotes for most companies are patchy until 1840. Thus there is only an incomplete series for each of the twelve companies. Although Gayer et al. have constructed an index of railway share prices, the data series for the above twelve companies in the present study were not sufficiently comprehensive to allow the

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calculation of *beta* as a measure of risk of an individual stock. An attempt was made to quantify the degree of variability of an individual railway share price from a price predicted for the stock by contemporary commentators. This is intended to give an indication of how contemporary investors viewed the risk of railway companies. Scrivenor, commenting in 1849 on contemporary attitudes to railway investment suggests that railways provide, 'a safe permanent investment for British capitalists,.. offering an haven of safety where the hard savings won by the sons of toil, by their patient and enduring exertions, may rest in security, and yield to them at the same time a reasonable return'.¹⁴⁰ This view was also held by 'A Successful Operator', writing in 1846. The author distinguishes three types of railway investment, namely, applications for original shares in newly projected lines, purchase of shares or scrip in lines projected or under construction and purchases of shares in lines already established. Each of these categories is distinguished by different levels of investment risk and return 'notwithstanding the thousands which have been lost by the follies and deceptions of the last twelve months [of 1846], investments may be made with advantage ... even in the first two classes; but it is the third class, as the safest and most eligible'.¹⁴¹ Only investors in that third category, namely lines under construction and already completed, are included in the present study. The 'Successful Operator' maintained that investors were primarily interested in the reliability of a return in excess of that from government stocks and that railway dividends were more reliably maintained at higher levels than the return on Funds. The 'Successful Operator' used the rate of railway dividends in comparison to the Consols benchmark to derive a value for railway shares. This calculation assumed the value of money to be equal to a return on Consols of 4 per cent on the market value of the stock. On this basis, a railway share paying 4 per cent would be valued at par, whereas stocks paying 6 per cent would have a market value of £150. Shares trading above or below their predicted price may be affected by expectations of better or worse performance as a result of imperfections in the transfer of information about the company. The 'Successful Operator's' method of valuation was applied to four of the most actively traded railway stocks. Figure 4.5 shows the percentage deviation of the actual from the projected market price of these companies.

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Figure 4.5: Percentage Deviation of Actual Price from Predicted Price at 4 per cent Yield



Source: Market value of railway shares are mid-December prices. Prices and annual dividend extracted from the Course of the Exchange, Guildhall Library. Predicted prices were calculated in accordance with assumptions of The Successful Operator.¹⁴² Annual yield 4 per cent equals valuation at par. Percentage deviation from the Predicted Price compared to the Actual Price plotted on x axis.

Figure 4.5 reveals that for the period up to 1845, the price of the stocks, with the exception of the Liverpool & Manchester Railway, was below that predicted from the level of dividend paid. This suggests that investors were discounting the current dividend performance, perhaps because they believed it would not be sustained. This may indicate that they considered railways to be relatively high-risk investments during that period. In 1844-5, this view was replaced by an expectation of higher earnings and the price of stocks rose as demand increased. 1844 was a year of railway mania as investors in new lines sought to emulate the success of earlier authorised lines, many of which were now completed and earning reasonable returns. Mania is generally applied to the rush of investments in new lines. These were a 'source of loss and misery' to many over the last six months of 1846.¹⁴³ In 1845 there was a period of prosperity, capital was in surplus and new investment opportunities were eagerly sought. Shares in new schemes sold for more than those in completed lines. Figure 4.5 clearly shows, however, that the share price of existing railway companies was also affected. The

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'Successful Operator' hinted at insider dealing, not then illegal, where a buyer may 'have some intelligent friend by whose information he will be guided or whose connection with a particular line enables him to recommend it with confidence'. Even lines paying little or no dividend might be a good investment if the reasons for the depressed price were known, but 'such investments would be dangerous ground for the inexperienced speculator'. Figure 4.5 indicates that in 1844-5 all of the four companies became more risky investments as the lower than predicted price was superseded by a price widely in excess of the predicted price. It is difficult, however, to use this analysis to attribute relative degrees of risk to the four companies. Both in the view of contemporary commentators and in their actual behaviour, railway stocks appear to be a homogenous group.

Earlier research has used an index of railway stock returns compared to risk-free government stocks to establish the premium or discount associated with investing in railways. An index of the railroad stocks quoted on the Boston Stock Exchange from 1835 to 1897 was compared to US government stocks and Massachusetts and New England municipal securities.¹⁴⁴ This showed the average weighted mean return on railway stock, including dividends, was 6 per cent, ranging from a low of minus 9 per cent to high of 35 per cent.¹⁴⁵ These returns were on the whole less than that achieved on the risk-free investments. Low yields on railway stock also pertained in the early years of trading on the London Stock Exchange, although yields rose above that of Consols in 1844-5, as can be seen from Figure 4.5.

Railway investments were subject to a greater degree of contemporary commentary than those in canals and a measure of relative risk can be derived from this source. Contemporary opinion regarded railway stocks as low-risk investments. 'One of the Initiated,' writing in 1845, noted that 'railway investment has become a lottery..in which the chances are reversed, the prizes exceeding the blanks in number by as much as the latter are usually more numerous than the former'.¹⁴⁶ The author goes on to list 87 English railway companies, which were in favour on the Stock Exchange. These lines included a number of companies in the present study: the Birmingham & Gloucester, the Birmingham & Oxford Junction, the Grand Junction, the Great Western, the London &

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Birmingham, and the Manchester & Birmingham. It is likely that these companies were regarded as particularly low risk. Whitefield, writing in 1849, took an extreme view of the reliability of railway investment. He argued that railway stocks offered a better investment than government stock.¹⁴⁷ This is echoed by Cochrane writing in 1846 that 'no wars with foreign countries can affect.. [the price of railway stock] in the same manner they do the funded debt'.¹⁴⁸ Whitefield based his opinion on the level and reliability of railway dividends. Nevertheless, railway dividends were generally at a consistently lower level than that of the canal companies. Chattaway, writing in 1856, compiled a list of 95 railway companies, of which 15 declared no dividend and the remainder declared dividends of between 1 and 10.5 per cent.¹⁴⁹ The declared annual dividends of the railway companies in the present study are given in Table 4.13.

Table 4.13: Railway Company Dividends Paid - Five-Year Averages (In per cent per annum)

	1832-5	1836-40	1841-5
Birmingham and Oxford Junction	n.a.	n.a.	0
Birmingham & Derby Junction	n.a.	0	2.1
Birmingham & Gloucester*	n.a.	0	2.3
Birmingham, Bristol and Thames Junction	n.a.	0	n.a.
Cheltenham	0	n.a.	n.a.
Cheltenham and Great Western*	n.a.	0	2.5
Grand Junction*	0	12.0	10.2
Great Western*	n.a.	0	3.4
Liverpool & Manchester	8.7	9.5	8.9
London & Birmingham	0	8	8.5
Manchester & Birmingham*	n.a.	0	1.0
Oxford & Worcester	n.a.	n.a.	0

*Source: Course of the Exchange. Companies marked with * are analysed in the CARD Database.*

Table 4.13 shows that dividends were lower than those for most of the canal companies analysed in Table 4.7. Premiums also tended to be less than those of the canal companies. Cochrane notes that on 27 July 1846, 93 out of 160 railroad stocks quoted on the London Stock Exchange were at an average premium of 20 per cent.¹⁵⁰

The present research confirms the perception held by contemporary commentators that railway companies operating completed lines were, as a group, regarded as low-risk investments. They were a much more homogenous group than that

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of the canal companies and consequently, the present study does not attempt to differentiate between them in terms of investment risk. The study does, however, compare the investment risk of the group of seven railway stocks to that of canal companies and other investments.

4.5.5 Relative Risk of Canal and Railway Company Investment

For almost sixty years, from the 1770s to the 1830s, canal companies were the most significant private sector investment opportunity available to investors. As shown in Table 6.2 in Chapter 6, canals accounted for £12.2 million of a total of £33.1 million of paid up capital of joint stock companies established prior to 1824. As has been discussed, they raised the majority of their capital from investors in local markets. These investors appear to have been able to discriminate between high- and low-risk investments. From the 1830s, railway company stock became increasingly available. As Table 6.3 in Chapter 6 shows, by 1842, railway companies accounted for £57 million out of a total of £183 million of paid up capital of joint stock companies listed on the London Stock Exchange. The proportion was much the same as that of the canal companies two decades earlier, but the total amount of stock available was nearly four times greater. Railway stock was bought by a much more geographically and socially diverse group of investors. Contemporary views of railway investment, in established lines, appear to indicate they were regarded as very low risk. The socio-economic composition of the investors in the CARD Database is compared in Table 4.14. The most notable differences are the higher proportion of less wealthy social groups and the lower numbers of female and clerical investors in the railways.

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Table 4.14: Ownership of Canal and Railway Shares by Socio-economic Groups

	Canal investors		Railway Investors		Investors in Both Canals and Railways	
	No.	%	No.	%	No.	%
Landed	114	4	166	6	0	0
Rentier	364	12	471	16	5	17
Clergy	159	5	101	3	1	3
Professional and Bankers	147	4	325	11	4	14
Manufacturers	91	3	80	3	1	3
Merchants	68	2	215	7	0	0
Artisans and Shopkeepers	88	3	432	15	1	3
Women	529	18	312	11	5	17
Unknown	1,420	48	831	28	13	43
Total	2,980	100	2,933	100	30	100

Source: Canal and railway investors from the CARD Database.

The differences between canal and railway in investor structure shown in Table 4.14 reflect the changes in social structure that occurred over the late-eighteenth to mid-nineteenth centuries. Most noticeable is the growth of the Artisan and Shopkeeper group, which includes small traders and service providers. To some extent it was a deliberate strategy by the railway companies to attract a broader shareholder constituency. Cochrane, writing in 1846, suggests a number of ways in which railway shares could be made more affordable by the 'more humble classes'.¹⁵¹ Some of his recommendations, such as making available shares with lower nominal values, were adopted by the companies in this study. For example, the Grand Junction Railway (GJR) issued a series of shares at nominal values of £100, £50, £25, and £12.50.¹⁵² It seems that this strategy was successful. Analysis of the socio-economic composition of the GJR investors who only held £12.50 shares compared to that of the total shareholders reveals a substantially higher proportion of the Artisans and Shopkeeper group held shares of the lower nominal value. This analysis is set out in Table 4.15.

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Table 4.15: Socio-economic Groups of GJR Shareholders Holding Low Denomination Shares Compared with All GJR Shareholders

	Total GJR Shareholders		£12.50 Shareholders	
	Number	% of Total	Number	% of Total
Landed and rentier	147	30	11	30
Clergy	35	7	3	8
Professional and bankers	58	12	4	11
Manufacturers	11	2	1	3
Merchants	61	12	2	5
Artisans and shopkeepers	30	6	5	14
Women	141	29	8	22
Unknown	10	2	3	8
Total	493	100	37	100

Source: GJR shareholder information extracted from Register of Proprietors.¹⁵³

Table 4.15 shows the extent of the success of this strategy with the Artisans and Shopkeepers group more than twice as likely to hold shares of the lowest available denomination than they were in the share capital as a whole.

4.6 Conclusions

The number and sophistication of investment opportunities increased over the period examined in the present study. Apart from the increasing amount of commercial and industrial development, which attracted investment by entrepreneurs and businessmen, the range of financial investments also increased. Whereas, real property, mortgages and government stock was the most common form of financial investment in the mid-eighteenth century, the development of canals from the 1760s onwards opened up a new capital market. Although there had been joint stock companies prior to the development of canals, these had been for the most part quasi-government stocks. Canal and later the railway companies represented a more risky but potentially lucrative source of investment. They were more risky because investors had to rely upon imperfect information. Whereas a mortgage or the purchase of land and buildings could be readily assessed by the investor or his representative, the new private sector companies were much more complex undertakings. Investors could no longer rely on their opinion of the credit standing of a potential borrower or the likely income from a property. They had to weigh the merits of innovative technology, the unpredictability of

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parliamentary approvals, the potential demand, quality of management and a host of other factors. If the investor wanted to realise his holding, the market, certainly in the period up to the 1830s, was relatively illiquid. By the mid-nineteenth century a national market had developed with professional brokers and many specialised publications to disseminate information. Nevertheless, these markets were convulsed by mania and were far from efficient. In this Chapter the risks of investing in canal and railway companies have been examined and an attempt has been made to quantify the relative risk of each company. The quality of the share price data has precluded any very precise quantitative analysis. Nevertheless, some indication of the relative risk of each company has been derived through a combination of quantitative and qualitative measures. In the light of this information, the behaviour of investors in each of the canal companies and in the group of railway companies has been examined to determine whether different investor groups had different propensities to take risk. Some general observations can be made. Contemporary opinion regarded railways as generally low-risk investments. In this study, it proved virtually impossible to differentiate between the selected railway companies. The investor profiles of each of the companies was also very similar. The risk in railway investment was in the speculation in the scrip of lines not built or even authorised. Since the seven companies selected were all authorised and eventually built it is not surprising that they appear to be a largely homogenous group. The canals companies are much more differentiated in terms of risk. P/E ratios varied considerably and the investor profiles also differed widely. In spite of the lack of formal channels of information transfer, investors seem to have been able to differentiate successfully between the companies. Canal company investors seem to conform to the characteristics of 'financial' and 'economic' investors. Financial investors tended to be more risk averse, although the behaviour of female investors appears to have been anomalous. The propensity of women to exhibit the behaviour characteristics of the more risk-seeking economic investors may be evidence of the source of their investment advice. It might also be expected that those groups which had less access to financial and economic information, such as women but also clergy may have made less advantageous investment decisions. How investors accessed information, mitigated the

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perceived risks and determined their personal risk strategies are discussed in the following Chapters.

¹ L. Davidoff and C. Hall, *Family Fortunes. Men and Women of the English Middle Class, 1780-1850* (London, 1987), pp. 14-15. James Luckcock, who the authors give as an exemplar of middle-class lifestyle was, for example, also an investor in the Warwick and Birmingham canal in 1808.

² C. Mackay, *Extraordinary Popular Delusions and the Madness of Crowds* (London, 1841), p. 71.

³ H. M. Markowitz, *Portfolio Selection: Efficient Diversification of Investments* (New York, 1959), p. 4 and W. F. Sharpe, *Portfolio Theory and Capital Markets* (New York, 1970), pp. 282-3.

⁴ H. Beeke, *Observations on the Produce of Income Tax* (London, 1799), pp. 183-4 and R. Giffen, *Recent Accumulations of Capital in the United Kingdom* (London, 1878), reproduced in B. L. Anderson, *Capital Accumulation in the Industrial Revolution* (London, 1974), p. 194.

⁵ P. Colquhoun, *A Treatise on the Wealth, Power and Resources of the British Empire* (London, 1814), Table No. 2.

⁶ Giffen, *Recent Accumulations of Capital* reproduced in Anderson, *Capital Accumulation*, p. 194.

⁷ J. Seed, 'From "Middling Sort" to Middle Class in Late Eighteenth- and Early Nineteenth-century England', in M. L. Bush (ed.), *Social Orders and Social Classes in Europe Since 1500. Studies in Social Stratification* (Harlow, 1992), p. 116.

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⁹ D. Spring, Introduction to the 1971 reprint of J. Bateman, *The Great Landowners of Great Britain and Ireland* (London, 4th edition, 1883), p. (7). *The Return of Owners of Land* included information from 15,000 parishes and 5 million parochial assessments.

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¹³ P. J. Corfield, 'The Rivals: Landed and Other Gentlemen', in N. Harte and R. Quinault (eds.), *Land and Society in Britain, 1700-1914. Essays in Honour of F. M. L. Thompson* (Manchester, 1996), pp. 9-10.

¹⁴ *Spectator*, February 1876, as reported by Spring, Introduction to the 1971 reprint of J. Bateman, *Great Landowners*, p. (7).

¹⁵ Mingay, *English Landed Society*, pp. 22-3.

¹⁶ J. Boswell, *The Life of Samuel Johnson LL.D* (London, 1791), Chapter XX1.

¹⁷ J. Habakkuk, *Marriage, Debt, and the Estates System. English Landownership 1650-1950* (Oxford, 1994), pp. 520-1.

¹⁸ Stone and Stone, *An Open Elite*, p. 12.

¹⁹ Allen, 'Price of Freehold Land', p. 34.

²⁰ Playford, *Practical Hints*.

²¹ Perkin, *The Origins of Modern English Society*, p. 61, W. D. Rubinstein, *Men of Property, the Very Wealthy in Britain since the Industrial Revolution* (London, 1981) and F. M. L. Thompson, 'Business and Landed Élites in the Nineteenth Century' in F. M. L. Thompson (ed.), *Landowners, Capitalists and Entrepreneurs. Essays for Sir John Habakkuk* (Oxford, 1994), pp. 139-70.

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²³ Stone and Stone, *An Open Elite*, p. 283.

²⁴ Thompson, 'Business and Landed Élites', pp. 146-65.

²⁵ Thompson, 'Business and Landed Élites', pp. 139-40.

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- ²⁸ Habakkuk, *Marriage, Debt, and the Estates System*, p. 552.
- ²⁹ Bateman, *Great Landowners*, p. xvi.
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- ³¹ P. Earle, *The Making of the English Middle Class. Business, Society and Family Life in London, 1660-1730* (London, 1989), pp. 154-5.
- ³² Habakkuk, *Marriage, Debt, and the Estates System*, p. 575.
- ³³ Data on all estates in Warwickshire over 1,000 acres taken from Bateman, *Great Landowners*, pp. 501-11.
- ³⁴ PRO RAIL 810 /1, BCN, Committee Minutes and Reports, Original Subscribers, 25 March 1768.
- ³⁵ PRO RAIL 881/1, Warwick & Birmingham Canal, Minutes of General Assembly, 1793-1812.
- ³⁶ Bateman, *Great Landowners*, pp. 501-11.
- ³⁷ PRO RAIL 810/159 and 169, Share Transfer Ledgers.
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- ⁹⁵ Playford, *Practical Hints*.
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- ⁹⁸ Act to Restrain the Number and Ill Practice of Brokers and Stockjobbers, passed in 1697, Barnard's Act, 1734, to Prevent the Infamous Practice of Stock-jobbing.
- ⁹⁹ AC27/1899, AC27/2025 and AC27/2033, 3 per cent Consols Stock Ledgers for holders with surnames beginning with the letter G and L for the years 5 July 1817 to 1827, Bank of England Archive, London.
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- ¹⁰¹ Rae, *Country Banker*, p. 222.
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- ¹⁰⁴ Cottrell, *Industrial Finance*, p. 6.
- ¹⁰⁵ Defined as market price of a share divided by the current post-tax earnings per share.
- ¹⁰⁶ One of the Initiated, *The Railway Investment Guide. How to Make Money by Railway Shares; A Series of Hints and Advice to Parties Speculating in the Shares of British, Colonial, and Foreign Railways* (London, 1845).
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¹¹⁸ PRO RAIL 810/159 and 169, BCN, Share Transfer Ledgers. BCN share capital was doubled on 21 May 1811, 24 September 1819, 21 March 1823 and 18 December 1835.

¹¹⁹ PRO RAIL 874/17, Stourbridge Navigation, Share Transfer Ledger.

¹²⁰ PRO RAIL 874/17, Stourbridge Navigation, Share Transfer Ledger, Proprietors 2 January 1809.

¹²¹ PRO RAIL 810/589, BCN, Share Transfer Ledger.

¹²² PRO RAIL 810/182, BCN, List of Proprietors, 8 May 1840.

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¹²⁴ H. Pollins, 'Aspects of Railway Accounting before 1868', in A. C. Littleton and B. S. Yamey, *Studies in the History of Accounting* (London, 1956), p. 340. Pollins is specifically referring to railway accounting but the same applies to canal company accounts.

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¹²⁶ Ward, *Finance of Canal Building*, p. 30.

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¹⁴⁴ J. van Fenstermaker, R. P. Malone, and S. R. Stansell, 'An Examination of Railroad Common Stock Returns 1835-97', *J. Trans. Hist.*, 3rd Series, Vol. 15, No. 1 (1994), pp. 21-6.

¹⁴⁵ Fenstermaker, Malone, and Stansell, 'An Examination of Railroad Common Stock Returns', p. 43.

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¹⁴⁸ Cochrane, *The Way to Make Railroad Shares Popular*.

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¹⁵¹ Cochrane, *Way to Make Railroad Shares Popular*.

¹⁵² PRO RAIL 220/12, Grand Junction Railway, Register of Proprietors, 10 September 1845.

¹⁵³ PRO RAIL 220/12, Grand Junction Railway, Register of Proprietors, 10 September 1845.

CHAPTER 5: RISK MITIGATION

5.1 Introduction

The propensity for investors to take different levels of risk depending on their gender or socio-economic background was discussed in Chapter 4. Evidence that investors were able to differentiate levels of risk between individual canal companies and between the canal and railway investments was examined. It was noted that contemporary commentators were aware of the concept of different risks and rewards from investment in land, government stocks and private companies. This Chapter examines the strategies these investors used to mitigate risk.

Investors were required to weigh the maximisation of their financial returns against the constraint of providing security for themselves and their families. The factors affecting personal risk strategies, such as age, comparative wealth, gender and family circumstances are discussed in this Chapter. Two main strategies to mitigate investment risk emerge; investors can spread their risk over different investments, that is take a portfolio approach to risk, or they can reduce risk through insurance. These two strategies are discussed below.

5.2 Portfolio Management

In conditions of certainty, that is in the ideal world where investment returns can be predicted with perfect accuracy, investors will place all their funds in a single stock which yields the highest return. In conditions of uncertainty investors will endeavour to hold a mix of investments which will provide the best predicted return. Portfolio Theory was developed to enable investors to optimise their returns through the selection of the best mix of investments.¹ In the eighteenth and nineteenth centuries, before the development of these theoretical techniques, investors held a portfolio of investments selected as a response to their needs for liquidity, income, capital growth and their individual risk/return requirements. The present research establishes that investors held a range of assets, which were both geographically and functionally diverse. A portfolio might contain property assets, government stocks, shares in higher risk canal or railway companies, and short-term money market instruments in order to produce a range of

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risks and returns. The composition of an investment portfolio was likely to have varied over the life of the investor as personal circumstances and the appetite to take risk changed. Bernoulli noted in 1738 that the 'utility resulting from any small increase in wealth will be inversely proportionate to the quantity of goods possessed'.² This idea was also explored by De Moivre, who in 1730 was already defining risk in terms of the probability of loss. Both these mathematicians were articulating one of the key beliefs of the Enlightenment, namely that man made decisions on a rational basis, that 'the Risk of losing any sum is the reverse of Expectation; and the true measure of it is, the product of the Sum adventured multiplied by the Probability of Loss'.³ Logically, the satisfaction derived from each successive increase in wealth is smaller than that derived from the previous equivalent increase in wealth. Conversely, the dissatisfaction derived from a loss will always exceed the positive utility derived from a gain of equal size. Much later research has gone into proving that investors make decisions on anything but a rational basis.⁴ There is, however, insufficient quantitative evidence of the portfolios held by eighteenth- and nineteenth-century investors to determine with any degree of precision how they made their investment decisions. Nevertheless, the present study shows that there is considerable evidence that the relatively sophisticated investors in joint stock companies in the eighteenth and nineteenth centuries were holding widely diversified portfolios of assets. Many of the investors in the CARD Database held shares in more than one canal or railway company. In addition they also held government stocks, land, property, mortgages and bank deposits, as discussed below.

5.2.1 Multiple Canal and Railway Shareholdings

Although there is a wealth of anecdotal evidence on the diversification of investments, previous research has not been able to quantify the complete portfolios of investments of individual investors in any significant number.⁵ Nor is this study any exception. As has already been discussed in Chapter 4.2, probate inventories lack information on real property and wills rarely mention specific assets. Information is mainly limited to that gleaned from individual investor's diaries or accounts and is inevitably patchy and unsystematic. In the present study, the CARD Database of 5,913

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individual canal and railway company investors was used to provide evidence of multiple holdings of canal and railway stocks. The dates at which the shareholder registers of each company were analysed are not concurrent. However, it has been demonstrated that shareholders generally retained their shares for considerable lengths of time. Thus, the appearance of the same investors on different company registers (albeit at slightly different times) has been taken as *prima facie* evidence of multiple shareholdings.

The analysis set out in Chapter 4 suggests that investors could differentiate between the relative levels of risk in the eleven canal companies examined in the present study. On the other hand, the seven railway companies in the study appear to have been regarded as a more homogenous group in terms of risk. Did investors attempt to hold a diverse portfolio of canal company shares in order to mitigate risk? This was tested using CARD Database. The number of shareholders with multiple holdings was analysed and the results for both canal companies and railway companies set out in Table 5.1.

Table 5.1: Multiple Shareholders in Canal and Railway Companies

Number of Companies in which Shares were held	Canal Shareholders		Railway Shareholders	
	Number	As % of Total	Number	As % of Total
1	2,503	84	2,850	97
2	382	13	75	3
3	82	3	7	0
4	9	0	1	0
5	2	0	0	0
6	2	0	0	0
Total	2,980	100	2,933	100

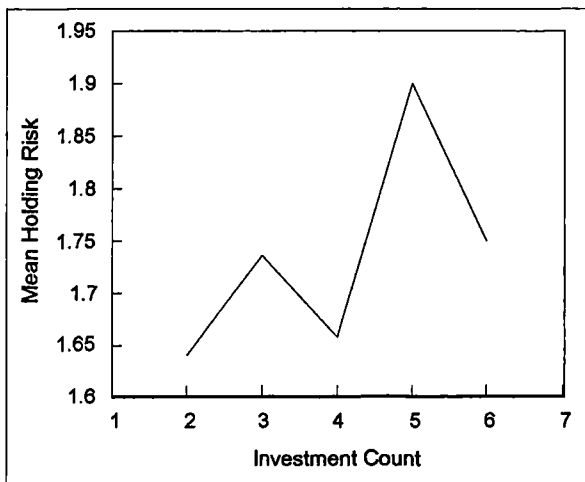
Source: CARD Database of 2,980 canal and 2,933 railway company investors, includes all shareholdings in more than one company but excludes shareholdings in the same company held for more than one period.

Table 5.1 shows that 477 (16 per cent) of canal company investors held shares in more than one canal company. In comparison, only 87 railway shareholders (3 per cent) were multiple investors. Canal investors held up to a maximum of six different stocks, railway investors four. This indicates a fundamentally different attitude to investment between the two constituencies of investors. This is further emphasised by the fact that only 30

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investors out of the entire CARD Database held both canal and railway shares. The propensity of canal shareholders to hold shares in more than one canal company was examined to determine whether this was a conscious strategy to mitigate risk. Each multiple canal shareholding was allocated the same risk score of low, medium and high, which was used in the analysis of risk in Chapter 4.5. The average risk score for holdings of two, three, four, five and six different companies was calculated and plotted on Figure 5.1.

Figure 5.1: Propensity of Investors in Multiple Canal Companies to Take Risk



Source: Investment Count is the number of multiple canal investments held by individual investors, minimum of 2, maximum of 6. Mean Holding Risk is the average risk score, low = 1, medium = 2, high = 3, for each category of Investment Count. Risk allocation is in accordance with analysis in Chapter 4.5.

Although the analysis shown in Figure 5.1 is not statistically significant, there appears to be a tendency for investors holding shares in more than one company to assume a higher level of risk. This is consistent with investors using a portfolio of shares to mitigate risk. Any conclusions drawn from such a small number of multiple investors should however be regarded with caution.

The tendency to hold shares in more than one company may also be a function of the relative wealth of different classes of investor. The socio-economic backgrounds of investors holding shares in more than one company was analysed and the results are shown in Table 5.2.

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Table 5.2: Socio-economic Classification of Multiple Canal Company Investors

Number of Investors	Number of Canal Companies Held			Total
	1	2	3 or more	
Landed	95	16	3	114
Rentiers	284	61	19	364
Clergy	127	28	4	159
Professional and Bankers	102	30	15	147
Manufacturers	66	16	9	91
Merchants	50	14	4	68
Artisans and Shopkeepers	68	16	4	88
Women	469	55	5	529
Unknown	1,242	146	32	1,420
Total	2,503	382	95	2,980
Percentage of Total Investors				
Landed	4	4	3	4
Rentiers	11	16	20	12
Clergy	5	7	4	5
Professional and Bankers	4	8	16	5
Manufacturers	3	4	9	3
Merchants	2	4	4	2
Artisans and Shopkeepers	3	4	4	3
Women	19	14	5	18
Unknown	50	38	34	48
Total	100	100	100	100

Source: Analysis of 2,980 individual investors from the CARD Database.

Table 5.2 shows that the Rentier and Professional groups were much more likely to be multiple shareholders than other investors. These two groups were probably the most financially sophisticated amongst the constituency of investors. Women were much less likely to hold shares in more than one company, which probably reflects their lower economic status. An analysis of multiple holdings amongst railway shareholders produces a similar result, as shown in Table 5.3.

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Table 5.3: Socio-economic Classification of Multiple Railway Company Investors

Number of Investors	Number of Railway Companies Held		
	1	Multiple	Total
Landed	163	3	166
Rentiers	449	22	471
Clergy	98	3	101
Professional and Bankers	312	13	325
Manufacturers	77	3	80
Merchants	210	5	215
Artisans and Shopkeepers	428	4	432
Women	307	5	312
Unknown	806	25	831
Total	2,850	83	2,933
Percentage of Total Investors			
Landed	6	4	6
Rentiers	16	27	16
Clergy	3	4	3
Professional and Bankers	11	16	11
Manufacturers	3	4	3
Merchants	7	6	7
Artisans and Shopkeepers	15	5	15
Women	11	6	11
Unknown	28	30	28
Total	100	100	100

Source: Analysis of 2,933 individual railway company investors from CARD Database.

Table 5.3 also shows that Professionals and Rentiers were the groups most likely to own shares in more than one railway company, whereas Women and other lower income groups such as Shopkeepers and Artisans were less likely to be multiple shareholders. Rentiers might be expected to be significant holders of shares, as they tended to be wealthy and to hold a large proportion of their wealth in financial assets. Women were also likely to hold a significant proportion of their wealth in financial assets. Women tended not to inherit real property. Amongst the landed classes real property was often entailed on a male heir.⁶ Women inherited assets held in trusts from husbands or fathers, under which they could benefit from the income but could not control the capital.⁷ In the case of the railway companies, only 6 per cent of the multiple shareholders were women. Although railways were generally regarded as low-risk investments and many investors chose them in preference to government stocks, the present study suggests they failed to attract female shareholders in significant numbers. In contrast, over 12 per cent of multiple canal company investors were women. The

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Clergy show a similar reluctance to make multiple investments in railway companies. The risk analysis, discussed in Chapter 4, indicates that investors did not differentiate levels of risk between the railway companies in the present study. Diversification may not have been considered necessary by railway investors. Contemporary commentators even suggested railway shares bore similar levels of risk to that of government stocks.⁶ If investors regarded railway stocks as low risk then they may have been regarded as interchangeable with government stocks. This may explain the small numbers of women who invested in the railway companies in the present study. As is shown in Figure 4.5 in Chapter 4.5.4, the yield on railway stock, certainly up to 1844 was very similar to that on Consols. There was thus no incentive for women to diversify their investments and hold both railway and government stock. Those women requiring a higher yielding investment continued to hold canal company shares. For example, the proportion of female shareholders in the BCN increased from 10.5 per cent in 1768 to 21.2 per cent by 1840.⁹ The strategy of mitigating risk through holding a diverse portfolio of investments other than canal and railway companies is discussed below.

5.2.2 Diversification into Investments Other than Canal and Railway

Shares

It is relatively easy to quantify an individual investor's holdings in the private sector canal and railway companies. It is much more difficult to determine what proportion of an individual's total wealth was invested in this way. Investment in joint stock canal and railway companies was more risky than investment in land and buildings or government stocks, but they generally yielded a better return. As has been discussed in Chapter 4, liquidity was an important factor for investors in the present study. Canal and railway investments were more liquid and incurred lower transaction costs than investment in land and buildings. They were, however, less liquid than government stocks and short-term bank deposits. Bank deposits were low yielding and as has been discussed in Chapter 4, deposits and investment in joint stock banks could be risky, although the level of risk declined as the capital adequacy of banks improved. Portfolios of holdings in canal and railway companies were likely to be balanced by investments in other assets.

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The portfolio of investments held by a sample of CARD investors was examined. This provided a common and homogenous population, rather than a number of separate samples drawn from landowners, or holders of government stocks. A common sample population enabled more meaningful comparisons be made between the portfolio strategy of different socio-economic groups of investors than studies based on the comparison of the portfolios of investors selected on the basis of different criteria and in different areas or time periods.

Various source documents were used to determine what other assets were held by CARD Database investors. Investment by these individuals in land, bank shares and deposits and government stocks has already been discussed in Chapter 4. Not surprisingly, given the relatively wealthy background of the CARD Database investors, the present research did not discover much evidence of substantial investment in land. However, there is evidence that financial assets such as government stocks and shares in joint stock banks were held as part of a diversified portfolio.

Further investigation was carried out on the wills and probate records of CARD Database investors. Wills generally tend not to mention specific holdings of shares since these were assets which could be readily bought and sold and might not continue to be owned at the testator's death. In the present study, in order to determine the relative importance of different assets in the total valuation of a testator's estate, the records of one particular canal company were examined. The Register of Transfers on Death of the BCN for the periods 1787 to 1797 and 1820 to 1828 were used to extract information on the size and composition of the transferees' estates. Forty transferees were selected from the first period and fifty-eight from the second period. The ledger entries usually included an extract of the will and probate inventory. The results of the analysis are given in Table 5.4.

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Table 5.4: References to Investments in the Wills of Deceased BCN Shareholders

	1787-1797	1820-1828	Total
Total Number of Testators	40	58	98
Testators with Multiple Investments	1	6	7
Percentage of Testators with Multiple Investments	3	10	7
Investments mentioned in Will	13	18	31
Percentage of Testators with Investments mentioned in Will	33	31	32

Source: Data from BCN, Register of Transfers by Death 1787-1832.¹⁰ Sample comprises all transfers on death between 1787-97 and 1820-28. Multiple investments refers to investments in more than one security or different types of asset as detailed in the will extract. Investments in Will refers to any reference in the extract to BCN or other securities where the testator specifies the method of disposal.

Shares owned by the testator are mentioned in 31 per cent of the wills reviewed in the two periods. These shares were either held in trust to pay a life interest or specifically willed to beneficiaries. This could indicate that the investors considered the shares to be a low-risk asset, which could be relied upon to pay an income to their wives and daughters. Since they were specifically mentioned in wills drawn up some time before death, it is likely that these shares were intended as long-term investments, not as traded assets. Wills mentioning investments in more than one company or type of asset were more common in the period 1820 to 1828. In order to quantify the importance of multiple holdings, a sample of BCN shareholders was selected from the ledger recording transfers on death for the years 1820 to 1828. The sample comprised deceased BCN shareholders for whom information was also available on the total size of their estate. This produced a small sample of 25 individuals. The results of the analysis are shown in Table 5.5.

