

Determinants of Growth and Profitability in Small Entrepreneurial Firms in the Manufacturing Sector in Tayside

Volume I of II

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I certify that this thesis is the true and accurate version of the thesis
approved by the examiners.

Signed ..
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Abstract

This thesis adopts an holistic interdisciplinary paradigm and a two-stage research design employing both econometric and qualitative techniques, to investigate determinants of growth and profitability in small firms in the manufacturing sector in Tayside Region. A descriptive analysis of the Tayside manufacturing sector, which includes a components of employment change analysis, establishes the increasing importance of small firms to Tayside manufacturing and finds evidence of firms with fewer than 10 employees having made a substantial contribution to employment creation.

Using accounts data for a sample of small manufacturing firms located in Tayside Region, an econometric analysis investigates the relationships between the firm-specific characteristics of size, age and location, and profitability and growth. The trade-off between the possibly conflicting objectives of profit and growth is considered primarily from an interdisciplinary entrepreneurial standpoint, rather than the managerial economic standpoint which previous econometric studies of small firm performance have adopted. Motivations for undertaking entrepreneurial activity and their possible relationships with profitability and growth are discussed and a number of hypotheses are developed which have not been collectively specified or tested in previous studies. From an entrepreneurial standpoint it is argued that a firm size measure based on employment is more appropriate. Firm characteristics are found to be of limited value in explaining profitability. However, a significant positive relationship is found between firm size and the rate of growth, which conflicts with previous studies, and younger firms are found to grow faster than older. This is also some evidence that growth is stronger in firms located in urban rather than in rural areas.

A qualitative analysis is then undertaken to build upon the findings from the econometric stage. This analysis examines the relative impact of intrinsic and extrinsic influences on the dynamic nature of the entrepreneurship process of developing a small firm. In particular, propositions derived from the interdisciplinary entrepreneurship literature are investigated concerning the possibility of feedback mechanisms in the entrepreneurship process which serve to revise entrepreneurial motivations, objectives and strategies. Using a dynamic conceptual model of the relationships between these key entrepreneurial variables, and growth and profitability, a series of entrepreneurial profiles are reported, which are derived from a programme of indepth interviews combined with data from financial accounts. A comparative analysis of these profiles provides new evidence in support of the propositions that financial performance can act a feedback mechanism which can revise entrepreneurial objectives and strategies, and that profitability is a means goal which can satisfy both pecuniary and non-pecuniary end-goals. The thesis concludes by deriving the implications of the research findings for entrepreneurship theory and practice, and suggests directions for further research.

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Preface

I have always wanted to write a preface. As Professor Neil Kay once wrote, "I have a genuine affection for prefaces". The purpose of this preface is to reflect upon the completion of this work, and to offer thanks to those whose help made it possible.

The work for this research project began in 1990 as a Scottish Education Department Research Studentship. Eight years later, after three job changes and five house moves, I find myself at last writing this preface, and in the year in which Celtic Football Club have at last won back the Scottish Premier League Championship. I suppose the light at the end of the tunnel has arrived in more ways than one, and long may it continue. In all respects, I owe my career as an academic to this project. It has furnished me with the knowledge and the enthusiasm for entrepreneurial and small business economics; and in practical terms it has provided me, directly or indirectly, with all of the publications I have to my name. It has also spawned all of the courses that I now teach. The tunnel may have been long, but it has certainly taken me in the right direction. I am grateful to the University of Abertay Dundee for the opportunities this project has afforded me.

Throughout the years, many people have contributed to this project, and given generously of their time and expertise. First of all, I would like to thank Tom Wood and his team at the former Tayside Regional Council, who provided me with a great deal of information and advice on the Tayside economy. My thanks also go to Alistair Byres and his colleagues at Scottish Enterprise Tayside, whose advice and monetary assistance contributed greatly to the financial analysis undertaken in this work. As someone who once scored 3% in a financial accounting exam, I am particularly pleased with my efforts in this regard. Thanks must also go to the accountancy lecturers at University of Abertay Dundee for my constant harassment during 1991-92. Perhaps a suitable testimony to their efforts is that at one point, after everything clicked, I seriously contemplated a career as an accountant!

Thanks must also go to several people with whom I have had informal debates (usually involving the consumption of beer) which have had a great influence on my views on economics and social science. In this regard I thank Professors Mark Brownrigg, Brian Loasby, Mike Scott and Neil Kay, and in particular Professor Gavin Reid. Above all, I thank my Director of Studies, Dr Pam Siler, and my supervisor, Dr Ron McQuaid, for their invaluable help, advice and encouragement. No longer shall they have to endure half a rainforest's worth of paper landing on their desks at regular intervals. As Ron once said, "What have you got against trees anyway?".

My wife Susan, and my father Philip Glancey, have also played a substantial role in helping me to complete this work and I thank them for their support and encouragement. Susan has had to endure living with someone who has the bizarre habits and lifestyle of a compulsive workaholic academic. Finally, I dedicate this work to my late mother, Margaret Glancey, whose faith in me has always encouraged me to keep going. Well Mum, I got there.

For Margaret Glancey

"Missions are stupid... I have no mission. No one has. And it's a terrific relief to realise you're free, free of all missions"

Milan Kundera, *The Unbearable Lightness of Being*

Chapter 1

Introduction

1.1 Background to Research

1.1.1 Introduction

This thesis is concerned with the determinants of small firm performance. Twenty years ago it might have begun by considering the neglect of the small firm in both academic research and government policy. This neglect is no longer evident, with a diverse range of academic disciplines having turned their attention to the small firm during the 1980s and 1990s. As long ago as 1971, the Bolton Committee emphasized the importance for the economic prosperity of the UK of a dynamic small firm sector. Small firms have been strongly promoted by post-1979 UK governments for economic, social and ideological reasons. The economic justification for the promotion of small firms follows from their potential to: (1) create competition through their responsiveness to the market; (2) generate employment both generally, and particularly in depressed regions; (3) provide a seed-bed for new ideas and innovations; (4) provide a sub-contracting base for large firms (Storey, 1994).

As far as economics is concerned, it is perhaps reasonable to suggest that the main focus of attention throughout the 20th Century has been the large corporate firm. Traditional economic literature on the theory of the firm and industrial organization has tended to view firm size on a continuous scale and has not allowed for fundamental qualitative differences between firms of different sizes (Storey, 1990). Nevertheless, since the 1970s, when most industrialized economies experienced a reversal of a century long trend towards increased industrial concentration, academic economists have begun to show increasing awareness of the importance of small scale economic activity, in what is commonly referred to as a post-industrial society. A large body of interdisciplinary literature has also emerged and one of the key issues which both economic studies (e.g. Reid, 1993) and

interdisciplinary studies (e.g. Hornaday and Wheatley, 1986) have focused on is the determinants of small firm performance. The central concern of this thesis in examining small firm performance is elaborated below.

1.1.2 Central Thesis

This thesis argues that in order to examine fully and comprehend the nature of small firm performance a multi-disciplinary paradigm should be adopted which encompasses a range of economic and non-economic factors pertaining to the relationships between the key decision makers in the small firm sector, i.e. entrepreneurs, and the performance of small firms. Conceptual and definitional issues pertaining to the terms entrepreneur, entrepreneurship, small firms and small firm performance are considered later in this chapter, and in Chapter 2.

This thesis argues that different motivations for undertaking entrepreneurial activity must be examined in terms of their impact on objective-setting by entrepreneurs, and their strategic managerial behaviour, within the markets in which small firms operate, and their wider economic and social environment. In particular, it is proposed that the key focus should be on the dynamics of objective-setting by entrepreneurs, and the strategic policies they implement in response to changes in intrinsic entrepreneurial motivations, and changes in extrinsic conditions.

Furthermore it is argued that the dynamic nature of the process of managing a small firm is best analyzed using a triangulation research design which is aimed at gaining an holistic picture of small firm performance; and which uses a variety of research methods to examine small firm performance in terms of the key business performance indicators of growth and profitability. The justification for this research design is based on a consideration of the need to adopt an holistic 'entrepreneurship paradigm' to understand more fully the nature of the process of developing a small firm, rather than concentrating in particular on the antecedent influences in determining the choice to undertake entrepreneurial activity, which many previous studies have tended to do.

1.2 Research Questions

The research questions forming the basis of this study are:

- (i) **RQ1** What are the determinants of small firm performance?
- (ii) **RQ2** What are the roles played by entrepreneurial motivations, objectives and strategic choices in determining small firm performance?
- (iii) **RQ3** What is the best way to analyze small firm performance?

In addressing these questions, an investigation of the determinants of growth and profitability performance, measured by key financial indicators, is undertaken using a sample of small firms in the manufacturing sector in Tayside Region. The rationale for delimiting the study to small firms in the Tayside manufacturing sector is provided in Section 1.8. The empirical work for the study was conducted over the period 1990-1993. The methodology used in the study is comprised of two stages, which are outlined in Section 1.5, and considered in greater detail in Chapter 4. The first stage comprises of an econometric analysis of firm-specific determinants of small firm performance, using key variables identified in the traditional economic literature, but also incorporating ideas from the interdisciplinary entrepreneurship literature. Second, an applied qualitative analysis is undertaken to build upon the econometric analysis of firm-specific variables. The concern of the qualitative analysis is to analyze more specifically entrepreneur-specific determinants of small firm performance, in particular motivations, goals and practices. This analysis also adopts an holistic interdisciplinary paradigm and it examines one of the key issues which has been identified in the theoretical and conceptual literature, but which has not received much attention in the empirical literature in the field, that is, the dynamic aspects of the relationships between entrepreneurial variables and small firm performance.

1.3 Contributions to Knowledge

The major contributions of this thesis are:

- (1) To conduct a more disaggregated analysis of the contribution to employment generation by small firms in the manufacturing sector than previous studies of a similar nature, taking into account spatial factors identified in the interdisciplinary literature. The rationale and methodology of this analysis is outlined in Section 1.6.2, and covered in greater detail in Chapter 3. Evidence is found of an outstanding contribution to employment generation in the Tayside manufacturing sector in the 1980s, by 'micro-firms' with less than ten employees (Reid, 1993; Storey, 1994), a size band which previous studies of the impact of small firms on regional employment generation (e.g. Storey, 1981; Fothergill and Gudgin, 1982; Dobson, 1989) have not been able to disaggregate from those with 11-25 employees. The 11-25 employee size band performed substantially less well in terms of employment creation in this analysis than the smaller size band. The results from this analysis have been published in Glancey (1995), which is given in Appendix X (Volume II, pp 69-90).

- (2) To develop and test hypotheses using an econometric methodology, with regard to the relationships between firm-specific variables identified in the traditional economic literature, but also taking into account the impact of entrepreneurial motivations derived from a consideration of the interdisciplinary literature. The traditional economic literature which has informed previous econometric studies of this nature, has largely focused on managerial, rather than entrepreneurial motivations.