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Table 5.5: Importance of BCN shareholding in Estates by Socio-economic Groups 1821-1828

	Average Value of BCN Shares	Average Probate Value	Value of BCN Shares as a Percentage of Probate Value
	£	£	%
Landed	1,695	37,500	5
Rentiers	4,642	20,750	22
Clergy	2,400	65,000	4
Professional and Bankers	3,136	29,500	11
Manufacturers	2,450	20,500	12
Merchants	14,160	25,000	57
Artisans and Shopkeepers	1,100	6,000	18
Women	3,202	11,500	28
Average	3,401	23,927	14

Source: Data from BCN, Register of Transfers by Death 1787-1832.¹¹ Sample comprises 25 transfers on death between 1820-28, where both the size of the estate and the number of BCN shares held by the testator are known. Value of estate is taken to be the upper limit of the relevant probate range. Average share prices taken from BCN Income and Expenditure Memorandum.¹²

The small size of the sample means that any conclusions drawn from analysis of the data should be viewed with caution. The average value of the BCN shares held by testators was £3,101. This represented on average 14 per cent of the average probate value of the testator's estate. As might be expected, the BCN shares form a higher than average proportion of the estates of Rentiers and Women. These groups were more dependent on financial assets than the Landed group, who held only 5 per cent of their assets, excluding real property, in BCN shares. The one merchant in the sample held a very high proportion of his wealth in BCN shares. Merchants appear to have been more likely than other socio-economic groups to dispose of shares during economic downturns, as has been discussed in Chapter 3. As a result, they may have placed greater importance on the liquidity of their investments. No conclusions can be drawn from the results of such a small sample. However, the length of time the original subscribers who bought BCN shares in March 1768 held their shares was analysed. This shows that the Merchant group held their shares for 7.5 years on average. Although this was less than the average of 9.8 years for the total of all the original shareholders it is not convincing evidence of a particularly rapid turnover and need for liquidity amongst

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the Merchant group.¹³

The analysis set out in Table 5.5 only relates to the valuation of BCN shares; it does not include the valuation of shares in other joint stock companies or other assets. Eighty-one BCN shareholders in the sample were observed to have owned shares in more than one canal company. It is therefore likely that Table 5.5 substantially understates the importance of investment in other joint stock companies amongst the assets held at death by the testators in the sample. No valuation has been made of the other assets, excluding shares, held at death. Some anecdotal evidence is available and is discussed below.

Individual wills give a detailed insight into the diversity of investments, which were held by investors. For example, Christiana Geast, a widow from Moseley, whose will, proved in 1825, mentioned the ownership of shares in the BCN, the Stourbridge Navigation and the Dudley Canal. As has already been discussed in Chapter 4.4.1, she also had a holding of approximately £4,000 of 3 per cent Consols.¹⁴ The CARD Database revealed that Geast owned eight BCN¹⁵ shares at her death and one Stourbridge share in 1809.¹⁶ Assuming that she held a minimum of one share in both the Stourbridge and Dudley canals at her death, the value of these holdings in 1825 would have been just over £3,000 or about 20 per cent of the total probate value of her assets.¹⁷ Her total estate was valued at under £14,000 although this does not include real property or settled property. Another example of a diversified holding was that of Edward, Bishop of Oxford, whose will was proved in 1827. At his death he owned 80 new BCN shares¹⁸, 20 shares in the Birmingham & Worcestershire Canal and 50 shares in the in Basingstoke Canal. His total estate amounted to £70,000.¹⁹ The value of his BCN and Birmingham & Worcester shares alone amounted to over £23,000, or 33 per cent of the probate value.²⁰ Another cleric, John Rose Holden, an Anglican minister from Birmingham, left an estate of under £60,000 including, shares in the BCN, the Basingstoke Canal and debentures in Worcester gaol. One of the more extensive inventories of assets belonged to Elizabeth Lovatt, a widow from Aston, whose will was proved in 1827. In addition to her six shares in the BCN, worth about £1,700, she included amongst her assets, the probate value of which amounted to under £4,000, two

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freeholds in Aston, a share in two lives in the Royal Hotel Birmingham tontine and £1,500 on mortgage to Thomas Riley, a pawnbroker.²¹ The canal shares accounted for 43 per cent of her total assets excluding real property.

Both anecdotal and quantitative evidence suggests that individuals from all socio-economic groups held diverse portfolios of assets. The average value of BCN shares in the probate value of those investors' estates that were examined was 14 per cent. It is likely that the total value of all joint stock shares held at death was considerably higher. Businessmen may have already divested their business assets to their sons or male successors prior to death.²² Thus the proportion of financial assets held at death might have been greater than during the life of the investor. Earle's study of post-mortem inventories of 375 individuals from London in the period 1660 to 1730 suggests that this may have been the case. His sample investors held on average one-third of their total assets in investments. The more wealthy individuals held most of their assets in government stocks, whereas the less wealthy favoured leaseholds and mortgages.²³

As has already been discussed, the CARD investors appear to have held very little of their wealth in land. There is some evidence that they acquired properties, probably to provide rental income, as noted by earlier researchers,²⁴ although this has not been thoroughly investigated in this study. The CARD investors also owned substantial balances in Consols. They combined portfolios of risk-free government stock with higher risk joint stock shares. If the estate of Samuel Galton is typical, they also kept a high proportion of their assets in cash, probably in the form of bank deposits. Galton left just over half of his £150,000 estate to his grandchildren in the form of bequests of cash.²⁵ The CARD investors appear to have prudently balanced risks and returns. They readily embraced new financial markets, such as those for joint stock shares but tempered this with a mix of traditional assets. This willingness to use new markets as part of a portfolio approach to risk and return was also shown in their use of life insurance.

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5.3 Life Insurance

The death of the family breadwinner, business partner or debtor could cause hardship to surviving partners, widows and children or destroy a business. As early as the sixteenth century, individuals sought to mitigate this risk through the mechanism of life insurance.²⁶ By the mid-eighteenth century a new financial industry, which served the needs of a growing middle-class population, had developed. The socio-economic profile of investors in the canals, railways and joint stock banks of the West Midlands fits closely those sectors of society targeted by the growing insurance industry. The present research investigates the use of life insurance amongst these investors. The extent to which different socio-economic groups of investors used life insurance informs the discussion of methods of information transfer and attitudes to risk.

The growing insurance industry was based on the rational assessment of risk, both by the insurer and the insured. However, the widespread use of life insurance had distinctly murky origins in the insurance of slave cargoes. Clark notes that in the seventeenth century 'life insurance was condemned throughout Europe as an incitement to fraud and murder'.²⁷ At best, early policies were often regarded as a form of gambling, whereby a policyholder might wager on the death or birth of a person with whom they had no relationship whatsoever. This activity was finally prevented by the Gambling Act of 1774, which required policyholders to have a *bona fide* financial interest in the insured life.²⁸ Life insurance developed into a tool to protect the middle class against risks that they could not afford to self-insure. Life insurance was generally not used by the wealthiest sectors of society since they could either afford to absorb those risks or had access to other means of risk mitigation, such as holding a diversified portfolio of assets. By the beginning of the eighteenth century, the need for accessible insurance for the middling classes was recognised and mutual organisations were established to provide protection for widows and orphans. This early form of insurance was through subscription societies, limited by the size of the membership, to which members paid an entrance fee and annual subscription. On the death of a member, a share of members' contributions was paid to the deceased's nominated beneficiaries.²⁹

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One such society was the Amicable Society for a Perpetual Assurance Office, chartered in London in 1706. Membership was restricted to 2,000. Annual subscriptions were divided amongst the nominees of the members who died in that year and consequently, contributors had little control over the value of the benefit, which would ultimately be paid to their beneficiaries.³⁰ These arrangements would appear to substitute one risk for another and it is not surprising that this form of insurance was not widely adopted. In addition to these mutual societies, there were two chartered companies, Royal Exchange Assurance and London Assurance, which began writing life business in 1721. Insurance was provided for a maximum of one year and both companies refused high-risk business such as the sick, the elderly, or victims of smallpox.³¹ The amount of life business at this period was small and not very profitable. It was not until the Society for Equitable Assurances on Lives and Survivorships (the Equitable) was established in 1762 that life business was given a more scientific background, using actuarial tables based on the work of de Moivre, John de Wit and Edmund Halley. The Equitable undertook permanent contracts and accepted a broad range of risks.³²

As has been discussed in Chapter 3.1, the early application of these life tables to determine the level of premiums was biased in favour of the life companies. The present research confirms that this was overwhelmingly the case for those investors in the CARD Database who were found to have used life insurance. However, in spite of the very obvious costs involved in life insurance, it must have satisfied a need to mitigate the risks to family or business life. The Equitable dominated the market for thirty years, selling policies primarily to the middle classes of London. The use of life insurance remained highly concentrated in London, even after other companies began to sell insurance through a network of agents throughout the country. For example, the Pelican Life office in 1797 endeavoured to sell life business through the country agencies of its sister company, Phoenix Fire Office. The Provident Institution, set up in 1806, and the Sun Life Assurance Company of 1810, also tried to establish nation-wide business, using agencies set up to sell fire insurance.³³ A number of companies were formed at this time following the same statistical principles as the Equitable. In order to compete, these new companies targeted particular sectors of the community, such as widows,

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lawyers, doctors or the clergy. For example, the Scottish Widows' Fund and Life Assurance Society was established in 1815, the Clergy Mutual in 1829, Law Life Assurance Society in 1823 and the Clerical, Medical and General in 1824. In the 1830s, provident institutions were set up which combined life insurance with concepts of thrift and temperance, such as the Friend's Provident of 1832 which was a Quaker foundation. Nevertheless, the life insurance market remained small until the mid-nineteenth century.³⁴ As Clark notes, life insurance was most avidly adopted by those members of society aspiring to gentility, such as the growing numbers of professionals. These individuals realised their 'trading capital', comprising their training and skill, terminated at their death, leaving their families with a commitment to a lifestyle they could no longer sustain.³⁵ The growing urban professional classes swelled the ranks of policyholders and by the 1850s sums assured through British offices had risen to about £150 million.³⁶ The investors in the canal and railway companies were typical of middle-class policyholders, who sought to mitigate risk through the use of life insurance. The extent to which these investors utilised this mechanism is discussed below.

5.3.1 Investors Using Life Insurance

By the 1790s, the London-based life companies were actively marketing their products in the Birmingham area. The *Birmingham Gazette* carried advertisements for Royal Exchange Assurance, and Mrs Ann Salt was appointed agent for fire business in 1792.³⁷ It is not known whether she also wrote life business. The Westminster Society also advertised in the *Birmingham Gazette* in 1792 for life insurance provision 'for old Age and for the Widow and Fatherless'.³⁸ The growing population of middle-class professionals in Birmingham at this time fitted the profile of typical buyers of life insurance. The Birmingham middle class has already been identified in this study as willing to embrace financial and business innovation. They might therefore be expected to have readily adopted the use of life insurance as a means of mitigating risk. This premise was tested by investigating the use of life insurance amongst the investors in the CARD Database and the BARD Database. The London Life Assurance Society (London Life) wrote a total of 14,120 policies between 1823 and 1850. The name of

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each policyholder with an address in the West Midlands was checked against the names of investors in the two Databases. It was discovered that seventy of these London Life policies were held by 50 of the investors in the Databases. It was interesting to observe that these investors comprised nearly all the London Life policyholders in the West Midlands. Clark calculated that the West Midland counties only accounted for between 1 and 10 policyholders per county.³⁹ The majority of London Life policyholders were from London and the South East of England and the geographical distribution of London Life policyholders was not atypical of the life insurance industry as a whole. Clark's analysis of two other insurance institutions reveals that the number of policyholders in the West Midlands was substantially less than London and the Southeast.⁴⁰ Although in general the use of life insurance was not widespread in the West Midlands, a large proportion of those taking up policies were investors in the canals, railways and joint stock banks examined in the present study. The life insurance market as a whole was relatively small at this time. Even by 1845, the Chairman of the Mutual Life estimated that less than 100,000 people out of a total population of 25 million were insured with life offices.⁴¹ The high incidence of life insurance amongst investors in the present study suggests that they were either well informed about new financial products or particularly receptive to financial innovation. Table 5.6 gives the proportion of investors in each Database who were found to have held life insurance policies from London Life between 1823 and 1850.

Table 5.6: Number of Investors who held Life Insurance

Database	London Life Insured Investors		Total Investors		Total Investors 1823-1850	
	Number	As % of Total	Number	As % of Total	Number	As % of Total
Banks	8	16	597	9	597	12
Canals	14	28	2,980	46	1,788	34
Railways	28	56	2,933	45	2,933	55
Total	50	100	6,510	100	5,318	100

Source: Data from London Life Assurance Policy Registers.⁴² Total Investors comprises all investors in the CARD and BARD Databases.

Table 5.6 shows that 9 per cent of the total number of investors came from the bank

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database with the remainder split almost equally between canal investors and railway investors. A disproportionate percentage of investors who held insurance policies were found in the bank or railway databases. This is probably because railway and bank investment covered a similar period to that of the insurance records, whereas 40 per cent of canal investment relates to an earlier period. If the number of canal investors is adjusted to include only those who were on shareholder registers during the time period covered by the insurance policy registers, the proportions of investors and investors who were also policyholders is roughly the same. This indicates that there was no real difference between the propensity of canal, railway or bank investors to use life insurance. On the other hand, a comparison between the socio-economic classification of investors holding life policies and that of investors in the Databases as a whole reveals substantial differences, as discussed below.

5.3.1.1 Comparison of Policyholders and Insured Lives

Clark, writing about an earlier period, 1695 to 1775, notes that life insurance societies drew their members almost exclusively from the middling classes.⁴³ The socio-economic classification of the 50 investors who were policyholders was analysed and the results of the analysis are set out in Table 5.7.

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Table 5.7: Social Groups of Policyholders and of Life Insured

	All Policyholders		Insured Life excluding Policyholders' Own Lives		Total Investors	
	No.	%	No.	%	No.	%
Landed and Rentier	14	27	5	18	2,055	34
Clergy	6	13	4	14	462	7
Professional and Bankers	16	31	6	24	874	14
Manufacturers	0	0	1	5	373	6
Merchants	2	4	1	5	531	9
Artisans and Shopkeepers	11	23	4	14	1,018	16
Women	1	2	5	20	862	14
Total	50	100	25	100	6,175	100

Source: Data from London Life Assurance Policy Registers.⁴⁴ Total Investors from CARD and BARD Databases. Socio-economic data on Bank Investors are only available for 262 shareholders of the Coventry Union Bank. All data series adjusted to reallocate individuals in the Unknown socio-economic group amongst males in other categories in proportion to the number of individuals in that group. Policyholders include all those investors from the West Midlands who held London Life Assurance policies. Insured Life excludes policyholders who insured their own lives.

Investors taking out policies were primarily from the Landed, Rentier and Professional groups and the Artisan and Shopkeeper group. There was only one woman amongst the policyholders. The 70 policies taken out by these 50 investors were used to make a further comparison between the socio-economic analysis of the policyholders and that of the lives that they insured. Twenty-five out of the 50 policyholders insured their own lives. The remaining 25 insured the lives of other individuals, who were not investors in the Databases. Table 5.7 reveals important differences between the socio-economic group of the policyholder and the group of the other lives they insured. The socio-economic analysis of the group of Insured Lives compares reasonably closely with that of investors in the Databases as a whole. Two categories, the Clergy and Professionals appear to have been marginally more likely to have been insured lives than their overall numbers in the Databases would suggest. These groups also formed a higher than expected proportion of policyholders. This is not surprising, since it was these groups which were targeted by life insurance companies. As has already been discussed

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above, specialist insurance companies were established to cater for the needs of the clergy and the professions. It was particularly these groups whose social standing was dependent on the salary or stipend of the breadwinner. The most significant difference, shown in Table 5.7, between the analysis of investors who were policyholders and the Databases as a whole, is in the proportion of women. Only 2 per cent of policyholders were women, whereas 20 per cent of insured lives were those of women and 14 per cent of the total investors in the Databases were female. The number of female holders of life insurance policies has been shown by Clark to be much higher than that amongst the female investors in the present study. Clark's analysis of the Amicable Society participants between 1706 and 1768 suggests that 16 per cent of policyholders were women and 32 per cent of insured lives were female.⁴⁵ The small proportion of female investors who were policyholders may be explained by the fact that the female investors belonged to particularly wealthy sectors of society, whereas female policyholders were often women who relied upon income from lending money or from businesses such as dressmaking and millinery. The widows and daughters of the middle-class elite of the West Midlands probably had no need to insure their livelihoods. On the other hand, they were more likely to be an insured life. The single female investor found amongst the London Life policyholders was Harriet Perkins, a widow from Edgbaston. She owned two policies. The first, for £999, was taken out in March 1830 on the life of Edward Henry Richards, aged 24, an attorney from Lincoln's Inn. This policy was surrendered in October 1843. Her second policy was taken out in December 1847 on the life of Lord Burghley, then aged 23. This policy was for £2,500 and ran until his death in 1895. Further examination of the policy registers revealed that Lord Burghley was the insured life in three other policies all taken out by different policyholders. No *prima facie* link can be established between Lord Burghley and any of these individuals. Clark suggests that women who lent money took out policies on the lives of their debtors.⁴⁶ Although Harriet Perkins may have been involved in money lending, as many widows were, the longevity of her policies and the amounts involved suggest that this may not have been the case.

Women were more likely to be the insured life than the policyholder.⁴⁷ Table 5.8 compares the socio-economic groups of policyholders who insured their own lives with

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those who insured the lives of others.

Table 5.8: Social Group of Policyholders

	Another life insured		Own life insured	
	Number	As % of Total	Number	As % of Total
Landed and Rentier	10	40	3	12
Clergy	5	20	1	4
Professional and Bankers	3	12	12	48
Manufacturers	0	0	0	0
Merchants	1	4	1	4
Artisans and Shopkeepers	4	16	7	28
Women	1	4	0	0
Unknown	1	4	1	4
Total	25	100	25	100

Source: Data from London Life Assurance Policy Registers⁴⁸ and the CARD and BARD Databases.

Table 5.8 shows that of the 50 policyholders in the present study, half of them insured their own life and half the lives of others. Although the absolute numbers in the sample are very low, there are marked differences in the behaviour of different socio-economic groups. Members of the Professional group were much more likely to insure their own lives, which confirms the reliance of families of professionals on the income of the breadwinner. Members of the lower income Artisans and Shopkeeper group were also more likely to insure their own lives for much the same reason. Manufacturers and Merchants in the CARD and BARD Databases did not use insurance to any great extent, presumably finding that their business assets provided sufficient security. The Landed and Rentier groups, on the other hand, relying perhaps on reversionary interests on settled property, tended to insure the lives of others rather than their own. The 70 London Life policies held by the 50 investors in the present study were further examined to provide an analysis of the socio-economic status of the lives insured under the policies. Thirty-three out of the 70 policies were in respect of lives other than that of the policyholder and the socio-economic classification of these insured lives is given in Table 5.9.

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Table 5.9: Social Class of Insured Life

	Number of policies	As % of Total
Landed and Rentier	6	18
Clergy	3	9
Professional and Bankers	7	21
Manufacturers	2	6
Merchants	1	3
Artisans and Shopkeepers	3	9
Women	5	15
Unknown	6	18
Total	33	100

Source: Data from London Life Assurance Policy Registers⁴⁹ and CARD and BARD Databases. Analysis of 70 policies of which 33 were insuring lives other than that of the policyholder.

Table 5.9 shows that in the present study, Women were almost as likely as Professionals, the Landed and Rentiers to be the insured life. All five of the policies insuring the lives of these women were taken out by male policyholders. Two of the women were the wives of policyholders, two were widows and one was the wife of a third party. Clark has established that a husband might insure the life of his wife in order to protect the family against the loss of her reversionary income on her death.⁵⁰ This may have been the case for one of the five women identified in the present sample. The Rev. James William Arnold insured his wife, Mary's life for £1,500 in 1849 when she was 50. This policy was surrendered in 1860 and replaced with a further policy. In another case, Joseph Enoch, a gentleman from Bengeworth, insured the life of his wife in 1837 for £200 when she was 60. Enoch may also have been protecting a reversionary income. Here, however, the amount involved seems to be rather low for a gentleman to require such insurance. In another example, two solicitors from Whitchurch, William Wycherley Brookes and John Lee took out a contingent survivorship policy on the lives of Elizabeth Bickerton, a widow from Whitchurch and her mother, Elizabeth Gill of Chester for £100 in 1827. This policy was most probably insuring a loan, given the size of the policy and the fact that it was abandoned after five years in 1832. The high proportion of policies where Professionals and Rentiers were nominated as the insured lives by policyholders suggests that some at least of these policies may have been

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insuring business risks. This is confirmed by the evidence relating to the duration of these policies, which is discussed below.

5.3.1.2 Age of Policyholders

As has been shown in Table 5.8, the majority of investors who insured their own lives came from the Professional and Banker group. This confirms earlier evidence that these groups were anxious to mitigate the risk of leaving their families in straightened financial circumstances on their death. Professionals were under pressure to live the lives of gentlemen. Indeed they often described themselves in share registers as gentlemen, rather than by their professional titles. This may have resulted this group living up to and possibly beyond their incomes, with resulting hardship and the very real fear of 'sinking' in the social scale after the death of the income earner. It is no surprise that the average age of investors from the Professional group taking out insurance on their own lives was 37. This was the age at which these investors were probably relatively newly married and had young families. Earle reveals that in his sample of 375 middle-class Londoners, 79 per cent of husbands were over the age of 25 when they married and nearly 30 per cent were over the age of 30.⁵¹ Although Earle's sample is taken from an earlier period than that of the CARD Database sample, it is probable that the middle-class investors in the present study married at a similar age. The age at which policyholders, in general, took out insurance has does not appear to have been investigated in earlier research. In the present study, the age at which the 25 policyholders who insured their own lives took out their policies has been calculated. In total these individuals took out 37 policies and the analysis of their ages is given in Table 5.10.

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Table 5.10: Average Age of Self-insured by Social Class

	Number of Investors	Average Age in years of Life Insured at Start of Policy
Clergy	1	48
Rentier	1	30
Landed	2	38
Farmers	1	45
Professionals	18	37
Bankers	1	52
Merchants	3	27
Shopkeepers	2	35
Service Industry and Servants	7	39
Unknown	1	35
Total	37	37

Source: Data from London Life Assurance Policy Registers⁵² and the CARD and BARD Databases. Data comprise 37 policies of the 25 policyholders who insured their own lives.

There are insufficient numbers in any of the groups other than Professionals to draw any reliable conclusions on the age at which different social groups took out policies. The data for the group as a whole reveal that the 25 policyholders took out insurance at an average age of 37. The age at which each of the 37 policies were written varied from 24 to 63 but 62 per cent were taken out when the policyholder was between the ages of 27 and 37, which is consistent with the use of life insurance when families were young and presumably most vulnerable.

5.3.1.3 Duration of Policies

Life insurance policies which were abandoned after a short period were probably taken out to protect short-term risks, such as a loan or some business-related commitment. Once the loan was repaid or the commitment completed the policy would be cancelled. Policies which were maintained over a long period would be more likely to relate to the protection of family lifestyle or assets. The 50 policyholders in the present study generally maintained their insurance for a considerable period of time. The average duration of policies for each socio-economic group is set out in Table 5.11.

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Table 5.11: Average Duration of Policies by Social Class of Policyholder

	Number of Policies	Average Duration of Policy in years
Clergy	8	14
Rentier	12	14
Landed	4	16
Farmers	1	43
Professionals	20	28
Bankers	2	26
Merchants	4	36
Shopkeepers	7	26
Service Industry and Servants	8	13
Women	2	31
Unknown	2	19
Total	70	22

Source: Data from London Life Assurance Policy Registers⁵³ and the CARD and BARD Databases. Data comprise 70 policies relating to 50 policyholders who were also investors.

The average duration of the 70 policies taken out by the 50 investors in the present study was 22 years. Of these policies, 37 were in respect of insurance of the policyholder's own life. The average duration of these policies was 27 years. All but three of the 25 investors who insured their own lives retained the policy until they died. It is very likely that these investors were using life insurance as a protection for families rather than short-term cover for business loans or other transitory risks. As a whole, the average duration of policies where the policyholder insured a life other than his own was 16 years. This was substantially less than the duration of policies insuring the policyholder's own life. The number of policies in the present study where the insured life was not that of the policyholder was only 33. Thus, any conclusions drawn from analysis of the socio-economic characteristics of the insured life must be regarded with caution. Nevertheless, there is evidence that five out of the seven policies naming Professionals as the other life insured were in connection with loans or other business arrangements. Only one of these policies was taken out by a policyholder from the Professional group on the life of another Professional. This was a policy taken out in 1847 by Charles Meredith, a solicitor from Lincoln's Inn, on the life of Thomas Andrew Fitzgerald Reynolds, another solicitor from London. It is possible that these individuals had a business relationship and the insurance policy for £2,000 was to cover partnership

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commitments. This policy was abandoned after five years. A further three policies were taken out on the lives of articled clerks or apprentices to professions. These policies were for relatively modest amounts. For example, in 1849, Charles Frederick Marshall and John Lord, tailors from Bath, insured the life of Francis William Ford, an articled clerk in Chancery Lane for £100. Ford was twenty-one years old when the policy was initiated and it ceased after two years. It seems likely that this policy was to insure a loan to cover Ford's premium as a clerk. Similarly, in 1833, William Burman, a druggist from Stratford upon Avon, insured the life of Thomas Southam Burman, an apprentice to David Rice, a surgeon from Stratford, for £1,000. Thomas Southam Burman was nineteen when the policy was taken out and it was surrendered after nine years, presumably when the young surgeon was able to repay the loan.

These relatively short-term policies were not typical of the way investors in the present study used life insurance. Evidence suggests that the comfortably wealthy investors had no real need for life insurance. Data are not available on the wealth of the policyholders in the present study, but other indicators, such as the virtual absence of policyholders who held shares in more than one company, are *prima facie* evidence that they were not among the wealthiest investors. Only three policyholders owned shares in more than one company and only two were amongst the 973 members of the prestigious philanthropic, political and social institutions in the Birmingham Database. These societies, where influential people could meet, were likely to have been fora for the transfer of information, as discussed in Chapter 6.3.2. The most probable means of information transfer for individuals who were not members of this elite, apart from direct advertising in newspapers such as the *Birmingham Gazette*, was through professional intermediaries. It has already been established that members of the Professional group was the most likely investors to use life insurance and there is evidence that at least four solicitors who were investors in the CARD and BARD Databases arranged life insurance for policyholders in the present study.⁵⁴ These individuals did not hold policies with London Life themselves but, based in the urban centres of Warwick, Leamington, Gloucester and Bath, they would have had opportunities to disseminate information to a potentially large number of clients.

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The initial decision to take out life insurance may well have been influenced by professional advisers. The decision to retain the policies over very long periods of time when perhaps family circumstances would have changed reflects a considerable degree of risk aversion amongst these investors. As is shown in Table 5.11, the average duration of the policies in the present study was 22 years, with 20 of the policies lasting for more than 30 years. The average sum insured by policyholders in the present study was £1,344, although the maximum amount was £5,000. These amounts were very substantial, although perhaps not unusually so. Walford estimates that £10.5 million of the £14.5 million new policies in 1849 were for insured sums of over £500.⁵⁵ Of the 70 policies taken out by the investors in the sample, 47 ran to maturity, that is, they matured on the death of the insured life. Maintaining these policies involved a considerable outlay. The overall cost of to the policyholders of maintaining the policies to maturity was calculated by compounding the annual cost of premiums at 3 per cent per annum over the remaining life of the policy. The total cost of these 47 policies amounted to £132,500. In return the policyholders received only £64,000 on maturity. Only the very risk averse would have continued to pay premiums on these policies, which demonstrated such poor economics. Table 5.12 sets out the average size of the amount insured and the average premiums payable.

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Table 5.12: Amounts Insured and Premiums Paid

	Policies	Average Sum Insured	Maximum Sum Insured	Minimum Sum Insured	Average Annual Premium	Premium Rate
	Number	£	£	£	£	%
Clergy	8	975	1,500	500	28.23	2.90
Rentier	12	1,342	3,500	100	47.84	3.57
Landed	4	2,513	4,000	1,000	90.57	3.60
Farmers	1	2,000	2,000	2,000	77.92	3.90
Professionals	20	1,528	5,000	100	52.23	3.42
Bankers	2	2,750	5,000	500	132.80	4.83
Merchants	4	800	1,000	400	32.50	4.06
Shopkeepers	7	400	1,000	100	8.90	2.23
Service Industry and Servants	8	1,275	3,000	200	53.08	4.16
Women	2	1,750	2,500	999	40.68	2.33
Unknown	2	1,175	2,000	350	33.00	2.81
Total	70	1,344	5,000	100	47.28	3.52

Source: Data from London Life Assurance Policy Registers⁵⁶ and CARD and BARD Databases. Data comprise 70 policies relating to 50 investors.

As might be expected, the policyholders from the wealthiest socio-economic groups insured the largest amounts. The smaller sums insured in the Merchant category and the wide range of amounts insured by Professionals suggests that in these two groups life insurance was being used for business purposes. The other groups would appear to be composed of investors who had sufficient wealth to maintain their policies and who were reluctant to abandon them.

In conclusion, life insurance appears to have been widely adopted by investors in the West Midlands. It was a convenient mechanism for mitigating risk, particularly amongst professionals and the clergy. The present research confirms the view that life insurance was most readily used by the middle classes who were comfortably off but not very wealthy. These investors clearly belonged to a group who readily adopted financial innovation and they were probably more risk averse than their peers.

¹ W. F. Sharpe, *Portfolio Theory and Capital Markets* (New York, 1970), pp. 82-96 and H. M. Markowitz, *Efficient Diversification of Investments* (New York, 1959), pp. 6 and 210.

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² As quoted by P. L. Bernstein, *Against the Gods: The Remarkable Story of Risk* (New York, 1996), p.105.

³ De Moivre quoted by Bernstein, *Against the Gods*, p. 126.

⁴ R. S. Shiller, 'Stock Prices and Social Dynamics', in R. H. Thaler (ed.), *Studies in Behavioral Finance* (New York, 1993), p. 206, D. Kahneman and A. Tversky, 'Prospect Theory: An Analysis of Decision under Risk', *Econometrica*, Vol. 47, No.2 (1979), pp. 263-91, E. E. Peters, *Chaos and Order in the Capital Markets* (New York, 1996), p. 15 and R. H. Thaler, D. Tversky and J. L. Knetsch, 'Experimental Tests on the Endowment Effect', *J. of Political Economy*, Vol. 98, No. 6 (1990), pp. 1325-48.

⁵ R. J. Morris, 'The Middle Class and the Property Cycle during the Industrial Revolution', in T. C. Smout, (ed.), *The Search for Wealth and Stability. Essays in Economic and Social History Presented to M. W. Flinn* (London, 1979), pp. 91-113, R. Floud, *The People and the British Economy 1830 - 1914* (Oxford, 1997), pp. 59-79 and T. Koditchek, *Class Formation and Urban-industrial Society: Bradford, 1750-1850* (Cambridge, 1990), p. 138.

⁶ A. L. Erickson, *Women and Property in Early Modern England* (London and New York, 1993), pp. 102-3.

⁷ Erickson, *Women and Property*, pp. 20-6 and L. Holcombe, *Wives and Property. Reform of the Married Woman's Property Law in Nineteenth-century England* (Oxford, 1983), pp. 39-42.

⁸ J. Whitefield, *Railway and Government Guarantee. Which is Preferable? Facts and Arguments to Shew that Guaranteed Railway Stock Offers a Better Investment than do Government Securities* (London, 1849).

⁹ PRO RAIL 810/1, BCN Committee Minutes and Reports 25 March 1768 and PRO RAIL 810/182, List of Proprietors, 8 May 1840.

¹⁰ PRO RAIL 810/178, BCN, Register of Transfers by Death 1787-1832.

¹¹ PRO RAIL 810/178, BCN, Register of Transfers by Death 1787-1832.

¹² PRO RAIL 810/589, BCN, Allocation of Receipts and Expenditure and Prices of Shares. Share price data and average size of shareholding adjusted to account for scrip issues which doubled the number of shares in issue on 21 May 1811, 24 September 1819 and 21 March 1823.

¹³ PRO RAIL 810/159 and 810/169, BCN, Share Transfer Registers.

¹⁴ AC27/1899, 3 per cent Consols Stock Ledger, G, 5 July 1817 to 1827, Bank of England Archive.

¹⁵ PRO RAIL 810/178, BCN, Register of Transfers by Death 1787-1832.

¹⁶ PRO RAIL 874/17, Stourbridge Navigation, Transfer Ledger, 2 January 1809.

¹⁷ Share prices taken from the *Course of the Exchange*, 14 June 1825, Guildhall Library.

¹⁸ 80 new shares in 1827 were the equivalent of 10 original shares.

¹⁹ PRO RAIL 810/178, BCN, Register of Transfers by Death 1787-1832.

²⁰ Share price taken from the *Course of the Exchange*, 15 May 1827, Guildhall Library.

²¹ Share price taken from the *Course of the Exchange*, 16 November 1827, Guildhall Library.

²² Morris, 'Middle Class and the Property Cycle', pp. 92-3 and 103.

²³ P. Earle, *The Making of the English Middle Class. Business, Society and Family Life in London, 1660-1730* (London, 1989), pp. 142 and 148.

²⁴ L. Davidoff and C. Hall, *Family Fortunes. Men and Women of the English Middle Class, 1780-1850* (London, 1987), p. 16.

²⁵ PROB 11/1330, Will of Samuel Galton, 1799.

²⁶ The earliest recorded contract was registered in June 1588 at the Chamber of Assurance for £382.34 on the life of William Gibbons for a term of twelve months, as noted by H. A. L. Cockerell and E. Green, *The British Insurance Business. A Guide to its History and Records* (London, 1976), p. 34.

²⁷ G. Clark, *Betting on Lives. The Culture of Life Insurance in England, 1675-1775* (Manchester, 1999), p. 8.

²⁸ Clark, *Betting on Lives*, p. 22.

²⁹ Clark, *Betting on Lives*, pp. 73-4.

³⁰ Cockerell and Green, *British Insurance Business*, p. 36.

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- ³¹ Cockerell and Green, *British Insurance Business*, p. 59.
- ³² Cockerell and Green, *British Insurance Business*, p. 59.
- ³³ Cockerell and Green, *British Insurance Business*, p. 60.
- ³⁴ Cockerell and Green, *British Insurance Business*, p. 37.
- ³⁵ Clark, *Betting on Lives*, p. 27.
- ³⁶ Cockerell and Green, *British Insurance Business*, p. 37.
- ³⁷ *Birmingham Gazette*, 30 January 1792.
- ³⁸ *Birmingham Gazette*, 4 June 1792.
- ³⁹ Clark, *Betting on Lives*, p. 180.
- ⁴⁰ Clark, *Betting on Lives*, p. 178, quotes data from Amicable Society, p. 181 and Assheton's Annuity Scheme.
- ⁴¹ Cockerell and Green, *British Insurance Business*, p. 37.
- ⁴² MS15181, London Life Assurance Society, Vols. 1-7, 1823 to 1850, Guildhall Library.
- ⁴³ Clark, *Betting on Lives*, p. 155.
- ⁴⁴ MS15181, London Life Assurance Society, Vols. 1-7, 1823 to 1850, Guildhall Library.
- ⁴⁵ Clark, *Betting on Lives*, p. 185.
- ⁴⁶ Clark, *Betting on Lives*, p. 186.
- ⁴⁷ Clark, *Betting on Lives*, p. 184.
- ⁴⁸ MS15181, London Life Assurance Society, Vols. 1-7, 1823 to 1850, Guildhall Library.
- ⁴⁹ MS15181, London Life Assurance Society, Vols. 1-7, 1823 to 1850, Guildhall Library.
- ⁵⁰ Clark, *Betting on Lives*, p. 184.
- ⁵¹ Earle, *The Making of the English Middle Class*, p. 182.
- ⁵² MS15181, London Life Assurance Society Vols. 1-7, 1823 to 1850, Guildhall Library.
- ⁵³ MS15181, London Life Assurance Society Vols. 1-7, 1823 to 1850, Guildhall Library.
- ⁵⁴ The solicitors were Thomas Fenn Addison of Gloucester, Joseph Collins of Leamington, Henry Mant of Bath and Thomas Morris of Warwick.
- ⁵⁵ C. Walford, 'History of Life Assurance in the United Kingdom', *Assurance Magazine*, 1887, as noted by Cockerell and Green, *British Insurance Business*, p. 44.
- ⁵⁶ MS15181, London Life Assurance Society, Vols. 1-7, 1823 to 1850, Guildhall Library.

CHAPTER 6: INFORMATION TRANSFER

6.1 Introduction

Access to information is the key determinant of risk evaluation and investment decision-making. Investors must be able to assess the accuracy of the information through mechanisms of verification and confirmation.¹ The most likely sources of company-specific information, particularly in the eighteenth and nineteenth centuries, were the officers, promoters or existing shareholders of that company. Market information arises from the collective interpretation of political or macro-economic events. The collective response of investors to both general and specific information results, ultimately, in a common market sentiment. This can produce the dramatic events of mania or crises; it may also result in selling or buying of securities on a more modest scale.² Chapter 4 discussed whether investors behaved rationally in response to the information they received. This Chapter examines the potential sources of information in the eighteenth and nineteenth centuries, the reliability of this information and how it was disseminated to the investing population.

A pre-requisite of an efficient market is that all investors have access to the same information at the same time and interpret it in the same way.³ In the eighteenth and nineteenth centuries both company specific and general market information was transmitted through two principal media, namely the press and word of mouth. The press included newspapers, more specialised publications, such as the *Course of the Exchange* or the *Railway Gazette*, and pamphlets. Opportunities to pass information by word of mouth occurred in both public and private spheres. This *social learning* is regarded by some researchers to be a much more effective means of transmitting information and forming collective opinion than that of the mass media.⁴ Access to this information was constrained by gender and socio-economic status. Male investors had access to both printed media and information transmitted by word of mouth in reading or newsrooms.⁵ These inner sanctums were not accessible to women. Although, Carswell found evidence that women established their own coffee house in Birchin Lane in the City of London, which they turned into a club for drinking tea and playing the stock exchange during the South Sea Bubble mania.⁶ This establishment appears to have

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been short lived and there is no evidence that women had access to provincial coffee houses. The basis upon which women made investment decisions, or as earlier research suggests, those decisions were made for them, is discussed below.⁷ Probably one of the most reliable information conduits was through family networks.⁸ The sphere of work, business partnerships, trade associations and contacts with specialists such as bankers and brokers must also have been important. Again access to these media was almost exclusively available to male investors only. Membership of philanthropic, political, religious or social organisations also presented opportunities to give and receive information.

The present study attempted to quantify the efficiency of information flow both about the company and about macro-economic conditions. Information transfer was measured by comparing the prices of two canal companies' shares, as recorded in the London market, with prices for the same companies recorded in the local market. The degree of correlation between the yields on government stock in the national market and canal shares in the local market was also examined. The degree of inter-connectedness between individual investors was investigated and the relative importance of family, business and social interactions was assessed.

6.2 Information Transfer through Public Media

6.2.1 Development of a National Capital Market

An efficient market is one in which all the participants have access to the same information at the same time, interpret the information in the same way and are able to deal freely on equal terms without legal or administrative constraints.⁹ A pre-requisite of an efficient market is a national capital market, where all investors are equally able to buy and sell all classes of stock on equal terms regardless of where they live. A key factor in the growth of an efficient national capital market is the development of fast and accessible methods of information transfer. Quick and reliable information flow was facilitated by technological, social and legal change during the eighteenth and nineteenth centuries. Considerable research has been carried out on this evolutionary process.¹⁰ Evidence of the availability of information and the mechanisms of information

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flow was obtained from contemporary media such as newspapers and pamphlets. To evaluate whether the capital market was efficient and to determine when local or regional markets became integrated into a national market, the behaviour of individual stock and share prices was analysed. Most of the empirical research on the eighteenth-century capital market has been confined to the study of the behaviour of government and quasi-government stocks. For example, Mirowski used price and dividend data for Consols and quasi-public stocks, such as those of the Bank of England, the East India Company and the Million Bank, for the first half of the eighteenth century to predict the 'ex-post rational' price of stocks. This price was derived from the present value of future dividends. It was then compared to the actual price of these stocks. Mirowski concluded that the lack of correlation between the predicted and actual price of the stocks demonstrated that the market was not efficient.¹¹ It seems that the basic premise of this research is, however, flawed in two respects. Firstly, the future dividend flow was discounted by the long-term interest rate. In the case of government stocks, the future dividend rate is fixed and constant. Thus the price of the stock is a function of prevailing interest rates, which vary according to macro-economic factors. Using the long-term interest rate as a deflator seems to introduce a certain circularity into the argument. Secondly, if market efficiency is a reflection of information flow, it would seem quite rational for prices of government stocks to fall during times of war when investors know that supply of government stocks is likely to outstrip demand. In spite of the results of this analysis, Mirowski suggested that all the elements of a modern market were already present in the eighteenth century, such as property transfer rules, arbitrageurs, freely available price information and a wide range of potentially tradable instruments.

Other researchers have avoided the problem of using government or quasi-government stocks to establish evidence for a national capital market. A study used an index of regional building activity in Middlesex and West Yorkshire for three periods, 1730-1776, 1770-1820 and 1820-1880, compared with yields on Consols and the price of Bank of England stock. Even though the property market was strongly affected by local factors, significant correlation between the two series was observed in the later periods. This suggests that although regional capital markets were still segmented in the

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mid-eighteenth century by the time of the Napoleonic Wars there was evidence of capital market integration.¹²

The present research also attempts to use regionally generated share price information to test the development of a national capital market. In this case, the price and yield of BCN shares was taken as an indicator of investor sentiment in a local capital market and their behaviour was compared to that of Consols as representative of the national capital market. This approach overcomes some of the problems of Buchinsky and Polak's work on property indices since a continuous data series of two financial instruments was available from 1770 to 1828. It has already been established that investors in canal company shares were more likely to invest in government stocks than they were in land (see Chapter 5.2.2) The BCN stock was sold in the regional market of the West Midlands. Transfers of stock took place through the company and the shares were rarely traded in the London market. For a period of more than seventy years, over half the BCN investors resided in the local area, as shown in Table 6.1.

Table 6.1: Location of BCN Investors: 1768 and 1840

	1768		1840	
	Number	As % of Total	Number	As % of Total
Birmingham	58	55	138	25
Other West Midlands	35	30	156	26
London	2	3	48	9
Other	10	12	287	40
Total	105	100	629	100

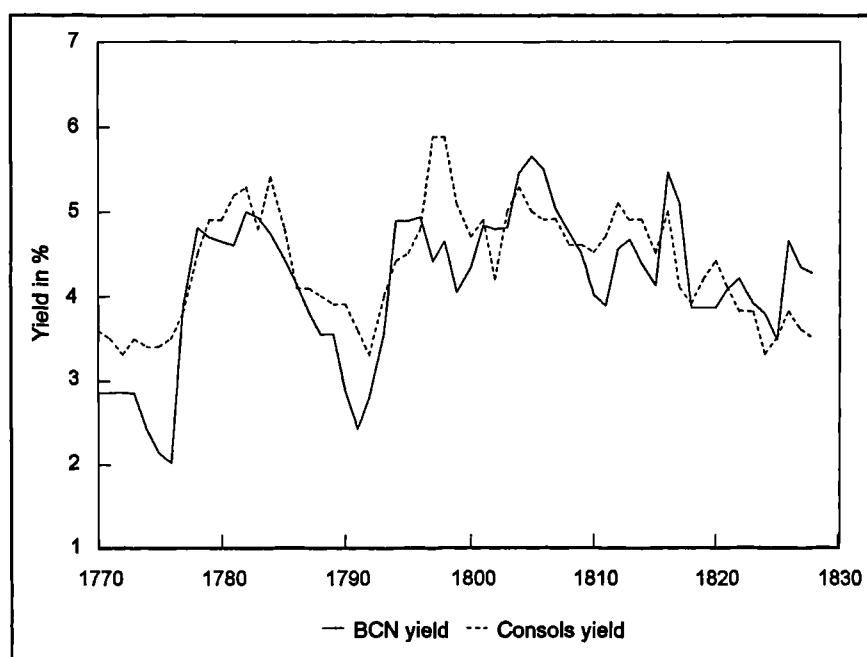
Source: BCN1768 from listing 105 original subscribers of 513 shares. BCN 1840 from listing of 629 shareholders holding 8,789 shares.¹³

Table 6.1 shows that even by 1840, only a small proportion of investors was resident in London. This proportion may be understated since the location of 31 per cent of the investors is unknown. Nevertheless, it can be assumed that the majority of the BCN investors in the 1840s did not have ready access to the London Stock Exchange. A measure of the efficiency of information flow is the time taken for price sensitive information to travel from the company to the national capital market, as defined as the Stock Exchange in London. In the opposite direction, changes in national market

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sentiment, reflected by movement of the yield in government stocks, can be compared with changes in the company's share price. A high level of correlation between the behaviour of the yield on Consols and the yield on BCN shares would tend to indicate the existence of a national capital market. The speed of information flow is a measure of the efficiency of that market. The results of the analysis are plotted in Figure 6.1.

Figure 6.1: Comparison of Yield on BCN Shares and 3 Per Cent Consols



Source: BCN share price and annual dividends for the years 1770 to 1828.¹⁴ Yield calculated on mean annual price. Consols annual yield from Mitchell.¹⁵

The BCN share yield was found to be highly correlated with that of Consols throughout the period 1770 to 1828, as shown in Figure 6.1. The correlation coefficient between these two series is 0.73, which with 59 data points is significant at better than 95 per cent. Investors in the BCN, throughout the period 1770 to 1828, were clearly reacting in the same way to the same factors which were affecting the market for Consols, traded on the London Stock Exchange. It has been established in Chapter 4.4 that BCN investors were also investors in Consols in the period 1817 to 1827 and most probably throughout the period in the present study. Clearly, market sentiment was quickly and effectively disseminated. This analysis suggests that there was a national capital market

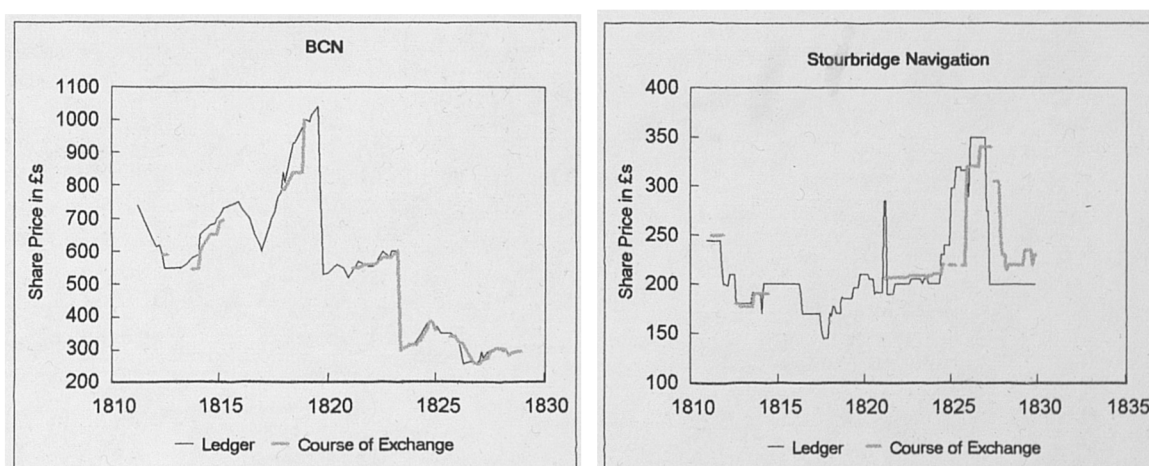
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as early as the 1770s. Even though the majority of BCN shares were not sold through the London Stock Exchange, investors were aware of the prevailing macro-economic environment. The behaviour of the yield on BCN shares tends to question some of the conclusions of earlier research based on the analysis of quasi-government stocks.

Mirowski suggests that the stock market devolved from a peak of efficiency in 1770 and that thereafter non-market mechanisms for capital investment, such as attorneys placing funds locally or kinship groups regained their ascendancy.¹⁶

The present research suggests that in the case of the BCN, market information was efficiently transmitted. This was further demonstrated by comparing the prices quoted in the *Course of the Exchange* and those recorded in the books of the company for shares actually transferred. These two prices were used to establish the time information took to travel from the company to the national capital market and *vice versa*. Similar share transfer information was also available for the Stourbridge Navigation but in the case of this company the evidence for efficient information transfer was less conclusive, as can be seen in Figure 6.2.

Figure 6.2: Comparison of Share Prices in the Course of the Exchange and Company Ledger



Source: BCN data from Memorandum of Income and Expenditure and Stourbridge Ledger price from the Share Transfer Ledger.¹⁷ Course of Exchange Prices from Course of the Exchange for the nearest day to the middle of each month 1814 to 1846. The methodology is described in greater detail in Chapter 4.5.2.

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Figure 6.2 shows that in the case of the Stourbridge Navigation there was a time lag of approximately twelve months between the prices recorded in the *Course of the Exchange* and the company books. The possible reasons for this are discussed in detail in Chapter 4.5.2. It is likely that the small number of Stourbridge Navigation shares in issue was a significant factor. In contrast, there is a close correlation between the price of the BCN shares recorded in the company books and in the *Course of the Exchange*. The BCN had more shares in issue and as a consequence had more shareholders in London. In the sample of government stockholders described in Chapter 4.4.1, a higher proportion of those holding 3 per cent Consols, also owned BCN shares than Stourbridge shares. Out of a total of 25 holdings of 3 per cent Consols, twelve were held by BCN shareholders, whereas only two were held by Stourbridge shareholders.¹⁸ Even after normalising for the fact that the BCN had double the number of shareholders, the Stourbridge Navigation had substantially fewer investors familiar with the government stock market. These Stourbridge investors were likely to have been less sophisticated and less aware of market sentiment than their BCN counterparts. Market sentiment was generated in the government stock market, based in London.¹⁹ Although it was not until the beginning of the nineteenth century that it became fully institutionalised the late eighteenth-century government stock market was large and liquid.²⁰

6.2.2 The London Stock Exchange

The main institution of the national capital market in government stocks was the London Stock Exchange. Even before an institutionalised exchange was established, in the last decade of the seventeenth century, there were sufficient stocks in issue to support the emergence of specialised dealers. Morgan and Thomas note that, 'there was a highly developed market [for dealing in stocks and shares] by the mid-[sixteen] nineties'.²¹ Licensed brokers had to be approved by the Lord Mayor, take an oath and provide a bond of good behaviour. There were also many unlicensed brokers. After several attempts an Act was passed in 1697 'To Restrain the number and ill Practice of Brokers and Stockjobbers'. This Act limited the number of brokers to one hundred and they each had to provide a bond of £500. There was a £500 fine for acting as an

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unlicensed broker, although it seems that this was not rigorously enforced and numerous unlicensed individuals continued to trade. The Act continued in force until 1704. Dealers in stocks had operated from the Royal Exchange but in 1696 they left the Exchange and carried on trading in the coffee houses in the City.²²

As the amount of government debt issues increased during the eighteenth century, syndicates of brokers bid for the total issue and placed the debt with investors, earning a profit. Although the mechanisms of the stock market became more sophisticated, trading continued in a number of venues such as the coffee houses and the rotunda of the Bank of England and the brokers and jobbers remained largely unregulated until the Subscription Room was opened in 1801. Only subscribers to the Stock Exchange could use the room and the committee of the Stock Exchange endeavoured to prevent unlicensed brokers from trading in stocks.²³

This study has already established that CARD investors held government stocks as part of their total portfolio of assets. They could then have acted as conduits of market sentiment to the more local market for canal shares. Water, Canal and Dock companies were not listed on the *Course of the Exchange* until 1811 and 'it took thirty years for canal shares to become popular on 'Change Alley and Threadneedle Street'.²⁴ Nevertheless, during the canal mania of the 1790s, the 'awakening of stock market interest enabled genuine projects to draw upon much wider sources of capital, but it also gave an incentive to reckless and fraudulent promotion'.²⁵ Some modern research has challenged the view that 'capricious changes in investor sentiments, changing fashions, or bubbles' are symptoms of an inefficient market.²⁶ They suggest that investors were differentiated by their reactions to market information. A limited number of 'smart money' investors behave rationally. Although these investors influence the behaviour of 'ordinary' investors there is sufficient irrational 'noise trading' in the market to allow speculative behaviour to dominate.²⁷ This does not mean that the market as a whole is inefficient.

After the 1793 boom and the collapse of the bubble companies, there remained a group of sound undertakings whose shares were regularly traded, although they were not listed until 1811.²⁸ There is evidence from the present study that canal shares

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became more widely held over time, possibly as a result of their being quoted on the London Stock Exchange. For example, although the number of shares of the BCN held by shareholders living in London only increased from just under 3 per cent in 1768 to just under 8 per cent in 1840, the proportion of shares held by investors outside the local area of Birmingham and the West Midlands rose from 14 per cent to 48 per cent.²⁹ This suggests that a more nationally based system of information transfer was operating by the mid-nineteenth century. There were 63 canal companies established prior to 1824 with a capital of £12.2 million most of which were quoted in London. The total number of joint stock companies, together with information on the relative importance of the sectors in which they operated, are set out in Table 6.2.

Table 6.2: Joint Stock Companies Established Prior to 1824

Type	Number	Authorised Capital	Paid up Capital
		£ millions	£ millions
Canal	63	12.2	12.2
Docks	7	6.2	6.2
Insurance	25	20.5	6.6
Waterworks	16	2.9	2.9
Bridges	4	2.5	2.0
Gas	27	1.6	1.2
Roads	7	0.5	0.5
Miscellaneous	7	1.5	1.5
Total	156	47.9	33.1

Source: *English*.³⁰

By 1842 the total capital of private sector companies quoted on the London Stock Exchange had risen to £183 million, of which 31 per cent of the paid up capital was accounted for by railway companies. By this time, canals accounted for just fewer than 10 per cent of the total, as shown in Table 6.3.

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Table 6.3: Companies Quoted on the London Market in 1842

Type	Number	Paid up Capital	
		£ millions	As % of Total
Railroads	70	57.4	31
Joint stock banks	n.a.	32.4	18
Assurance Cos., including Mutuals	107	17.8	10
Canals	59	17.3	9
Docks	8	12.0	7
Foreign Mining Cos.	24	6.5	4
British Mining Cos.	81	4.5	2
Gas Light and Coke	27	4.3	2
Water	11	2.5	1
Bridges	4	2.1	1
Misc.	n.a.	25	14
Literary Institutions	n.a.	1.0	1
Total		182.8	100

Source: Spackman.³¹

In spite of railway stocks being quoted on the Stock Exchange from 1827, Henry Burgess, writing in his Circular to Bankers in 1835 noted that 'it is a remarkable fact that the Railway system advanced and became established in the public confidence almost wholly without the assistance of the Stock Exchange'.³² Even when companies sought a flotation on the London Stock Exchange they rarely used firms of stockbrokers who had come to specialise in new issues. Instead many sought applications through advertisements and used their own bankers and solicitors. Some were handled solely by provincial brokers and some by both provincial and London brokers. Morgan and Thomas note, however, that of a sample of 60 prospectuses taken from Bradshaw's Railway Gazette for 1845, 35 firms of London brokers appeared on at least one prospectus.³³ The widening constituency of investors in railway stocks, which has been observed in the present study encouraged provincial brokers to establish formal stock exchanges.

6.2.3 Provincial Stock Exchanges

Exchanges in Manchester and Liverpool played an important role in early railway investment. For example, by 1847 the Liverpool exchange quoted 193 domestic and 40 foreign railway stocks. At the same time it quoted only one canal company.³⁴

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Local specialisation developed; in Liverpool in insurance and American securities; in Manchester, railways and cotton; in Glasgow, shipping and iron, and in Cardiff, collieries.³⁵ Local exchanges also quoted local companies, which were not quoted in London, although a large part of the orders received, were executed in London. Provincial exchanges rarely traded government stocks, since transfers had to be registered at the Bank of England.³⁶ Table 6.4 shows the growth of provincial stock exchanges between 1830 and 1861.

Table 6.4: Number of Provincial Stock Broking Firms 1830-1861

	1830	1837-8	1845-6	1847	1853	1861
Birmingham	-	-	19	25	13	11
Bristol	1	3	20	32	n.a.	14
Liverpool	4	43	90	187	102	80
Manchester	2	38	85	105	66	49

*Source: Killick and Thomas who assembled data taken from trade directories.*³⁷

The Birmingham Stock Exchange was founded in 1845 and was always one of the smallest. Examination of the list of members suggests that they were even fewer in number than that suggested by Killick and Thomas. The members' list records that there were only four member firms and thirteen individual members in 1845, rising to fifteen members the next year. In 1847 a further eight members and two firms joined the Birmingham Exchange.³⁸ Interestingly, only two of the members in the period 1845 to 1847 held any shares in the canal and railway companies or banks in the CARD and BARD Databases. These were John Wrighton, who held shares in the Coventry Union Bank in 1836,³⁹ and William Lee, who held shares in the GWR in 1835.⁴⁰ Neither owned shares in any other company included in the present study. For a brief period the *Railway Times* published share prices for stocks traded on the Birmingham Exchange. On 9 January 1847 the prices of 85 different issues were provided by John Wade. This compared to 122 issues traded in London and 141 in Liverpool. Six weeks later, after the market had deteriorated only 12 issues were traded in Birmingham, although the volume of stocks traded in London was unchanged.⁴¹ Shortly thereafter, the *Railway Times*

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ceased to publish stock prices from provincial stock exchanges. John Wade was an investor in the CARD and BARD Databases. He owned 450 shares in the Grand Junction railway in 1845 and ten shares in the Coventry Union Bank in 1836.⁴²

An analysis of the railway investors in the CARD Database reveals that less than one per cent of the total 2,933 investors lived in Birmingham and only 3.2 per cent lived in the West Midlands. This suggests that there was not an active railway share market in Birmingham and the West Midlands in the mid-nineteenth century. This contrasts with the active participation of men and women from Birmingham and the West Midlands in the canal companies. The reasons for this are unclear. Certainly, even in the 1840s many of the local canal companies were paying dividends of over 10 per cent per year, as shown in Table 2 of Appendix V. In comparison, the railway company dividends of 1 to 2 per cent would have seemed unattractive. This study has shown that investors from Birmingham were well experienced in evaluating joint stock shares. For them, railway investment was not an exciting new opportunity as it might appear to the widening constituency of investors in the mid-nineteenth century. These Birmingham investors were prudent and sophisticated. The lack of investment in railway shares perhaps suggests that they preferred to invest their capital in existing businesses, canal shares and government stocks as the best mix of risks and returns which was available.

Although there is little evidence of active participation in the shares of the canal and railway companies by members of the Birmingham Stock Exchange, there is evidence that individuals acting as brokers did deal and hold shares in these companies.

6.2.4 Role of Brokers

Many unlicensed individuals acted as sharebrokers in spite of the efforts of organised Stock Exchanges to regulate and license the profession. As Ward notes, the canal mania of 1792 led a number of individuals to set up 'Inland Navigation Offices' or style themselves 'canal agents' or 'brokers'.⁴³ Many of these individuals advertised their services in the local newspapers. The *Birmingham Gazette* carried advertisements from brokers. For example, Myles Swinney advertised his 'Licensed State Lottery Office' at 25, High Street, Birmingham for tickets in the Irish and English State Lotteries in 1791

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and 1792.⁴⁴ Swinney was not an investor in the CARD Database but did hold a share of the Birmingham Library Tontine in 1799. At this time, individuals who traded in shares often did not describe themselves as brokers. For example, Matthias Mogridge⁴⁵, a Birmingham attorney, described himself as a 'General Agent' in the *Birmingham Gazette* in 1792 in an advertisement to buy shares in the Worcester & Birmingham, Stourbridge and Dudley canals.⁴⁶ By July he was also offering to buy Oxford canal and Coventry canal shares.⁴⁷ In the Stourbridge Navigation transfer ledger, Mogridge was designated as a 'Gentleman'. Over the period 1776 to 1827, seven individuals were identified who actively bought and sold Stourbridge Navigation shares.⁴⁸ Closer inspection suggests that only Mogridge was acting as a trader. Between March 1792 and March 1798 he bought and sold twelve shares in nine separate transactions. On average he held them for just under a month, although in most cases it was only seven days. He was most successful in the period of canal mania when he made a profit of £1,850 in just seven days. After the euphoria of the mania he was less successful and appeared to give up dealing.

Analysis of the transfer register of the BCN from the time of the initial subscription in 1768 to 1773 revealed that a total of 401 shares were transferred over the period by 89 individual investors.⁴⁹ Of these, only six investors might be classed as traders, see Table 6.5 below. These individuals sold a total of 20 shares, which they had held on average for 3.7 months.

Table 6.5: Investors Actively Trading Shares in the BCN 1768-1773

Named Investor	Ascribed Occupation	Ascribed Address
Richard Chattock	Gentleman	Solihull
Samuel Garbett	Merchant, chemical manufacturer	Birmingham
William Holden	Saddlers' iron monger	Birmingham
John Meredith	Gentleman	Birmingham
Thomas Tomkyn	Gentleman	Bilston
Henry Venour	Mercer	Birmingham

Source: Names selected from 185 transfers of 401 BCN shares by 85 different investors between 1768 and 1773.⁵⁰

Samuel Garbett was on the committee of the BCN and as such would probably have

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had privileged access to information. None of the others appear to have been professional brokers. A further analysis of the behaviour of the original shareholders of the BCN who subscribed for shares in March 1768 over a period of sixty-six years revealed only five investors who bought and then resold shares a few days later. Out of a total of 948 share transfers, less than 2 per cent of shares were traded in this way. None of the shares bought and resold within a few days were transferred during the period of canal mania.⁵¹ Again there is little real evidence that these five investors were acting as professional brokers. This was a profession that developed later as a result of the efforts of the London Stock Exchange to restrict share dealing to licensed brokers who were members of a recognised stock exchange. Analysis of the 5,913 shareholders on the CARD Database revealed that 36 investors either described themselves as brokers or gave their address as the Stock Exchange, London. Only one of these individuals was an investor prior to 1800. This was Joseph Hawtyn, an auctioneer from Banbury, who held three shares in the Warwick & Braunston canal in 1794.⁵² Canal shares were often advertised for sale by auction during the period of canal mania. It is likely that the auctioneers acted as brokers although there is no direct evidence of this in the books of the companies examined in the present study. For example, a Mr Boott advertised an auction of five Birmingham & Worcester canal shares in July 1792⁵³ and Thomas Warren was advertising the auction of fifteen shares in the Grand Junction canal and seven shares of the Hampton Gay canal in ten separate lots in 1792.⁵⁴ The location of the CARD investors who described themselves as brokers is given in Table 6.6.

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Table 6.6: Location of Brokers in Canal and Railway Investors

Location	Number	As % of Total
Birmingham	4	11
Bristol	1	3
London	20	55
Liverpool	9	25
Manchester	1	3
Other	1	3
Total	36	100

Source: All investors designated as 'brokers' or 'sharebrokers' or giving their address as 'stock exchange' in the CARD Database of 5,913 individuals.

All but four of the brokers were railway company investors. The importance of the London market is evident from Table 6.6, but as has been discussed in Section 6.2.3 above, Liverpool was also an important centre for trading railway shares, ranking above Birmingham, which was not an important centre for railway investment. Institutional share trading, either in London or on provincial exchanges informed market sentiment through word of mouth and through published share lists.

6.2.5 Published Media

Published sources of investment information were quite comprehensive by the early-eighteenth century. For example, by the 1670s *price currents* were published and by 1690 there were four regular publications, including Houghton's *Collection for the Improvement of Husbandry and Trade*, and Castaing's *Course of the Exchange*.⁵⁵ By 1702 a *Daily Courant* was published in London.⁵⁶ These publications were aimed specifically at investors and included commodity prices and the prices of government stocks. The *Gentleman's Magazine* began monthly publication in 1731 and was widely read both in London and in the provinces. It had a page of statistics on prices of selected securities, foreign exchange rates, wheat prices and consolidated returns of the London bills of mortality. The *Birmingham Gazette*, in the 1740s published prices of Bank of England and East India Company stock, lottery ticket prices, and statistics on the aggregate births and deaths by sex and age, which could be used to evaluate investments in *tontines* and annuities. In spite of these publicly available sources of

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information, Mirowski noted the 'relative abundance of vehicles for dissemination [which] actually disseminated such a dearth of information'.⁵⁷

There is little evidence of published information on either the price of canal shares before they were quoted in the *Course of the Exchange* in 1811, or the financial performance of canal companies. In the early period of canal promotion, companies were not required to publish financial information beyond rudimentary annual accounts, which were available for scrutiny by their shareholders. These accounts were not prepared on a consistent basis so the comparison of one year with another or one company with another was difficult. Generally, contemporary publications concerning canals tended to confine themselves to technical matters. For example, Phillips's comprehensive review of inland navigation provided detailed technical information and a brief summaries of the parliamentary history of each project. The entry for the Birmingham Canal refers to the, 'great profits arising from this canal', but this information seems unlikely to be sufficient for the basis for an investment decision.⁵⁸ Other contemporary commentaries on canals seem similarly concerned with technical rather than financial matters.⁵⁹ Even the *Birmingham Gazette*, which regularly published notices about calls and general meetings for the BCN, did not publish share price information. Similarly, an examination of the *Gentleman's Magazine* for the periods covering the flotation of the Birmingham Canal Company and the construction of the BCN revealed no references to the canal. Perhaps more surprisingly, a scrutiny of the *Gentleman's Magazine* for the period of canal mania also failed to reveal any references to this phenomenon. The page devoted to financial information appears never to have provided price information on canal company shares.

Eighteenth-century pamphlets on investment were mainly concerned with government stocks. For example, Thomas Mortimer's, *Every Man his own Broker*, first published in 1761, ran to fourteen editions and sold 50,000 copies.⁶⁰ By the nineteenth century, a wealth of advice was forthcoming on the efficacy of buying railway shares. 'A Successful Operator' writing in 1846, promised *A Short and Sure Guide to Permanent Investment in Railways*,⁶¹ and 'One of the Initiated' wrote *The Railway Investment Guide* in 1845.⁶² Both writers emphasised the money-making potential of speculating in railway

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shares. Railway shares were marketed to and bought by a wider group of individuals than those of the canal companies.⁶³ From 1849, railway companies were obliged to make an annual parliamentary return, providing information on the paid up capital of the company.⁶⁴ The price of railway shares was quoted in the *Course of the Exchange from 1827* and there were many specialist publications. Some of these, 'calculated to assist parties investing in capital', are listed by 'One of the Initiated,' and include: the *Railway Investment Guide*, the *Railway Shareholders' Manual* and the *Railway Directory*; daily papers such as the *Iron Times*; the twice weekly *Railway Herald*, and the monthly *Railway Receiver*. The weekly *Railway Times* was founded in 1837 and published the reports of general meetings, although there was no consistency in the accounting policies of the published information.⁶⁵ Information on the relative performance of each railway company was collected and published to assist investment appraisal.⁶⁶ The *Railway Times* was joined by a myriad of other weekly publications, such as *The Railway Gazette*, *The Railway Chronicle* and *Herapath's Railway and Commercial Journal*, all of which provided similar information, including notices of meetings, traffic returns, balance sheets, prospectuses, editorial comment and correspondence. Some publications were specifically targeted at the investor, such as the *Railway Critic and Shareholders' Adviser* and the *Money Market Examiner and Railway Review*. Other weeklies, such as the *Railway Bell* and *London Family Newspaper* were aimed at a wider audience.⁶⁷ All these publications carried share prices. In the case of the *Railway Times* for a brief period in 1847, share prices were provided for the London, Liverpool, Manchester, Leeds, Birmingham and Sheffield stock exchanges. Although with the downturn in the market this ceased, and after August 1847 only London prices were given. Individual companies also published *Advertisers* which were distributed free at stations. For example, the *London & Birmingham Railway Advertiser* boasted a circulation of 10,000 copies.⁶⁸ These news sheets carried timetables and other information about the company as well as advertisements.

Although published media became more important in the appraisal of investments during the nineteenth century, the process of *social learning* remained a key means of transferring investment information.⁶⁹ Male investors could meet in coffee

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houses, navigation offices and share rooms to read and to discuss and transact investment business. These fora were not available to women.

6.2.6 Navigation Offices, Railway Share Rooms and Coffee Houses

Prior to the establishment of provincial stock exchanges, meeting places were established where newspapers and other information were available and investors could transact business. In the latter part of the eighteenth century these fora were often described as Navigation Offices or Canal Agencies. They sprang up and disappeared as the mania for canal shares ebbed and flowed. In Birmingham, Overton's coffee house in New Street, also known as the Navigation Coffee House, was founded in 1769. It boasted London papers 'on the morrow of their publication at 2 o'clock', plus House of Commons division lists, session papers, entry bills and Lloyds List.⁷⁰ The Leicester Arms was the venue for meetings of John Freeth and his friends in the Jacobin Club in 1792, where copies of the London and provincial papers were available, together with parliamentary reports.⁷¹

In 1822 a Commercial and Newsroom was established in Birmingham, which provided six daily newspapers, namely the *Morning Chronicle*, the *Courier*, the *Sun*, the *Traveller*, the *True Briton* and the *Statesman* and ten weekly publications, the *Observer*, the *Philanthropic Gazette*, the *Farmer's Journal*, the *Examiner*, *Bell's Messenger*, the *Birmingham Gazette*, the *Birmingham Chronicle*, *Gore's Liverpool Advertiser*, *Lloyd's List*, the *Price Current* and the *Army List*. A subscription of £1.25 per annum entitled the user to nominate six London newspapers for the next year which were then selected on majority vote. By November 1823 the Newsroom was proving to be so popular that shares were sold to raise money to build a Public News Room.⁷² Three of the nine committee members charged with raising the finance were investors on the CARD and BARD Database. These included Charles Cope, a chemical manufacturer,⁷³ Edward Tilsley Moore, Esq.,⁷⁴ and John Frederick Ledsam.⁷⁵

6.2.7 Information Transfer through Public Media - Conclusions

As has been discussed in Chapter 5.2.1, out of the total of 5,913 investors in the CARD Database, only 30 were investors in both canal and railway companies. This

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suggests that there were two distinct pools of investment. The market in canal shares does not appear to have developed into that for railway shares. The institutionalised public railway share market did not evolve from the localised and essentially private canal company market. Both markets appear to have co-existed for a considerable period. Although it has been shown that from the 1770s, canal investors made informed decisions based on knowledge of the market in government stocks, buyers and sellers of canal shares appear to have been largely drawn from a geographically and socially restricted population. Canal companies still retained a strongly local investor-base at the same time that railway companies were drawing investors from a wide geographical area. There was a period of about twenty years when the canal companies were still yielding considerably better investment returns than the majority of the railway companies. Although the paid up capital of canal companies quoted on the London market in the 1840s was a third that of the railway companies, it still amounted to just over £14 million.⁷⁶ This must have been sufficient for a national market in these shares to have been sustained. Nevertheless, there is little evidence that this was the case. It seems that the older forms of information transfer persisted, such as personal contact and word of mouth. On this basis, canal investors might be expected to be more highly connected to each other through business and other public activities than railway investors were. The evidence for this is examined below.