Furthermore, in analytical terms, adjustments are made to financial accounts data used in the analysis to ensure consistency between cases, adjustments which previous studies have not been able to make. It is also argued that the number of employees is the most appropriate measure of small firm size in this analysis, rather than the more commonly used assets or turnover

measures. It is argued that the employee measure can detect more directly the impact of entrepreneurial motivations on small firm performance, which are emphasized in the interdisciplinary entrepreneurship literature.

The analysis provides evidence which supports inter-disciplinary hypotheses suggesting that 'larger' small firms (measured in terms of employee numbers) are managed by more capable and 'business-oriented' entrepreneurs who are motivated by pecuniary returns, rather than by entrepreneurs motivated by personal lifestyle considerations. The latter are less likely to be motivated by pecuniary returns relating to business growth and are more likely to be associated with micro-firms. The results from this analysis have been published in Glancey (1998), which is given in Appendix X (Volume II, pp 91-108).

- (3) To develop and implement a qualitative research design which is based on a conceptual model of the qualitative nature of the relationships between entrepreneurial characteristics, motivations, objectives and strategic practices. This is used in an applied qualitative analysis, using fieldwork methods, to examine the nature of entrepreneurial dynamics in the process of small firm development. Previous studies of the relationships between key entrepreneur-specific, firm-specific, and the wider environmental factors which determine small firm performance, have not used a research design similar to that used in this study.

This research design also uses quantitative financial data to provide greater internal validity in the analysis, so that data from unstructured depth interviews are combined with financial data in the development of case studies, an exercise which is intended to build upon the findings of the econometric analysis undertaken in the previous section. In philosophical terms, the applied qualitative analysis is within the interpretive paradigm but represents an analytical extension to previous studies within the logical positivist paradigm. While some philosophers of science would argue that

the two paradigms are mutually exclusive in purpose and methodology (Halfpenny, 1982), in practical terms a triangulation of methodologies for explanatory purposes, but retaining the exploratory 'edge' of fieldwork methodology, is argued to be justifiable practice, especially if an entrepreneurship paradigm is adopted rather than a subject-specific perspective (Hofer and Bygrave, 1992).

Evidence is found that regardless of their backgrounds prior to the entrepreneurial event, dynamic changes in objective-setting are made by entrepreneurs in response to changes in both intrinsic motivations for undertaking entrepreneurial activity, and extrinsic market conditions. These changes are found to be manifested in the form of revised strategic choices. Furthermore, there is evidence that entrepreneurs pursue 'means' goals and 'ends' goals so that the process of objective-setting is more complex than is suggested in much of the empirical literature. There is no evidence, however, that changes in objectives which are induced by changes in extrinsic factors serve to revise fundamental intrinsic motivations for undertaking entrepreneurial activity.

These key findings, along with the adoption of a multi-stage research design which employs a number of rigorous analytical methods informed by an interdisciplinary literature, are the major contributions of the study towards gaining an understanding of the relationships between entrepreneurship and small firm performance, in this case in the manufacturing sector of a Scottish local economy analyzed at a disaggregated level. It is suggested that the research design developed in this study can provide a basis for future research in this field in a wider range of contexts.

1.4 Context for Research

As noted in the introduction to this chapter, the small firm sector has experienced a resurgence of interest in recent years. The aim of this section is to provide some context to the study and to identify the importance of small firms as an area of research interest. In broad terms, four key areas of interest may be identified in justifying the importance of the small firm sector as a research field. These are: (i) an increase in small firm numbers; (ii) the return of the small firm sector as a key sector in the operation and development of modern economies; (iii) government policy measures to promote small firms; (iv) the small firm sector as a vehicle of regional development.

1.4.1 Small Firm Numbers

Statistics indicate that the population of firms in the UK is highly skewed towards the smallest end of the employee scale, even in the manufacturing sector (which is more concentrated than the service sector). A study of the population of all UK firms in 1989, found that across all sectors, firms with less than 200 employees account for 99.7% of the three million firms identified (Daly and McCann, 1992). The relevant statistics are shown in Figure 1 below.

Figure 1 **Number of Businesses, Employment and Turnover Share by Employment Size Band (End-1989)**

<i>Employment size band</i>	<i>Number of businesses (000)</i>	<i>Share of total Businesses %</i>	<i>Share of total Employment %</i>	<i>Turnover %</i>
1-2	2,025	67.8	12.3	4.2
3-5	596	19.9	10.0	4.7
6-10	181	6.1	6.3	4.1
11-19	92	3.1	6.0	4.3
20-49	57	1.9	7.7	6.0
50-99	18	0.6	5.8	3.7
100-199	9	0.3	7.2	13.6
200-499	6	0.2	10.6	17.9
500-999	2	0.1	6.7	11.2
1,000+	1	0.0	27.5	30.4
TOTAL	2,988	100.0	100.0	100.0

SOURCE: Daly and McCann (1992)

points lower than the EC average of 11%. In 1989, however, this gap had closed to only one percentage point, with the UK proportion having increased to 12%, compared with the EC average of 13%. The 1989 proportion of 12% was greater than the US, and almost on a par with Japan, economies which have historically always had a relatively much higher proportion of small firms than the UK (Stanworth & Gray, 1991).

1.4.2 The Revival of the Small Firm Sector

Acs and Audretsch (1990) identify two key factors which have changed the industrial environment in favour of smaller scale activity: (1) the implementation of new flexible technologies; (2) the proliferation of consumer demand away from standardized mass-produced goods and towards stylized and personalized products. Taking the first of these, for most of this century industrial technology has favoured the mass production of standardized products. Inherent in this technology is inflexibility and a bias towards large firms. Large scale production is necessary to reduce indivisible fixed costs incurred in purchasing the machinery. Product standardization is also necessary to reduce costs. However, advances in areas such as microelectronics and plastics, have changed manufacturing technology, which,

"...has been revolutionized by the cost reduction of small-scale production relative to large-scale and the degree of flexibility offered by the technology".

(Acs & Audretsch, 1990, p5)

The emergence of this new flexible technology represents an 'industrial divide' according to Piore and Sabel (1984), in which firms and society are confronted with a choice of technological modes other than mass production. New technology and new materials have reduced the minimum size at which firms in many sectors can be competitive and efficient, and flexible production systems have been implemented which are favourable to small batch production. Changing consumer tastes have served to create a need for greater flexibility in production. More

affluent consumers are no longer satisfied with mass produced consumer goods, but demand more exclusive or distinctive products. Thus there has been a trend towards market segmentation, which has favoured smaller firms which are characteristically more flexible by virtue of their less bureaucratic organizational structure and lower capital requirements.

Penrose (1959) defines small market niches as 'interstices', and suggests that the economy generates a number of market spaces that are unfavourable for large scale production. In addition to luxury needs arising from an improved level of affluence, these may be created by local customs (e.g. ethnic foods), geographical location, special uses, or by very new markets with as yet a weak demand. Such small markets are not accessible to large producers, nor do they yield sufficient profit to interest them.

Curran (1990) notes that the greater flexibility of small firms has been exploited by large firms, which have increasingly externally sourced services and products formerly produced in-house. Additional benefits to the large firm of external sourcing includes the fact that in recession, there is no need to incur the expenses of rationalization, while competition between sub-contractors tendering for the same contract serves to lower prices. Therefore has been a growth in small firm numbers as a result of sub-contracting. Shutt and Whittington (1987) find evidence from a study of subcontracting in the engineering sector in support of three types of 'fragmentation' of the supply chain. First, they identify a decentralisation of production in which large plants are broken up but retained under the same ownership, by hiving off into smaller plants or by creating new subsidiary companies. Second, a form of detachment whereby large firms cease to directly own units but retain revenue links with them, for example, in the form of licensing. Third, a disintegration of production and innovation, where large firms cease to own units but retain control through market power, or latently through the power to repurchase units (Storey, 1994).

A small firm whose existence depends upon one, or a few, large customers,

however, is a different entity from a small firm actively seeking to generate custom through strategic marketing practices. In a sense, intricate sub-contracting networks represent 'hidden concentration'; if the ultimate buyer pulls out of the chain, there may be knock-on effects which threaten the survival of the rest of the chain. While recession may threaten the existence of small subcontractors, it may leave market spaces for other small firms through the withdrawal of larger firms from markets, as they attempt to consolidate their core products.

Curran (1990) provides summary definitions of the mixture of production types arising as the result of economic restructuring. These are: (1) 'Fordist' or mass production techniques; (2) elements of vertical disintegration by large firms approximating to the 'post-Fordist' pattern; (3) 'flexible firm' models, where small firms are confined to a subcontractor role serving large firms; (4) 'flexible-specialisation', where small firms have some control over the labour process and the products and markets they serve. Thus, there is a wide range of small firm-large firm relations, some involving dependency of small firms on large firms, others reflecting small firms independently serving consumers' needs in niche markets. It is clear, however, that the trend has been towards a decentralisation of productive activities, which has undoubtedly acted in favour of small firms. The taxonomy proposed by Curran serves to indicate the dangers of assuming homogeneity in the small firm sector.

1.4.3 Government Policy Towards Small Firms

A number of policy initiatives have been implemented since 1979 specifically aimed at developing the small firm sector. These relate to a broad government strategy of: (1) making the general business and regulatory environment more favourable to small firms; (2) specific direct assistance measures where there is evidence that the normal market mechanisms fail to provide the appropriate service, such as finance and information. A fuller consideration of policy measures is provided in Appendix I (Volume II, pp 8-13).

1.4.4 Small Firms and Regional Development

The small firm sector has received much attention from academics and policy makers regarding its potential as a vehicle of local economic development, and in particular employment creation. The growth in employment in small firms has two elements: the formation of new firms, which tend to be small, and the growth in employment in existing small firms. Much research has been aimed at investigating regional differences in the birth rates of new firms, and has reached the broad conclusion that there are significant disparities between regions of the UK. Stanworth and Gray (1991, p165) have summarised the pattern of new firm formation rates in the UK as "a north-south divide upon which is overlain an urban-rural difference".

Storey and Johnson (1987) develop an 'entrepreneurship index' based on characteristics such as levels of educational attainment, dominance of large manufacturing plants, and owner-occupation, which are perceived as being directly related to new firm formation. They rank the regions of the UK using this index and find that the South East scores highest, and Wales and the North the lowest, which tallies with findings by Oakey, Nash and Thwaites (1980), that over the period 1965-78, the South-east has the highest rate of innovations per capita, and Wales the lowest. In both of these studies, Scotland ranks in the lower half of the regional league table, along with the other northern regions. Other studies (Batchelor, 1990; Birley & Westhead, 1990) have also identified a North-South divide in that northern regions are more dependent upon declining manufacturing industries, and, northern firms are less profitable, invest less in management resources and are more likely to be supported by grants, a feature which Stanworth and Gray (1991) characterise as 'grantpreneurship'. In a study of the distribution of venture capital, Mason (1987) finds that 60% of venture capital is located in the South East, where only 47% of recipient firms were identified.