6.3 Information Transfer through Semi-public Commercial and Social Fora

When the market for investment was mainly local, as has been shown to be the case in the canal companies, one of the most important mechanisms for spreading information was likely to be existing business and commercial links. The social and cultural life of the middle classes also provided opportunities, primarily for men, to meet other wealthy and influential individuals and to have contact with prestigious members of the aristocracy.⁷⁷ It is difficult to establish whether investment information was discussed at these meetings. However, the existence of such conduits is *prima facie* evidence that information could have been disseminated in this way.

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6.3.1 Business and Commercial Fora

Before joint stock company shares were traded on the London Stock Exchange, purchases and sales of shares were generally made locally. Decisions were likely to have been informed by prevailing market sentiment, as has already been discussed in Section 6.2.1 above. Nevertheless, the decision to buy or sell a particular canal company stock was probably the consequence of information available in the local market. There is evidence, reviewed in Chapter 4.5.3, that investors could differentiate between the relative risk of each stock and make an informed choice. The source of much of this information would have been existing shareholders and the officers of the company concerned. These individuals may have disseminated that information to others through public and private spheres of contact. A potentially important source of contact was the semi-public fora of voluntary associations. The members of 33 philanthropic, political, religious, commercial and social voluntary associations based in Birmingham were assembled to form the Birmingham Database. The institutions included are shown in Table 7 of Appendix I. The methodology used to construct the Birmingham Database is discussed in Chapter 2.4. The 1,291 individuals analysed in the Birmingham Database comprised a sample of the middle-class elite, which dominated Birmingham social life between 1760 and 1850. If investors were also members of the Birmingham Database, this is a *prima facie* evidence that investment information could have been disseminated through these fora.

The degree of social and business interaction in Birmingham was assessed by comparing those BCN investors who attended general assembly meetings in 1768, 1790, 1800 and 1810 with those on the Birmingham Database. General assemblies of the BCN were usually held semi-annually. Committee meetings of smaller groups of active investors and managers of the company met more frequently, often weekly in the early years of the company's existence. Female shareholders, with rare exceptions,⁷⁸ did not attend the general assemblies, although male shareholders did attend as proxies on their behalf. The general assemblies were well attended; there were between 40 to 60 per cent of male shareholders present at meetings examined in 1790, 1800 and 1810.⁷⁹ The proportion attending meetings appears to be high but accords with the

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numbers attending the general assemblies of other canal companies, for example the Coventry canal and the Warwick and Birmingham canal.⁸⁰ Members of the Birmingham Database made up 10 per cent of the male investors of the BCN in 1840 and 22 per cent of the Birmingham Database investors attended BCN proprietors' meetings.⁸¹ These individuals would have been well informed about company affairs and they knew each other both in a business context and socially. It is highly likely they were disseminators of information and that they did this in a social as well as a business context.

Individuals who belonged to business partnerships were likely to have passed on information about investment opportunities. Given the level of trust inherent in such a relationship, a high degree of commonality of investments might be expected between business partners. In the case of banking partnerships, there is considerable evidence of members of the partnership holding shares in the same company both singly and jointly. For example, banking partners who were investors in the BCN in 1840 included Samuel Lloyd and John Taylor and Osgood Hanbury, who was the London correspondent banker to the Lloyds. Partnerships of attorneys included John Simcox and John Lee, Clement Ingleby and William Spurrier.⁸² Attorneys and bankers were accustomed to giving investment advice as part of their normal business activities. For example, Samuel Tertius Galton, himself, sought advice from his French bankers as to whether to sell 'French stock' in 1818.⁸³

By the end of the eighteenth century, professionals began to establish their own regulatory societies, such as the Birmingham Law Society, which was founded in 1818.⁸⁴ Samuel Garbett and Josiah Wedgwood were founder members of the General Chamber of Manufacturers in 1785.⁸⁵ Garbett was an investor in the CARD Database. A Commercial Committee of prominent Birmingham businessmen was formed in 1790.⁸⁶ Amongst the 45 individuals who attended a meeting of the Committee in May 1790, 17 were members of the CARD Database. If the institutions analysed in the Birmingham Database are classified into philanthropic, religious, political, commercial and social categories, the highest proportion of investors is found in the commercial section, as shown in Table 6.7.

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Table 6.7: Membership of Institutions in the Birmingham Database and Number of Investors

	Members	Investor Members	
	Number	Number	As % of Total Members
Philanthropic	399	75	19
Commercial	56	15	27
Political	237	22	9
Religious	193	24	12
Social	203	25	12
Total	895	161	18

Source: Members of the 33 institutions in the Birmingham Database. Members include the same individuals who are members of more than one category of institution. Investors include investors who are members of more than one category of institution.

These institutions were an important aspect of the public sphere in which wealthy middle-class males socialised and no doubt conducted business. Much of this activity was designed to promote the economic power of the participants and to demonstrate, 'middle-class weight and responsibility'.⁸⁷ Even ostensibly philanthropic activities enabled the leaders of middle-class society to demonstrate the extent of their wealth and organisational skills to their peers and members of the landed and aristocratic classes.⁸⁸ The most prestigious of these philanthropic activities were useful fora for the exchange of information and are examined in greater detail below.

6.3.2 Voluntary Associations

The credit-worthiness of individuals was enhanced by their reputation and standing in the public sphere.⁸⁹ The middle-class elite involved in conspicuous public service, such as serving on the committee of the Birmingham General Hospital, employed the skills gained as bankers, lawyers and businessmen in philanthropic activities.⁹⁰ These wealthy individuals were also likely to have been regarded as sources of reliable information and advice about investment opportunities. The present study examined the relative importance of various Birmingham philanthropic, religious, political and purely social institutions as fora for the dissemination of information.

The individuals making up the Birmingham Database were compared to the investors in the CARD and BARD Databases. A total of 146 individuals (15 per cent) of

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the members of the Birmingham Database were found to be investors. These individuals belonged to the wealthier middle-class groups as can be seen from Table 6.8.

Table 6.8: Socio-economic Classification of Investors in the Birmingham Database

	Number	As % of Total
Clergy	12	8
Landed and Rentiers	32	22
Professionals and Bankers	40	28
Manufacturers	25	17
Merchants	19	13
Artisans and Shopkeepers	15	10
Women	3	2
Total	146	100

Source: Data from 146 individuals in the Birmingham Database who are also investors in the CARD and BARD Databases. Unknown socio-economic groups reallocated in proportion to the number of known male investors in each group.

Investors who were also members of the Birmingham Database were primarily from the wealthier Landed, Rentier, Professional, Manufacturer and Merchant groups. The Clergy and the Artisan/Shopkeeper groups only accounted for 18 per cent of the total. The proportion of Women, as might be expected, was also very low. Women were encouraged to participate in philanthropic activity, but their contributions tended to be confined to purely social and charitable roles.⁹¹ Although fifteen of the ninety benefactors of the Birmingham General Hospital were women, there were no women on the committee.⁹² Women appear to have been active members of societies only when men were not or could not be involved, for example in dispensing charity to other women.⁹³ An example of a society run by women was the Ladies' Society for the Relief of Negro Slaves. This Society was active in the first half of the nineteenth century and involved, amongst others, female members of most of the leading Quaker families in Birmingham, such as the Lloyds and the Cadburys.⁹⁴ Only one member of the Society, Barbara de Lys, also held shares in the BCN.⁹⁵

Wealth was obviously an important factor in the number and prominence of an individual's philanthropic and social activities and hence that person's level of connectivity to other individuals. Wealthier investors were also more likely to own

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multiple shareholdings and thus also have more opportunities to receive investment information and pass it on to others. An analysis of the 146 investors in the Birmingham Database revealed that they were more likely than average to hold shares in more than one company, as shown in Table 6.9.

Table 6.9: Investors in the Birmingham Database Owning Multiple Investments. (In Number of Investors)

	Number of Investments				Total
	1	2	3	4	
Clergy	5	2	2	2	10
Landed and Rentier	17	13	2	0	32
Professional and Bankers	23	5	11	0	39
Manufacturers	16	9	1	0	26
Merchants	12	5	1	0	19
Artisans and Shopkeepers	9	4	1	2	15
Women	2	0	2	0	4
Total	84	38	21	3	146

Source: Data from 146 individuals in the Birmingham Database who are also investors in the CARD and BARD Databases. Unknown socio-economic groups reallocated in proportion to the number of known male investors in each group.

Table 6.9 shows that 43 per cent of the investors in the Birmingham Database held shares in more than one company. This compares with 10 per cent of investors in the CARD Database as a whole, as discussed in Chapter 5.2.1. These multiple investors were highly inter-connected and were probably well informed and effective conduits of information.

Significantly, 88 per cent of those members of the Birmingham Database who were also investors held shares in canal companies. Only 9 per cent were rail shareholders and the remainder owned bank shares. This is further evidence that trading in canal shares was essentially local and relied upon non-market forms of intermediation, where the inter-connectivity of investors was important. In contrast, the market for railway shares was intermediated through an institutionalised and largely impersonal national market. The importance of non-market forms of intermediation has already been noted in the mortgage market and in the provision of loans between family members. The transfer of information through such private mechanisms was highly

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effective, and is examined below.

6.4 Information Transfer through the Private Sphere

The private sphere of relationships between family members and friends was an important conduit of information. Family connections were often interwoven with religious and business relationships (see Chapter 7.5.1). An attempt was made to establish the total number of investors in the BCN who were linked by family connections. A crude estimate of the total number of investors with family relationships was obtained by listing all investors sharing a surname and the same address. This probably understates the proportion of related investors since it ignores relationships through marriage where surnames or addresses differ. The results are shown in Table 6.10.

Table 6.10: BCN Shares Held by Investors with a *Prima Facie* Family Relationship, by Socio-economic Group

	1768	1790	1800	1810	1840	All Years
Clergy	0	0	0	0	14	14
Landed and Rentier	3	1	4	3	63	74
Professional and Bankers	2	1	4	5	44	56
Manufacturers	4	4	2	7	15	32
Merchants	2	0	3	1	8	14
Artisans and Shopkeepers	0	10	0	1	3	14
Women	8	0	2	7	105	122
Unknown	5	4	16	8	60	93
Total	24	20	31	32	312	419
As % of all BCN Investors	23	26	36	39	50	43

Source: Family defined as investors sharing the same surname and the same address. Data from BCN 1768, 1790, 1800, 1810 and 1840.⁹⁶

Table 6.10 shows that a large proportion of the BCN investors were related through family connections. The proportion of investors with family relationships with other investors increases from 23 per cent in 1768 to 50 per cent in 1840, which is probably the result of shares being distributed to family members on the death of an investor. This confirms the importance of the local market for distribution of canal company shares. The groups classed as 'financial' investors, namely, the Landed, Rentiers, Professionals Bankers and Clergy had the highest levels of family relationship. This is consistent with these groups being more reliant on information disseminated by word of mouth. In the

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case of 'economic' investors, such as Merchants and Manufacturers, direct business contact may have been more important. Women were also strongly connected by family relationships to other investors. This again suggests that advice from relatives was a key part of the investment process.

If female investors relied primarily upon the advice of male relatives, the analysis should show the family relationships of female investors to be predominantly with related male investors. Both male and female investors in the BCN in 1840 were classified into those which had no family relationship to any other investor, those which had relationships with another family member of the same sex and those which had a family relationship with a member of the opposite sex. The results of this analysis are set out in Table 6.11.

Table 6.11: Family Relationships of Male and Female BCN Investors in 1840

	Male		Female	
	Number	As % of Total Males	Number	As % of Total Females
Same sex	116	26	30	17
Male and female	66	15	44	25
Opposite sex only	33	7	36	21
No family relationship	238	53	65	37
Total	453	100	175	100

Source: Data extracted from List of Proprietors, 8 May 1840.⁹⁷

Table 6.11 shows that 37 per cent of female investors had no family connection with any other investor, on the basis of the criterion of family relationship defined above. As has already been discussed, this criterion may understate family relationships particularly by marriage. As expected, the percentage of female investors without family connections is substantially lower than that for males. Female investors were more likely than males to be related to an investor of the opposite sex. This seems to confirm the importance of male relatives as advisors to their daughters and sisters. This was certainly the view of Thomas Mortimer who wrote in 1761 that brokers only existed because female investors relied upon them and that females would do better to use male relatives to render this service instead.⁹⁸ However, male investors were more likely than females to be related

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to other male investors, for example, fathers with sons, or with brothers. This again confirms the importance of personal connectivity between males in the canal share market. This was compared with the family connections of investors in the Great Western railway in 1835, using the same criterion of relationship. The results of the analysis are given in Table 6.12.

Table 6.12: Proportion of GWR Shareholders with a *Prima Facie* Family Relationship

	Family Relationship Investors	Total Investors	Family Relationship Investors as Percentage of Total
	Number	Number	%
Clergy	6	50	12
Landed and Rentier	59	457	13
Professional and Bankers	39	228	17
Manufacturers	13	38	34
Merchants	23	152	15
Artisans and Shopkeepers	44	348	13
Women	60	142	42
Unknown	5	31	16
Total	249	1,446	17

Source: Family defined as investors sharing the same surname and the same address. Data from GWR, Register of Proprietors.⁹⁹

Table 6.12 shows that the overall proportion of investors with family relationships to other investors is only 17 per cent compared with 43 per cent for the BCN. This is further evidence that the market in railway shares was driven by national institutional intermediaries rather than local personal relationships. The only surprising figure is the high proportion in the of Manufacturer group who had family relationships with other investors. This anomaly is probably because the total number in that group is low. Not surprisingly, Women are the only group with a high proportion of family relationships. This suggests that even after the market evolved into one dominated by national institutional intermediaries, women were still dependent on their male relatives for the management of their investments.

6.5 Conclusions

Analysis of the different characteristics of canal and railway investors suggests

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that two different mechanisms for information transfer and investor behaviour were in operation. The dissemination of information about canal companies appears to have been predominantly by personal contact and share transfers took place largely in the local market. This market was informed by market sentiment in the national market as has been demonstrated by the close correlation between the yield on BCN shares and Consols. On the other hand, new mechanisms developed to transmit information to potential investors in the railway companies. Share dealing became institutionalised and information was disseminated through formal public media such as the stock exchange and the press. There appears to have been little overlap between investors in canal and railway companies in the present study, and the two models of investor behaviour appeared to co-exist. There is no direct evidence that the modern institutionalised system evolved from the localised canal company model. Certainly in the case of investors in Birmingham, where the canals had been enthusiastically embraced there appears to have been relatively little interest in railway investment. It may be argued that canal investment was regarded as a higher risk and as a consequence required greater personal scrutiny and investigation, hence preserving the older system of personal information transfer. In contrast, there is evidence to suggest that railway companies were regarded as a more homogenous low-risk commodity, which could be adequately marketed through more impersonal media.

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CHAPTER 7: SOCIAL AND CULTURAL INFERENCES

7.1 Introduction

The investors in the present study represent a broadly defined middle class which shared many common values. They were selected on the basis of one economic criterion, namely ownership of shares. As a consequence, the basis of sample selection, apart from this economic constraint, was neutral in terms of socio-economic background, gender or social, cultural, religious or political orientation. Although the sample population was broad based, it was also cohesive. It has been shown to share common attitudes to both environmental and investment risk. Differences arising from socio-economic background or gender, in the appetite for or mitigation of those risks have been identified and discussed in earlier Chapters. These differences, however, are of degree rather than substance. On the other hand, fundamental differences in the attitudes to risk and investment are apparent between this group of middle-class financial investors and the landed classes. In this Chapter the social and cultural background of the CARD investors is examined. Inferences are drawn on how and why this predominantly urban rentier class was differentiated from the landed classes.

Earlier researchers have made a case for distinguishing the middle classes from both the landed and the labouring classes by the source of their income, which was generated from the active pursuit of an occupation, in either a business or a profession. For example, the middle classes were those who possessed property, but this was not generally in the form of extensive holdings of land, but took the form of capital invested in a business. The middle class included professionals, but excluded those involved in manual labour.¹ This rigid classification according to the sources of income and wealth has been questioned by Morris, on the grounds that it fails to cope with individuals who derived income from many different sources, such as landed proprietors who also derived income from businesses.² Other researchers have attempted to identify the extent to which those who derived their wealth from business invested in landed estates. Rubinstein and the Stones found little evidence that the wealthy middle class acquired land, although Thompson suggests that the descendants of the wealthy middle class used the money derived from commerce and industry to buy estates and embraced the

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lifestyle of the landed gentry.³ Koditchek also suggests that this was also the goal of the textile magnates of Bradford.⁴ The present research has shown that the investors in the CARD Database did not own substantial amounts of land. Nor did they tend to inherit vast wealth, although there is evidence that interests in businesses and investments were inherited. The investors in the CARD Database were comparatively wealthy but, as has been described in Chapter 4.5, they were also relatively risk averse. They were concerned to nurture their wealth and preserve their comfortable lifestyle for themselves and their dependants. What constituted the 'middle-class lifestyle' and whether social and cultural mores can be the defining characteristic of class is also the subject of earlier research. Perkin, for example, defined class in terms of ideals, the middle classes were entrepreneurial and competitive, and the landed were paternalistic.⁵ This classification is again challenged by Morris who suggests that it fails to recognise the paternalism inherent in much of middle-class charitable activity or the entrepreneurial skills of many landowners.⁶ The complexity and difficulty of defining class according to a single criterion is recognised by Neale who suggested a five-class stratification of society defined by a mixture of economic and social indicators, such as income, wealth, occupation, manners. Class was recognised by either the assumption of authority by the upper classes and attitudes of deference by the middle and working classes. Neale's middle and middling classes embraced most of social groups who were investors, from industrial and commercial property owners to petit bourgeois and wealthier artisans.⁷ This wide spectrum of social groups is also recognised in Davidoff and Hall's definition of a middle class, comprising two ranks, based on a number of economic, social religious and political criteria.⁸

This research has examined the how a *prima facie* middle-class population evaluates and copes with risk. The sample population of investors appeared to exhibit a number of common attitudes to investment, such as the need for liquidity, prudent use of portfolios and life insurance to reduce risk and lack of interest in financial speculation. These common values appear to be embraced by a broadly defined group of rentiers drawn from the middle class or middling sort. This Chapter examines the extent to which social and cultural factors, such as relative levels of wealth, age, gender and political

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and religious affiliation appear to have influenced the attitudes to risk and the behaviour of these investors.

7.2 Comparative Wealth

Although the sample population shared many common economic and social attributes, the CARD investors came from a broad range of income groups and owned an equally wide range of capital resources. Colquhoun attempted to quantify the income levels of each echelon of society in 1812 from royalty to the indigent poor. His 'attempt to exhibit a general view of society' revealed an unequal distribution of resources. For example, Colquhoun's top ten income earning groups, excluding royalty, accounted for just over 27 per cent of the aggregate annual income, but made up only 5 per cent of the total population of Great Britain and Ireland. Nevertheless, Colquhoun's analysis reveals the existence of a middle class comprising not only 'eminent' merchants, bankers and manufacturers, but also more modest employers of capital such as shopkeepers and artisans. A growing class of professionals comprised civil servants and those in the fields of law, engineering and medicine. Colquhoun's analysis was used to estimate the proportion of the total population of Great Britain and Ireland that belonged to those socio-economic categories from which the investor population in the present study was drawn. These categories are shown in Table 7.1.

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Table 7.1: Estimate of Incomes of Socio-economic groups of Potential Shareholders from Colquhoun's Analysis in 1812 of Great Britain and Ireland

Socio-economic Group	Population of Group		Average Group Annual Family Income	Total Group Income	
	Number	As % of Total	£	£' 000s	As % of Total
Temporal Peers	12,900	0.08	10,000	5,160	1.20
Spiritual Peers	720	0.00	5,010	240	0.06
Baronets	12,915	0.08	3,510	3,022	0.70
Knights and Esquires	110,000	0.64	2,000	22,000	5.11
Gentlemen Living on Income	280,000	1.64	800	28,000	6.50
Eminent Clergy	9,000	0.05	720	1,080	0.25
Lesser Clergy	87,500	0.51	200	3,500	0.81
Dissenting Clergy	20,000	0.12	100	500	0.12
Legal Profession	95,000	0.56	400	7,600	1.77
Medical Profession	90,000	0.53	300	5,400	1.25
Eminent Merchants and Bankers	35,000	0.20	2,600	9,100	2.11
Lesser Merchants	159,600	0.93	805	18,354	4.26
Surveyors and Engineers	43,500	0.25	300	2,610	0.61
Manufacturers	264,000	1.54	804	35,376	8.22
Shopkeepers and Tradesmen	700,000	4.09	200	28,000	6.50
Artisans	4,343,389	25.40	48	49,054	11.39
Farmers	1,540,000	9.01	120	33,600	7.80
Persons included in Other Groups with Income from Funds	n.a.	n.a.	n.a.	5,211	1.21
Total of Above Groups	7,803,524	45.63	n.a.	252,597	58.66
Total Population	17,096,803	100.00	n.a.	430,521	100.00

Source: Table adapted from Colquhoun.⁹

Table 7.1 shows that in 1812, 45 per cent of the total population belonged to the same range of socio-economic groups as the CARD Database investors. However, the majority of the CARD Database investors were members of the more wealthy social groups. This is shown in Table 7.2, which gives the socio-economic categories of the entire CARD Database.

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Table 7.2: Socio-economic Groups of Canal and Railway Investors

	No. of Investors	Percentage of Total Investors
Landed and Rentier	1,115	19
Clergy	260	4
Professional and Bankers	472	8
Manufacturers	171	3
Merchants	283	5
Artisans and Shopkeepers	520	9
Women	841	14
Unknown	2,251	38
Total	5,913	100

Source: Data from the CARD Database of 5,913 investors.

As can be seen in Table 7.2, the less wealthy Artisan and Shopkeeper group only make up 9 per cent of the total CARD investors, whereas they comprise 29 per cent of the total population in Colquhoun's classification. A direct comparison of the distribution of the total population of Great Britain and Ireland and that in the CARD Database is given in Table 7.3.

Table 7.3: Comparison of CARD Database and Colquhoun Distribution of Population

Categories According to Colquhoun Classification	CARD Database		Colquhoun	
	Number	% of Total	Number	% of Total
Landed and Rentier	1,115	40	1,955,815	11
Clergy	260	9	117,220	1
Professional	391	14	228,500	1
Manufacturers	171	6	264,000	2
Merchants and Bankers	364	13	194,600	1
Artisans and Shopkeepers	520	18	5,043,389	29
Total of Categories under Database Classification	2,821	100	7,803,524	45
Other Colquhoun Categories	n.a.	n.a.	9,293,279	55
Total Population as per Colquhoun	n.a.	n.a.	17,096,803	100

Source: The number of investors in the Database was reclassified according to Colquhoun's classification. Unknowns and Women categories were ignored and percentages recalculated.

Table 7.3 shows the concentration of investors in the most wealthy groups, even when comparing only those socio-economic groups covered in the CARD Database, that is ignoring the 55 per cent of the population in the other Colquhoun categories such as the labouring or pauper classes. This is not surprising since investment of surplus income in

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canal and railway shares was probably only undertaken after the acquisition of a freehold residence and perhaps investment in government stocks. Colquhoun's 1812 analysis shows the importance of those sectors of the population reliant on income rather than the employment of capital. The growth of this middle-class professional group and its importance in the development of the market in financial investment is examined in Section 7.7 below. When the distribution of total wealth including land and capital is considered, the dominance of the traditional sectors of society is apparent. The distribution of capital resources was discussed in Chapter 4, where Table 4.1 showed that 49 per cent of capital investment in 1799 was in land and property. At the same time the amount invested in domestic and foreign trade was only 8 per cent with a further 4 per cent invested in mines, timber and canals.¹⁰

Comparative wealth clearly is an important factor in the evaluation of investment risk. Opinion varies as to the extent to which wealth affects attitudes to risk. Although in Bernoulli's view wealthy people are more risk averse, Sharpe suggested that increases in wealth result in a greater appetite for risk.¹¹ It is possible that both these premises are true. It is reasonable to assume that individuals with a relatively small surplus income or capital would be prepared to risk this in the hope of accelerating the acquisition of a level of wealth which would normally take years, if ever, to amass. The sacrifice of this small surplus would seem insignificant in comparison to the potential gains. On the other hand, an individual with substantial wealth would probably be more reluctant to hazard its loss. Julius Hardy, the Birmingham buttonmaker, appears to be an example of the less wealthy speculator. Hardy was in business with his brother and they employed thirty to forty workers. In 1792 he remarked in his diary that his business was doing well and throughout that year he actively sought out speculative investments. In January of 1792 he bought shares in the Mining and Copper Company; in August he travelled to Ellesmere to take shares in a proposed canal from Chester to Shrewsbury; in November he bought shares in a proposed canal from Bristol to Worcester and in December he travelled to Devizes to invest in the proposed Devizes to Southampton canal. This activity took place at the height of canal mania. By February of the next year Hardy had noted the deterioration of the political situation in France and the fall in Consols; by the

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end of April he had laid off half his workforce.¹² It seems that most of Hardy's capital was invested in his business and that he was prepared to hazard the surplus arising from favourable trading conditions, perhaps because he did not have family commitments at this point. Hardy does not appear on the share register of any of the companies in the present study, but it is impossible to prove that he was merely a speculator. In contrast, most investors in the CARD Database appear to have bought shares in the early canals as part of a long-term strategy. As has been discussed in Chapter 6, share turnover was slow and there is little evidence that shares were actively traded. For the middle class, ownership of financial assets was an important strategy for the creation and maintenance of wealth. In contrast, as outlined in Chapter 4.2, only twenty-one of the investors in the CARD Database were identified as substantial landowners.¹³

The type of assets which generate wealth, rather than the absolute level of wealth, is likely to have a greater bearing on an individual's attitude to risk. Land is an illiquid asset and the income from land, particularly in the period from 1790 to 1815, was probably largely ploughed back in agricultural improvements rather than invested in financial assets. For example, Deane notes that during this period the landed classes invested £2.2 million in inclosure.¹⁴ In contrast, during this period a substantial proportion of the wealthy middle class of Birmingham, invested in canal and railway companies. The proportion of investors amongst these wealthy individuals who lived in Birmingham was examined. Ballard's list of all individuals with estates of £10,000 or over whose wills were proved in the Prerogative Court of Canterbury between 1775 and 1864 was compared with the investors in the CARD Database.¹⁵ Of the total of 321 individuals identified by Ballard, 108 were CARD Database investors. The results of the analysis are shown in Table 7.4.

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Table 7.4: Investors Whose Estates were Valued at over £10,000

	1775-1804		1805-1834		1835-1864	
	In CARD Database	Total Estates	In CARD Database	Total Estates	In CARD Database	Total Estates
Half Millionaires	0	0	0	0	1	2
Quarter Millionaires	0	0	0	0	2	2
£100 - 249,000	1	2	1	3	5	7
£50 - 99,000	1	1	2	4	7	18
£10 - 49,000	9	23	33	86	46	173
Total	11	26	36	93	61	202
As % of Total Estates	42		39		30	

Source: Total Estates from Ballard.¹⁶ Probate values do not include real estate.

Table 7.4 shows that between 30 and 42 per cent of the wealthiest individuals in Birmingham were investors in the CARD Database. This would tend to contradict the argument that the wealthy are more risk averse. On the other hand, as has already been discussed, these individuals may not have regarded this type of investment as particularly risky. These individuals were likely to have been financially sophisticated, to have had good access to information and to have adopted strategies to mitigate their risk. Table 7.5 shows the proportion of investors who died leaving estates of over £10,000 who owned shares in more than one company, and who also appeared in the Birmingham Database of members of the 33 prestigious voluntary societies of Birmingham.

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Table 7.5: Deceased Investors with Multiple Shareholdings and in Birmingham Database

Number of Holdings	Investors Not in Birmingham Database		Investors in Birmingham Database		Total	
	Number of Estates	Av. Estate £'s	Number of Estates	Av. Estate £'s	Number of Estates	Av. Estate £'s
1	68	57,327	19	59,294	87	57,756
2	22	44,818	13	51,154	35	47,171
3	7	20,429	10	40,400	17	32,176
4	4	36,250	0	na	4	36,250
6	1	15,000	0	na	1	15,000
Total	102	50,855	42	52,276	144	51,269

Source: Data on estates taken from Ballard¹⁷ and BCN Transfer Ledger.¹⁸ Birmingham Database includes 973 individual members of 33 societies, listed in Table 7, Appendix I.

Table 7.5 shows that 57 out of the total of 144 investors in the CARD Database with estates over £10,000 (40 per cent) owned shares in more than one company. The proportion of multiple shareholders in the CARD Database as a whole is only 9 per cent (see Chapter 5.2.1). Multiple shareholding, as has been seen in Chapter 6.2.1, is a strategy for mitigation of risk. As might be expected, these wealthy Birmingham shareholders were also members of fora where information could be exchanged amongst other influential members of Birmingham society. Table 7.5 shows that 42 out of the 144 investors (29 per cent) who left estates of over £10,000 were members of the prestigious Birmingham voluntary societies on the Birmingham Database and over half of these owned shares in more than one company. The socio-economic analysis of these investors is given in Table 7.6.

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Table 7.6: Socio-economic Groups of Deceased Investors with Estates over £10,000

	Number of Investors	Average Estate in £'s
Landed and Rentier	13	62,154
Clergy	4	30,000
Professional	19	41,503
Bankers	17	97,647
Manufacturers	45	39,579
Merchants	20	83,600
Artisans and Shopkeepers	15	26,839
Women	7	7,229
Unknown	4	25,000
Total	144	51,269

Source: Data from the 144 investors for whom date of death and size estate was available.¹⁹

Table 7.6 shows that the Merchant and Banker groups left the largest average estates. Since the probate value does not include land, this conforms to Colquhoun's estimate of incomes given in Table 7.1. Inevitably, the sample of deceased investors is biased towards those in the more wealthy groups, as only testators who left more than £10,000 are included. Ballard identified only one female testator, Phoebe Webster, a widow who inherited her husband's wiredrawing business. Information on other female testators collected from other sources reveals that their estates were substantially smaller than those of their male counterparts.²⁰ The gender implications of wealth and shareholding are examined in greater detail in Section 7.4 below. The type of assets held and their relative value is also a function of the age of the investor are investigated below.

7.3 Age

Earlier research has suggested that age is an important determinant of investor behaviour. Morris identified six stages in what he describes as the male middle-class property cycle, which existed during the industrial revolution.²¹ Each stage is characterised by a different investment strategy. Men were usually in their late thirties or early forties before they had accumulated sufficient capital, often inherited on the death of a parent, to invest in a house and perhaps other real property and financial assets. Up to that point, capital was accumulated in a business, the family home was usually rented, and income was earned almost exclusively from a trade or profession. In the

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next stage of the cycle, unearned income from rents, dividends and mortgages became a more important part of the family income; the family home was owned, and capital might be withdrawn from the business. Finally, after death, accumulated wealth was used to protect the lifestyle of dependants and the estate was more or less equally apportioned to provide the seed capital for the next generation. The broad geographical and occupational diversity of the investors in the CARD Database was used to test the concept of age as a determinant of investor behaviour.

The dates of birth for 66 out of the total 5,913 individual investors on the CARD Database were obtained from various sources, including life insurance data, wills and biographies.²² This information was used to calculate the age of the investors at the time they were first listed on the share register. The age of the investor's first appearance on a share register is shown in Table 7.7.

Table 7.7: Age of Investor on First Listing in a Company Share Register

	Number of Investors	Average Age on First Listing
Rentiers	5	40
Landed	2	27
Clergy	6	46
Professionals	4	35
Bankers	16	45
Manufacturers	2	47
Artisans	1	53
Merchants	1	25
Shopkeepers and Services	2	36
Women	5	35
Unknown	22	39
Total	66	40

Source: Data from 66 out of 5,913 investors in the CARD Database.

Although the number of investors in the sample is relatively small, the average age of 40 for the first appearance in a share register confirms Morris's view of the middle-class property cycle. However, the number of investors in each socio-economic category is too small to make any meaningful distinction among the age-related behaviour of different occupational groups. The average age of the five women in the sample was 35 and ranged between 20 and 46. Only spinsters or widows were able to own shares in their own name and married women could only own shares if they were held in a trust on

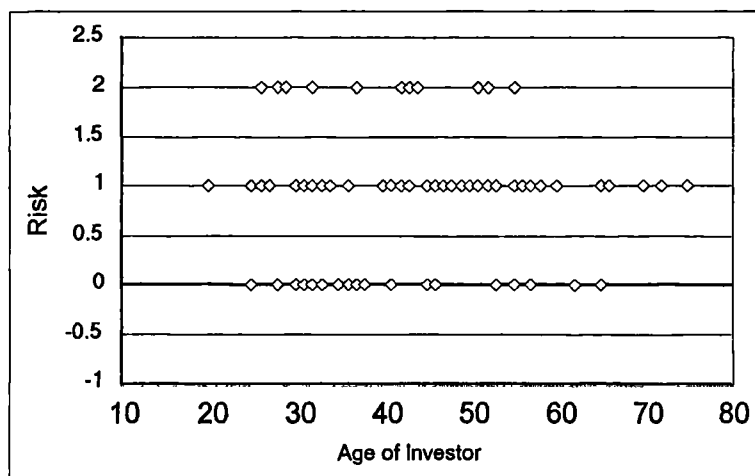
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their behalf.²³ This constraint at first sight, might explain the age profile. Closer investigation suggests that this was not the case. Four of the women held shares in their maiden names, although all four married and the men they married were alive when the shares were held. Although the date of their marriages is not known, in view of the women's ages it seems likely that they may have been married at the time the shares were held. None of the women appears to have inherited the shares on the death of a father or grandfather. The most likely explanation is that the shares were held in some form of trust, possibly as a marriage settlement. The share registers in these instances are silent on whether these women's investments were controlled by trustees, although the existence of trustees was usually noted. All five women came from either the wealthy Galton or Lloyd families; they were mature, probably well educated and must have been exposed to a sophisticated financial family background. Regrettably however, there is no direct evidence that they were anything more than passive investors.

The age of investors was further analysed to determine whether the propensity to take risk was age-related. Each canal investment was classified as high or low risk, as already described in Chapter 4.5.3. Railway company shares were always regarded as very low risk and were classified accordingly. In Figure 7.1 high risk is denominated as 2, low risk as 1 and very low risk as 0.

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Figure 7.1: Age of Investor and Propensity to Take Risk



Source: Data from 66 investors extracted from the CARD Database. The Y axis (Risk) is the level of risk associated with each investment as determined by the analysis in Chapter 4.5.3 and 4.5.4, with level of risk allocated as, 2 for high risk, 1 for low risk and 0 for very low risk. Age is the age of the Investor when they owned the shares.

Figure 7.1 indicates that in the sample, investors under 25 years old and over 55 did not invest in high-risk shares. The small size of the sample and the lack of a clear trend make it unwise to make any firm conclusion on the propensity of different age groups to take risk. Nevertheless, it is interesting to speculate that those in their middle years would perhaps have been in a better position to evaluate and take risk in comparison to the young and perhaps less experienced, or the elderly and less commercially connected investor.

7.4 Gender

The importance of female investors in the private sector joint stock companies does not appear to have been sufficiently recognised by earlier researchers.²⁴ Davidoff and Hall do acknowledge that the 'aggregate of small investments held by women' could be regarded as an important source of capital in commercial and industrial development, although legal and social constraints cast women in the role of passive providers of capital, whose investments were managed by male relatives or advisers.²⁵ In the present study, women were found to be important investors, although the extent to which

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individual women made investment decisions is difficult to establish. Analysis of the CARD Database reveals that 529 out of a total of 2,980 canal company investors (18 per cent) were women. The number of female investors in the railway companies examined in the study was 312 out of a total of 2,933 (11 per cent). Women were thus an important constituency even though no evidence was found in this study that they attended meetings of proprietors or took any active part in the management of the companies or their investments.

There were particular legal constraints preventing married women from owning and disposing of property. Under common law, a woman on marriage lost her legal identity and became a 'feme covert'.²⁶ Any property owned by a woman became the property of her husband on marriage. Wives lost control of personal property permanently, but a husband could not dispose of his wife's real property, such as freehold and copyhold land, without her consent. After his death, the wife's real property reverted to her control.²⁷ Shares in joint stock companies were classified as *chattels incorporeal* and a husband had the right to reduce them to possession, that is to convert them into personal property over which he had absolute rights of disposal.²⁸ If the husband did not reduce them into possession, the ownership of the shares reverted to the widow on her husband's death.

By the eighteenth century, the provisions of the common law in respect to women's property were being superseded by the use of equity trusts. These were drawn up before marriage to provide a 'sole and separate estate' administered by trustees. These settlements were used by a broad spectrum of social groups to preserve even quite small amounts of personal property.²⁹ Property was placed in the trust on behalf of the wife who could benefit from the income but was not permitted to dispose of the property. This protected the wife's assets from her husband's creditors.³⁰ The pre-nuptial settlement usually provided for a specific jointure, whereby the cash portion a wife brought into the marriage was commonly used to buy land to provide an income to support the married couple and to provide an income for the widow on her husband's death. The land itself was left to the heir on the death of the widow. If the husband left no will, common law provided that real property should be left according to

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primogeniture. This meant that all the real property went to the eldest son. In the absence of any sons the property went to the daughters jointly.³¹

The pre-nuptial contract was also used to define the amount of pin money which a husband was obliged to provide for his wife. This allowance was generally used to buy clothes and other personal items, although researchers suggest that it was used in some cases to invest in assets, such as property or shares.³² Carswell suggests that in the early -eighteenth century, the legal position regarding the purchase of shares by married women using pin money was unclear. He remarks that 'for a brief moment fashion and the existence of a market in which women could deal legally because the law had never thought of it, gave married women prominence and wealth in their own right'.³³ The women who took advantage of this pre-South Sea Bubble market were generally from the upper levels of the aristocracy and their ability to access this market did not survive the collapse of the Bubble. There is little evidence in the present study that married women owned shares. With only two exceptions,³⁴ the women in the CARD Database were described as either spinsters or widows, although there is some evidence that shares were held by women under their maiden names even though they may have been married.

Researchers have also investigated the ability of women to dispose of property. Erickson collated data from other researchers in fourteen areas of England covering the period 1414 to 1710.³⁵ She concludes that the perception that women had no access to their property when married and only at the whim of their husband's will after his death is not an accurate one. In her study, Erickson revealed that women were executrixes of between 46 and 96 per cent of wills, usually those of husbands and sisters, and sole executrixes in between 8 per cent and 80 per cent. This is confirmed by Berg who notes that research into women's property in the eighteenth century was generally carried out on rural records and that the practice in urban areas was different.³⁶ Her study of the wills of Birmingham testators between 1700 and 1800, confirmed that 18 per cent of wills were written by women and women accounted for 30 per cent of executors and guardians.³⁷

The legal constraints regarding women's right to own property had a profound

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impact on the way both men and women invested and inherited wealth. The present research shows how, within the constraints of a legal system that severely restricted married women's property rights, a sample of BCN investors attempted to provide for their relatives after death. The provisions in the wills of these investors shed further light on how both men and women approached fundamental investment decisions in respect of value, risk and diversification.

7.4.1 Wills and Female Investors

The Register of Transfers on Death of the BCN for the period 1787 to 1832 was used to explore how women of the middle-class elite in the West Midlands settled and inherited property.³⁸ In total, 98 transfers of BCN shares on the death of the investor were analysed for two periods 1787 to 1797 and 1820 to 1828. These two periods were selected to investigate whether there was any change in investor behaviour as the market in shares in private sector joint stock companies developed. Although the later sample contained less information on the names and relationships of beneficiaries, the sample did have reasonably comprehensive data on the value of the total estate. The earlier sample had little information on the value of the estates. Analysis of the two samples produced remarkably similar results, as shown in Table 7.8.

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Table 7.8: Analysis of Testators and Beneficiaries: BCN 1787-97 and 1820-28

		1787-1797	1820-1828	Total
Testators				
Total		40	58	98
Female	Number	13	20	33
	% of total	33	35	34
Beneficiaries				
Total		48	56	104
Female	Number	26	31	57
	% of total	54	55	55
Beneficiaries receiving life interest				
Total		18	18	36
Female	number	13	15	28
	% of total	72	83	78
	% females receiving life interest out of total female beneficiaries	50	48	49
Wives				
Wives as beneficiaries		8	10	18
Wives inheriting life interest		6	9	15
% Wives inheriting life interest		75	90	83

Source: Sample comprises all transfers on death between 1787-97 and 1820-28 taken from the BCN Register of Transfers by Death 1787-1832.³⁹

Table 7.8 shows that 34 per cent of the testators and 55 per cent of beneficiaries in the BCN samples were female. Approximately 50 per cent of female beneficiaries received a life interest only in the assets of the testator's estate. This is clearly because of the constraints imposed by the legal system on married women owning property in their own right. Nevertheless, many unmarried women also inherited life interests only. Although some male beneficiaries did inherit life interests, the largest group of investors inheriting life interests was female, amounting to 72 and 83 per cent, respectively, in the two samples. Widows of testators were particularly likely to receive the life interest in their husbands' estates. In the two samples the proportions were 75 and 90 per cent, respectively. An example is Anne Simpson, widow of William Simpson of Bordesley Green, whose will was proved at Doctors Commons on 29 November 1793. Anne Simpson received the life interest in four BCN shares. On her death the shares passed to William Keay, the son of William Simpson's first wife by a former husband and to Thomas Crowne, Anne Simpson's own son by her former husband.⁴⁰ A more typical example is that of Joseph Hadley of West Bromwich, whose will was proved on 21 March 1821. He owned two shares in the BCN and his total estate amounted to under

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£6,000. He left a life interest in the income to his widow, Nancy. On her death the assets were to be sold and the proceeds divided equally between his sons, Joseph and William, his daughter, Sarah Gilbert, and his daughter-in-law, Nancy Maurice.⁴¹ An interesting example of a female beneficiary inheriting an estate absolutely was that of Marie Marguerite Richard, a Frenchwoman described as 'co-habitant' of George Augustus Allen, an army captain who died at Sidmouth in 1826. Marie was left the residue of the estate of under £10,000, which included fourteen BCN shares, after the deduction of a £500 legacy.

The sample of BCN wills does not reveal any cases of primogeniture or the favouring of eldest sons in the division of estates. Primogeniture was not common practice amongst the middle classes.⁴² Eldest sons who had reached their majority and were expected to carry on the father's business were often provided for during the lifetime of the testator. In these circumstances, these assets would not be mentioned in the will. Testators, on the other hand, carefully provided for daughters. The wills for the earlier period of 1787 to 1797 reveal four cases where married daughters were left shares in trust as part of a separate estate. A typical example is the case of William Butler's daughter, Mary who was the wife of John Merry. Under his will, proved on 20 May 1791, her father, a gentleman from Birmingham, left his daughter the interest in his real and personal estate during her life, stipulating that it was for her own, 'sole & separate use notwithstanding her coverture for & free from the control & Debts of her present Husband'.⁴³ Unmarried daughters were also provided for in a similar way. Brittainia (sic) and Sarah Lee, the unmarried daughters of John Lee, a buttonmaker from Birmingham, were left one BCN share each, in trust 'for her own sole and separate use without the lett or controul of any person or persons with whom she may intermarry or any of his or their creditors'.⁴⁴ Their married sister, Rebecca Hodgson, was also left one share under similar terms.

The will of Samuel Galton, who died in 1799, provided a carefully calculated distribution of his assets which illustrated his view of the needs but also perhaps the relative importance of his offspring. Samuel's only son, also called Samuel, inherited all the banking partnership assets and shares worth three times more than those

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bequeathed to Samuel Tertius Galton, the eldest grandson of Samuel senior. Samuel Tertius was sixteen when his grandfather died and destined to join the banking partnership with his father. Samuel senior's three other grandsons were fifteen, ten and six when he died and although the two youngest ultimately joined the banking partnership they were given half the number of shares that Samuel Tertius received. All the grandsons were given the same £15,000 cash legacy. None of Samuel senior's daughters survived him. His three granddaughters inherited half the number of shares that the three youngest grandsons inherited and their cash bequest was only £6,000 each.⁴⁵ Clearly the protection of the Galton family business was paramount. Perhaps it was assumed that in the fullness of time income and capital generated by the business would provide more fully for the younger offspring. The apportionment clearly illustrates one reason why female shareholders tended to own fewer shares than their male counterparts.

Earlier research on the size of the estates of wealthy individuals from Birmingham gives the impression that women scarcely figured amongst the wealthiest individuals between 1775 and 1924. Ballard found no women amongst the eleven half and quarter millionaires he identified from the probate valuations for the period 1775 to 1850. He found only one woman amongst the lesser wealthy (defined as probate values from £10,000 to £50,000) during the same period.⁴⁶ This is surprising, since the two samples in the present study taken from BCN shareholders revealed seven women leaving estates in the lesser wealthy category out of a sample of only 98 testators.

Data on the probate value of the testator's estate exist for 51 men and women out of the total sample of 98 testators. The average size of both male and female estates for these 51 individuals is given in Table 7.9.

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Table 7.9: Estates of Testators BCN 1820-1828

	Testators Number	Average Size of Estate £
Males	35	22,660
Females	16	8,975
Total	51	18,367

Source: Sample comprises all estates in the BCN, which transferred on the death of the investor between 1820 and 1828 for which data on the total estate were available, from the Register of Transfers by Death 1787-1832.⁴⁷ Probate values do not include the value of land.

The average probate value of the estates shown in Table 7.9 is £18,367. The average size of estates of female testators is substantially less than that of their male counterparts. This differential is much more marked than that between the average size of shareholdings of male and female investors. An analysis of the share register of the BCN in 1840 is given in Table 7.10.

Table 7.10: Average Size of Male and Female Shareholdings in BCN 1840

	Investors Number	Average Holding Number of shares	Market Value of Average Holding £
Male	454	15	3,313
Female	175	11	2,353
Total	629	14	3,046

Source: Share price used to calculate market value taken from Course of the Exchange, 12 May 1840.

Table 7.10 shows that based on shareholdings in the BCN in 1840, the average value of stock owned by female investors was only 30 per cent lower than those of male shareholders. In comparison, the probate value of the estates of female investors in the BCN between 1820 and 1828, as shown in Table 7.11, was 60 per cent lower than that of their male counterparts. It is unlikely that this difference could be accounted for by changes in relative wealth between the period 1820 to 1828 and 1840. If, as Davidoff and Hall note, women 'were the beneficiaries of "passive" property, such as trusts, yielding income only',⁴⁸ it is not surprising that their estates were substantially smaller than those of men. This view is challenged by Berg who notes that in her study of the

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wills of Birmingham women that 47 per cent owned real property.⁴⁹ Nevertheless, women in the social classes most commonly seen as investors in canal and railway companies rarely owned and controlled substantial commercial business assets. One woman who did was Phoebe Webster, who described herself in the share register of the Warwick and Birmingham canal in 1798 as a wiredrawer.⁵⁰ Widowed in 1788 when she was twenty-nine, she managed Penns Mill for twelve years until her son, Joseph was old enough to take over the business. In 1788 Penns Mill was a substantial business comprising three wire mills, a forge, steel manufactory, a warehouse and retail organisation.⁵¹ After Joseph took over the business, Phoebe became a passive investor with a continuing interest in the business of £9,000 on which she earned 5 per cent per annum.⁵² Whilst she was running the business she invested in 10.5 shares in the Warwick and Birmingham canal in 1798 and in 6 shares in the Warwick and Braunston canal.

The tendency for women to hold financial assets is also shown by analysis of the 104 beneficiaries is identified in Table 7.8. The average size of estates where females were the sole or main beneficiaries was compared with those of their male counterparts. Probate valuations existed for 52 out of the total 104 beneficiaries. The analysis by gender is given in Table 7.11.

Table 7.11: Value of Estates Passing to Beneficiaries

	Beneficiaries	Average Size of Estate
	Number	£
Males	34	17,474
Females	18	19,089
Total	52	18,033

Source: Sample comprises all estates in the BCN, which transferred on the death of the investor between 1820 and 1828 for which data on the total estate were available. Data from Register of Transfers by Death 1787-1832.⁵³ Probate values do not include the value of land. Average Estate comprises the mean total estate receiving probate, not the amount individual beneficiaries received.

Although the analysis in Table 7.11 suggests that female beneficiaries benefited more or less equally to their male counterparts, other evidence, such as Samuel Galton's will suggests that wealthier individuals may have left the bulk of their estates to male

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relatives. The data refer to the total value of the estate only. This does, however, give some indication of the value of assets passing to female beneficiaries. However, it should be recalled that approximately 50 per cent of female beneficiaries received only a life interest and consequently were not free to will their property to whoever they might choose on their own death.

7.4.2 The Female Property Cycle

Morris makes a convincing case for a distinct cycle of asset ownership and disposal in respect to men. Can any conclusions be drawn on the cycle of female property ownership? As has already been discussed in Section 7.3 above, the small sample of women in the CARD Database with known dates of birth first acquired shares in the companies in the present study at the average age of 35. This age was only slightly less than that for all investors. In view of the requirement to surrender assets on marriage either to a husband or to a trust, it would be expected that women would tend to hold shares for a shorter period than their male counterparts. This premise was tested by calculating the number of years investors in the BCN retained their shares. This was calculated in two ways. Firstly, shareholders on the registers in each of the years 1768, 1790, 1800, 1810 and 1840 were compared and the average number of years each investor held shares was calculated. Because of the long time period between the dates of the share registers, this analysis was only capable of producing a crude comparison of the relative length of time male and female investors held shares. The results are shown in Table 7.12.

Table 7.12: Average Duration of Shareholding in BCN 1768-1840

	Number of Investors	Average Duration in years
Male	608	3.95
Female	217	2.28
Total	825	3.51

Source: Number of investors includes all individuals who held shares in the BCN in any of the five years, 1768, 1790, 1800, 1810 and 1840.⁵⁴

The analysis in Table 7.12 suggests that women held shares for a considerably shorter average period than men. The second calculation of the average duration of share

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ownership was made from a record of all the transfers of shares made by the original subscribers to the BCN over a sixty-six year period. This revealed that the average period this group of investors held shares was 9.8 years and that female subscribers held shares for an average duration of 10.6 years.⁵⁵ This evidence is not consistent with the results of the first calculation, but this is probably explained by the fact that the original subscribers to the BCN may not have been typical of later investors. Certainly the proportion of women was much lower. In 1768 11 per cent of shareholders were women and this had risen to 21 per cent in 1840.⁵⁶ Nevertheless, it is likely that this analysis provides a more accurate view of the actual duration of male and female shareholdings than that shown in Table 7.12.

As has been discussed above, after the death of their husbands, widows were often left shares as a life interest. In the BCN shareholder records, spinsters outnumber widows by three to one. Interestingly, out of a total of 213 female investors two are described as wives. The average size of shareholdings and the average length of time spinsters, widows and wives held shares is shown in Table 7.13.

Table 7.13: Average Size and Duration of Shareholdings of Female Investors in the BCN 1768-1840

	Female Investors	Average Shareholding	Average Duration
	Number	Number	Years
Spinsters	101	9	2.40
Widows	31	16	1.61
Wives	2	34	20.00
Unknown	83	6	2.05
Total	217	9	2.32

Source: Number of female investors in the includes all women who held shares in the BCN at some time in any of the five years 1768, 1790, 1800, 1810 and 1840.⁵⁷

It is not surprising that widows owned on average more shares than spinsters since they were likely to have inherited the shares from their husbands. There is no substantive difference between the length of time spinsters and widows maintained their shareholdings. More interesting is the position of Elizabeth Penn and Mary Ann Wakefield, who were the two married women investors. These wives held their shares

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for 20 years and had substantially larger average holdings than those of the other women. Both women came from *prima facie* comfortable backgrounds. Their husbands were respectively, William Penn, a glassmaker from Dudley, and George Wakefield, also an investor in the BCN in 1840, who was described in the share register as an esquire from Sutton Coldfield.⁵⁸ Although no firm conclusions can be drawn from these two examples, it would seem that if women were not constrained by marriage to dispose of assets, the characteristics of share ownership were very similar to that of men.

Chapters 4 and 5 discussed the importance of women as a source of capital for canal, and to a lesser extent, railway companies. Women were willing to invest during the construction period of some of the more risky projects. In the operating period female investors exhibited the risk-averse behaviour typical of financial investors. Women had a preference for assets that provided a high income. There is also evidence that they invested in government stocks and life insurance as part of a balanced portfolio of assets. The present study did not find evidence of women actively managing their investments, although there is evidence that some women did so.⁵⁹ Women did not have the same access to information as male investors. Although there is evidence that some female investors managed businesses, this was unusual.⁶⁰ As a consequence, most women did not have access to information from the commercial world. Women were also excluded from active management of voluntary societies (see Chapter 6.3.2). Women appear to have relied on their male relatives for investment advice. The importance of family connections was examined in Chapter 6.4. Family connections as a source of information and support were important to both male and female investors. Kinship links were often reinforced by religious networks, as discussed below.

7.5 Religious Affiliation

Religious affiliations had a profound influence over economic and cultural life in the period 1750 to 1850. Attendance of the established Anglican Church was declining at the beginning of the period, whilst the progressive dismantling of prescriptive religious conformity encouraged the rapid growth of dissenting communities.⁶¹ At the end of the period, the Church Census of 1851 revealed that approximately 40 per cent of the

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population of England and Wales attended church services, of which just over half were Anglican.⁶² The Census confirmed that attendance at church or chapel had become a largely middle-class activity. The period 1750 to 1850 saw the decline in the numbers of Quakers and Unitarians and the rise of New Dissenting communities of Independents and Congregationalists and other nonconforming groups such as Methodists. Members of these communities were drawn mainly from the lower strata of the middle classes. Over the period, the constituency of Old Dissent was drawn increasingly from the wealthy upper middle class. At the same time, Evangelical Anglicanism was also developing a constituency amongst the same social group.⁶³

These trends in social and religious activity were reflected in the changes in Birmingham society over the period. For the middle classes, membership of a religious group was also an affirmation of particular cultural and political beliefs. Dissent and radicalism were the *marque* of the wealthy merchants and manufacturers who came to challenge the Tory Anglican axis after Birmingham became a Municipal Borough in 1838.⁶⁴ The appointment of the Evangelical, Henry Ryder, as Bishop of Coventry and Lichfield in 1824 helped revive Anglicanism in Birmingham. Ryder created new Anglican parishes and appointed Evangelical clergy to these livings, including William Marsh who took over the parish of St. Thomas in 1829. Ryder also appointed William Spooner as Archdeacon of Coventry.⁶⁵ Members of the Spooner family were prominent Evangelicals. Both Barbara Spooner and her grandfather Sir Henry Gough, Lord Calthorpe, were investors in the CARD Database.⁶⁶ The Calthorpe's were also leading Evangelicals.

At the same time, the Dissenting community was establishing more places of worship and evangelical dissenting clergy, such as John Angell James, were instrumental in building an active dissenting community.⁶⁷ In spite of political differences, Evangelical Anglicans and Dissenters had much in common. Both communities believed in the importance of education, anti-slavery and temperance. These 'serious Christians' built networks based on their denominational beliefs, strengthened by kinship and business links.⁶⁸ These networks were potent conduits for transferring information and inculcating cultural, social and political norms.

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The supposed link between Protestantism and entrepreneurial performance in a capitalist economy, first advanced by Weber in the early-twentieth century, has been the subject of considerable research.⁶⁹ The reason dissenters sought to establish their own businesses has been attributed to legal constraints, which prevented them from practising a profession, such as the law, or pursuing a trade through the guild system or establishing businesses in incorporated towns and cities, until after the repeal of the Test and Corporation Acts in 1829. As a result of exclusion from traditional middle-class activities, dissenters were assumed to be more innovative and directed their energies into developing their own businesses.⁷⁰ Recent research has attempted to test this premise that there were a disproportionate number of dissenters amongst entrepreneurs and industrialists. Hagen traced the religious affiliations of the 92 entrepreneurs and industrialists mentioned in T. S. Ashton's *Industrial Revolution*. He found that 41 per cent of those individuals from England and Wales were dissenters and 58 per cent were Anglicans. These results appear to confirm Weber's thesis. However, Rubinstein suggests that Hagen's work is flawed since Ashton ignored important sectors of the business community such as financiers, merchants, shipowners and warehousemen.⁷¹ Rubinstein tested Weber's hypothesis by investigating the religious affiliation of the wealthiest sectors of society. He used probate records in England and Wales to select a sample of individuals who were likely to have been successful businessmen. The religion of 'very wealthy' individuals (millionaires, half millionaires) and 'wealthy' individuals (those with more than £100,000 of property subject to probate) was extracted from obituaries in newspapers. This provided evidence of the religious affiliation of the individual at death rather than the religion they inherited at birth. Although Rubinstein suggests his analysis tended to overstate the number of dissenters, he found that in the period 1720 to 1879, approximately 15 per cent of both the very wealthy and the wealthy categories were dissenters.⁷² Anglican made up approximately 50 to 56 per cent of the very wealthy and 70 per cent of the lesser wealthy categories. Gilbert estimated that the total number of dissenters in national population was at its peak in 1700 at around 5 per cent, but by 1740 this number had halved.⁷³ It would seem from Rubinstein's research that dissenters were relatively more numerous amongst the well-to-do merchants and

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industrialists than in the population as a whole.

A similar study was carried out on the population of dissenters in Birmingham. Ballard traced the religious affiliation of wealthy individuals who died between 1775 and 1864 and whose estates had a probate value of over £100,000. The sample was very small: only 20 individuals qualified, of whom 70 per cent were Anglican. Out of the remaining 30 per cent who were nonconformists, the majority was either Unitarian or Quaker. This compares with a total of 6,000 dissenters in Birmingham in 1800 out of a total population of 73,000 (8.2 per cent). This proportion was sustained in the 1851 Church Census, which recorded 17,452, nonconformists out of a population of 232,841 (7.5 per cent).⁷⁴ In spite of doubts about the accuracy of the Church Census, Ballard's work suggests that dissenters made up a disproportionately large percentage of the wealthiest members of Birmingham society. The present study re-examines Ballard's research using a more representative sample of the middle-class population of Birmingham.

7.5.1 Investor Religious Affiliation

In order to examine the religious affiliations of the sample population, members of the Birmingham Society of Friends,⁷⁵ were compared with investors on the CARD and BARD Databases. The investor population was drawn from a wider range of socio-economic groups than Ballard's sample of those leaving estates of more than £100,000. In total, forty-nine members of the Birmingham Quaker meeting were found to be investors in the Databases. All but two of the Quaker investors had addresses in the West Midlands area and these two investors had Unknown addresses. The total number of investors in the Databases from the West Midlands amounted to 1,062. Thus investors who were also members of the Birmingham Society of Friends represented 4.8 per cent of the total number of investors from the West Midlands. The number of dissenters in the Databases as a whole is undoubtedly higher since the records of only one dissenting congregation was included in the study. Thus the proportion of dissenters amongst the moderately wealthy of the West Midlands was likely to have been substantially greater than the 2.5 to 5 per cent estimated by Gilbert as pertaining to the

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population as a whole. Davidoff and Hall suggest that 18 per cent of their sample of the Birmingham middle class were Quaker.⁷⁶ However, the selection criteria of their sample is unclear and was undoubtedly biased towards the selection of dissenting individuals since it comprised 40 per cent dissenters to 54 per cent Anglicans. Rubinstein notes that research that purports to show the predominance of dissenters is fostered by trotting out the same names over and over again. He suggests that 'when one has named the most celebrated Quaker dynasties, like the Gurneys, Peases, Barclays and Cadburys, one has virtually exhausted the roll-call of Quaker wealth'.⁷⁷ However, the present study did look beyond these well-known names. The investors in the CARD and BARD Databases represent a broad cross-section of middle-class individuals. The records of the Birmingham Society of Friends included all the members of the congregation. Nevertheless, the 49 members of the Birmingham Society of Friends who were found to be investors were from the wealthiest groups in the Databases as shown in Table 7.14.

Table 7.14: Socio-economic Classification of Dissenting Investors

	Total CARD and BARD Databases		Dissenter Investors	
	Number of Investors	As % of Total	Number of Investors	As % of Total
Landed	296	5	25	4
Rentier	886	14	3	6
Clergy	266	4	0	0
Professional and Banker	502	8	11	22
Manufacturer	213	3	5	10
Merchant	305	5	5	10
Artisan and Shopkeeper	586	9	1	2
Women	917	14	10	20
Unknown	2,539	39	12	24
Total	6,510	100	49	100

Source: Dissenting Investors are investors who were members of the Society of Friends Birmingham Meeting 1770-1850.⁷⁸

As can be seen from Table 7.14, investors from the dissenting community were members of the wealthiest social groups. For example, 22 per cent of the dissenting investors were from the Professional and Banker group compared to 8 per cent in the Databases as a whole. In contrast, the number of dissenters in the Artisan and Shopkeeper group was only 2 per cent compared with 9 per cent for the Databases as a

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whole. On the other hand, the proportion of dissenters in the Landed and Rentier groups, which comprises some of the wealthiest members of the investor population, was lower than that in the Databases as a whole. The Landed group, in particular were largely Anglican. In addition there was a tendency for dissenters to leave their communities and become Anglicans once they attained a certain level of wealth and status. The wealthy Galton family was a typical example of this.⁷⁹ The Quaker community disowned Samuel Tertius Galton in 1807 after his marriage to Violetta Darwin, an Anglican.⁸⁰ His daughter, Elizabeth Anne Galton remarked in her memoirs that her father joined the Church of England after his marriage, although the family still maintained close ties with dissenting relatives, such as the Gurneys.⁸¹

Compelling evidence of the importance of dissent in engendering successful businesses is shown in the work carried out by Pratt.⁸² He extracted data on Quaker banks from the quarterly meetings of the Lancashire, Warwickshire, Yorkshire, Gloucestershire and Bristol Quaker societies, supplemented by information from directories and secondary sources. He found that at least six of the country banks operating in these five areas in the 1750s were founded by Quakers and that by 1785 Quakers controlled 16 per cent of the 119 country banks in his sample area. Extending the results of his sample to the rest of England and Wales, Pratt estimates that 25 per cent of the country banks were Quaker concerns at the start of the Industrial Revolution. He notes that half the Quaker bankers were connected through marriage to other Quaker banking families. Quakers started to transport money as a consequence of their extensive journeys to the quarterly and annual meetings of other communities. Later they set up channels for providing credit. Quakers were accustomed to monitor the business probity of fellow members of their community. Knowledge of individuals' creditworthiness and the Quaker reputation for honesty no doubt contributed to the development of Quaker banking partnerships.⁸³

The present study also confirmed the importance of the Quaker banking families in the social and economic life of Birmingham and the West Midlands. For example, Samuel John Galton and Joseph Gibbins, the founders of the Galton and Gibbins banking partnership in 1804, were both investors in the Warwick and Birmingham

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canal.⁸⁴ Galton was a gunmaker and supplied the slave trade, engendering the disapproval of the Quaker community, which disowned him in 1796 'for fabric[ating] Inst[ruments] of War'.⁸⁵ Joseph Gibbins was charged with persuading Galton to give up the business interests, which conflicted with Quaker ideals.⁸⁶ Banking was clearly deemed to be acceptable even though it may have financed the gun trade. The banking partnership included Galton's eldest son, Samuel Tertius, and later his younger sons, John Howard and Hubert. Gibbins left the partnership in 1806 and was replaced by Paul Moon James. James was a Unitarian who married Olivia Lloyd, one of the daughters of Charles Lloyd and Mary Farmer in 1808.⁸⁷ Both the Farmers and the Lloyds were Quaker families from Birmingham. The banking partnership of the Lloyds and Taylors was founded in 1765. Sampson Lloyd, a Quaker, was an iron master and merchant and John Taylor, a Unitarian, was a manufacturer and merchant in the bullion trade.⁸⁸ Another early banking partnership in Birmingham was founded in 1766 between Robert Coales and John Lewis Moilliet, who were both merchants. Moilliet was a Quaker, but the religion of Coales is not known. By 1840 the partnership was known as J. L. Moilliet & Sons and included John Lewis's son James, who married Lucy Galton, daughter of Samuel Tertius Galton. Thus the Quaker families of Galton, Moilliet and James were linked both by marriage and by business interests. This was consolidated in 1865 when Taylor and Lloyds and J. L. Moilliet & Sons amalgamated to form LLoyds Banking Company Limited.⁸⁹

Davidoff and Hall note that Quakers and Unitarians were commonly among the wealthier merchants and manufacturers of the upper middle class. They maintain that Unitarians, in particular, were often high status professionals and bankers. However, since they do not specify how they selected their sample of individuals from Birmingham it is difficult to assess their analysis of occupational groups.⁹⁰ All the members of the banking partnerships mentioned above, with the exception of Robert Coales, were investors in the CARD Database.

The leading dissenting families in Birmingham not only had strong business connections but they also were connected by marriage, both amongst themselves, and to other leading dissenting families. The shareholdings of James Taylor in the books of

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the BCN reveal the extent of the business and personal connections between these dissenting families. Taylor owned 60 BCN shares solely in his own name. In addition he owned 40 shares with George Braithwaite Lloyd and 20 shares with Hubert John Galton and Theodore Moilliet. These joint holding were presumably in respect of their business interests. There is also circumstantial evidence that James Taylor owned BCN shares jointly with other trustees, in connection with family marriage settlements. For example, he held 58 shares with Ralph Adderley, and Taylor's sister, Caroline, owned shares in the Warwick and Birmingham canal in her own name before she was married to George Bowyer Adderley.⁹¹ James Taylor also held 12 BCN shares in conjunction with members of the Skey and Steward families to whom he was also connected by marriage. Taylor's first wife was Louisa Skey, who was probably his cousin, and Taylor's son, William Francis, married Augusta Steward.

These connections were likely to have been a potent means of disseminating information about business and investment. In the present study an attempt was made to analyse the degree of intermarriage between the leading dissenting families in Birmingham. Thirty investors on the CARD Database were found to be members of the Quaker Galton and Lloyd families and the Unitarian Ryland and Taylor families. These individuals were then checked against family trees⁹² and the CARD Database. It was found that these 30 individuals were connected by marriage to a further 19 investors, mainly from dissenting backgrounds. For example, the Rylands were connected to the Priestleys, the Smiths, and the Pembertons, all of whom were Unitarians. The Lloyd family was connected to the Quaker Farmer, Pearson, Barnes, Hanbury and Barclay families. Table 7.15 shows the socio-economic groups to which these 49 related investors belonged.

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Table 7.15: Socio-economic Group of Dissenting Family Investors

Socio-economic Group	Number of Investors
Landed and Rentier	6
Clergy	3
Professional	1
Bankers	18
Manufacturers	6
Merchants	1
Artisans and Shopkeepers	1
Women	9
Unknown	4
Total	49

Source: 30 members of the Galton, Lloyd, Taylor and Ryland families were taken from the CARD Database and all the connections to 19 other investors through marriage selected.

The investors were picked from three banking families so it is not surprising that this socio-economic group dominates the analysis. However, it is clear that these dissenting families were firmly ensconced in the upper middle-class elite of Birmingham. These family connections were extremely strong. An analysis of the number of connections between individuals in the dissenting families who were also investors reveals that there were 352 separate relationships. These are analysed in Table 7.16.

Table 7.16: Degrees of Inter-relationship amongst Investors

Type of Relationship	Number of Separate Relationships
Husband/wife	8
Father/mother/son/daughter/ grandparents/grandchildren	59
Brother/sister	67
Cousin/nephew/niece/uncle/aunt/in-law	218
Total	352

Source: Relationship of 49 members of dissenting families who are also investors in the CARD Database.

Table 7.16 shows that these 352 investors were highly connected with each other. On average, each investor had a family relationship with just over 7 other investors. This is clear evidence of the importance of family connections in the dissemination of information and the investment decision-making process. However, even where a family connection did not exist, there is evidence that information was disseminated through

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the network of religious affiliation. For example, the Rev. John Kenrick, a Unitarian, owned 72 shares in the BCN in 1840. He was described as living in York.⁹³ Kenrick studied under John Kentish, who owned 60 shares in the BCN at the same time. Between 1805 and 1807 Kenrick had lived in Kentish's house in Birmingham.⁹⁴ This is compelling evidence of the strength and duration of relationships within a religious community.

As can be seen from Table 7.17, a very high proportion of the Birmingham Quaker community (49 out of a total of 347 individuals, or 14 per cent) were investors in the CARD and BARD Databases.⁹⁵ This compares with only 3 per cent of the Unitarian community (5 out of a total of 153 individuals).⁹⁶

Table 7.17: Social and Philanthropic Behaviour of Quaker and Unitarian Communities in Birmingham

	Members of Religious Society	Investors in CARD and BARD Databases		Members of Birmingham Database	
	Number	Number	As % of Society Membership	Number	As % of Birmingham Database
Unitarians	153	5	3	9	1
Quakers	347	49	14	43	5

Source: Members of Unitarian Society taken from List of Members of Unitarian Brotherly Society.⁹⁷ Members of Quaker Society taken from list of members of Birmingham Meeting of Society of Friends, 1770 to 1850.⁹⁸ Birmingham Database comprises 973 members of 30 voluntary societies listed in Table 7 of Appendix I, adjusted to exclude the 153 members of the Unitarian Brotherly Society.