Furthermore, several studies have concluded that the independent effect of the industrial structure of a locality has only a minor influence on its new firm formation rate. Controlling for the effect of industrial structure fails to eliminate

regional variations (Beesley & Hamilton, 1986; Johnson, 1983; Storey & Johnson, 1987; Ashcroft, Love & Malloy, 1991). The northern regions seem to be inherently less 'fertile' breeders of new firms. Ashcroft *et al* (1991) find that Scotland performs particularly poorly, a fact which is not accounted for by an unfavourable industrial structure, and conclude that Scotland (as do all the northern regions), suffers from a 'deficiency of enterprise'. Although they find no particular 'Scottish effect', they conclude, that Scotland is disadvantaged in key aspects of its socio-economic structure, in that it has low levels of home ownership and low availability of professional and managerial labour due to a tendency for out-migration of indigenous managerial labour towards the South East, where there is a concentration of corporate headquarters. The factors which have been considered here are clearly parameters of the ability of certain UK regions to assimilate an 'enterprise culture'.

With respect to employment generation through the expansion of existing small firms in regional economies, there is strong evidence that in general small firms, if they survive, are likely to remain small. In a study of all new manufacturing firms opening in North East England in the period 1965-78, Storey (1982) finds that only 774 survived out of 1,200 over the period. Of the survivors, more than half still had fewer than 10 employees in 1978, and nearly three-quarters had fewer than 25 employees. The proportion of new firms employing more than 100 employees after a decade was less than three-quarters of one per cent. In a survey of single-plant independent manufacturing companies in the North East, Storey, Keasey, Watson and Wynarczyk (1987) find that one third of new jobs were created in less than 4% of new firms. Fothergill and Gudgin (1982) report similar findings for the East Midlands. The issue of employment generation by small firms in regional economies will be considered in greater depth in Chapter 3.

1.5 Methodology

The methodology is comprised of two interconnected stages which are summarised below.

1.5.1 Econometric Analysis

The first stage involves an econometric analysis of small firm performance, which is measured by key financial growth and profitability ratios, using firm size, age and location as the key explanatory variables. This analysis incorporates a large scale secondary database search of all manufacturing establishments in Tayside using published and on-line sources of company information to provide comprehensive list of all Tayside manufacturing companies (as opposed to establishments); and a survey of 275 manufacturing companies to ascertain the nature of ownership in these companies (75% response rate). The analysis was delimited to companies so that financial accounts data could be obtained unobtrusively from Companies House.

1.5.2 Qualitative Analysis

The second stage builds on the first in examining the qualitative nature of the relationships between entrepreneurs and the performance of their firms. An applied qualitative analysis is undertaken which is based on an interdisciplinary conceptual model of the relationships between key entrepreneurial variables and small firm performance. This analysis uses a combination of fieldwork methods, namely unstructured indepth interviews, and the collation and analysis of archival financial accounts data obtained from Companies House. The analytical methods are:

- (i) to reconstruct intra-site analyses (case studies) around the elements of the conceptual model;
- (ii) to conduct a comparative inter-site analysis of the key entrepreneurial variables identified in the literature, in 'high' performers and 'low' performers in the sample of 16 cases, with the sample being partitioned into these categories using the financial accounts data. Analysis is presented in form of analytical tables combining qualitative and quantitative data, and narrative textual analysis based around the elements of the analytical model;

- (iii) to conduct an analysis of the nature of dynamic change in objective-setting by entrepreneurs, and the impact of changes on strategies pursued, using qualitative data matrices of textual data, with narrative text incorporating direct quotations from informants.

1.6 Outline of Thesis

1.6.1 Chapter 2

This chapter will provide a review of the literature pertaining to the fields of entrepreneurship and small firm performance and will identify the key issues which emerge from this body of knowledge and which are relevant to this study. The chapter will begin by reviewing economic literature in field. This review will begin with a consideration of the theoretical and conceptual economic literature, followed by an examination of the few economic studies which have investigated determinants of small firm performance. Following this, a review of the non-economic interdisciplinary literature in the field is undertaken. Similarly, the theoretical and conceptual literature in this field is first considered, followed by the empirical interdisciplinary literature which has sought to investigate the determination of small firm performance.

A key element of this thesis is the focus on the economic impact of non-economic aspects of the relationships between entrepreneurs and the performance of small firms, which can used to inform the empirical work undertaken in this study. The literature review will reflect this feature of the study and will be structured accordingly in order to reach some conclusions regarding these issues. An overview of both economic and interdisciplinary perspectives will be undertaken in order to establish the theoretical and methodological stances adopted in this research, and to derive research hypotheses and propositions for investigation.

1.6.2 Chapter 3

This chapter will provide background information on the spatial area forming the basis of the study, Tayside Region in East Central Scotland, focusing in particular on trends in the manufacturing sector in the region. The chapter will begin with an overview of Tayside Region and its manufacturing sector, commencing with socioeconomic and demographic indicators for the region, followed a brief history of the Tayside manufacturing sector, and then by a more detailed consideration of the key trends in the sector in the 1980s. Following this, a components of employment change analysis will be carried out, which is aimed at showing the importance of small firms to employment generation in Tayside manufacturing in the 1980s. This will begin with an overview of the analytical procedure involved, followed by a review of previous studies of this nature which have focused on the manufacturing sector in local economies. Issues pertaining to the sources of data used and the definitional issues employed in the analysis will then be considered, and finally the results will be reported and discussed.

1.6.3 Chapter 4

This chapter will describe and discuss the methodology and research design employed in the study, and it will detail the research procedures used in sampling, data collection and data analysis. One of the key features of this study is the use of a triangulation research design, which many researchers in the field (e.g. Bygrave, 1989; Hofer and Bygrave, 1992; Chetty, 1996) argue provides greater insights into the nature of small firm performance. Methodological triangulation involves using a range of methods in addressing research questions and hypotheses in order to gain a richer view of both the quantitative and qualitative nature of the relationships between key analytical variables (Denzin, 1978; Jicks, 1979). This study employs an econometric analysis of firm-specific determinants of small firm performance, followed by an applied qualitative analysis of the relationship between key entrepreneur-specific variables and small firm performance. It will be argued that in doing so, the study combines the robust explanatory framework associated with econometric analysis with the exploratory 'edge' associated with qualitative

fieldwork. This methodology, and the research design, will be justified in the context of the research issues identified in Chapter 2.

1.6.4 Chapter 5

This chapter will report the results from the econometric analysis of small firm performance. It will begin with a description of the sample characteristics incorporating key descriptive and summary statistics, and then it will examine the findings with respect to hypotheses derived from a consideration of the literature in Chapter 2. The key areas of agreement and conflict with the findings from previous studies of this nature (Dobson and Gerrard, 1989; Reid, 1993) will be indicated. It will be demonstrated that key relationships identified between the dependent and independent variables contrast with previous studies and provide support for hypotheses rooted in the interdisciplinary entrepreneurship literature, rather than the traditional economic literature. The chapter will conclude with a summary of the key points to arise from the econometric stage of the study.

1.6.5 Chapter 6

This chapter will be the first of two which will report the results of the qualitative analysis. As noted in Section 1.6.3, the rationale for undertaking the qualitative analysis as part of a triangulation research methodology is to provide a deeper understanding of small firm performance than can be gained from the quantitative estimates provided by the econometric analysis on their own. In particular, the dynamic nature of the relationships between entrepreneurial motivations, goals and practices cannot be easily be captured using quantitative analytical techniques. The qualitative analysis therefore represents an analytical extension to the econometric analysis.

In this chapter, the findings from an intra-site analysis of each of the small firms participating in the study will be reported as a series of entrepreneurial profiles. This method is recommended by fieldwork researchers (e.g. Miles and Huberman,

1994; Yin, 1989) and has been used in previous studies of small business (e.g. Reid, Jacobsen and Anderson, 1993; Chetty, 1996). Descriptive statistics are also provided pertaining to the sample of entrepreneurs and their firms, and financial data are provided for each case and in summary form for all cases. The intention here is to provide a layer of analysis which can be used to underpin a comparative analysis of the sample, but which can also provide the reader with the opportunity of examining the raw qualitative data. Furthermore, future studies which develop entrepreneurial profiles can use the intra-site analyses from this study as comparators.

1.6.6 Chapter 7

This chapter will report the results of the comparative inter-site analysis of the entrepreneurial profiles presented in Chapter 6. This will comprise of a comparative analysis of the cases based around the key entrepreneurial variables and themes underpinning the study, namely entrepreneurial characteristics, motivations, objectives, strategies and managerial practices. This analysis will incorporate a textual data matrix analysis of the factors determining the dynamic development of objective-setting and the impact on strategies and managerial practices employed by entrepreneurs. The key findings from the inter-site analysis will be identified and the chapter will conclude with a summary of the key points to arise in general from the qualitative stage of the study.

1.6.7 Chapter 8

In addressing the research questions specified in Section 1.2, this chapter will discuss the results from the econometric and qualitative analyses from an holistic perspective. The overall findings from the analysis will be discussed in the context of previous studies of determinants of small firm performance, and in the context of the wider theoretical and methodological entrepreneurship and small firms literature. Conclusions will be derived with respect to each of the research questions set in Section 1.2, and the more general implications of the research will

be discussed with regard to theory and practice in the field of entrepreneurship and small firm performance. Avenues for future research will be suggested and recent work by the author in the field will be discussed.

1.7 Definitional Issues

The key issues of the definitions used in the study of small firms and entrepreneurs/ entrepreneurship are discussed below.

1.7.1 Small Firms

The conceptual and operational definitions of what constitutes a small firm in the study reflects key qualitative factors which are identified in the literature. Most definitions of firm size are expressed in quantitative terms, with the most common measures adopted being number of employees, sales turnover, assets and output. The Bolton Committee (1971) considered the problem of definition and arrived at the conclusion that there is no single universal quantitative definition of the small firm. It proposed a series of definitions for different economic sectors principally based upon employee numbers and turnover. The definition proposed for the manufacturing sector was a firm with less than 200 employees.

However, it is clear that firms with 200 employees, are different organizations to firms with 20 employees, or firms consisting of one self-employed person. The Bolton Committee appreciated that a theoretically sound definition of the small firm sector should consider qualitative differences between organizations of different sizes.

"First, in economic terms, a small firm is one that has a relatively small share of the market. Secondly, an essential characteristic of a small firm is that it is managed by its owners or part-owners in a personalized way, and not through the medium of a formalised management structure. Thirdly, it is independent in the sense that it does not form part of a larger enterprise and

that the owner-managers should be free from outside control in taking their principal decisions".

(Bolton Committee, 1971, p1)

Thus the key criteria which distinguish a small firm from a large firm according to this qualitative definition are: (1) a small market share; (2) a personalised form of management; (3) freedom from external control when making decisions. While the first of these criteria can be quantified and measured in some way, the concept of market share cannot by itself be used to provide an adequate discussion. For example, in niche markets, it is possible for a firm to have a large share of a small market, while still being small by any other measure, and meeting the other two qualitative criteria. The concept of market share is therefore nebulous, and ultimately is determined by the definition of the market, or industry in which the firm operates. For example, a small firm may operate in a highly competitive industry, as measured by standard industrial organization criteria such as concentration ratios, but may have captured a small market segment in which it does not directly compete with larger firms operating in the same broadly defined industry.

The second and third components of the Bolton Committee definition are more robust in terms of providing unambiguous criteria for identifying small firms. Large corporations are often characterised by a separation of ownership and control between shareholders (owners) and professional managers (controllers). This is in contrast to the small firm in which the owner(s) is/are the manager(s) and is/are the nexus of authority and decision-making in the firm. This is the case for sole traders with no employees, and for firms with a small number of employees where direct supervision and control is possible for one individual.

The Committee also recognised that some smaller firms may have intermediate layers of management, for example, supervisors or foremen, to implement the owner-manager's decisions, but it still regarded the owner-manager as undertaking the principal management functions, making the principal decisions. Atkinson and

Meager (1994), however, argue that managerial appointments, not simply supervisors or foremen, are made when firms reach a size of between ten and twenty workers. At that size, owners are no longer the exclusive source of managerial decisions. By the time a firm has in excess of 100 employees, its owners have to devolve key responsibilities to management teams. Thus it seems unlikely that a firm with more than 100 employees could be managed in a personalized way, and some formal management structure is required for the smooth operation of the firm's activities (Storey, 1994).

Differences in management style are therefore clearly a key element in specifying the qualitative differences between single establishment firms of different employment sizes. However, while a single establishment firm with 100 employees may be large compared to a single establishment firm with 10 employees, it is still small compared to a Public Limited Company with many thousands of employees, operating internationally with many hundreds of business establishments, with ownership dispersed between many thousands of shareholders. Therefore, there are clearly qualitative differences which distinguish even the larger 'small' firms according to the Bolton 200 employee measure, from the largest corporations in the economy.

The extent of freedom from external control is more difficult to quantify, however, in that while a firm may be independent with no higher level of ownership such as a holding company, there are always external influences on decision-making, such as advice, or imperatives, from bankers, accountants, solicitors and suppliers. Even so, for the owner-managed firm there is still no direct higher level of authority, and advice can be disregarded.

1.7.2 Entrepreneurs and Entrepreneurship

The definition of 'entrepreneur' used in the study reflects the view that while there is no consensus on the definition of 'entrepreneur' and 'entrepreneurship', the act of controlling a set of economic resources represents an entrepreneurial activity. Some

authors, for example, Curran (1986) have argued that the 'hallowed' term 'entrepreneur' should be reserved for those small business owner-managers who are innovative and opportunistic in their strategy for deploying resources in the provision of products or services. That is, entrepreneurs are in the business of providing new products or services for which there is demand. Curran compares this activity with the prosaic activities of the majority of small business owner-managers, who are neither innovative or opportunistic but provide well established products or services to well established markets.

Other theorists, notably Casson (1982) have argued for a wider definition of entrepreneurial activity which is related to the making of judgemental decisions regarding the allocation of resources. An entrepreneur is an individual who possesses greater than average abilities to make judgemental decisions and in order to gain from their abilities has to form or takeover a business. Taking this theoretical stance, it could be argued that an entrepreneur is any individual at the helm of a business. In the small firm, as it has already been explained, this is the owner-manager. Therefore all owner-managers are strategic decision-makers and therefore entrepreneurs. While this is clearly an unresolved debate, for the purposes of the model employed in this research, the definition of the entrepreneur used in this study conforms to that of Casson's, i.e., the owner-manager as the economic agent who is a strategic decision-maker. This definition includes those individuals who are later generation managers in firms rather than the founder. In this respect, the definition employed takes a wider view of entrepreneurship than narrower definitions which are related to new firm creation (Gartner, 1988). A more detailed consideration of the issues pertaining to entrepreneurs and entrepreneurship will be provided in Chapter 2.

1.8 Delimitations and Key Assumptions

The key delimitations of the study pertain to the nature of the business forms examined, and the specific focus on manufacturing activity. These are discussed below, along with the key assumptions adopted in the study which relate to the

issues faced in examining small firm performance.

1.8.1 Business Forms

The research is centred on what is regarded as conventional business forms, i.e. the firm as the unit of ownership and control, whether this is a sole trader or a multinational company. However, another dimension to the heterogeneity of the small firm sector is created by non-conventional business forms such as cooperatives and host-satellite business relationships such as franchises and outworkers. Cooperatives, for example, clearly do not have the same concentration of authority as in the owner-managed firm, or the same rationale for their existence; and while franchisees are legally independent business entities from their franchisers, they still would not exist without them. While these have grown in numbers in recent years (Curran, 1986), they are still small in number by comparison with the conventional firm as defined above. Also excluded, as in most investigations of the small firm sector, is the unofficial contribution made by entrepreneurs in the 'informal economy' whose activities are largely unreported and by definition difficult or impossible to quantify in terms of their aggregate contribution to the economy.

1.8.2 Manufacturing Sector

In common with many other small firm studies, the rationale for restricting the research to the manufacturing sector is partly practical, in that data is more readily available than for the service sector; and, partly theoretical in that some writers argue that the manufacturing sector is of greater importance than services for sustained economic development and the regeneration of depressed local economies (Bannock, 1981; Acs & Audretsch, 1990).

1.8.3 Tayside Region

The study is focused on Tayside Region. It will be demonstrated in Chapter 3 that Tayside is a particularly interesting local economy in which to undertake an analysis of small firm performance for three reasons: first: in terms of location (which is one of the key variables in this study), it has a clear spatial division between urban and rural areas; second, its manufacturing sector remained relatively stable in terms of its contribution to overall employment in the region in the 1980s, and did not experience a substantial decline as in many other local economies; third, small firms made a significant contribution to employment generation in Tayside manufacturing in the 1980s. These points are illustrated in Chapter 3. Additionally, the researcher was working in Tayside when the project commenced.

1.8.4 Examining Small Firm Performance

In examining different facets of the profitability and growth performance of small firms, a diverse range of literature is reviewed, reflecting the author's view that much of the growing body of small firm research has been limited by a narrow subject-specific focus. While small firm research has flourished during the last twenty years, the adoption by many authors of subject-specific theoretical positions and methodological stances has perhaps limited the usefulness of some of this research. This controversial proposition is one which will be debated in much greater detail later in the thesis. It is sufficient for now to indicate that the economic, social and psychological influences on entrepreneurial and small firm behaviour and performance are not easily compartmentalized, and cannot be comprehensively investigated within the confines of any single discipline. One of the main aims of this thesis is to argue the case for economists to embrace a wider body of knowledge in their analyses of the small firm. It is suggested that an interdisciplinary paradigm is the most valid way to proceed in the study of entrepreneurship and small firm performance.

Chapter 2

Literature Review

2.1 Introduction

The purpose of this chapter is to review the literature concerning entrepreneurship and small firm performance in order to develop a theoretical and methodological basis for this research. The chapter comprises of a broad review of the economic and interdisciplinary theoretical and empirical literature in the field of entrepreneurship and small firm performance.

Section 2.2 reviews the theoretical and empirical economic literature relating to entrepreneurship and small firm performance. This review examines the theoretical economic literature in this field from a thematic perspective, beginning with traditional neoclassical economic theories based on an equilibrium paradigm. This is followed by a consideration of alternative equilibrium-related theories, and finally by a consideration of evolutionary economic theories.

Section 2.3 reviews the body of interdisciplinary theoretical and empirical literature which has developed rapidly in the past two decades. This review begins with a consideration of the contributions of the other major social sciences of sociology and psychology towards gaining an understanding of entrepreneurship and small firm performance. This is followed by a consideration of the theoretical and empirical contributions of generalist, interdisciplinary perspectives, which encompass elements from all of the theoretical approaches considered previously.

Section 2.4 provides an holistic critique of the economic and interdisciplinary literature and establishes the key areas of concern for this thesis. The chapter concludes with a summary in Section 2.5.

2.2 Economic Theories of Entrepreneurship and Small Firm Performance

2.2.1 Synopsis

This section provides the structure of the ensuing discussion of the key ways in which the field of entrepreneurship and small firm performance has been treated in economic theory. The first point to note is that in order to discuss this field of study in economics, a range of economic paradigms have to be considered, which comprise both mainstream neoclassical economic thought and a range of paradigms which are conventionally assumed to be 'alternatives' to neoclassical theory. These paradigms comprise the Austrian, Socioeconomic and Evolutionary schools of economic thought. Kirchoff (1991) argues that the growing interest in the field of entrepreneurship in small firms has raised a conflict in economics in that the neoclassical paradigm alone cannot provide a satisfactory framework for analysing the nature and scope of entrepreneurship, its impact on small firm performance, and its impact on the performance of the wider macroeconomy.

The review begins in Section 2.2.2 with a consideration of neoclassical approaches, which are based upon static analyses of economic equilibrium. This is followed in Section 2.2.3 by a consideration of Austrian economic approaches, which place emphasis on the role of market dynamics in periods of economic disequilibrium. Section 2.2.4 considers the work of one of the leading contemporary theorists in the field, Mark Casson, who has devised what is perhaps the most comprehensive economic equilibrium theory of entrepreneurship. Section 2.2.5 considers the entrepreneurship theory of Amitai Etzioni, the leading contemporary writer in the socioeconomic school of thought. Section 2.2.6 considers entrepreneurship in the body of thought which is regarded as evolutionary economics. Section 2.2.7 reviews the empirical economic literature which has examined the determinants of small firm performance. Finally, Section 2.2.8 derives the general themes evident in the economic literature.

2.2.2 Neoclassical Theories - Equilibrium and Industrial Structure

The central principle of neoclassical economics is that the economy can be modelled as a system in which equilibrium is attainable. The preferred type of economic system in neoclassical economics is the decentralised market economy, rather than the centralised command economy in which it is the government that makes decisions regarding resource allocation. In examining the operations of the market economy, particular emphasis is placed on understanding the coordinating role of prices in the system. However, because of the complexities of reality, an approach is adopted which is aimed at simplifying the market economy into readily identifiable units of analysis, namely consumers and producers, and using deductive reasoning to make predictions about their behaviour in the system in directing the flow of scarce resources to achieve a state of equilibrium. This approach was pioneered by economists such as Walras (1874) in 'Elements of Pure Economics', and Marshall (1919) in 'Principles of Economics', key works which laid the foundations for conventional economic analysis.