Even taking into account the smaller size of the Unitarian community, there appears to be a difference in behaviour between these two groups. Davidoff and Hall place both Quakers and Unitarians amongst the 'higher ranks' of the middle class.⁹⁹ They also record that Unitarians were committed to 'science and rationality' and were a strong influence in the Birmingham Philosophical Institution.¹⁰⁰ However, Table 7.17 shows that only 9 Unitarians compared to 43 Quakers participated in the social and philanthropic activities included in the Birmingham Database. Even allowing for the smaller size of the membership of the Unitarian Brotherly Society, some evidence of Unitarians

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participating in funding such important projects as the General Hospital and the General Dispensary might have been expected. This is particularly true given that the overall size of the Unitarian community amongst the middle-class elite of Birmingham appears to have been larger than that of the Quakers. Davidoff and Hall estimate that the Unitarian community was three times that of the Quakers.¹⁰¹ These authors hint that Unitarians largely retreated from public life after the Church and King riots in Birmingham in 1791, when prominent Unitarians, such as Joseph Priestley, were attacked for their support of repeal of the Test and Corporation Acts.¹⁰² Unitarians, including Joseph Priestley's son¹⁰³ were among the investors in the CARD Database, but they do not appear to have been socially and politically active. In contrast, Seed suggests that in national politics prior to the 1832 Reform Act, Unitarians were the only dissenting group to have real influence.¹⁰⁴ Although this had diminished by the mid-nineteenth century as Unitarianism failed to be adopted by the industrial middle class and the number of Unitarian MPs declined.

7.5.2 Charitable Ethos

A number of the formalised philanthropic activities in Birmingham were sectarian. Although philanthropy may have owed more to social and commercial impetus than altruism and the availability of sufficient wealth. The formation of committees to raise money for building hospitals, libraries and schools gave middle-class men the opportunity to associate on equal terms with members of the landed aristocracy.¹⁰⁵ Manufacturers, merchants and professionals sought the patronage of the Earl of Dartmouth in promoting the Birmingham Canal Navigation.¹⁰⁶ In much the same way, middle-class philanthropists enlisted the support of members of the local aristocracy for their charitable endeavours. High profile philanthropic projects such as the building of the General Hospital in 1766 were a way of demonstrating the same skills, which the middle class used to finance and operate the canal and railway companies. In the analysis in Chapter 6.3.2, members of the CARD and BARD Databases were also found in large numbers in the Birmingham Database, which includes members of prestigious voluntary societies. Of the thirty-three associations examined, nine were purely

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charitable with a further four being mainly of charitable purpose, but sponsored by a particular religious denomination. There is less direct evidence of private charitable activity, although wills do mention small bequests. Wealthy middle class men often supported the charitable activities of their female relatives through the provision of money and expertise.¹⁰⁷ Elizabeth Anne Galton recalled that in 1834, Samuel Tertius Galton, her father, provided money for a school to be built at their house in Leamington for the education of poor children. Adele, Elizabeth Anne's sister, taught in the school, which clearly did not have the approval of the local clergyman who declined to support it.¹⁰⁸

The philanthropic activities of the wealthy middle class of Birmingham reflect the preoccupations of eighteenth- and nineteenth-century life with health and education. Such projects often had some religious connection but were generally run on interdenominational lines, such as the Birmingham Infant School Society set up in 1825.¹⁰⁹ Other educational projects were sectarian, such as the Society for Protestant Dissenting Schools established in 1761 and the Unitarian Brotherly Society, which trained Sunday school teachers and managers. Thirteen philanthropic institutions and activities were examined in the present study and a total of 730 individuals were identified as participants. These philanthropic projects are listed in Table 7.18.

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Table 7.18: Number of Investors in Charitable Societies

	Number of Total Members	Investors	
		Number	As a % of Total Members
General Dispensary 1793	16	3	19
General Dispensary 1840	15	4	27
General Hospital 1765	117	38	32
General Hospital 1839	61	22	36
Library 1799	159	36	23
Deaf and Dumb Institution 1812	43	14	33
Eye Hospital 1823	17	5	29
Friends Book Club 1840-1	24	6	25
Fever Hospital 1825	15	7	47
Infant Schools 1825	20	6	30
Orthopaedic Hospital 1825	26	10	38
Protestant Dissenting Schools 1761	15	3	20
Poor Relief 1794	41	9	22
Abolition of Slavery 1790	8	3	38
Unitarian Brotherly Society 1796	153	14	9
Total	730	180	25

Source: Investors taken from the CARD and BARD Databases. Sources for membership of charitable institutions set out in Appendix III

As can be seen from the analysis in Table 7.18, a very high proportion of the participants in these philanthropic projects (25 per cent) were also investors in the CARD and BARD Databases. Investors were also well represented amongst those participants who were involved in more than one philanthropic activity. Out of a total of 233 individuals who were associated with more than one charitable project 45 per cent were investors. These were wealthy individuals, such as Samuel Tertius Galton, the banker. On his death in 1844, the probate value of his estate was £45,000.¹¹⁰ Galton was a subscriber to the Infant Schools in 1825,¹¹¹ the Deaf and Dumb Institution in 1812,¹¹² the Eye Hospital in 1823¹¹³ and the Orthopaedic Hospital in 1817.¹¹⁴ Galton was born into a Quaker family but became an Anglican on his marriage to Violetta Darwin. Undoubtedly his support for charitable works reflects his religious upbringing, but it is also likely that he used his participation in high profile charitable enterprises to further his business activities as a banker.¹¹⁵ Another supporter of multiple charitable projects was Richard Spooner. Spooner stood as a candidate in the parliamentary elections to the Warwick constituency in 1820 and the Birmingham constituency in 1841.¹¹⁶ In Spooner's case, his charitable activities in the Infants Schools in 1825,

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Orthopaedic Hospital in 1817, the Eye Hospital in 1823 and the General Hospital in 1839 may have been to forward his political career. The same motivation was probably also a contributory factor to Joshua Scolefield's and Francis Lawley's support of the Orthopaedic Hospital. Scholefield stood as a candidate in the 1841 election and Francis Lawley opposed Spooner in the 1820 election. Analysis of the socio-economic background of the 180 investors who also took part in philanthropic projects reveals that Professionals were by far the largest single group, comprising 23 per cent of the total. The full analysis is given in Table 7.19.

Table 7.19: Socio-economic Analysis of Investors who were Members of Charitable Societies (Number of Investors)

	Landed/ Rentier	Clergy	Professional /Banker	Manufacturers	Merchants	Artisans Shopkeepers	Women	Unknown	Total
General Dispensary 1793	0	0	0	2	0	1	0	0	3
General Dispensary 1840	1	0	2	0	0	0	1	0	4
General Hospital 1765	15	0	9	5	2	1	1	5	38
General Hospital 1839	4	0	7	0	3	4	0	4	22
Library 1799	2	3	2	1	4	3	1	20	36
Deaf and Dumb Institution 1812	0	4	5	0	2	0	0	3	14
Eye Hospital 1823	2	0	1	1	0	0	0	1	5
Friends Book Club 1840-1	0	0	0	1	2	0	0	3	6
Fever Hospital 1825	0	0	5	1	0	0	0	1	7
Infant Schools 1825	1	0	4	0	0	0	0	1	6
Orthopaedic Hospital 1825	1	1	5	0	0	0	0	3	10
Protestant Dissenting Schools 1761	0	0	0	1	1	0	0	1	3
Poor Relief 1794	0	0	0	0	0	2	0	7	9
Abolition of Slavery 1790	0	1	0	1	0	0	0	1	3
Unitarian Brotherly Society 1796	2	1	1	2	0	1	0	7	14
Total	28	10	41	15	14	12	3	57	180

Source: Investors taken from the CARD and BARD Databases. Sources for membership of charitable institutions set out in Appendix III.

Professionals were the group most likely to benefit from philanthropic activities through contact with other influential people.¹¹⁷ For example, both John Taylor and Charles Lloyd, the bankers, were active participants in a number of charitable projects. Taylor & Lloyds were appointed treasurers to the Society for the Abolition of Slavery in 1790¹¹⁸ and the Infant Schools in 1825.¹¹⁹

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Not surprisingly, given the virtual exclusion of women from membership and management of voluntary societies, only three female investors were found amongst the 180 participants in the philanthropic projects analysed in the present study. Women did participate in charitable activities but not in an executive capacity. They taught in Sunday Schools, dealt with the female recipients of the charitable largesse and were permitted to subscribe to charitable causes.¹²⁰ For example, 15 out of the 90 people subscribing more than £10 to the General Hospital in 1765 were women.¹²¹ Nevertheless, the exclusion of women from corporate life also applied to their participation in philanthropic institutions.

Perhaps for this reason women may have been more inclined to support charitable projects posthumously than their male counterparts. Certainly, the generosity of Elizabeth Farquharson, a widow from Birmingham, who bequeathed legacies of £6,100 to the General Hospital and a charity school on her death in 1796, is not matched in the wills of some of the wealthiest male investors.¹²² Samuel Galton, who during his lifetime was a notable public benefactor, left only small bequests to the General Hospital amongst the disposal of his fortune, valued at probate at £150,000.¹²³ Samuel Garbett, another lifetime benefactor of the General Hospital was relatively more generous. He left £400 of his £15,000 estate to the charity school of St Philips Church and £400 to the General Hospital.¹²⁴

7.6 Political Affiliation

The period of canal and railway building was marked by enormous social and political upheaval. Rapid urbanisation was fuelled by inclosure and agricultural modernisation. Industrialisation and the development of the factory system led to a growing class of wage labourers, who were vulnerable to economic recession. A succession of wars during the period exacerbated the cycle of booms and slumps caused by interruption to trade. The West Midlands was one of the areas which was most acutely affected by these processes.¹²⁵ The population of the area later covered by the Borough of Birmingham grew from 62,000 in 1801 to 234,000 in 1851.¹²⁶ The old Poor Law was unable to cope with the needs of this burgeoning conurbation yet the new

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Poor laws of 1834 were deeply unpopular amongst both the beneficiaries and those on whom the rates were levied. The peaks and troughs of the post-war economy also affected middle-class businesses and professions, but the gap between the labouring classes and the middling sort became wider. At the same time the middle class were also differentiating themselves politically from the aristocracy and gentry. The middle classes felt they were taxed disproportionately by a parliament, which was largely made up of representatives of the land-owning classes. The abolition of income tax in 1816, the high duties on imported raw materials, the 1815 Corn Law and the Orders in Council all conspired against middle-class business interests. The middle classes had common cause with working-class Radicals.¹²⁷

In the early days of the French Revolution many in the middle class shared Wordsworth's view:

That a benignant spirit was abroad
Which might not be withstood, that poverty....
Be found no more, that we should see the earth
Unthwarted in her wish to recompense
The meek, the lowly, patient child of toil.....
Should see the people having a strong hand
In framing their own laws; whence better days
To all mankind.¹²⁸

These sentiments were echoed in the pages of the *Birmingham Gazette* on 11 July 1791 with a notice that 'a number of Gentlemen intend DINING together on the 14th instant to commemorate the auspicious day which witnessed the Emancipation of Twenty-six Millions of People from the yoke of Despotism'.¹²⁹ Shortly thereafter, the excesses of the French Revolution and fears of a similar working-class revolution in Britain caused middle-class property owners to eschew the radical agenda.¹³⁰ The radical Unitarian, Joseph Priestley was driven from Birmingham during rioting in 1791. In 1792, Birmingham Anglicans and Tories were meeting to form the *Association for the Protection of Liberty and Property against Republicans and Levellers*. Of the eighteen committee members of the *Association for the Protection of Liberty*, seven were

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investors in the CARD and BARD Databases, reflecting the innate conservatism of middle-class rentiers. The opposition of the established church to radicalism and its associations with dissent was demonstrated by no less than six Anglican clergy being members of the committee.¹³¹ In the event, the middle-class establishment in Birmingham had little to fear from radical agitation. After the 1791 riots, middle-class reformers lost their nerve for a generation.¹³² Throughout the period leading up to the 1832 Reform Act, the constituency for North Warwick, of which Birmingham was a part, regularly returned Tory candidates to Westminster. The middle classes pursued their own political agenda, through extra-parliamentary pressure groups, many of which were concerned with the economy.¹³³ In 1790 the Commercial Committee was preoccupied with the question of brass exports. Seventeen of the forty-five members of this committee were members of the CARD and BARD Database, including leading manufacturers and traders such as Matthew Boulton, William Chance and Sampson Freeth.

Working-class radicalism continued to survive in Birmingham. Wages and prices were no longer regulated and became determined by the market. It became more difficult for those without capital to set up their own businesses and the social and economic divide between master and labourer widened.¹³⁴ Although the landed interest did well during the last ten years of the French War, the disruption to trade in industrial goods, exacerbated by the Orders in Council, united middle-class manufacturers and traders in opposition to government policy. The economic crisis of 1810 -11 saw the middle and working classes unite to fight against the Orders. In Birmingham, Thomas Attwood, a banker, was responsible for leading the campaign.¹³⁵

After the end of the French Wars, high wheat prices and flagging trade continued to activate the middle classes to the radical cause.¹³⁶ In 1816, George Edmonds, the son of a Baptist minister, founded the radical Hampden Club. Not surprisingly, only four out of the forty-eight members of the Club in 1817 were investors in the CARD and BARD Databases, including Edmonds himself, and James Luckcock. Davidoff and Hall considered that Luckcock epitomised the ideals of respectability and civic and moral responsibility of the developing middle classes.¹³⁷ He was a jeweller

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from Birmingham with a moderately successful business, which provided sufficient capital for him to acquire two properties in Edgbaston and shares in the Warwick and Birmingham canal.¹³⁸ The income from his investments enabled him to devote time to his religious and political interests. He was an active member of the Unitarian Brotherly Society, which trained teachers and managers for Sunday schools; he was an ardent supporter of the anti-slavery campaign and he worked for Radical reform. Luckcock attended a public meeting on 22 January 1817, which was organised by the Hampden Club and addressed by Edmonds. The meeting, which was held at Newhall Hill, was attended by 10,000 to 20,000 people.¹³⁹ Later, in July 1818, Edmonds, together with four companions, was arraigned for conspiracy to elect and return Sir Charles Wolseley without lawful authority following a meeting of Liberal sympathisers.¹⁴⁰ Thereafter Wolseley styled himself as 'MP'. The *Birmingham Gazette*, which was a supporter of the Anglican-Tory axis, commented rather sniffily that 'not a single individual, resident or holding a respectable situation in society, took a prominent share in the day's proceedings'.¹⁴¹ Only fourteen months later in September 1819, recognising the change in public opinion following the Peterloo Massacre, the *Birmingham Gazette* published James Luckcock's letter sympathising with the plight of the poor. He wrote on 23 September 1819 that 'I sincerely sympathise with the lower class in their privations and sufferings...whoever tells them that their distresses are temporary, and that it is out of the power of human means to grant present relief, are uttering the foulest libel on the bounty of Providence'.¹⁴² Luckcock's reaction to the brutality of the government reaction to civil unrest is captured in Shelley's *The Mask of Anarchy*:

Tis to work and have such pay
As just keeps life from day to day
In your limbs, as in a cell
For tyrants' use to dwell'

'Rise like Lions after slumber
In unvanquishable number-
Shake your chains to earth like dew

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Which in sleep had fallen on you-

Ye are many - they are few.¹⁴³

Although written in 1819, the poem was not published until 1832, on the eve of parliamentary reform.

Few of the middle-class reformers in Birmingham would have supported Shelley's call for revolution. Nevertheless, in December 1829, Thomas Attwood established the Birmingham Political Union with the intention of uniting 'the lower and middle classes of the people of this town' to press for reform.¹⁴⁴ Thirty-seven individuals including George Edmonds and James Luckcock's son, Felix, signed the Declaration. Edmonds had been released from gaol in 1823 and continued to be active in radical politics, although the leadership of the radical movement in Birmingham passed to others. Only three of the signatories were investors in the CARD and BARD Databases. The Union held a public meeting on 25 January 1830 which 15,000 people attended. The Birmingham Political Union was a model for other Unions throughout the country, although in the factory towns of Lancashire and the West Riding, Reform was perceived as being too closely associated with the employers and failed to obtain popular working-class support.¹⁴⁵

At a public meeting on 7 May 1832, 200,000 people were estimated to have gathered at Newhall Hill in Birmingham. Most concerned with the reform of the economy, Attwood, ever the pragmatist, first espoused support for the Ultra-Tories before endorsing the Whig Reform Bill. Middle-class political affiliations were characterised by such unlikely alliances. Like the electors of George Eliot's *Middlemarch*, the citizens of North Warwick contemplated the Reform Bill and the prospect of 'a Tory Ministry passing Liberal measures, or of Tory nobles and electors being anxious to return Liberals rather than friends of the recreant Ministers'.¹⁴⁶ The Reform Bill finally received Royal Assent on 7 June 1832. In the event, it did little for the emancipation of the working classes. The Act did increase the franchise for the more wealthy sections of the middle class and recognised the importance of the new urban centres. Nationally suffrage increased to 217,000. Birmingham became a Parliamentary Borough with the right to elect two Members of Parliament. Approximately 7,000 of the 170,000 population in the new

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Municipal Borough, created in 1838, were entitled to vote under the £10 rental qualification.¹⁴⁷ The first election in Birmingham after the Act was passed was on 12 December 1832. Thomas Attwood and Joshua Scholefield, who was also a member of the Birmingham Political Union, were elected without opposition.

The Conservative interest continued to represent the county. North Warwickshire returned Sir Eardley Eardley Wilmot and William Stratford Dugdale in 1832. In the borough of Birmingham the Conservatives attempted to retrieve their electoral defeat. On 17 December, a Loyal and Constitutional Association was formed. Of the twelve founding members five were investors in the CARD and BARD Databases. The founders were typically representatives of the Tory landed interest, such as the Earls of Dartmouth and Bradford and Evangelical Anglicans such as Lord Calthorpe and Richard Spooner. Spooner had stood as a Radical in the 1820 election, but by 1832 'yellow Dick' had deserted to the Conservative cause. At the election in 1835, Spooner stood as a Conservative, but the two sitting members for the Liberal interest were reelected.¹⁴⁸

Birmingham became a Municipal Borough in 1838. Prior to this the Street Commissioners, who were dominated by Whigs, had been responsible for local government. Of the 50 Street Commissioners elected in May 1769, 17 were investors in the CARD and BARD Databases. These were manufacturers, like Samuel Galton, merchants, such as John Oseland or professionals such as Dr John Ash. At least 11 of the Commissioners were Dissenters; Quakers, such as Sampson Lloyd or Unitarians, like John Ryland.¹⁴⁹ After 1838, Radicals dominated the Municipal Council.

The investors in the CARD and BARD Databases were poorly represented amongst the Radical interest. Not surprisingly, the moderately wealthy manufacturers, merchants, professionals and rentiers were mainly concerned with the state of the economy. Where this agenda coincided with the objectives of the working classes, such as on political reform in the 1830s, they supported a more radical platform. The voting behaviour of investors in the CARD and BARD Databases, living in the North Warwickshire constituency, was investigated in four elections over the period 1774 to 1837. This analysis sought to determine whether the socio-economic background of

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investors had an effect on political affiliation.

7.6.1 Investor Voting Behaviour

Until 1838, when Birmingham was created a Municipal Borough, Birmingham electors were entitled to vote for two seats in the constituency of North Warwickshire. The votes cast were recorded in published Poll Books. The voting record of the investors in the CARD and BARD Database who lived in the North Warwickshire area was analysed for elections in 1774, 1820, 1832 and 1837. The votes cast per candidate were compared to the voting pattern of the constituency as a whole and the result significance tested.

Table 7.20: Investor Voting Behaviour in North Warwickshire 1774-1837

	Affiliation	Total Votes		Investor's Votes	
		Number	As % of Total	Number	As % of Total
1774					
Holte	Independent	1,845	28	20	41
Skipwith	Tory	2,954	45	23	47
Mordaunt	Court	1,787	27	6	12
Total		6,586	100	49	100
1820					
Lawley	Tory	2,153	69	7	35
Spooner	Radical	969	31	13	65
Total		3,122	100	20	100
1832					
Wilmot	Tory	2,237	41	32	45
Dugdale	Tory	1,666	30	27	38
Heming	Liberal	1,568	29	12	17
Total		5,471	100	71	100
1837					
Wilmot	Tory	2,771	27	22	33
Dugdale	Tory	3,301	32	20	30
Skipwith	Tory	2,303	23	14	21
Bracebridge	Liberal	1,802	18	11	16
Total		10,177	100	67	100

Source: Data extracted from Poll Books of the North Warwickshire elections 1774, 1820, 1832 and 1837.¹⁵⁰

The analysis set out in Table 7.20 shows that in 1774 and 1820, investors in the CARD and BARD Databases were more inclined than the electorate as a whole to vote for the Independent or Radical candidate. This was found to be significant using the Chi-squared test. Differences in voting behaviour in the 1832 and 1837 elections between

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investors and the electorate as a whole were found not to be significantly different.

The numbers of investors for whom voting information is known is very small. Nevertheless, in the 1820 election, there is a discernible difference in behaviour between socio-economic groups. Not surprisingly, the Radical vote came from Manufacturers, Merchants, most Professionals, urban Rentiers and Shopkeepers. The Tory vote was primarily from the Clergy and Landed groups. In 1820 Richard Spooner stood as the Radical candidate. A number of investors who voted for Richard Spooner in 1820 were Unitarians, such as John Kettle, a merchant, John Ryland, a wiredrawer and John and William Taylor from the wealthy banking family. John Taylor voted for Dempster Hemming, the Liberal candidate, in 1832 but rather confusingly appears to have joined the Conservative Association in that year.¹⁵¹ William Taylor voted for Richard Spooner in 1841,¹⁵² but by 1832 Spooner had become a Conservative. Since party politics was in its infancy in the early to mid-nineteenth century, it is perhaps not surprising that voters exhibited a degree of personal rather than party loyalty. After the 1832 Reform Act, a large proportion of the urban middle-class voters of the Borough of Birmingham became ineligible to vote in the North Warwickshire elections. The voting patterns of those investors still entitled to vote in North Warwickshire mirrored those of that constituency.

The voting patterns of investors in the four elections examined in detail between 1774 and 1832 do reflect the particular concerns of their class. The urban middle class were willing to adopt radical politics when their lifestyles became threatened and they made common cause with the working classes in the period leading up to the 1832 Reform Act. Generally, investors were much more likely to be members of Whig dominated institutions such as the Street Commissioners or the Conservative Association than they were to join the radical Birmingham Political Union. Carruthers suggests from his research into trading of government stocks in the early-eighteenth century that in imperfect markets there is evidence that shares were more likely to be traded amongst individuals sharing the same political beliefs than between those of different political backgrounds. Additional security was derived from membership of a group where political ties often reinforced business or family connections.¹⁵³ Certainly,

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the investors in the present study appear to share common political, religious and social backgrounds.

7.7 Development of the Professional Classes

The growth of the middling classes during the eighteenth and nineteenth centuries has been widely examined.¹⁵⁴ Nevertheless, the middle classes only accounted for a small proportion of the population at this time. The middle classes may have secured a disproportionate share of capital and income in comparison to the labouring classes but this was still insignificant in comparison with the assets held by the landed elite. Table 7.21 sets out the total population in each of the middle-class income groups identified by Colquhoun.

Table 7.21: Income of the Middle Classes of Great Britain and Ireland in 1812

Socio-Economic Group	Population of Group		Average Annual Income per Family	Group Income	
	Number	As % of Total	£	£ millions	As % of Total
Capitalists					
Knights/Esquires	110,000	0.64	2,000	22,000	5.11
Gentlemen	280,000	1.64	800	28,000	6.50
Living on Income					
Clergy					
Eminent	9,000	0.05	720	1,080	0.25
Lesser	87,500	0.51	200	3,500	0.81
Dissenting	20,000	0.12	100	500	0.12
Civil service	123,500	0.72	300-980	9,370	2.18
Officers in Armed Services	79,500	0.46		7,151	1.66
School Teachers	210,000	1.23	204	7,140	1.66
Lesser Merchants	159,600	0.93	805	18,354	4.26
Manufacturers	264,000	1.54	804	35,376	8.22
Professionals					
Lawyers	95,000	0.56	400	7,600	1.77
Eminent Merchants	35,000	0.20	2,600	9,100	2.11
Bankers					
Physicians etc.	90,000	0.53	300	5,400	1.25
Surveyors	43,000	0.25	300	2,610	0.61
Engineers					
Total Professional	263,500	2	3,600	24,710	5.78
Total	1,606,600	9	9,233	157,181	36.74

Source: Colquhoun.¹⁵⁵ Total population includes the total number of family members supported by each income earner.

Table 7.21 shows that 37 per cent of incomes in 1812 were earned by individuals who

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belonged to broadly defined middle-class occupations. These groups only made up 9 per cent of the total population and of these, the professional group comprised only 2 per cent of the population. In comparison, the proportion of professionals in the CARD Database was 8 per cent of the total number of investors. The investors in the CARD Database were largely those who, as Koditchek notes in his study of the Bradford capitalists in the period 1750 to 1850, were never wholly dependent for their income on their business activities. They 'developed diverse, balanced investment portfolios that enabled them to secure themselves as elites'.¹⁵⁶ Middle-class capitalists aspired to transfer resources from more risky direct investment in commercial and industrial assets into safer and more passive investment forms and to 'build a viable identity as gentlemen on the foundations of an increasingly rentier-capitalist role'.¹⁵⁷ The middle classes, particularly those from the professional groups were concerned with the dangers of 'sinking', economically and as a corollary, socially. As has been discussed in Chapter 5.2.2, the investment of surplus cash in canal and railway companies was not regarded as a high-risk strategy but part of a diversification into investments which offered the prospect of secure returns for family dependants and for a comfortable old age.

Researchers have noted the growth of the professional class in the late-eighteenth and nineteenth centuries.¹⁵⁸ This growth was a reflection of the development of new occupations, as society became more complex. In total 465 investors in the CARD Database were in professional occupations. As can be seen from Table 7.22, the proportion of professionals increased through time.

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Table 7.22: Growth in Professional Occupations 1760-1849 (Number of Investors employed in professional occupations)

	1760 to 1779	1780 to 1799	1800 to 1819	1820 to 1829	1830 to 1849	Total
Accountant, Bookkeeper	0	0	1	0	45	46
Architect, Surveyor	1	3	0	0	17	21
Attorney, Barrister	3	1	2	5	77	88
Banker	1	12	11	9	48	81
Broker	0	0	0	0	21	21
Dentist	0	0	0	0	3	3
Doctor, Surgeon	3	11	7	3	77	101
Engineer	0	1	0	0	16	17
Armed Forces	0	0	0	0	33	33
Other	0	0	0	0	54	54
Total Professionals	8	28	21	17	391	465
Total CARD Database Investors	243	926	528	297	3,919	5,913
Professionals as a Percentage of Total Investors	3	3	4	6	10	8

Source: Analysis of investors in the CARD Database.

Table 7.22 shows that the proportion of investors employed in professional occupations increased from 3 per cent to 10 per cent over the period 1760 to 1849. The new professions, such as accountants, brokers, engineers, architects and surveyors, were a response to the increasing specialisation of the business world. To some extent the development of these professions was a direct result of the changes brought about by investment in transportation infrastructure through the mechanism of publicly owned joint stock companies. Just as George Eliot's own father had grown from tenant farmer to successful land agent, surveyor and valuer so too does Fred Vincy in *Middlemarch*. His career in the Church is abandoned after the railway line surveyors appear in the countryside.¹⁵⁹ However, there was also enormous growth in the numbers of practitioners of older professions such as attorneys and barristers, doctors and surgeons.

Professional occupations were generally part of the growing urban middle classes. In the present study 16 per cent of investors from Birmingham were from the Professional and Banker categories, as can be seen in Table 7.23.

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Table 7.23: Birmingham Investors in the Professional and Banker Group

	Number	As % of Total
Attorney	13	23
Banker	20	36
Doctor/surgeon	18	32
Engineer	1	2
Armed forces	1	2
Surveyor	3	5
Total Professionals	56	100
Total investors	346	100
Professionals as a Percentage of Total Investors	16	

Source: Investors from the CARD Database with addresses in Birmingham.

The analysis in Table 7.23 confirms the findings of earlier research, which used trade directories as source documents. This showed physicians and surgeons, attorneys and solicitors as the most dominant professional groups.¹⁶⁰ Although by 1852 the more modern professions such as architects, accountants, surveyors and auctioneers and estate agents were starting to become more widespread. The absence of these professions amongst the CARD investors from Birmingham may be because they were probably less wealthy than members of the older professions and did not belong to the social elite.¹⁶¹

Surprisingly, the largest category of Birmingham Professionals was that of doctors and surgeons, only slightly fewer in number than Bankers. The medical group is also understated since it does not include unqualified practitioners such as apothecaries and druggists. The prominence of the medical profession may be the result of their access to information networks. The number of Birmingham Professionals who were also members of the 33 voluntary societies in the Birmingham Database is shown in Table 7.24.

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Table 7.24: Birmingham Professionals who were also Members of the Birmingham Database

	Birmingham Professionals		
	Number	Members of Birmingham Database	As % of Total
Bankers	71	10	14
Doctors	93	8	9
Attorneys	61	5	8
Total	225	23	10

Source: Data from 973 members of Birmingham voluntary societies on the Birmingham Database and Birmingham Professionals from the CARD Database, as defined in Appendix III.

In total, 23 out of the 465 Birmingham Professionals (5 per cent) were also members of the Birmingham Database. The 23 Professionals came from three groups, Bankers, Medical Practitioners and Attorneys. The presence of Bankers and Attorneys at the heart of Birmingham society is not remarkable. The importance of these two groups in acting as advisers and intermediaries has already been discussed. There is also evidence that some members of the medical profession were also active investors and may also have been sources of information and conduits for its transfer. Two Birmingham doctors, John Ash and William Small, were original subscribers to the BCN and members of the management committee.¹⁶² They were well connected to other prominent investors in Birmingham through their work on the committee of the General Hospital.¹⁶³ Elizabeth Anne Galton, the daughter of Samuel Tertius Galton, the Birmingham banker, noted in her diary that their family doctor was Joseph Hodgson. Dr. de Lys and Dr. John Johnstone were also friends of the family.¹⁶⁴ Dr. de Lys's daughter, Barbara, and Drs. Hodgson and Johnstone all owned shares in the BCN in 1840. Dr. Johnstone owned 24 shares jointly with the bankers, J. L. Moilliet, Paul Moon James, John Barclay Galton and Samuel Tertius Galton.¹⁶⁵ Adele Galton, the sister of Elizabeth Anne, married a Dr. Booth, although there is no evidence in the present study that he was a canal or railway investor. These doctors must all have mixed with the wealthy and financially sophisticated elite of Birmingham middle-class society. Like pollinating bees they may well have passed on information from one patient to another. The relative prominence of members of the medical profession in investment in canal companies has also been noted by other researchers. Ward recorded the involvement of doctors from

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Liverpool in speculative activity in the late eighteenth century but could offer no explanation.¹⁶⁶

The relative absence of newer professions amongst the Birmingham-based investors is also a reflection of the lack of interest in railway stocks from the investors in that city. It will be recalled that railway investors tended to dominate the CARD and BARD Databases in the later years, when these new professions began to emerge. There is a wider mix of professionals from both Bristol and from Liverpool where railway investment was more popular. This is further evidence of the two separate constituencies of canal and railway investment already discussed in Chapter 6.2.3. The difference in the types of Professional investor in the canal and railway companies is analysed in Table 7.25.

Table 7.25: Professional Investors in Canal and Railway Companies

	Canal		Rail	
	Number	As % of Total	Number	As % of Total
Accountant, Clerk, Bookkeeper	3	2	43	13
Architect, Surveyor	5	3	16	5
Attorney, Barrister	28	20	60	19
Banker	53	37	28	9
Broker	0	0	21	7
Dentist	0	0	3	1
Doctor, Surgeon	45	31	56	17
Engineer	3	2	14	4
Armed Forces	2	1	31	10
Other	4	3	50	16
Total	143	100	322	100

Source: Analysis of the total number of investors in the CARD Database classified as Professionals and Bankers.

Table 7.25 shows that the old professions of attorneys, barristers, bankers, doctors and surgeons dominated the professionals who invested in the canal companies. Although both the legal and medical professions are still the most important professions amongst the railway company investors, the proportion of bankers has declined markedly and the newer professions such as accountants have increased substantially.

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7.8 Conclusions

The sample population of canal and railway company investors was selected on the basis of economic criteria. The investors are drawn from a wide spectrum of socio-economic backgrounds. Nevertheless they share many social and cultural values. These investors were broadly representative of the growing middle class. They were clearly differentiated from the landed class in terms of the sources of their wealth and their attitudes to risk. The investors exhibited strong religious affiliations. A large number of the sample population were dissenters, who belonged to closely inter-connected family groups. Membership of societies, often based on common political or religious affiliation, provided fora for social interaction, which reinforced class identity, but also provided a medium for the exchange of ideas and information.

¹ J. Smail, *The Origins of Middle-class Culture, Halifax, Yorkshire 1660-1780* (Ithaca and London, 1994), p. 236 and J. Seed, 'From "Middling Sort" to Middle Class in Late Eighteenth- and Early Nineteenth-century England', in M. L. Bush (ed.), *Social Orders and Social Classes in Europe Since 1500. Studies in Social Stratification* (Harlow, 1992), p. 115. R. S. Neale, *Class and Ideology in the Nineteenth Century* (London, 1972), p.129 and H. Perkin, *The Origins of Modern English Society, 1780-1880* (London, 1969), pp.27-8.

² R. J. Morris, *Class and Class Consciousness in the Industrial Revolution 1780-1850* (London and Basingstoke, 1979), pp. 12-13.

³ W. D. Rubinstein, *Men of Property, the Very Wealthy in Britain since the Industrial Revolution* (London, 1981), pp. 10-11, Rubinstein, 'Businessmen into Landowners. The Question Revisited', in N. Harte and R. Quinault (eds.), *Land and Society in Britain, 1700-1914. Essays in Honour of F. M. L. Thompson* (Manchester, 1996), p. 109, L. Stone and J. C. Fawtier Stone, *An Open Elite. England 1540-1880* (Oxford, 1986), p. 291 and F. M. L. Thompson, 'Business and Landed Élites in the Nineteenth Century', in F. M. L. Thompson (ed.), *Landowners, Capitalists and Entrepreneurs. Essays for Sir John Habakkuk* (Oxford, 1994), pp. 146-65.

⁴ T. Koditchek, *Class Formation and Urban-industrial Society: Bradford, 1750-1850* (Cambridge, 1990), p. 45.

⁵ Smail, *Origins of Middle-class Culture*, pp. 191-2 and Perkin, *The Origins of Modern English Society*, pp. 218-52.

⁶ Morris, *Class and Class Consciousness*, p. 14.

⁷ Neale, *Class and Ideology*, pp. 30-1.