Two broad approaches to the analysis of the economic system can be identified within neoclassical thought: first, general equilibrium analysis, and second, partial equilibrium analysis. The distinction between these modes of analysis is defined in terms of their level of abstraction. General equilibrium analysis was pioneered by Walras and is concerned with analysing how equilibrium can be achieved in the whole economy, taking account of the inter-relationships between markets. Partial equilibrium analysis, on the other hand was pioneered by Marshall and represents a more disaggregate view of the market economy, focusing on the operations of particular markets, and the firm as a decision making unit. This mode of neoclassical analysis broadly forms what has come to be known as microeconomics.

In general equilibrium analysis, the economy is perceived as a series of inter-related markets connected through the price mechanism, and it is theoretically possible that at a point in time all markets are in equilibrium, where the quantity of a product demanded by consumers equals the quantity supplied by producers. At

this point, the markets for the factors which are used in the production process (land, labour and capital) are also in equilibrium. There are, however, certain conditions which must be met in this theoretical framework before a general equilibrium is possible. The first of these conditions is that it must be assumed that individual consumers and producers act rationally in the sense that they will make decisions which will maximize their utility. In terms of producer behaviour this is equivalent to profit-maximization because the second condition underlying general equilibrium theory requires the existence of perfectly competitive markets.

Perfect competition exists in a market full of small, atomistic competitors, each of whom produces an identical product and therefore faces a perfectly elastic demand curve for their output. Furthermore, there are no barriers to entry or exit so that producers can enter or leave the market without incurring any costs. All of these features of the market environment mean that individual producers have no control over the price they can charge, this is determined by the level of market demand. Producers must seek to maximize profits in order to survive, and this is achieved at the point where marginal revenue equals marginal cost. This arithmetic calculation is made easy for producers, however, because of the assumption of perfect knowledge in the economy. That is, producers have complete knowledge of all consumer preferences, and the prices, costs and optimal production modes of producing all goods. This is not to say that all knowledge is ready at hand at every point in time, it may be that some search activity is required. The point is that all the relevant knowledge required to make an optimal decision can be accessed by all decision makers. It is therefore little problem for producers to decide which goods to produce, in what quantities, and how best to produce them.

Therefore the firm as a decision making unit does not really exist in perfect competition because it is no more than a production process transforming inputs into outputs as efficiently as possible. The perfectly competitive nature of the market environment renders production decisions as no more than arithmetic calculations in order to produce the profit maximizing level of output, at the price determined by the market. Decision making by producers is purely reactive to

changes in the consumer preferences and production technologies. The cause of change, and the process through which equilibrium is restored in order to accommodate change, are not explored at all. Furthermore, in equilibrium, no individual producer earns profits over and above any other. All firms operate at the level of output where they breakeven in economic terms in that there is no better opportunity to earn a higher level of profit using their particular set of productive resources. All producers are doing the best they can in order to survive and there is no scope to earn an element of monopoly profit when the economy is in equilibrium.

The assumption of perfect knowledge is essential to general equilibrium analysis as a tool of predicting the price and output combinations of all goods and factors of production in an economy at a point in time. General equilibrium can only exist for a given set of consumer preferences and production technologies. If either of these change, a new equilibrium will be reached once the change has been accommodated by producers, in which a different set of price and output combinations will prevail. The theory is therefore a static analysis of an economy at one point in time compared with another. The problems of time and uncertainty can be dealt with by assuming that there exist a complete set of futures and insurance markets (Arrow and Debrue, 1959). Thus consumers and producers can determine their consumption and production plans in the present, with complete knowledge of all future prices, and they can insure themselves against any foreseeable risk. General equilibrium analysis is thus an abstract theoretical treatment of the market economy as a system of resource allocation.

In a general equilibrium system, in which there is perfect knowledge and decision making is routine and determined by the environment, there is little scope for entrepreneurship. In early general equilibrium models entrepreneurship was assumed merely as a rather intangible fourth factor of production, along with land, labour and capital. Entrepreneurs were regarded as manager-coordinators of the other three factors, charged with the task of calculating the profit maximizing level of output for a given set of consumer preferences and available technologies. This

function is best described as one of superintendence of the production process. The need to react to a change in exogenous factors is forced upon entrepreneurs by the competitiveness of the environment, in order to survive. In equilibrium, however, there is no need for entrepreneurship defined in these terms because all resources are deployed efficiently. It is important to note here that while the function of entrepreneurship is defined as one of adjustment to new circumstances, this process is nothing more than a mechanical arithmetic calculation, the outcome of which is determined by the environment and not the entrepreneur. There is no scope for proactive and dynamic behaviour of the type that is commonly associated with entrepreneurs.

In the partial equilibrium approach developed by Marshall, there is also little mention of entrepreneurship, although again an entrepreneurial function of sorts can be identified implicitly. Whilst being the pioneer of the mathematical models of microeconomics, Marshall differed from his neoclassical contemporaries in that he was more concerned with incorporating an element of realism into his analysis. In point of fact, Marshall's main concern was with economic development, in other words, how an economy evolves through time. The problem of time is assumed away in general equilibrium analysis, and therefore economic evolution is no concern of general equilibrium models. In developing partial equilibrium models of producer behaviour in order to predict price and output levels, Marshall attempted to incorporate the feature of change occurring through time, acknowledging that firms and markets are dynamic entities which are subject to uncertainty. The assumptions underlying Marshall's analysis, however, are that change is slow and gradual, and that economic evolution is therefore a predictable incremental process. According to Marshall, change is organic, it occurs from within the economic system, and it is contributed to by all producers, who must constantly test out new ideas in the marketplace in the search for profit opportunities. Thus change occurs in the supply-side of the economy.

In order for their firms to develop, business managers must use their accumulated knowledge acquired through experience, to improve productivity and develop new

products. Marshall, however, does not draw any distinction between managers and entrepreneurs and there is no specific function attributed to entrepreneurship. The process of 'natural selection' of the best production techniques and products, is contributed to by all managers. Furthermore, the accumulated 'body' of knowledge in an industry is, according to Marshall, available to all business managers. Knowledge is 'in the air' and all firms can potentially benefit from the actions of their rivals in implementing new and better ideas. Thus, the notion that business managers must be receptive to new ideas and willing to test them out, in order to survive and flourish, is more explicit in Marshall's more 'realistic' partial equilibrium approach, than it is in the more abstract theoretical treatment of producer decision making in general equilibrium analysis. The importance of acquiring knowledge through learning by experience cannot be overstated in Marshall's analysis. In common with the evolutionary basis of his theory, Marshall perceives the process of natural selection in markets as being one in which new, small firms with the best ideas, grow into large firms through becoming more efficient as they accumulate experience. At some point in their life-cycle though, the ability of a firm to learn and improve diminishes, as managers' motivations decline, and their ideas become less well suited to market conditions. These declining firms fail, and new dynamic firms take their place.

Those following in the footsteps of the early neoclassicists, in particular Robinson (1933) and Chamberlin (1933) developed this body of work further in elaborating an economic 'theory of the firm' in which imperfect and monopolistic competition were developed as an alternative viewpoint to perfect competition. In the model of perfect competition, the firm as a decision making unit with a degree of control over price and output decisions, does not exist. The concern of perfect competition is to predict the profit-maximizing price and output decisions of the producers of standardized goods in response to changes in external factors such as consumer preferences and technology. Here production is merely regarded as the transformation of inputs into outputs, and the productive unit is seen as a 'black box' through which this process occurs. In imperfect and monopolistic competition, the market is still assumed to be made up of small atomistic competitors, but each

firm has a degree of discretion over its price and output decisions by virtue of product differentiation. The development of the theory of the firm provided the basis for the predominant paradigm in neoclassical analysis of industrial structure and performance, the Structure-Conduct-Performance (SCP) model, pioneered by Mason (1939). In the SCP model, the performance of firms is determined by their conduct, in terms of price and output decisions, which in turn are determined by the market structures in which they operate. Market structures can be measured in terms of industrial concentration, and factors which affect concentration such as the rate of entry and exit of firms and the duration of firms, can also be measured. It is assumed that perfect competition and pure monopoly are the best and worst yardsticks of industrial performance respectively, in terms of the implications for efficient resource allocation and consumer welfare.

Fundamental to the theory of the firm and the SCP model is the assumption that the long-run objective of the privately owned business enterprise is profit-maximization. In competitive markets this is a necessary condition if the firm is to maintain its existence in the market. In the theory of the firm it is assumed that all firms in an industry face identical U-shaped average cost curves, so that the optimal firm size is uniquely determined by the minimum efficient scale (MES) of production, represented by the lowest point on the firms' average cost curve. It is assumed that firms will not grow beyond the MES, as they would exceed the optimal efficient firm size for the industry and experience increasing average costs. In growing up in size to the MES a firm will derive economies of scale which are associated with greater technical and commercial efficiencies (e.g. specialisation of labour and a lower cost of capital). In growing beyond the MES, a firm will experience diseconomies of scale because of technical and commercial inefficiencies which creep in (e.g. breakdown in managerial co-ordination, bidding up input prices). Firms in different industries with different cost structures would therefore end up at different optimal sizes. Thus firm growth is assumed to be exogenously determined by industrial structure, with those firms most far away from the MES growing at faster rates. In long run equilibrium, the optimal size in any industry will be determined by exogenous factors such as changes in cost

structures and technological advances

During the same period in the 1930s another body of neoclassical work was being developed which sought to analyze the decision making operations of the modern corporate firm, in which ownership and control are separated between shareholders and professional managers. Previously, when the firm was analyzed as a unit of analysis, it was regarded as an owner-controlled, single product entity. Two major bodies of neoclassical thought emerged subsequently which sought to examine the price and output decisions of large corporate firms, one which concentrated on the oligopolistic market environments in which corporate firms typically operate, where there is an interdependency of behaviour between firms. Here, the analytical models of pricing theory (Hall and Hitch, 1939) and game theory (von Neumann & Morgenstern, 1944) were developed to predict the price and quantity decisions of oligopolistic competitors if they behave in certain ways.

The second body of thought formed what is regarded as the 'managerial theories of the firm', which were developed in order to predict the price and output decisions of corporate firms, where controlling managers have a degree of discretion in pursuing their own objectives at the expense of shareholders' objectives (Baumol, 1959; Williamson, 1964; Marris, 1964). The corporate firm, unlike the small owner-controlled firm, is characterised by a separation of ownership and control. While the owners of a corporate firm are the shareholders, the firm is controlled by professional managers. In the managerial theories of the firm it is generally assumed that shareholders are motivated by maximizing their return on investment, which will be achieved through high levels of profitability and consequently a high market value for shares. Professional managers, on the other hand, are assumed to have some discretion in pursuing non-profit maximizing objectives such as higher sales revenue, or enhanced staff levels or emoluments. High levels of sales may be achieved at the expense of cutting profit margins, although it is assumed that managers have to achieve some minimum level of profits to satisfy shareholders and thus protect their managerial posts. Thus while oligopoly theory recognises the external influences on decision making in large corporations, managerial theory

concentrates on the internal influences. Both, however, are still concerned with the central concern of neoclassical economics, which is to predict the behaviour of the producers of goods and services within the economic system, in determining equilibrium.