⁸ Davidoff and Hall, *Family Fortunes*, p. 24.

⁹ P. Colquhoun, *A Treatise on the Wealth, Power and Resources of the British Empire* (London, 1814), pp. 124-5, Table No. 4.

¹⁰ H. Beeke, *Observations on the Produce of Income Tax* (London, 1799), pp. 183-4.

¹¹ D. Bernoulli, *Specimen Theoriae Novae de Mensura Sortis* (Exposition of a New Theory on the Measurement of Risk) (St. Petersburg, 1738), translated by Louise Sommer, *Econometrica*, Vol. 22 (1954), pp. 23 - 36 and W. F. Sharpe, 'Investor Wealth Measures and Expected Return', in W. F. Sharpe (ed.), *Quantifying the Market Risk Premium Phenomenon for Investment Decision Making* (Charlottesville, Virginia, 1990), pp. 29-37.

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- ¹² MS 839/53, Julius Hardy Diary, Birmingham Reference Library,
- ¹³ That is owning more than 3,000 acres and earning more than £3,000 p.a. in rents.
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CHAPTER 8: CONCLUSIONS

This research set out to establish that risk assessment and the strategies used to mitigate risk are fundamental to the understanding of middle-class society in the period 1760 to 1850. The sample of investors in West Midland's canal and railway companies was selected solely on the basis of economic criteria. The resulting population of 5,913 investors was intended to be neutral in respect of social and cultural factors, although the economic selection criterion excluded those who did not have sufficient surplus wealth to invest. Theoretically the sample population could have included anyone from a sufficiently wealthy background. In fact it was dominated by individuals from socio-economic backgrounds typical of the middle classes.¹ This large, homogenous population was used to re-evaluate earlier research into the ways in which the middle class was differentiated from the landed and labouring classes. The effect of socio-economic background and gender on attitudes to risk and risk mitigation within this middle-class population was also investigated.

The sample population of investors was classified into categories according to gender, socio-economic background and geographical location. The behaviour of each of these groups was then examined under different risk scenarios. Earlier research has categorised investors into two types, 'financial' investors and 'economic' investors.² In the present research, financial investors corresponded to the socio-economic groups of Rentiers, the Landed, Clergy, Professionals and Bankers. The remaining categories of Merchants, Manufacturers, Artisans and Shopkeepers were *prima facie* economic investors. This crude classification of financial and economic investors ignores the likelihood that economic investors may have had mixed motives and behaved as 'financial' investors in some circumstances and that economic investors may not have had a specific commercial interest in the company in which they held shares. It also ignores differences in investment strategy amongst the different categories of financial investors. Nevertheless, discernible differences in the behaviour of these broadly defined groups of financial and economic investors were observed.

The prevailing risk environment in the eighteenth and nineteenth centuries was discussed in Chapter 3. Other researchers have suggested that newly acquired affluence was threatened by the risk of early death, war or business failure, thus

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encouraging the adoption of risk mitigation strategies such as life insurance. At the same time, some sectors of society were permeated by reckless, risk-seeking behaviour.³ Even government finance and life insurance embraced the ethos of lotteries and gambling.

Other studies have attempted to correlate the incidence of bankruptcy with different phases of the economic cycle.⁴ Although a tendency for bankruptcies to increase in periods when the economy was expanding was observed, the research could not establish a statistically significant correlation between specific phases of the business cycle and business failure. These inconclusive results are probably because the factors affecting bankruptcy in the eighteenth and nineteenth centuries were too varied and the time lag between economic incidents and business failure was too long. In the present study, the turnover of shares, which are relatively liquid assets, was observed at different stages in the business cycle, and in war and peacetime conditions. The extent to which different socio-economic groups were effected by the prevailing risk environment was investigated by analysing the purchases and sales of shares in two of the canal companies over several business cycles during the period before and after the American and French Wars. The study revealed that more shares changed hands in the troughs of business cycles than during peaks (Chapter 3.5.2). The turnover of shares belonging to economic investors, such as Merchants and Manufacturers, was higher during troughs in the cycle than that of financial investors. On the other hand, financial investors were more likely to sell in peak or neutral periods. Merchants, and increasingly over the period, Manufacturers, were dependent on external credit from banks and it is not surprising that they were most adversely affected by downturns in the business cycle.⁵ The tightening of conditions in the money market during downturns in the economy may have required them to liquidate investments to provide additional cash for their business at the least advantageous time. Behaviour of investors during periods of war and peace also confirms the vulnerability of the Merchant group to the disruption of trade (Chapter 3.4.2). The financial investors in the sample population tended to buy canal shares less frequently during wartime. This appears to confirm the financial sophistication of this group who may have been switching from joint stock shares into

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government securities as wartime yields on government stocks rose.⁶

The behaviour of investors in response to the underlying risk environment was the background to the further study of the response of these shareholders to specific investment risks. Investment risk is the uncertainty of the return on an investment, in terms of income and capital. Uncertainty results from an investor having inadequate information. This may be because the information is not available or inaccurate, or that investors do not have equal access to information. Equal access to good quality information, which all investors interpret in the same way, is one of the requirements for an efficient market. Other factors which are essential for an efficient market include liquidity, which is a function of both the number and variety of shares available for trading, and the existence of legal and institutional structures to facilitate the transfer of shares and the presence of market makers and arbitrageurs.⁷ The inequalities in an inefficient market heighten uncertainty and the level of investment risk. Earlier research on the efficiency of the market for shares in the late-eighteenth and mid-nineteenth centuries used data on the yield of government or quasi-government stocks.⁸ Researchers are agreed that the market for government stocks was well developed by the end of the eighteenth century.⁹ Although Mirowski challenges the view that the market was efficient.¹⁰ The present study extends this research to the market for joint stock shares in the canal and railway companies. The prices of canal company shares were not regularly reported until 1811. However, share prices exist for two of the companies in the present study in a complete series for the last three decades of the eighteenth century up to and beyond the period at which the *Course of the Exchange* started to report prices. As this information extends over such an important period in the development of the capital market it can be used to shed new light on the debate about when the national capital market developed. The yield on the shares of the Birmingham Canal Navigation was compared to that on Consols for the period 1770 to 1828. The fluctuations in the yield between the canal share and the bellwether government stock were found to be significantly correlated. This is new evidence for the existence of a national capital market in the late-eighteenth century and corroborates the findings of Buchinsky and Polak's research in the property market.¹¹ A similar exercise on the yield

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of the shares in the Stourbridge Navigation failed to produce a statistically significant correlation. Further investigation revealed that reporting of the price of the BCN shares in both the local market and the stock exchange in London were closely matched, whereas the reporting of share prices of the Stourbridge Navigation lagged by about twelve months. This evidence shows that the eighteenth-century capital market in canal company shares still exhibited inefficiencies in the transfer of information. Inefficiencies would have been likely to cause further differentiation in the investment risk amongst different companies.

Research on twentieth- and twenty-first- century stock markets has defined the relative risk of a stock as a function of the variability of its yield in comparison to the performance of the market or a relevant sector of the market and the probability of the stock earning a particular yield.¹² The present study attempted to construct an index of the yield on late-eighteenth- and mid-nineteenth-century canal company stocks. However, the poor quality of the underlying data on prices and dividends made them unsuitable for use in quantitative risk analysis. A series of measures were devised to rank each canal company according to the level of risk during the construction and operating periods. Contemporary opinion regarded railways as generally low-risk investments¹³ and it proved virtually impossible to differentiate between the group of railway companies in the present study. The canals companies were found to be more differentiated in terms of risk. The present study investigated whether the gender or socio-economic background of investors effected their propensity to take different levels of investment risk.

The results of this study suggest that different socio-economic groups did have varying investment objectives. Differences in the behaviour of the financial and economic investors were found to be more pronounced during the construction period than the operating period (Chapter 4.5.3.3). This is probably because the overall level of risk was higher before the canals were completed. In addition, inertia of investors holding onto shares acquired earlier probably blurred results in the operating period. Financial investors, particularly the Clergy, were much more likely than economic investors to follow low-risk investment strategies during the construction period.

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Financial investors were probably more likely to make decisions based on financial criteria, such as the yield on a particular stock. Economic investors may have included other benefits in their risk analysis and found higher risks to be acceptable. Some economic investors, such as Manufacturers or Merchants, may have had access to better information about the companies, whereas, some financial investors, such as the Clergy, were isolated from the business community.

The risk analysis revealed the Landed group exhibited different behaviour to that of other financial investors. This may be further evidence of the differentiation of the middle and landed classes. It was established that financial assets, such as shares, were not an important part of the wealth of the landed group. The differentiation of different groups on the basis of their attitudes to risk was investigated further by the examination of the strategies used to mitigate risk. Strategies such as portfolio management and life insurance have been examined by other researchers.¹⁴ In the present, study investors who held shares in more than one canal or railway company, or who held life insurance policies were investigated. The research also attempted to establish the extent to which the sample population also held investments in land and government stocks.

The study found evidence that a substantially higher proportion of investors held multiple investments in canal companies than in railway companies. This confirms the premise that investors were capable of differentiating between different levels of risk in the canal companies in the present study. There is some evidence to suggest that investors holding higher-risk investments were more likely to hold a portfolio of canal shares. The railway companies in the present study were a much more homogenous and lower-risk group. Investors generally held the shares of only one of these companies. Financial investors, in particular Rentiers and Women, were more likely to hold multiple investments than economic investors. Holding of multiple investments might be a function of wealth, which would explain the greater incidence of Rentiers. Female investors, however, were generally less wealthy than their male counterparts, and thus the holding of multiple investments is more likely to denote risk-averse behaviour.

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Rentiers and Women were also more likely to hold a significant part of their assets in shares. There is also evidence that government stocks were widely held by investors in the present study (Chapter 4.4.1). Again, financial investors exhibited a preference for holding financial assets. Bankers and Women were the two groups of investor in the present study most likely to hold government stocks. The value of the holdings was substantial, which contradicts contemporary evidence that holdings of these stocks were generally small although the size of the sample in the present study was extremely limited.¹⁵ In contrast, little evidence was found of substantial landowners holding shares or of investors holding substantial amounts of land (Chapter 4.2.1). This corroborates Rubinstein's research into the extent to which the wealthy middle class acquired estates and assumed the lifestyle of the landed gentry.¹⁶ Little support was found for Thompson's view that the descendants of wealthy middle-class businessmen joined the landed classes.¹⁷

Earlier research has made the case for the differentiation of the middle classes from the landed and labouring classes on the basis of their sources of income. The present study, based on a sample population selected on the basis of the economic criterion of surplus investment capital is clearly differentiated from the labouring classes, who relied on manual labour and did not own property.¹⁸ The present study suggests that it is also possible to differentiate the middle classes from the gentry not only by their lack of investment in land, which has already been explored by other researchers, but also by importance the middle classes placed in the ownership of liquid financial assets. These investments could be easily disposed of to provide extra capital for their businesses or passed on to their descendants in the form of marriage portions or the seed capital for future business enterprises.¹⁹ The mix of investments held by the investors in the sample population, the age they acquired them and how they disposed of them on death was investigated. The present study established that investors first acquired shares at the average age of forty, which corroborates evidence of the male middle-class property cycle described by Morris.²⁰ The study also revealed that investors first took out life insurance at the average age of thirty-seven.

A very high proportion of investors held life insurance (Chapter 5.3.1), which

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confirms the prudence of the sample population and its willingness to embrace financial innovation. Again, differences were distinguished between the behaviour of economic and financial investors. Life insurance was primarily used by financial investors.

Professionals insured their own lives to protect their families in the event of their premature death or to insure partnership arrangements or indentures. Most commonly, life insurance was taken out by males in their thirties, presumably to protect young families. The present study revealed that female investors, who were drawn from amongst the wealthier socio-economic backgrounds, did not use life insurance extensively. This contradicts evidence from other studies, which show relatively large numbers of women used life insurance to protect their income or insure a debt.²¹

Women in the sample population rarely need to insure their own lives, as they did not have an income from a trade. The lives of these women were more likely to be insured by others to preserve a reversionary income. Lower income groups, such as Artisans and Shopkeepers were active users of life insurance since it was easily accessible through local agents. It was also a relatively inexpensive way to provide, through annual payments out of income, a capital sum for dependants in the event of the policyholder's death.

Access to information was the key to effective risk evaluation. Analysis, in Chapter 6, of the different characteristics of canal and railway investors suggests that two different mechanisms for information transfer and investor behaviour were in operation. The dissemination of information about canal companies appears to have been predominantly by personal contact, and share transfers took place largely in the local market, although these transactions were informed by the prevailing sentiment in the national market. New mechanisms evolved to transmit information to potential investors in the railway companies. Share dealing became institutionalised and information was disseminated through formal public media such as the London and provincial stock exchanges and the press. In the present study there was little overlap between investors in canal and railway companies. The local exchange of canal company shares co-existed with the national, institutionalised railway share market. The two populations of investors were separate and do not appear to have moved from using

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one market to the other. Certainly in the case of investors in Birmingham, where canal stocks had been enthusiastically embraced, there appears to have been relatively little interest in railway investment. Canal investment was likely to have been regarded as requiring greater personal scrutiny and investigation, hence preserving the older system of more personal information transfer. In contrast, there is evidence to suggest that railway companies were regarded as a more homogenous low-risk commodity, which could be adequately marketed through more impersonal media.

This research appears to confirm the view that social learning was a more effective means of transferring information than the press.²² Personal contact between members of the middle-class elite in various public spheres was important, although family relationships, often reinforced by religious affiliation, were probably the most effective means of information transfer. The research provided evidence of the importance of nonconformists as providers of capital, which corroborates the views of earlier researchers on the importance of these groups in the business community.²³ This research distinguished between the behaviour of Quakers and Unitarians. A much higher proportion of Quakers were investors. Quakers were also more likely to be members of the voluntary societies whose members were recorded in the Birmingham Database. This provides firm evidence to substantiate earlier research, which suggests that Unitarians retreated from public life after the Church and King riots in Birmingham in 1791.²⁴

Professionals were the largest single group of investors who belonged to voluntary societies. This group was probably the most likely to benefit from contact with other influential people. This study confirms earlier research that there was a growth in the new professions over the period.²⁵ The proportion of investors who were Professionals increased from 3 to 10 per cent over the period. However, these were much more likely to be railway investors than canal investors. This further illustrates the widening of the constituency of investors who bought shares in the national capital market.

Earlier researchers have suggested that during the period 1760 to 1850 the middle classes not only came to differentiate themselves from the landed aristocracy

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and the gentry in terms of their social activities and religious affiliation, but they also began to differentiate themselves politically.²⁶ In towns such as Birmingham, the middle classes made common cause with working-class Radicals in the agitation for reform of the franchise.²⁷ Although their support was ultimately directed towards different objectives, which preserved middle-class values. Nevertheless, the political behaviour of the population of investors provides quantitative evidence of the objectives of middle-class voters in the period. Investors who represented the wealthy middle class were significantly more likely than the constituency as a whole to support Independent or Radical candidates in the period up to the 1832 Reform Act. Radical support made common cause amongst both financial and economic investors. Only the Landed and the Clergy did not support the Radical agenda.

The present research successfully distinguishes between the behaviour of male financial and economic investors. The use of risk analysis as a tool highlights the anomalous behaviour of female investors. Previous researchers have tended to underestimate the importance of women as investors.²⁸ In the present study, 18 per cent of canal shareholders and 11 per cent of railway shareholders were women. There is no substantial evidence to suggest that they were any more than passive financial investors. However, their collective presence was of great importance to the viability and liquidity of the equity markets. The research shows that women's estates were substantially smaller than those of men, (an average of 60 per cent lower probate value). This may be because they originally inherited fewer stocks than their male siblings. Nevertheless, the value of their share holdings was only 30 per cent below that of their male counterparts. Analysis of their propensity to take risk suggests that they invested in higher-risk canal companies during the construction period but sought out higher yielding, low-risk investments in the operating period. Their behaviour conformed more to the model of economic investors, possibly because their investment activity was directed by male advisors or they had less access to information in the early years of a company's life. Certainly over the life of a company, females conformed to the behaviour typical of financial investors. The present study confirms that female investors were substantial holders of low-risk government securities, and that they were also more likely

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than most male investors to hold shares as part of portfolio of investments.

The present research has attempted to inform the debate on the differentiation of the middle class from the perspective of how they assessed and mitigated investment risk. The research has produced evidence of a class of financial investors with common values of risk assessment and common prudent objectives to preserve and pass on their wealth to future generations in the form of liquid, financial assets. These investors did not own substantial amounts of land, nor did they appear to aspire to the lifestyle of the gentry. They developed and supported cohesive social and cultural activities within the urban environment. This environment perpetuated their ability to acquire and disseminate information, which informed their ability to evaluate and mitigate risk effectively.

¹ L. Davidoff and C. Hall, *Family Fortunes. Men and Women of the English Middle Class, 1780-1850* (London, 1987), p. 24.

² J. R. Ward, *Finance of Canal Building in Eighteenth-Century England* (Oxford, 1974), pp. 18 and 131.

³ G. Clark, *Betting on Lives. The Culture of Life Insurance in England, 1675-1775* (Manchester, 1999), pp. 33-40.

⁴ J. Hoppit, *Risk and Failure in English Business 1700 - 1800* (Cambridge, 1987), pp. 130-6, V. Markham Lester, *Victorian Insolvency, Bankruptcy, Imprisonment for Debt, and Company Winding-up in Nineteenth Century England* (Oxford, 1995), pp. 273-7 and 281 and K. J. Weiller and P. Mirowski, 'Rates of Interest in 18th-Century England', *Expl. in Econ. Hist.*, Vol. 27, No. 1 (1990), pp. 1-28.

⁵ M. J. Daunton, *Progress and Poverty. An Economic and Social History of Britain 1700-1850* (Oxford, 1995), pp. 247-8.

⁶ C. E. Heim and P. Mirowski, 'Interest Rates and Crowding out During Britain's Industrial Revolution', *J. of Econ. Hist.*, Vol. III, No. 1 (1987), p. 38 and R. A. Black and C. G. Gilmore, 'Crowding Out During Britain's Industrial Revolution', *J. Econ. Hist.*, Vol. L, No. 1 (1990), pp. 109-31.

⁷ J. M. Samuels, 'Inefficient Capital Markets and their Implications' in F. G. J. Derkinderen and R. L. Crum (eds.) *Risk, Capital Costs, and Project Financing Decisions* (London, 1981), pp. 129-48.

⁸ P. Mirowski, 'What Do Markets Do? Efficiency Tests of the 18th-Century London Stock Market', *Expl. in Econ. Hist.*, Vol. 24, No. 2 (1987), pp. 107-29 and P. Mirowski, 'The Rise (and Retreat) of a Market: English Joint Stock Shares in the Eighteenth Century', *J. of Econ. Hist.*, Vol. XLI, No. 3 (1981), pp. 565-7.

⁹ E. V. Morgan and W. A. Thomas, *The Stock Exchange* (London, 1962), pp. 19-20, H.

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Roseveare, *The Financial Revolution 1660 -1760* (London, 1991), pp. 35-51 and P. G. M. Dickson, *The Financial Revolution in England. A Study in the Development of Public Credit, 1688 - 1756* (London, 1967), p. 514.

¹⁰ Mirowski, 'The Rise (and Retreat) of a Market', p. 576.

¹¹ M. Buchinsky and B. Polak, 'The Emergence of a National Capital Market in England, 1710-1880', *J. of Econ. Hist.*, Vol. LIII, No. 1 (1993), p. 18.

¹² W. F. Sharpe, *Portfolio Theory and Capital Markets* (New York, 1970), pp. 82-3.

¹³ H. Scrivenor, *The Railways of the United Kingdom Statistically Considered, in Relation to their Extent, Capital, Amalgamation, Debentures, Financial Position, Acts of Parliament by which they are Regulated, Creation and Appropriation of Shares, Calls, Dividends, and Various Other Minor Particulars* (London, 1849), p. 25 and A Successful Operator, *A Short and Sure Guide to Permanent Investment in Railways. A Few Plain Rules. How to Invest and Speculate with Safety and Profit in Railway Shares* (London, 8th edition, 1846).

¹⁴ Sharpe, *Portfolio Theory*, pp. 82-96, H. M. Markowitz, *Portfolio Selection: Efficient Diversification of Investments* (New York, 1959), pp. 6 and 210 and Clark, *Betting on Lives*, p. 27.

¹⁵ F. Playford, *Practical Hints for Investing Money with an Explanation of the Mode of Transacting Business on The Stock Exchange* (London, 1855).

¹⁶ W. D. Rubinstein, *Men of Property, the Very Wealthy in Britain since the Industrial Revolution* (London, 1981), pp. 10-11 and Rubinstein, 'Businessmen into Landowners. The Question Revisited', in N. Harte and R. Quinault (eds.), *Land and Society in Britain, 1700-1914. Essays in Honour of F. M. L. Thompson* (Manchester, 1996), p. 109.

¹⁷ F. M. L. Thompson, 'Business and Landed Élites in the Nineteenth Century', in F. M. L. Thompson (ed.), *Landowners, Capitalists and Entrepreneurs. Essays for Sir John Habakkuk* (Oxford, 1994), pp. 146-65.

¹⁸ J. Seed, 'From "Middle Sort" to Middle Class in Late Eighteenth- and Early Nineteenth-century England', in M. L. Bush (ed.), *Social orders and Social Classes in Europe Since 1500. Studies in Social Stratification* (Harlow, 1992), p. 115 and J. Smail, *The Origins of Middle-class Culture, Halifax, Yorkshire 1660-1780* (Ithaca and London, 1994), pp. 121, 191-2 and 236.

¹⁹ Seed, 'From "Middle Sort" to Middle Class', pp. 115, 117, 121 and 132 and Davidoff and Hall, *Family Fortunes*, pp. 18-23.

²⁰ R. J. Morris, 'The Middle Class and the Property Cycle during the Industrial Revolution', in T. C. Smout (ed.), *The Search for Wealth and Stability. Essays in Economic and Social History Presented to M. W. Flinn* (London, 1979), pp. 91-113.

²¹ Clark, *Betting on Lives*, p. 185.

²² R. J. Shiller, 'Stock Prices and Social Dynamics', in R. H. Thaler (ed.), *Advances in Behavioral Finance* (New York, 1993), p. 176.

²³ Rubinstein, *Men of Property*, pp. 146 and 148 and E. Hagen, *On the Theory of Social Change. How Economic Growth Begins* (Homewood, Illinois, 1962), pp. 295-300.

²⁴ Davidoff and Hall, *Family Fortunes*, pp. 96-7.

²⁵ P. Ballard, 'A Commercial and Industrial Elite. A Study of Birmingham's Upper Middle Class 1780-1914' (PhD thesis, University of Reading, 1983), p. 52.

²⁶ Davidoff and Hall, *Family Fortunes*, pp. 14-24, A. Briggs, *The Age of Improvement 1783-1867* (Harlow, Essex, 1959), pp. 129-49 and Smail, *The Origins of Middle-class Culture*, pp. 122-3.

²⁷ F. M. L. Thompson, *The Rise of a Respectable Society, A Social History of Victorian Britain, 1830-1900* (London, 1988), p. 15.

²⁸ Ward, *Finance of Canal Building* and M. R. Reed, *Investment in Railways in Britain, 1820 - 1844* (Oxford, 1975), refer only to the percentage of female shareholders in the companies they studied and Davidoff and Hall, *Family Fortunes*, p. 278.

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1. Selection Criteria

1.1 Canal Companies

The eleven canal companies included in the present study represent the total number of such companies, which operated in the West Midlands for which shareholder information is available. The canal companies included in the CARD Database are listed in Table 1 below.

Table 1: Canal Companies Included in the CARD Database

	Code	Date Authorised	Original Share Capital	Final Share Capital
			£	£
Birmingham Canal Navigations	BCN	1768	70,000	112,000
Birmingham & Liverpool Junction	BLC	1826	400,000	800,000
Coventry	CCC	1768	50,000	87,500
Dudley	DUD	1776	7,000	206,325
Grand Junction	GJC	1793	500,000	1,800,000
Stourbridge Navigation	SN	1776	30,000	43,000
Stourbridge Extension	SEC	1837	na.	49,000
Warwick & Birmingham	WCB	1793	69,300	160,000
Warwick & Napton	WBRC	1794	79,500	79,500
Worcester & Birmingham	WOBC	1791	180,000	610,000
Gloucester & Berkley	GBC	1793	112,000	440,000
Total			1,497,800	4,387,325

Source: Original share capital from Ward.¹ Final share capital from Course of the Exchange, Mileage and Dates Authorised and Completed from Hadfield.²

1.2 Railway Companies

The total number of railway companies which obtained parliamentary approval to construct lines in the West Midlands are set out in Table 2. Those included in the CARD Database and the Share Price Analysis, discussed in Chapter 4, are indicated in the Table.

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Table 2: Total Capital Authorised by Parliament for Railway Companies in the West Midlands between 1826 and 1848

Railway	Year	Capital £'000	Included in CARD Database	Included in Share Price Analysis
Liverpool & Manchester	1826	510		✓
Cheltenham	1827	0.35	✓	✓
Birmingham & Derby Junction	1836	630		✓
	1840	170		
Birmingham & Gloucester	1836	950	✓	✓
	1843	106		
Birmingham, Bristol and Thames Junction	1836	150		✓
	1840	60		
Bristol & Gloucestershire	1828	45		
	1834	20		
	1839	400		
	1842	200		
Cheltenham & Great Western	1836	750	✓	✓
	1842	750		
Grand Junction	1833	1,040	✓	✓
	1835	52		
	1838	546		
	1840	125		
	1841	441		
	1844	257		
	1834	0		
Great Western	1835	2,500	✓	✓
	1839	1,250		
Great Western Additional powers for the purchase of the Birmingham & Oxford and Birmingham, Wolverhampton and Dudley Railways	1848	500		
London & Birmingham	1833	2,500	✓	✓
	1835	0		
	1837	0		
	1839	1,000		
Manchester & Birmingham	1837	2,100		✓
Stratford & Moreton	1833	0		
Warwick & Leamington Union	1842	130		
Birmingham & Oxford Junction	1846	700	✓	✓
Birmingham & Oxford Junction (Birmingham Extension)	1846	300		
Birmingham, Wolverhampton & Dudley Amendment	1847	50		
Birmingham, Wolverhampton & Stour Valley	1846	1,110		
Coventry, Nuneaton, Birmingham & Leicester	1846	270		
Oxford, Worcester & Wolverhampton	1845	1,500		✓
Alteration and extension	1846	220		
Amendment	1848	750		
TOTAL		21,571		

Source: List of companies and share capital from Scrivenor.³

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1.3 Joint Stock Banks

The total number of investors included in the Bank Database, (BARD Database), which comprises shareholder information from two banks, is shown in Table 3 below.

Table 3: Share Capital and Investors Included in the BARD Database

	Code	Date	Issued Share Capital	Shares Included in BARD Database	Shares in Database as Percentage of Shares in Issue	Investors
			£'000	£'000	%	Number
Coventry Union Bank	CUB	1836	200	200	100	262
Stourbridge & Kidderminster Bank	SKB	1834	250	230	92	356
Total			450	430	96	618

Source: Coventry Union Bank data from Deed of Settlement and List of Shareholders 1836.⁴ Stourbridge & Kidderminster Bank data from Deed of Settlement 1834.⁵

2. Completeness of Source Documents

The source documents have varying degrees of completeness. A complete list of source documents is given in Appendix III. Table 4, below, gives the percentage of shares in each of the canal and railway companies for which shareholder information was available and was included in the CARD Database.

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Table 4: Total Share Capital Analysed in CARD Database

	Total Shares in Issue	Shares Included in CARD Database	Percentage of Total Shares Included in CARD Database
	Number	Number	%
Canal Companies			
BCN1768	500	500	100
BCN1790	500	202	40.4
BCN1800	500	161	32.2
BCN1810	500	107	21.4
BCN1840	8,000	7,594	94.93
BLC1826	4,000	2,554	63.85
BLC1830	4,000	366	9.15
BLC1841	4,000	800	20
CCC1768	500	335	67
CCC1780	500	93	18.6
CCC1790	500	133	26.6
CCC1800	500	74	14.8
CCC1810	500	83	16.6
CCC1816	500	255	51
CCC1820	500	66	13.2
DUD1776	2,074	62	2.99
DUD1791	2,074	463	22.31
GBC1817	440	372	84.55
GJC1793	5,000	2,101	42.02
GJC1800	5,000	1,964	39.28
SEC1837	500	359	71.8
SN1776	300	288	96
SN1809	300	256	85.33
WBRC1794	795	780	98.11
WCB1793	1,000	921	92.1
WCB1798	1,000	522	52.2
WCB1808	1,000	571	57.1
WCB1820	1,000	546	54.55
WCB1840	1,500	1,044	69.6
WCB1849	1,500	422	28.13
WOBC1791	1,800	1,625	90.28
Railway Companies			
BGR1836	9,500	na	na
BGR1844	9,500	1,974	20.78
BOR1847	50,000	na	na
CGW1836	7,500	1,097	14.63
GJR1845	66,943	17,393	25.98
GWR1835	25,000	22,675	90.7
MBR1838	30,000	28,939	96.46
OWR1845	30,000	23,510	78.37

Source: Total shares in issue for periods after 1811 taken from the Course of the Exchange for the relevant year. For periods prior to 1811 total canal company shares taken from Ward and checked against Hadfield.⁶ Total railway shares checked against Scrivenor.⁷

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3. Classification

The following information on individual investors in the eleven canal companies and seven railway companies was extracted from source documents and entered on the CARD Database:

Surname;

First name;

Number of shares held;

Sex;

Title/social status;

Occupation, and

Address.

3.1 Socio-economic Classification

The following fifteen-category classification was used in the present research:

- L Landed, including peers, gentlemen and esquires in rural locations, farmers;
- G Rentiers, including gentlemen, esquires in urban locations;
- P1 Professionals;
- P2 Bankers;
- P3 Brokers;
- M1 Manufacturers;
- M2 Food Processors, such as brewers, millers;
- M3 Artisans;
- T1 Merchants;
- T2 Shopkeepers;
- T3 Persons engaged in service industry, including servants, innkeepers;
- IC Iron, coal, or metal masters;
- C Clergy;
- W Women; and
- U Unknown.

This classification is a development of those used by Ward in 1974 for canal investors

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and Reed in 1975 for railway company investors.⁸ Ward classified shareholders into nine socio-economic groups, namely:

Peers;
Landed gentlemen;
Yeomen, graziers, tenant farmers;
Capitalists;
Manufacturers;
Tradesmen;
Professional men;
Clergymen, and
Women.

Reed, in his study of railway investors, developed a similar classification, namely:

Trade, including merchants, brokers, agents, most retail trades, shipowners;
Manufacturing, including mining;
Banking;
Professions, including law, medicine, clergy, officers in the services and merchant marine, architects;
Miscellaneous, including white-collar groups, teachers, engineers, craftsmen, servants;
Land, farmers and graziers;
Non-occupational, gentlemen, esquires, nobility;
Women, and
Unspecified.

Both Ward's and Reed's classifications have certain deficiencies. For example, Ward distinguishes Landed Gentlemen from the Capitalist group. It is often difficult to identify landed gentlemen from the information available in share registers. Particularly by the mid-nineteenth century, an investor who would have once described himself as a manufacturer or merchant tended to call himself a gentlemen or esquire even though he might not have owned anything more than a villa in Edgbaston.⁹ Sons may have aspired to the status of a gentleman, for example, Edmund Hatcher, junior, of Bristol

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who owned shares in the GWR1835.¹⁰ His father, also Edmund, is denominated as a carrier, his son as a gentleman. In the present study, except where the address very clearly indicates a landed estate 'gentlemen' or 'esquires' have been placed in the Rentier category. Another deficiency of the Ward classification is the broad categories of 'Manufacturers' and 'Tradesmen'. This means that no distinction can be made between investors who owned large businesses and the more humble artisan, butcher or baker. The 15-category classification used in the current research seeks to overcome this by splitting the Manufacturer category into three; namely Manufacturer, that is a man in a substantial way of business; Food Processors such as brewers and millers and Artisans. The 15-category classification also distinguishes Merchants, Shopkeepers and individuals in the Service Industry, such as innkeepers and servants. A problem with all schemes of classification is how to distinguish between an individual craftsman and a substantial employer when the only information available is a single entry in a share register. For example, John Gibbons is described as a japanner in the share register of the Birmingham Canal Navigation in 1768.¹¹ On this information alone, a M3 Artisan classification would be appropriate. It is known from other sources¹² that Gibbons was a partner in the firm of Gibbons & Gibbs, enamel manufacturers, thus requiring a M1 Manufacturer classification. Since Gibbons' self-effacement is unusual in the aspirational society of the eighteenth century, in cases of uncertainty, the lower socio-economic classification was applied.

3.2 Geographical Classification

The addresses of the canal and railway investors were classified into twelve areas as follows:

Bristol and Avon;

Bath and South West;

Birmingham;

West Midlands;

London;

Liverpool;

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Manchester;

North West;

South Wales;

Scotland and Ireland;

Other, and

Unknown.

3.3 Treatment of Unknowns

Where the information was not available, the socio-economic group or the address of the investor was designated as Unknown. In some cases the only information available, apart from the shareholder's name and shareholding was the investor's gender. Where, rarely, initials only rather than forenames were recorded in the company books, the shareholder has been assumed to be male. The proportion of investors for whom occupations or addresses were Unknown varies substantially for each share register, as can be seen from Table 5.

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Table 5: Unknown Socio-economic Groups and Addresses in CARD Database

	Total Investors	Investors with Unknown Socio-economic Group		Investors with Unknown Address	
	Number	Number	%	Number	%
Canal					
Companies					
BCN1768	89	14	16	1	1
BCN1790	46	26	57	40	87
BCN1800	46	25	54	38	83
BCN1810	33	17	52	24	73
BCN1840	536	137	26	181	34
BLC1826	176	87	49	149	85
BLC1830	24	15	63	22	92
BLC1841	46	16	35	44	96
CCC1768	78	52	67	66	85
CCC1780	17	8	47	14	82
CCC1790	16	9	56	12	75
CCC1800	15	6	40	10	67
CCC1810	15	4	27	4	27
CCC1816	72	7	10	3	4
CCC1820	11	7	64	8	73
DUD1776	17	0	0	0	0
DUD1791	55	39	71	3	5
GBC1817	30	28	93	30	100
GJC1793	216	152	70	182	84
GJC1800	134	87	65	111	83
SEC1837	34	0	0	0	0
SN1776	59	7	12	14	24
SN1809	85	7	8	4	5
WBRC1794	157	104	66	126	80
WCB1793	137	91	66	113	82
WCB1798	82	61	74	76	93
WCB1808	98	57	58	90	92
WCB1820	110	62	56	96	87
WCB1840	249	137	55	225	90
WCB1849	97	55	57	86	89
WOBC1791	200	103	52	95	48
Total Canals	2,980	1,420	48	1,867	63
Railway					
Companies					
BGR1836	18	18	100	18	100
BGR1844	60	60	100	60	100
BOR1847	95	95	100	1	1
CGW1836	84	80	95	80	95
GJR1845	482	10	2	3	1
GWR1835	1,429	31	2	19	1
MBR1838	725	532	73	21	3
OWR1845	40	5	13	33	83
Total	2,933	831	28	235	8
Railways					

Source: CARD Database.