The previous discussion of the key strands of neoclassical economics has identified key issues which are relevant to the relationship between firm size and growth and profitability performance. These include exogenous determinants of performance which relate to market structures and the size distribution of firms within industries; and endogenous determinants which relate to the objectives of those decision makers who have effective control of the firm. The discussion which follows will elaborate these points further, and will consider other neoclassical variants on these themes which also have implications for gaining an economic understanding of the determinants of small firm performance. The discussion will initially focus on the relationships between the key firm-specific variables which neoclassical analysis has focused on, namely firm size and age, and the performance measures of growth and profitability. Following this, there will be a consideration of neoclassical approaches which have identified a more explicit role for entrepreneurs in determining the performance of their firms than one of mere superintendence of the production function.

Firm Size, Age, Growth and Profitability

In terms of relating firm size to profitability and growth, neoclassical theory suggests that larger firms should be more profitable. This expectation is based on two key components. First, larger firms in an industry will be able to derive economies of scale and thus operate on a point lower down their average cost curve than smaller firms. However, if they exceed their optimum efficient size they may experience diseconomies of scale and become less profitable. Additionally, the more concentrated the industry, the more scope there exists for larger firms to erect barriers to entry and thus to reap the benefits of earning monopoly profits in the long run (Sawyer, 1985). Baumol (1959) also argues that larger firms must be more

profitable because of the greater opportunities afforded to them by virtue of their greater resources. There are some activities that only large firms can undertake, while large firms can undertake any activities that small firms can. Large firms should therefore be at least as profitable as smaller firms, and certainly not less profitable.

A second theoretical advantage enjoyed by larger firms, which should lead to higher levels of profitability, is the lower variability of their profits from year to year. This may be expected because of the ability of larger firms to diversify their operations into different product and/or geographical markets. In doing so, they reduce the risk of trading in any one market. Sawyer (1985) indicates that an important consequence of this is that large firms will find it easier to obtain external finance, and furthermore, finance may be obtained more cheaply because lenders will not require as great a return on investment because of the lower risk involved. Conversely, smaller firms should find it more difficult to obtain lower cost finance and this may be a constraint on the growth of the firm.

Along the same lines, in neoclassical theory it is expected that there will be a negative relationship between firm size and growth, as larger firms will have exhausted their best opportunities for growth (Sawyer, 1985). Firms smaller than the optimum size in an industry will grow at faster rates as they move down their average cost curves and reap the benefits of increasing economies of scale. However, as in the case of profitability, it may be expected that large firms will experience less variation in their annual growth rate which may offset the tendency for growth rates to decline with increasing size.

However, the independent relationships between size and profitability, and size and growth, are further complicated by the complex relationship which may exist between profitability and growth. This may involve a number of causal processes which operate in both directions, which are complicated further by the independent relationships which may exist between profitability, growth and other common determinants.

Marris (1964) proposes a growth model in which corporate firms are viewed as facing a trade-off between growth and profitability, with the choice being determined by the extent to which management possesses a degree of discretion over the objectives of the firm. Marris argues that as management gains more control over setting the firm's objectives, it will indulge its presumed preference for higher growth over higher profitability. The pursuit of growth, however, is subject to a financial constraint in that if profitability falls to the extent where the firm's market value falls below its net worth, it may be subject to the threat of a take-over. Profitability will also play an important part in the growth process in that it will help to provide the required finance, whether this is internal or external. Thus, growth is a direct function of profitability in a positive causal relationship. However, Penrose (1959) identifies managerial constraints on growth due to increasing managerial inefficiencies which arise as the firm expands. If the firm expands beyond the capability of the managerial team to cope with the extra demands, this further expansion is pursued at the expense of declining profitability due to dynamic diseconomies of scale, which is termed the 'Penrose effect'.

Penrose also stresses the importance of diversification on firm growth, in that if a firm's existing market(s) face saturation and more intensive competition, then external constraints would be imposed on the firm's growth rate. To achieve higher growth in existing markets, the firm would have to cut its price or incur increased costs through advertising. In both cases the effect is to reduce profitability. However, if the firm diversified into new geographical markets it may be able to achieve a higher growth rate without having to take measures which would reduce its profitability. It has already been suggested that diversification is more likely to be undertaken by larger firms with greater resources, therefore smaller firms facing market saturation and increasing competition may only be able to grow at the expense of reducing profitability. Thus while growth may depend on profitability in order to finance expansion, after some point managerial inefficiencies will set in, which will reduce profitability. When the firm grows beyond its limits, higher growth rates will only be achieved at the expense of profitability, and thus the firm's managers are presented with a trade-off. This represents a negative

relationship between growth and profitability.

While the concern of neoclassical theory is generally with static models of industry structure, and with estimating the optimal firm size in an industry, another stream of neoclassical thought in the field of economics which is broadly known as 'industrial economics' has analyzed the nature of dynamic changes in industrial structure. In static analysis, growth is a function of industrial structure, and is induced by exogenous factors which affect the industry, and then in turn, all firms in that industry. Dynamic theories of change in industrial structure have stressed the importance of *proportionate* rather than *absolute* changes in size, and suggest that growth is essentially a stochastic process. The reasoning here is that in order to achieve any given growth rate, larger firms will need to achieve increasingly greater absolute increases in size than smaller firms. While there are variations on this theme, the general theory of proportionate effect is termed Gibrat's Law (Storey, Keasey, Watson and Wynarczyk, 1987; Evans, 1987; Reid, 1993). This law proposes that growth is essentially a random process which is the result of the chance operation of a large number of factors, each operating independently. These include factors such as access to new markets, access to finance, managerial ability and pure luck. These factors do not operate systematically with respect to firm size, but can effect firms of all sizes equally. On this basis it is suggested that: (i) growth in one period should not be related to growth in any other period so that no firm can systematically achieve persistent growth; (ii) all firms have an equal chance of achieving a common mean growth rate, with the dispersion of growth rates around this mean being equal for firms of all size classes. Growth will therefore be a random process, and these factors will influence proportionate rather than absolute changes in size. This suggests that from the random process of growth, the size distribution of firms will tend towards log-normality because of the proportionate effect, whilst being positively skewed in terms of absolute values (Sawyer, 1985). This effect should lead to increasing industrial concentration through time, as smaller firms grow at a faster average rate than larger firms, a process which Prais (1976) terms 'spontaneous drift'.

The importance of the Gibrat effect on industrial concentration has been debated in the industrial economics literature with respect to firm births and deaths and with respect to possible firm-specific factors which determine that smaller firms will show systematically higher growth rates than larger firms, and vice versa. In the first case, the higher birth rates of smaller firms, may serve to offset the concentrating effect, and the deaths of surviving smaller firms (particularly through acquisition) may enhance the concentration effect (Dunne and Hughes, 1994). In the second case, it has been suggested that smaller firms in an industry will typically adjust upwards towards the MES in order to survive while larger firms at or above that threshold scale have essentially stochastic growth characteristics (Simon and Bonnini, 1958; Davies and Lyons, 1982).

It has also been argued that larger firms are more likely to achieve growth by external rather than internal means (Storey, 1990), and thus the variability of acquisition activity between firms of different sizes may explain some of the variation in growth and the consequent concentration effect. Hannah and Kay (1977) argue that acquisition activity is the most important systematic determinant of industrial concentration. Empirical studies of Gibrat's Law, which estimate log-linear and semi-log growth models in order to model the impact of proportionate rather than absolute change, have in general found no evidence in support of it across a range of firm sizes, from small independent firms up to large corporate firms (Simon and Bonnini, 1958; Brock and Evans, 1986; Evans, 1987a and 1987b; Hall, 1987; Storey *et al*, 1987; Contini and Revelli, 1990; Reid, 1993; Dunne and Hughes, 1994). Reid (1993) argues that while Gibrat's Law is useful in conceptualising different categories of variables relevant to the analysis of firm growth (i.e. exogenous, endogenous, stochastic), it is too narrowly focused and insufficiently informed by economic theory. Reid suggests that an approach which considers possible systematic determinants of growth offers a richer analytical framework.

In an attempt to explain possible deviations from Gibrat's Law, Jovanovich (1982) argues that age is the key factor in determining the relative performance of firms

and proposes a model in which firms learn about their relative efficiency through time. In this model, efficient firms prosper and inefficient firms fail. Firm growth is therefore independent from size for firms of the same age. Jovanovich (1982) suggests that younger firms, which are typically smaller, will have higher and more variable growth rates than older, typically larger firms. Managers in younger firms will have to learn quickly about how efficient their firms are in order to survive. Managers in surviving older firms, on the other hand, will have had time to discover how efficient their firms are in relation to their competitors. Jovanovich (1982) also suggests that the relationship between age and profitability will be positive because of economies of scale associated with the accumulated experience of older firms. Older firms will know the most efficient production processes, will have had the time to seek out the most skilled labour and will thus benefit from enhanced levels of productivity. A number of empirical studies of Gibrat's Law which modelled the age effect, have provided support for Jovanovich's model (Brock and Evans, 1986; Evans, 1987a and 1987b; Reid, 1993; Dunne and Hughes, 1994). These studies have generally attributed the existence of a significant negative relationship between age and growth to learning effects. However, this is arguably a somewhat narrow view and other possible explanations for a systematic relationship between a firm's age and its performance have been suggested.

It has also been suggested that older firms may also benefit from reputation effects in that they are already well established in their markets and may face lesser barriers to entry in breaking into new markets as a consequence (Dobson and Gerrard, 1989). The benefits of reputation effects may take the form of: (a) maintaining established contracts to supply other producers; (b) creating new opportunities for establishing such contracts; (c) brand loyalty by consumers. An enhanced reputation may allow an older firm to earn a higher profit margin compared with a new firm who may have to cut prices to establish a market position. Thus, reputation effects may allow older firms to grow at a faster rate. However, Meuller (1972) suggests that there may be an offsetting tendency for profitability and growth to decrease in older (corporate) firms through more rigid and bureaucratic management structures in which professional managers will pursue

increasingly less profitable growth opportunities as they gain more control of the firm through time. This theory is clearly related to Marris's growth model but adds a temporal dimension in relating the determination of the degree of managerial control to the age of the firm.

Entrepreneurs and Firm Performance

While the theories considered thus far have taken a rather abstract view of the firm as a unit of production, or have focused on the objectives of professional managers in determining the performance of corporate firms, another stream of neoclassical thought, within the general equilibrium tradition, has attributed a greater role for entrepreneurs, defined as owner-managers of firms, in determining the profitability and growth performance of firms.