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4. Multiple Shareholders

Table 6 gives the total number of investor entries for each company including and excluding multiple shareholders.

Table 6: Investors Included in the CARD Database (Number)

Company and Date	Canal		Company and Date	Rail	
	Total Investors	Investors Excluding Multiple Shareholders		Total Investors	Investors Excluding Multiple Shareholders
BCN1768	103	89	BGR1836	18	18
BCN1790	60	46	BGR1844	64	60
BCN1800	53	46	BOR1847	95	95
BCN1810	39	33	CGW1836	88	84
BCN1840	588	536	GJR1845	492	483
BLC1826	213	176	GWR1835	1,446	1,428
BLC1830	28	24	MBR1838	745	725
BLC1841	46	46	OWR1845	40	40
CCC1768	86	78	Total	2,988	2,933
CCC1780	18	17			
CCC1790	22	16			
CCC1800	17	15			
CCC1810	18	15			
CCC1816	83	72			
CCC1820	12	11			
DUD1776	20	17			
DUD1791	77	55			
GBC1817	30	30			
GJC1793	230	216			
GJC1800	144	134			
SEC1837	36	34			
SN1776	72	59			
SN1809	93	85			
WBRC1794	259	157			
WCB1793	235	137			
WCB1798	112	82			
WCB1808	115	98			
WCB1820	126	110			
WCB1840	276	249			
WCB1849	102	97			
WOBC1791	228	200			
Total	3,540	2,980			

Source: CARD Database.

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5. Birmingham Database

Table 7: Institutions Included in the Birmingham Database

	Date	No. of Members
Abolition of Slavery	1790	8
Anacreontic Society	1793	105
Association against Republicans and Levellers	1792	18
Bean Club	1761	67
Birmingham Political Union	1817	48
Birmingham Political Union	1829	18
Birmingham Political Union	1830	36
Churchwardens	1790	19
Commercial Committee	1790	51
Conservative Association	1832	12
Deaf and Dumb Institution	1812	43
Eye Hospital	1823	17
Fever Hospital	1825	15
Friends Book Club	1840-1	24
General Dispensary	1793	16
General Dispensary	1840	15
General Hospital	1765	117
General Hospital	1839	61
Infant Schools	1825	20
Library	1799	159
Manufacturers Petition	1775	10
News Room	1822	9
Orthopaedic Hospital	1825	26
Poor Relief	1794	41
Protestant Dissenting Schools	1761	15
Society of Arts	1821	43
Street Commissioners	1769	50
Suffrage Union	1842	37
Unitarian Brotherly Society	1796	153
Water Works	1808	38
Total		1,291

Source: Details of the source documents for members of each of the above institutions are given in Appendix III

6. Normalising Results of Risk Analysis

The 'propensity to take risk' by each social class group was determined by examining the number of shareholders in each social class who owned shares in companies that were determined to be either High, Medium or Low risk. The total number of shareholders varied from social class to social class; the analysis recognised this by normalising the data, i.e. dividing the actual number in each category, by the

APPENDIX I: METHODOLOGY

number that would have occurred, if the buying pattern had been random.

Table 8: Normalised Propensity of Canal Investors to Take Risk in Each Social Group - Construction Period

	Low	Medium	High	Combined Risk Propensity
Clergy	0.38	1.47	0.19	3.89
Landed	1.23	1.08	0.50	4.87
Professional and Bankers	0.82	1.11	0.86	5.61
Rentiers	0.72	1.11	0.96	5.81
Women	1.30	0.81	1.28	6.75
Manufacturers	2.34	0.45	1.23	6.93
Artisans and Shopkeepers	1.31	0.50	2.26	9.07
Merchants	2.19	0.21	2.18	9.14

For example, in Table 8 the figure for 'Clergy' in the 'High' column means that the total number of Clergy, who actually invested in High-risk companies divided by the number of Clergy that would have invested in High-risk companies, had the distribution between companies been random, was 0.19. Thus, the number of clergy who invested in this type of share was only 19 per cent of the expected number.

To determine the combined risk propensity the distribution of each of the low, medium and high scores was combined. This was done by allocating a score of 1, 2 and 3 to Low, Medium and High risk companies respectively, and computing the sum of each of these scores with the relevant propensity to take risk. The choice of 1, 2 and 3 for the risk scores is clearly arbitrary, but the results of the analysis were examined using a variety of alternative plausible scoring systems, with no impact on the findings.

¹ J. R. Ward, *The Finance of Canal Building in Eighteenth-Century England* (Oxford, 1974), pp. 29 to 54.

² C. Hadfield, *The Canals of the West Midlands. The Canals of the British Isles: Vol. 5* (Newton Abbot, 1985), pp. 318-29 and C. Hadfield, *The Canals of the East Midlands* (Newton Abbot, 1966), pp. 268-76.

³ H. Scrivenor, *The Railways of the United Kingdom Statistically Considered, in Relation to their Extent, Capital, Amalgamation, Debentures, Financial Position, Acts of Parliament by which they are Regulated, Creation and Appropriation of Shares, Calls, Dividends, and Various Other Minor Particulars* (London, 1849), Appendix taken from Parliamentary Paper, No. 159, Session 1844 and No. 731, Session 1848 and No.7, Session 1849.

⁴ AB1, Coventry Union Bank, Deed of Settlement and List of Shareholders, 1836, Midland Bank Archive, London.

⁵ T1, Stourbridge & Kidderminster Bank, Deed of Settlement, 25 March 1834, Midland Bank Archive, London.

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⁶ Ward, *The Finance of Canal Building*, pp. 29-54, Hadfield, *Canals of the East Midlands*, pp. 268-76 and Hadfield, *Canals of the West Midlands*, pp. 268-76.

⁷ Scrivenor, *The Railways of the United Kingdom*, Appendix taken from Parliamentary Paper, No. 159, Session 1844 and No. 731, Session 1848 and No.7, Session 1849.

⁸ Ward, *The Finance of Canal Building*, p. 18 and M. R. Reed, *Investment in Railways in Britain, 1820 - 1844* (Oxford, 1975), p. 109.

⁹PRO RAIL 810/182, BCN, List of Proprietors, 8 May 1840. George Eyre Lee was described as 'esquire' and lived in Edgbaston.

¹⁰ PRO RAIL 251/1, GWR, Register of Proprietors, 29 October 1835.

¹¹ PRO RAIL 810/1, BCN, Committee Minutes and Reports, Original Subscribers, 25 March 1768.

¹² Sketchley and Adams, *Tradesman's True Guide* (Birmingham, 1770).

APPENDIX II: YIELD INDEX OF CANAL COMPANY SHARES

Table 1: Weighted Index of Canal Company Share Yield 1814-1846

Year	%	Year	%
1814	3.84	1833	5.23
1815	3.85	1834	4.69
1816	4.28	1835	4.72
1817	5.90	1836	4.82
1818	3.12	1837	5.08
1819	n.a.	1838	5.09
1820	n.a.	1839	5.58
1821	3.34	1840	5.66
1822	4.40	1841	6.74
1823	3.95	1842	7.37
1824	3.88	1843	6.41
1825	3.49	1844	5.50
1826	3.03	1845	5.57
1827	4.28	1846	5.54
1828	3.98	1847	5.54
1829	4.28	1848	5.54
1830	4.13	1849	5.54
1831	4.48	1850	5.54
1832	4.95		

Source: Monthly canal share price and annual dividend from Course of the Exchange. Yields weighted by issued nominal share capital of eleven companies as set out in Table 2.

The yields on the eleven shares making up the canal index were weighted in accordance with the nominal issued share capital of the companies as set out in Table 2.

APPENDIX II: YIELD INDEX OF CANAL COMPANY SHARES

Table 2: Weighting of Canal Companies by Issued Nominal Share Capital in 1834

	£	%
Birmingham Canal Navigation	70,000	2.33
Birmingham & Liverpool Canal	400,000	13.29
Coventry Canal	50,000	1.66
Dudley Canal	206,000	6.84
Grand Junction Canal	1,150,000	38.20
Staffordshire & Worcestershire Canal	98,000	3.26
Stourbridge Canal	43,500	1.44
Stratford upon Avon Canal	289,936	9.63
Warwick & Birmingham Canal	125,000	4.15
Warwick & Napton Canal	107,800	3.58
Worcestershire & Birmingham Canal	470,400	16.62
Total	3,010,636	100.00

Source: *Course of the Exchange*, 14 January 1834.

APPENDIX III: DATABASE SOURCE DOCUMENTS

Canal Companies in CARD Database

	Reference	Type of Document
BCN1768	PRO RAIL 810 /1	Committee Minutes and Reports, Original Subscribers, 25 March 1768
BCN1790	PRO RAIL 810/43	General Assembly of Proprietors, 26 March 1790
BCN1800	PRO RAIL 810/43	General Assembly of Proprietors, 28 March 1800
BCN1810	PRO RAIL 810/43	General Assembly of Proprietors, 28 September 1810
BCN1840	PRO RAIL 810/182	List of Proprietors, 8 May 1840
BLC1826	PRO RAIL 808/4 Part 1	General Minutes of Assembly of Proprietors, First General Meeting, 22 July 1826
BLC1830	PRO RAIL 808/4 Part 1	Minutes of General Assembly of Proprietors, 16 January 1830
BLC1841	PRO RAIL 808/4 Part 1	Minutes of General Assembly of Proprietors, 5 March 1841
CCC1768	PRO RAIL 818/1	Minutes of First General Assembly, 19 February 1768
CCC1780	PRO RAIL 818/3	Minutes of General Assembly, 20 March 1780
CCC1790	PRO RAIL 818/4	Minutes of General Assembly, 28 September 1790
CCC1800	PRO RAIL 818/4	Minutes of General Assembly, 25 March 1800
CCC1810	PRO RAIL 818/4	Minutes of General Assembly, 27 March 1810
CCC1816	PRO RAIL 818/35	Share Register ,6 May 1816
CCC1820	PRO RAIL 818/5	Minutes of General Assembly, 28 March 1820
DUD1776	PRO RAIL 824/2	Minutes of General Assembly, Initial Shareholders, 6 June 1776
DUD1791	PRO RAIL 824/19	Proprietors Ledger, 1 September 1791
GBC1817	PRO RAIL 829/1	Minutes of Meeting of General Assembly, 17 September 1817
GJC1793	PRO RAIL 830/39	Minutes of General Assembly and Committee, First General Assembly, 1 June 1793
GJC1800	PRO RAIL 830/40	General Meeting of Proprietors, 3 June 1800
SEC1837	PRO RAIL 873/17	Subscribers to Parliamentary Bill, 19 January 1837
SN1776	PRO RAIL 874/1	First General Assembly, 1 June 1776
SN1809	PRO RAIL 874/17	Transfer Ledger, 2 January 1809
WBRC1794	PRO RAIL 882/1	Minutes of Annual General Meeting, Proprietors Named in the Act, 27 May 1794
WCB1793	PRO RAIL 881/1	Minutes of General Assembly, Proprietors named in the Act, 27 May 1793
WCB1798	PRO RAIL 881/1	Proprietors, 27 March 1798
WCB1808	PRO RAIL 881/1	Proprietors, 29 March 1808
WCB1820	PRO RAIL 881/2	Proprietors, 18 April 1820
WCB1840	PRO RAIL 881/3	Proprietors, 21 April 1840
WCB1849	PRO RAIL 881/3	Proprietors, 5 September 1849
WOBC1791	PRO RAIL 886/1	Minutes of General Assembly of Proprietors, First General Meeting, 5 July 1791

APPENDIX III: DATABASE SOURCE DOCUMENTS

Rail Companies in the CARD Database

	Reference	Type of Document
BGR1836	PRO RAIL 37/1	Minutes of General Meetings of Proprietors, First Meeting, 19 September 1836
BGR1844	PRO RAIL 37/1	Minutes of General Meetings of Proprietors, 23 August 1844
BOR1847	PRO RAIL 39/4	Minutes of General Meetings of Shareholders, Extraordinary Meeting, 13 March 1847
CGW1836	PRO RAIL 109/69	List of Shareholders Agreeing to Hold Shares until 10% Is Paid, 1836
GJR1845	PRO RAIL 220/12	Register Book of Proprietors, 10 September 1845
GWR1835	PRO RAIL 251/1	Register of Proprietors, 29 October 1835
MBR1838	PRO RAIL 384/147	Lists of Subscribers, 2 April 1838
OWR1845	PRO RAIL 558/4	General Meetings of Proprietors, 22 February 1845

Joint Stock Banks in BARD Database

	Reference	Type of Document
SKB1834	T1, Midland Bank Archive	Deed of Settlement, 25 March 1834
CUB1836	AB1, Midland bank Archive	Deed of Settlement and List of Shareholders, 1836

Birmingham Philanthropic, Political, Religious and Social Institutions in Birmingham Database

	Reference	Type of Document
Abolition of Slavery 1790	Langford, Vol. 1, p. 434	List of Individuals at a Meeting to Petition for the Abolition of the Slave Trade, November 1790
Anacreontic Society 1793	514093 HR19, Birmingham Reference Library	Register of Members 1793-1814
Association against Republicans and Levellers 1792	Langford, Vol. 2, p.164	List of Members, 7 December 1792
Bean Club 1761	345313 IIR 12, Birmingham Reference Library	List of Members made by John Wickens, Secretary in 1761
Political Union 1817	Langford, Vol. 2, p. 414	Members of Hampden Club, Meeting at New Hall, 22 January 1817
Political Union 1829	Langford, Vol. 2, p. 530	Signatories to Petition to Call a Meeting on the Distressed State of the Country, 8 November 1829
Political Union 1830	Langford, Vol. 2, p. 534	Signatories to Declaration of the Union

APPENDIX III: DATABASE SOURCE DOCUMENTS

Birmingham Philanthropic, Political, Religious and Social Institutions in Birmingham Database, (continued)

	Reference	Type of Document
Commercial Committee 1790	Langford, Vol. 1, p. 349	Meeting 12 May 1790
Conservative Association 1832	Langford, Vol. 2, p. 625	Meeting 17 December 1832
Deaf and Dumb Institution 1812	Langford, Vol. 2, p. 405	Private Meeting on 30 November 1812; Public Meeting and Committee Members, 12 December 1812
Eye Hospital 1823	Langford, Vol. 2, p. 457-8	Report of Meeting 24 November 1823 to Establish Hospital
Fever Hospital 1825	Langford, Vol. 2, p. 462	Report of Meeting to Form a Committee, 3 January 1825
Friends Book Club 1840-1	MS 2160 1/2, Birmingham Reference Library	Annual Meeting of Members, 25 March 1840
General Dispensary 1793	MS1759, Birmingham Reference Library	Minutes of Annual Meetings, Subscribers Present, 27 December 1793
General Dispensary 1840	MS1759, Birmingham Reference Library	Minutes of Annual Meetings, Subscribers Present, 19 February 1840
General Hospital 1765	HC/GH 1/1/1, Birmingham Reference Library	List of Benefactors, 21 November 1765
General Hospital 1839	HC/GH 1/1/1, Birmingham Reference Library	Minutes of Board of Governors Present at General Meeting, 15 March 1839
Infant Schools 1825	Langford, Vol. 2, p. 501	Report 26 September 1825
Library 1799	Parish, pp. 105-31	List of Subscribers to the Tontine 1799
Manufacturers Petition 1775	Langford, Vol. 1, p. 215	Petition 23 January 1775 re. American War
News Room 1822	Langford, Vol. 2, p. 496	Committee meeting, 10 September 1822, to establish a Commercial and News Room
Orthopaedic Hospital 1825	Langford, Vol. 2, p. 345	Meeting of Subscribers, 24 June 1817
Poor Relief 1794	Langford, Vol. 2, p. 46	List of Individuals Giving Relief to the Poor, 19 December 1794
Protestant Dissenting Schools 1761	Langford, Vol. 1, p. 95	Meeting of Committee of Members of the Old and New Meeting Houses, 29 June 1761
Society of Arts 1821	Langford, Vol. 2, p. 411	Proposers of Provisional Committee, 26 January 1821
Street Commissioners 1769	Langford, Vol. 1, p. 190	Commissioners of Act for Laying Open and Widening Certain Ways and Passages, 8 May 1769
Suffrage Union 1842	129666 ZZ34, Minute Book I Birmingham Reference Library	First Weekly Meeting, 25 April 1842 and Council Meeting, 9 April 1842
Unitarian Brotherly Society 1796	391175 IIR 28, Birmingham Reference Library	Minutes of Society Meetings 1796-1882
Water Works 1808	Langford, Vol. 2, pp. 231-2	Meeting of Committee to set up Water Works October 1808

APPENDIX III: DATABASE SOURCE DOCUMENTS

J. A. Langford, *A Century of Birmingham Life or a Chronicle of Local Events 1741-1841*, Volumes 1 and 2 (Birmingham, 1868).

C. Parish, *History of the Birmingham Library*, (London 1966), Appendix F, pp. 105-31.

APPENDIX IV: ECONOMIC CYCLES

Years were designated Trough, Peak and Neutral as set out in Table 1.

Table 1: Stages in the Economic Cycle 1790-1850

Year	Economic Cycle	Year	Economic Cycle
1790	T	1821	N
1791	P	1822	N
1792	P	1823	N
1793	T	1824	N
1794	T	1825	P
1795	N	1826	T
1796	P	1827	N
1797	T	1828	P
1798	N	1829	T
1799	N	1830	N
1800	P	1831	P
1801	T	1832	T
1802	P	1833	N
1803	T	1834	N
1804	N	1835	N
1805	N	1836	P
1806	P	1837	T
1807	N	1838	N
1808	T	1839	P
1809	N	1840	N
1810	P	1841	N
1811	T	1842	T
1812	N	1843	N
1813	N	1844	N
1814	N	1845	P
1815	P	1846	N
1816	T	1847	N
1817	N	1848	T
1818	P	1849	N
1819	T	1850	N
1820	N		

Key: P=Peak, T=Trough, N=Neutral.

*Source: Designation of Peak, Trough and Neutral after A. D. Gayer, W. W. Rostow and A. J. Schwartz, *The Growth and Fluctuations of the British Economy 1790-1850. An Historical, Statistical and Theoretical Study of Britain's Economic Development* (Oxford, 1953), Vol. II, p. 888.*

APPENDIX V: CANAL COMPANY RISK ASSESSMENT

Table 1: Ranking of Canal Companies in Order of Total Construction Risk Assessment

	Author- ised Year	Complete Year	Duration Years	Miles	Miles/yr. Miles/yr.	Original Capital £'000	Final Capital £'000	Under funded %	Rank on Mileage	Rank on Funding	Rank on Duration	Total Rank
Staffordshire & Worcestershire	1766	1772	6	46.13	7.69	70	98	40	2	2	4	2.67
BCN - Birmingham to Aldersley	1768	1772	4	22.63	5.66	70	112	60	3	4	2	3.00
Stourbridge Navigation	1776	1779	3	7.13	2.38	30	43	43	7	3	1	3.67
Warwick & Napton	1794	1800	6	15	2.50	79.5	79.5	0	6	1	4	3.67
Birmingham & Liverpool Junction	1826	1835	9	39.5	4.39	400	800	100	4	6	7	5.67
Warwick & Birmingham	1793	1800	7	22.63	3.23	69.3	160	131	5	7	6	6.00
Grand Junction	1793	1805	12	93.5	7.79	500	1,800	260	1	10	8	6.33
Coventry	1768	1790	22	32.5	1.48	50	87.5	75	8	5	9	7.33
Stratford upon Avon	1793	1816	23	26	1.13	120	300	150	10	8	11	9.67
Worcester & Birmingham	1791	1815	24	30.5	1.27	180	610	239	9	9	12	10.00
Dudley	1776	1798	22	16.13	0.73	7	206.3	2,848	11	11	9	10.33

Source: Share capital taken from Course of the Exchange, Guildhall Library. Mileage and dates authorised and completed from Ward¹, Hadfield² and Phillips.³

APPENDIX V: CANAL COMPANY RISK ASSESSMENT

Table 2: Ranking of Canal Companies in Order of Total Operating Risk Assessment

	Dividends in per cent p.a.											Ranking
	1813-1815	1816-1820	1821-1825	1826-1830	1831-1835	1836-1840	1841-1845	Average				
Birmingham Canal Navigations	27.5	36.0	47.0	50.0	50.0	40.8	40.0	41.6			1	
Coventry	40.0	44.0	44.0	44.0	40.6	45.4	24.0	40.3			2	
Staffordshire & Worcestershire	44.0	38.7	40.0	39.6	34.8	38.4	32.8	38.3			3	
Warwick & Birmingham	13.3	11.5	8.3	11.6	13.2	15.8	11.8	12.2			4	
Stourbridge Navigation	12.3	15.0	8.3	13.0	8.8	9.2	17.8	12.1			5	
Warwick & Napton	13.7	9.3	8.0	11.7	11.6	13.0	9.8	11.0			6	
Grand Junction	7.0	6.0	9.5	13.2	12.4	11.4	7.2	9.5			7	
Dudley	2.0	1.3	3.0	3.9	2.8	4.0	5.0	3.1			8	
Worcester & Birmingham	0.0	0.0	0.3	2.0	3.6	3.9	4.0	2.0			9	
Stratford upon Avon	0.0	0.0	0.3	1.2	1.4	1.9	1.7	0.9			10	
Birmingham & Liverpool Junction	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.3			11	

Source: Annual dividends from Course of the Exchange, Guildhall Library, 1811 - 1845. No data was available for 1819 and 1820. Dividends are expressed as annual averages for each period.

¹ J. R. Ward, *Finance of Canal Building in Eighteenth-Century England* (Oxford, 1974), pp. 29-54.

² C. Hadfield, *The Canals of the West Midlands. The Canals of the British Isles. Vol. 5* (Newton Abbot, 1985), pp. 318-329 and C. Hadfield, *The Canals of the East Midlands* (Newton Abbot, 1966), pp. 268-76.

³ J. Phillips, *A General History of Inland Navigation, Foreign and Domestic; Containing a Complete Account of the Canals Already Executed in England with Considerations on those Projected* (London, 5th edition, 1805).

APPENDIX VI: DEVELOPMENT OF THE MIDLAND'S CANAL AND RAILWAY SYSTEM

The Duke of Bridgewater's canal from Worsley to Manchester, opened in 1761, is generally regarded as the bellwether commercial canal in England.¹ It opened up the Duke's coalfields to the markets of Manchester and was immediately successful in simultaneously reducing the price of coal to consumers and increasing the profits to the coal-owner.² Other canal promoters quickly recognised the advantages of linking navigable river systems by canals to produce an inland navigation network safe from interruption by the weather or war.³ Josiah Wedgwood encouraged the development of the Trent & Mersey canal, which reduced his transportation costs and opened up wider markets for his products.⁴ In 1766 Parliament approved the construction of the Staffordshire & Worcestershire Canal which linked the Severn at Stourport with the Trent & Mersey canal. A canal to link these routes to the Thames was the next objective. The first part of this plan was the Coventry canal, which was intended to carry coal mined near Coventry to the Trent & Mersey canal. Although the Coventry canal gained parliamentary approval in 1768 it failed to raise sufficient capital and only the portion between Coventry and Atherstone was built. In the meantime, the second part of the scheme to link the Midlands to London was initiated in 1769 with the approval of a canal to link the Thames at Oxford to the Coventry canal at Longford.

Birmingham began to develop as a canal hub. The Birmingham canal linking the Staffordshire & Worcestershire canal at Autherley to Birmingham was authorised in 1768 with the purpose of bringing coal to Birmingham and goods from the Staffordshire and Worcestershire canal. John Freeth, 'the facetious bard of nature'⁵ captured the mood of elation in Birmingham as the first cheap coals reached Birmingham in 1769:

There never in war was victory won
A cause that deserve'd such respect from the Town;
Then revel in gladness, let harmony flow,
From the district of *Bordesley* to *Paradise Row*
For true feeling joy in each breast must be wrought,
*When Coals under Five-pence per hundred are bought*⁶

The line from Birmingham to the Staffordshire & Worcester Canal at Aldersley was

APPENDIX VI: DEVELOPMENT OF THE MIDLAND'S CANAL AND RAILWAY SYSTEM

completed in 1772. The Birmingham canal was later extended to Fazeley to join the Coventry canal near Tamworth.

Completion of the Coventry canal and the Oxford canal between Banbury and Oxford became even more critical in the link between the Midlands and London. In 1782, the proprietors of the four interested companies, the Trent & Mersey, the Birmingham & Fazeley, the Oxford and the Coventry canals agreed to co-operate to achieve this objective. The Trent & Mersey and the Birmingham & Fazeley proprietors agreed to construct the portion of the Coventry canal between Fradley and Fazeley. This was completed in 1786. In 1786, the Coventry Canal Company finally raised sufficient capital to complete its line, which was opened in 1790. The remainder of the Oxford canal was completed in 1789, thus finally linking the Trent, Mersey, Severn and Thames. Birmingham now had access to London markets via the Birmingham, Coventry and Oxford canals.⁷

Meanwhile more and more feeders were being built to existing canals and more towns were being linked by new projects. For example, the Stourbridge canal linked Stourbridge to the Staffordshire & Worcestershire canal. The Dudley canal joined Dudley to the Stourbridge canal. Canal promoters were constantly seeking to divert traffic through their lines with the lure of lower tolls or faster routes. Investors had to take considerable risks during the construction period. Estimates of the capital costs were often wildly over optimistic and the ability to raise additional funds problematic, as in the case of the Coventry canal. In addition there was no guarantee that the project would continue to have an economic rationale by the time it was built. The vested interests of other canal companies or the subsequent approval of a competing scheme could destroy the project's potential profitability. For example, the Dudley canal and the Stourbridge canal competed with the Birmingham canal to take coal to the Severn. Later, in 1785 the Dudley canal was permitted to connect with the Birmingham canal at Tipton with the intention of bringing coal from Netherton to Birmingham. This gave a shorter connection with the Severn to that via Aldersley. It was not completed before Parliament approved a direct line between Birmingham and the Severn at Worcester. This was opposed by both the Staffordshire & Worcester and Birmingham canal

APPENDIX VI: DEVELOPMENT OF THE MIDLAND'S CANAL AND RAILWAY SYSTEM

companies, which foresaw traffic would be diverted away from their lines. The Dudley canal proprietors sort to exploit this situation and proposed a junction between their canal and the Birmingham & Worcester canal at Selly Oak. This meant that traffic going south could by-pass Birmingham altogether. In spite of competition from the Birmingham Canal Company, the junction was approved by Parliament. In spite of opposition from existing canal companies traffic levels were sufficient to sustain generally high levels of profitability.⁸

The success of some of the early canals led to speculation caused by financial investors gambling on the potential success of new schemes. This reached a climax in the years 1792 to 1793. Canals started at the beginning of the period of canal mania were generally 'those, which had a solid base in the increasing prosperity of the times.'⁹ These included the Warwick & Birmingham and the Warwick & Napton canals, which shortened the route to London. These were also the years of the development of the very large projects, such as the Grand Junction canal, which cost close to a million pounds to complete and never produced high returns to investors, as a consequence of its high capital cost.¹⁰ The speculative canals of the later years of the mania tended to be in the south and west of the country and centred on Bristol. For example, the Bristol to Gloucester canal or the line from Bristol to the Thames Severn canal at Thameshead. The financial crisis of 1793, at the outbreak of the French Revolutionary war, put an end to the boom in canal shares. Nevertheless, canal building continued albeit on a less frenetic scale.

Between 1790 and 1800, £5 to £6 million was invested with a further, £12.5 to £11.0 million between 1801 and 1835.¹¹ Investment continued long after the development of railways. At first the railways were seen as feeders to the waterways but soon the canals were coming under increasing competition. Existing canals were improved and services such as express boats and passenger services were introduced. Competition with railways forced canal companies to reduce tolls but many canals continued to exist and trade profitably until the 1840s.¹²

At first, railways were conceived as toll companies with other carriers and even canal companies running wagons over the rail company's track.¹³ Railway companies

APPENDIX VI: DEVELOPMENT OF THE MIDLAND'S CANAL AND RAILWAY SYSTEM

began to acquire canal navigations. In 1845 five navigations came under railway control, in 1846 a further seventeen and in 1847, six more, comprising a total 949 miles, representing about 20 per cent of all the navigable waterways in Great Britain. They included 160 miles of the Birmingham Canal Navigations and the 204 miles of the Shropshire Union system.¹⁴ Railways acquired canals for three reasons. Firstly, to reach agreement with their opponents for the passage of their Parliamentary Bills; secondly, to reduce competition, and finally in some cases to use the line of the canal to build the track.¹⁵ Canals which served manufacturing concerns usually managed to survive, whilst canals serving agricultural districts succumbed most quickly to the railways.

The first railway to be constructed in England was the Stockton to Darlington line, which gained parliamentary approval in 1825 and was completed five years later. Like canals, railways were initially envisaged as freight carriers. Up to 1830 most of the schemes which were authorised were relatively short and designed for mineral traffic, such as the network round Glasgow to open up the Lanarkshire coalfield and the Llanelly Railway in South Wales. The main trunk routes serving Birmingham were authorised in the 1830s. The London to Birmingham (L&B) and the Grand Junction (GJR) were both authorised in 1833. The GJR linked Birmingham to Liverpool and Manchester. It took a direct route, ignoring most of the towns on its route, particularly Wolverhampton. As a consequence, it was cheap to build, costing less than a third per mile of the L&B. The GJR never became an important passenger line since it only served a small population of about 150,000. Nevertheless, low construction costs meant it was amongst the most profitable of the early railway companies.¹⁶ The L&B was completed a year later in 1838. Although construction was more expensive than that of the GJR it was also profitable. The Manchester to Birmingham railway (MBR), authorised in 1838, was in direct competition with the GJR to serve the Northwest. The Birmingham & Gloucester railway (BGR) was authorised in 1836 to link Birmingham with the Southwest. The BGR had difficulties raising sufficient capital and construction progress was slow although it was finally completed in 1841.

Unlike the canals, the railway companies began to amalgamate very early in their development. Amalgamation was a strategy used by both the broad and narrow

APPENDIX VI: DEVELOPMENT OF THE MIDLAND'S CANAL AND RAILWAY SYSTEM

gauge companies to frustrate the rival system. For example, in 1846, in a pre-emptive strike against the GWR, the Midland Railway, itself an amalgamation of three midland railway companies, purchased the BGR and the Bristol & Gloucester railway. This opened a narrow gauge system from Birmingham to Bristol.¹⁷ In the 1840s, the Birmingham & Oxford (BOR) and the Oxford, Worcester & Wolverhampton (OWR) railways were promoted by the GWR to compete with the L&B.¹⁸ The MBR, the GJR and the L&B were amalgamated into the London & North Western railway in 1847.¹⁹ The GWR was conceived as a link between Bristol and London in 1835. It built an extensive broad gauge network in the Southwest of England and attempted to expand into the Midlands via the line to Cheltenham. It was later successful in taking over the BOR in 1848 and constructing a line from Banbury to Birmingham in 1852.²⁰

¹ J. Phillips, *A General History of Inland Navigation, Foreign and Domestic; Containing a Complete Account of the Canals Already Executed in England with Considerations on those Projected* (London, 5th edition 1805), p. vi and J. R. Ward, *Finance of Canal Building in Eighteenth-Century England* (Oxford, 1974), p. 150.

² Ward, *Finance of Canal Building*, p. 127.

³ Phillips, *General History of Inland Navigation*, p. viii.

⁴ C. Hadfield, *The Canals of the West Midlands. The Canals of the British Isles: Vol. 5* (Newton Abbot, 1985), pp. 15-28.

⁵ Quote from the *Gentleman's Magazine* reported by C. Gill, *History of Birmingham, Vol. I, Manor and Borough to 1865* (Birmingham, 1952), p. 138.

⁶ J. A. Langford, *A Century of Birmingham Life or a Chronicle of Local Events 1741-1841, Vol. 1* (Birmingham, 1868), p. 177.

⁷ Hadfield, *Canals of the West Midlands*, pp. 63-80.

⁸ C. Hadfield, *British Canals* (London, 1950), p. 87 and Hadfield, *Canals of the West Midlands*, pp. 100-14.

⁹ Hadfield, *British Canals*, p. 98.

¹⁰ C. Hadfield, *Canals of the East Midlands* (Newton Abbot, 1966), pp. 108-18.

¹¹ P. Deane, *The First Industrial Revolution* (Cambridge, 1979), p. 80.

¹² S. R. Broadbridge, *The Birmingham Canal Navigations. Vol. I 1768-1846* (Newton Abbot, 1974), pp. 174-5.

¹³ Hadfield, *British Canals*, pp. 179-80.

¹⁴ Hadfield, *British Canals*, p. 184.

¹⁵ Hadfield, *British Canals*, p. 184.

¹⁶ R. Christiansen, *A Regional History of the Railways of Great Britain. Volume 7. The West Midlands* (Trowbridge, 2nd edition, 1983), pp. 25-31.

¹⁷ Christiansen, *Regional History of the Railways. The West Midlands*, pp. 48-56.

¹⁸ Christiansen, *Regional History of the Railways. The West Midlands*, pp. 65-6.

¹⁹ Christiansen, *Regional History of the Railways. The West Midlands*, pp. 22 and 279.

²⁰ Christiansen, *Regional History of the Railways. The West Midlands*, p. 272.

ABBREVIATIONS

BARD	Bank Database.
BCN	Birmingham Canal Navigations.
BGR	Birmingham & Gloucester Railway.
BLC	Birmingham & Liverpool Junction Canal.
BOR	Birmingham & Oxford Railway.
Bus. Hist. Rev.	Business History Review.
CARD	Canal and Railway Database.
CCC	Coventry Canal.
CGWR	Cheltenham and Great Western Railway.
CUB	Coventry Union Bank.
DUD	Dudley Canal.
Econ. Hist. Rev.	Economic History Review.
Ed.	Editor.
Expl. in Econ. Hist.	Explorations in Economic History.
Fin. Hist. Rev.	Financial History Review.
GBC	Gloucester & Berkley Canal.
GJC	Grand Junction Canal.
GJR	Grand Junction Railway.
GWR	Great Western Railway.
J.	Journal.
J. of Econ. Hist.	Journal of Economic History.
J. Trans. Hist.	Journal of Transport History.
Mass.	Massachusetts.
MBR	Manchester & Birmingham Railway.
N. A.	Not available.
OWR	Oxford, Worcester & Wolverhampton Railway.
P/E	Price/Earnings.
PRO	Public Record Office.
Rev. of Econ. Statistics	Review of Economic Statistics.

ABBREVIATIONS

SEC	Stourbridge Extension Canal.
SKB	Stourbridge & Kidderminster Bank.
SN	Stourbridge Navigation.
Vol.	Volume.
WBRC	Warwick & Napton Canal.
WCB	Warwick & Birmingham Canal.
WOBC	Worcester & Birmingham Canal.

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PRO RAIL 810/178, BCN, Register of Transfers by Death 1787-1832.

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PRO RAIL 810/43, BCN, General Assembly of Proprietors, 26 March 1790, 28 March 1800 and 28 September 1810.

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