The first economist to explicitly identify a specific entrepreneurship function within a general equilibrium system, other than one of passive superintendence, was Knight (1921). Knight sought to address the deficiencies of early general equilibrium models in overcoming the problem of uncertainty, by the assumption of perfect knowledge. Here the term uncertainty needs to be clarified in order to appreciate Knight's theory. Typically most business decisions are such that the costs of implementing the decision are borne immediately, or within a short period of time, whereas the benefits may or may not accrue at some uncertain time in the future. Furthermore, many business decisions are not repeated in exactly the same form, so that it is difficult to develop decision rules which can be tried and tested over and over again. Uncertainty of outcome is therefore a pervasive fact of everyday business life.

Knight makes an important distinction, however, between pure uncertainty and predictable risk. While risk can be quantified and measured against some statistical distribution of the probability of alternative outcomes, uncertainty cannot be treated in this manner because the probability of outcomes are themselves unknown. Thus risk can be insured against but uncertainty cannot. The question then is how can a

general equilibrium system function with the prevalence of uncertainty? In this context, Knight defines the function of entrepreneurship as uncertainty-bearing, so that it is specifically entrepreneurs who make the sort of decisions which require judgement to be exercised in the face of uncertainty. The distinctive ability which entrepreneurs possess in order to make such decisions is foresight. Some individuals have a greater degree of foresight than others, and it is those with the greatest amount of foresight that achieve high level decision making posts in businesses. These individuals are entrepreneurs and they are not merely managers of routine administrative tasks. Entrepreneurs are judgemental, or strategic, decision makers who generate profits by their actions in deploying resources to optimal effect in an uncertain economic environment.

Furthermore, entrepreneurs are capable of making 'good' strategic decisions (i.e. those which generate profits) repeatedly. The distinction between entrepreneurs and managers is thus based on Knight's conception of uncertainty. An important point to note here is that in this analysis capitalists do not bear uncertainty, although they benefit from the actions of entrepreneurs. This does not, however, exclude the possibility that entrepreneurs can be also be capitalists if they self-finance their business ventures. Furthermore, entrepreneurs exist in new and small businesses, and in large corporate businesses. The choice between self employment and paid employment is determined by the relative income which can be earned from each activity. Entrepreneurs are motivated to earn the highest level of income possible.

Knight argues that large corporations are essentially 'pools' of entrepreneurs with large scale capital at their disposal, so that the overall uncertainty is reduced simply by the law of averages. The best entrepreneurs get to the top in large firms through sheer proof of their ability, and active competition. The rewards entrepreneurs receive for undertaking the function of uncertainty-bearing, is a residual income taken from profits generated by their actions, after all costs have been borne by the firm (including the salaries of non-entrepreneurial managers). Thus entrepreneurial income is pure profit, and this is not a contractual income in the way that a manager's salary is. In this respect, entrepreneurship entails an element of

monopoly. Firms that consistently earn profits over and above the average level in their markets do so because they have better entrepreneurs. This element of monopoly, however, is beneficial to the economy because without it there could be no economic equilibrium, as uncertainty would prevail.

More recent neoclassical approaches (which are reviewed below) have also been concerned with identifying a specific entrepreneurial function within a general equilibrium system. These approaches are based on the notion that the decision to become an entrepreneur, as opposed to a worker, is a voluntary choice which requires that individuals assess their abilities to become an entrepreneur. Here the individual is faced with a choice of earning an uncertain income, which is residual profit generated by undertaking entrepreneurial activity, or a certain contractual income from undertaking paid employment. It is assumed that an equilibrium wage rate is determined by a perfectly competitive labour market. This wage is therefore the opportunity cost of choosing to undertake entrepreneurial activity, and thus individuals must be sure that they can earn an income from residual entrepreneurial profit in excess of this wage. If this is the case, then it is a rational choice to choose entrepreneurship over paid employment. This decision depends upon the entrepreneur's self-assessment of the extent to which they possess certain abilities which are assumed to be required to undertake successful entrepreneurial activity.

Therefore the rational decision to become an entrepreneur is assumed to be based solely on the fact that the expected income will be higher than that from waged employment. Thus if the wage rate falls, the opportunity cost of entrepreneurship will become lower, and less able entrepreneurs will be attracted into entrepreneurship. Implicit in this analysis is the assumption that entrepreneurs will always choose entrepreneurship if they can earn more income from doing so and they are not motivated by any other factors. In accordance with the methodology of neoclassical equilibrium economics, it is essential that the components of a general equilibrium system behave in a rational and predictable manner, if equilibrium is to be achieved. In equilibrium there will n entrepreneurs active in the economy. If this situation changes because of changing preferences or technologies, a new

equilibrium will be found by the number of active entrepreneurs adjusting to a level which is required to achieve equilibrium in the new set of economic data. The question is, therefore, what specific ability is required to be an entrepreneur? Three approaches have developed in this field of study, those of Kihlstrom and Laffont (1979), Lucas (1978) and Oi (1983), all of which have identified different abilities which entrepreneurs must possess.

Kihlstrom and Laffont (1979) follow Knight and identify the definitive entrepreneurial ability as being the willingness to bear risk, which they take to mean uncertainty. Entrepreneurs play a key role in the general equilibrium system of bearing uncertainty, but their reward for doing so is specifically associated with their ability to do so, and not with the function of uncertainty-bearing *per se*, as in Knight's analysis. Thus all individuals in the economy are assumed to be risk-averse but entrepreneurs are less risk-averse than workers, and there is some critical level of this ability which partitions the set of economic agents in the production process in any static equilibrium. If circumstances change, the critical level of this ability will change, and the numbers of active entrepreneurs will adjust accordingly, thus creating a new point of static equilibrium.

Lucas (1978), on the other hand, identifies the entrepreneurial ability as being one of managerial co-ordination. While this has commonalities with the early general equilibrium models in terms of the function of entrepreneurship, here the ability to undertake entrepreneurship is specifically associated with an income generated through entrepreneurial activity when the economy is in equilibrium. This is not the case in early general equilibrium models when there is no need for entrepreneurs in equilibrium, and thus no income for entrepreneurship. Lucas aligns his theory with Gibrat's Law and argues that there is a stochastic distribution of managerial ability in the set of economic actors and that more able managers can manage larger production processes. Thus if there is an improvement in technology which causes workers' productivity to increase, the critical level of managerial ability required to earn an income over and above that from waged employment will change. Less able entrepreneurs will become workers, thus raising the average level of ability of

the remaining entrepreneurs. While all producers are efficient in that they must be cost-minimizers and profit-maximizers, firm size is directly related to the entrepreneur's managerial ability. Lucas suggests that just as there is an engineering technology which transforms inputs into output from the production process, there is also an entrepreneurial technology, which is associated with the effective deployment of the factors of production in the transformation of inputs into output. Thus larger firms are managed by more able entrepreneurs who earn higher incomes for their superior levels of managerial ability. In this analysis, however, there is no clear distinction between entrepreneurs and managers, as there is in Knight's analysis.

The last of these approaches, that of Oi (1983), identifies the ability to manage time effectively as being the critical ability required to be an entrepreneur. More specifically, it is the ability to use effectively residual time available after monitoring the workforce, assuming that the stock of capital assets is inanimate and does not need monitoring. As in the previous two approaches there is a critical level of this ability which determines the number of active entrepreneurs when the economy is in equilibrium. Thus larger firms are again associated with more able entrepreneurs who can use residual time effectively in raising the productivity of their workforce, and therefore increase the level of output from the production process. More capable entrepreneurs are associated with more productive workers. In this analysis entrepreneurship represents an input into the production process, rather than managerial-coordination of the production process *per se*, as in Lucas's analysis. However, common to all of these theories is the notion that larger firms are associated with more capable entrepreneurs, who are better able to identify profit opportunities and to manage resources efficiently in exploiting these opportunities.

2.2.3 Austrian Theories - Disequilibrium and Market Dynamics

In contrast to neoclassical economics, the Austrian school of economic thought places emphasis on dynamic aspects of the operations of markets. Kirzner (1973,

1985, 1997) is the key writer in the Austrian tradition on the role of entrepreneurship in the market economy. Kirzner builds his theory of entrepreneurship on the notion of the market as an entrepreneurially driven discovery process, in a world where knowledge is unevenly dispersed between market participants, and where there exists genuine ignorance on the part of some individuals. Therefore some people's choices are essentially mistakes, where a different choice would have been made if the individual had been aware of other knowledge at the time the decision was made. Not all individuals are ignorant at the same time, rather some are better informed than others and can therefore exploit their superior knowledge in the pursuit of their own self interest. In doing so, however, their actions must be made public and thus others are made aware, fully or partially, of the knowledge that was previously owned privately. Thus people learn from their mistakes and adapt their behaviour accordingly.

Against this backdrop, Kirzner is concerned with the problem of how the market economy can operate effectively in allocating scarce resources. More specifically, he focuses on the processes which lead to the discovery of knowledge, and the adjustment of markets towards equilibrium following a disequilibrating change in preferences or technologies. In elaborating on the ways in which entrepreneurs play the key role in helping to 'solve' this problem, it is important to note, however, that Kirzner provides no explanation of the causes of exogenous change.

The mechanism through which entrepreneurial activity brings about a tendency towards equilibrium following an exogenous change involves the concept of arbitrage. This entails the exploitation of price differentials. Assuming that a market has been thrown into disequilibrium following a change in exogenous circumstances, how then does entrepreneurial arbitrage operate in order to help restore the market back towards equilibrium? In disequilibrium it must be the case that there is no equilibrium price, thus it is possible that some people are paying too much for the product, and others are paying too little. In neoclassical theory, it would be assumed that the 'price mechanism' would adjust automatically to restore equilibrium through the 'invisible hand' of the market. Kirzner, however, finds a

more purposeful human function in the adjustment of prices back towards equilibrium levels. In disequilibrium, imperfect knowledge must exist in the sense that some individuals are better informed than others, and some are ignorant of at least some of the knowledge associated with this change in market circumstances.

All individuals, however, continue to make what they perceive to be correct choices given the information they have. Therefore some individuals must be making incorrect choices, although they are unaware of this fact. In practical terms, some people are therefore paying a higher price than they would if they had other information available, while others are paying too low a price. In these circumstances there is an opportunity for profitable exchange in order to exploit this price differential. Kirzner argues that it is entrepreneurs who perform this function by buying low and selling high. Entrepreneurs are therefore traders who possess superior knowledge and who benefit profitably through the ignorance of others.

In order to do this, however, entrepreneurs must possess certain abilities which allow them to acquire this superior knowledge, and the major abilities are those perception and alertness to new opportunities. More specifically, entrepreneurs are alert to the fact that identical products are being sold at different prices. Their alertness, however, has nothing to do with searching for information about profit opportunities, such opportunities are obvious to entrepreneurs without any effort being expended on their part in looking for them. Thus by virtue of their greater alertness, entrepreneurs notice price differentials and exploit these opportunities to reap pure profit. In acting upon an opportunity entrepreneurs must, however, signal this opportunity to other entrepreneurs who were not sufficiently alert in the first instance. These entrepreneurs follow in the footsteps of the prime mover, and compete away the profit opportunity by rapidly adjusting the levels of supply and demand in the market. Thus by acting on the opportunity which they were first to notice, entrepreneurs destroy their own profit potential by invoking competition with other entrepreneurs. It is this entrepreneurial competition which speeds up the equilibrating adjustment process. The fact that profit seems certain in the first

instance is enough to cause entrepreneurs to act, and through their actions they turn private knowledge into public knowledge. Thus the pursuit of their own self-interest serves the public good.

The dynamic nature of the market economy which is continually in a state of flux, ensures that there will always be some markets tending towards disequilibrium and there will always be new profit opportunities for entrepreneurs to exploit. Gaining access to finance is no problem as profit seems certain in the first instance and a capitalist who is willing to finance the venture can always be found. Kirzner argues that entrepreneurs therefore need not actually own any resources in order to exploit profit opportunities. Entrepreneurs are purely intermediaries between the product and factor markets, buying at a lower price and selling at a higher price in return for a certain profit.

Also in the Austrian tradition, Schumpeter (1934, 1943) identifies an explicit entrepreneurial function within an economic system in which there is the potential for equilibrium to exist, but which is characterised by dynamic forces that cause change and disequilibrium. Unlike Kirzner, however, Schumpeter is concerned with explaining the process by which capitalist societies develop, where capitalism is the social, economic and institutional order which is associated with market economies. In explaining the process of capitalist development, Schumpeter incorporates the Marxist idea that capitalism is a system which is driven by internal conflict, and that this conflict is created within the system, and not by any exogenous force (Marx, 1867). Thus Schumpeter assumes that economic development is an organic process. His concern, therefore, is to explain the causes of change in consumer preferences and production technologies, unlike the neoclassical and Kirznerian theoretical perspectives, in which change in these factors is assumed to be exogenous to the system. Furthermore, Schumpeter is concerned with the creation of new possibilities, and not merely the discovery of existing possibilities, which were hitherto not noticed.

Within this theoretical framework, Schumpeter identifies entrepreneurs as the key

agents of change, and entrepreneurship as the cause of capitalist development. In relating entrepreneurship to economic development, Schumpeter disagrees with the Marshall's cautious treatment of evolution as a slow incremental process which is contributed to in a small way by all business managers. In complete contrast, Schumpeter perceives entrepreneurs as exceptionally gifted individuals that are few and far between, and views economic development as a dramatic, turbulent process in which entrepreneurs are revolutionaries. The mechanism through which entrepreneurs' actions are implemented in Schumpeter's theory is that of innovation and 'creative destruction'. By innovation, it is meant the commercial exploitation of a novel product or production mechanism, in the pursuit of profit. There are two aspects to this conceptualisation of innovation which must be clearly understood. First, innovation is not the same thing as invention, entrepreneurs are not advancing knowledge for science's sake, they are motivated by profit. Second, 'novel' represents an entirely new idea, or the new use of an existing idea. The point is that entrepreneurs are in the business of creating and exploiting new knowledge, which hitherto did not exist in the economic system. Schumpeter has very clear ideas of the type of innovations that entrepreneurs create, however, and he is referring to grand innovations which have far reaching effects throughout the whole economy, and which challenge the existing order.

All of the activities which entrepreneurs must undertake in order to exploit their ideas require a range of intellectual and practical abilities, and personal attributes such as creativity, imagination, intuition, and sheer ambition and drive.

Entrepreneurs make things happen and they see their ideas through to the end no matter what obstacles are put in their way. Thus only a small proportion of the population of an economy is capable of undertaking entrepreneurial activity, according to Schumpeter. Above all, entrepreneurs have to be leaders, capable of convincing others of the worth of their ideas, and capable of overcoming the existing order which, in general, is reluctant to change. Most 'ordinary' individuals like to stick to known routines and this resistance to change has to be overcome if entrepreneurs, as extraordinary individuals, are to profit from their innovations. Profit is thus created by entrepreneurial innovation. In equilibrium, there can be no

profit, therefore entrepreneurship is a disruptive endogenous force which causes disequilibrium, and which therefore creates profit opportunities. Once disequilibrium is created by entrepreneurial activity, the question of how the system adjusts to change may be raised, and the answer lies in the process of creative destruction.

Schumpeter argues that equilibrium must be the starting point for entrepreneurial activity. Only in equilibrium are all routines known, and therefore entrepreneurs can calculate the profit potential of their innovations in the knowledge of all the products, technologies, prices and costs which currently prevail. This information is available to all producers, but only entrepreneurs have knowledge of the novel idea which they are about to implement, and thus in equilibrium they have a monopoly over their new idea, albeit a profitless monopoly until the idea is actually exploited. It is important to note that while a general equilibrium in its strictest mathematical sense is not a practical possibility, there may be periods of relative stability in market economies. It is this more realistic conceptualisation of equilibrium which is important to Schumpeter's theory. Only if entrepreneurs are certain that their innovation will be profitable will they act. This must entail a belief that their ideas will have a competitive advantage over what is currently available. On this basis they can convince a capitalist to finance their new venture and it is the capitalist who bears the risk of the venture failing and not the entrepreneur. Thus entrepreneurs and capitalists enjoy a symbiotic relationship, in a mutually beneficial quest for profitable projects which will provide a return on investment.

While these new ventures create new opportunities, they also threaten the viability of existing products and production processes. The novelty value of the new ideas leads to a surge in demand for them, and thus away from existing producers, who may become obsolete unless they adapt to the changing circumstances. Those that do adapt, will merely imitate the new ideas pioneered by entrepreneurs, and thus more new investment projects will ensue. Alternatively, existing producers can develop products or processes which are complementary to entrepreneurs' innovations. At some point, however, once the competition to profit from the new

opportunities becomes so great as to make further investment unviable, this boom period will come to an end. At the same time consumers will no longer be impressed by the novelty value of the new idea, and eventually it becomes routine. The ensuing downturn in the economy towards recession is fuelled further by those producers who were so entrenched in their routines that they could not adapt to the new ideas and whose businesses subsequently failed. This is the process of creative destruction, the new destroys the old. Only once change has been fully accommodated throughout the economy in a 'new order' of institutions and routines, can some form of stability be restored and thus equilibrium. There is, however, no explicit equilibrating force in Schumpeter's theory. The whole economy must react and adapt to the change in order to restore widespread stability and equilibrium.

Once the new equilibrium has been achieved, a new wave of innovative activity will follow and the process of creative destruction will be invoked again. According to Schumpeter, this is the turbulent manner in which the capitalist system develops, although the timescale he envisaged for each wave of innovation and creative destruction was several decades. This is not a theory of short term business cycles. Indeed Schumpeter perceived creative destruction as a spiral of change, rather than a cycle or a trend, both of which can be predicted to some extent. If there is a trend to waves of creative destruction, this is merely a statistical, and not an economic phenomenon.

An important element of Schumpeter's earlier work was the role of new, small firms in the process of innovation. Entrepreneurs create and develop new ventures in order to challenge the monolithic corporations that pursue obsolete routines, and which are forced to adapt in order to survive. In his later work, however, Schumpeter took a more pessimistic view in arguing that eventually these monolithic corporations would use their market power to buy out entrepreneurs and thus take over the entrepreneurial function, which they would then proceed to stifle. The eventual demise of capitalism through increasing industrial concentration, and the stagnation caused by the lack of entrepreneurial change, would seem inevitable in these circumstances. However, Schumpeter was being unduly pessimistic about

the potential of small entrepreneurial firms to survive and prosper in markets dominated by large corporations, a fact which Schumpeter himself recognised towards the end of his life. While not all small firms are driven by innovative activity, as it was noted in Chapter 1, many small firms have made an outstanding contribution to the creation and commercialisation of new ideas in dynamic technology-driven industries.

2.2.4 Casson - The Market for Entrepreneurs

Casson (1982) attempts to combine insights from both the neoclassical and Austrian approaches in a comprehensive economic theory of entrepreneurial decision making in response to profit opportunities. Casson assumes that all individuals act rationally and make what they believe to be optimal choices according to their perceptions. These perceptions may be incorrect, however, in two ways: first, in the Kirznerian sense that some decisions may be made in complete ignorance of better information; and second, in the Schumpeterian sense that some individuals continue to follow established routines which are made obsolete in a changing environment, but are unaware of the changes which have occurred.

The role of entrepreneurs is to assist in the process of allocating resources to their optimal effect, by correcting these mistakes. At one level incorrect choices such as paying too high a price for a good, or buying a good when there exists a better alternative, provide opportunities for profitable arbitrage. At another level, however, Casson argues that entrepreneurs can perceive opportunities through speculation, for example, about what products consumers would prefer if they were to be made available. Anyone who perceives and acts on such opportunities, either through arbitrage or speculation, is an entrepreneur. Casson defines an entrepreneur specifically as a specialist in making judgemental decisions in return for profit. His conception of a judgemental decision is very specific, and entails the ability to make a correct choice in given circumstances in which a non-entrepreneurial individual would make an incorrect choice. In this situation, although both individuals may be motivated by similar goals, only the entrepreneur would have

the knowledge required to make a correct choice, and would be able to interpret that knowledge and apply it in achieving the desired goal. Furthermore, entrepreneurs are able to do this repeatedly, and therefore they are a unique set of individuals, with unique skills and abilities which allow them to make judgemental decisions.

The ability to make judgemental decisions, according to Casson, is determined by a combination of the qualities evident in previous theories, namely perception, foresight, creativity and imagination. Non-entrepreneurial individuals do not possess these abilities and will not learn from their mistakes. They will therefore continue to make incorrect choices. This proposition is in contrast to Kirzner who argues that all individuals learn from their mistakes and therefore have the potential to act entrepreneurially. Casson, disagrees with this view and asserts that entrepreneurs are a subset of the population. On this basis, it is important that entrepreneurs, as the key decision makers in an economy, are able to gain control of resources in order to co-ordinate the process of resource allocation.

Casson argues that something similar to neoclassical supply and demand analysis can be applied to a perfectly competitive market for entrepreneurs, with an equilibrium price equating demand with supply. This means Casson's model is an aggregate model of the market for entrepreneurs rather than a theory of entrepreneurship at the individual level. In common with Kirzner's analysis, individual entrepreneurs can only effect partial and not general resource allocation. However, Casson's application of supply and demand analysis is not conventional. The demand curve is drawn assuming a given pace of change in the economy, so that new opportunities are occurring at a certain pace, and it is the job of entrepreneurs to spot and take advantage of them. The demand curve will thus shift position if the pace of change in the economy increases or decreases. As the number of active entrepreneurs increases, the expected return to each entrepreneur decreases given the higher probability that any given opportunity will have already been spotted and acted upon by other entrepreneurs. The position of the supply curve depends on the stock of entrepreneurial talent existing in the population,

which is determined by a stochastic distribution of judgemental decision-making ability, and the proportion of those who are actually capable of having command over resources.

In elaborating on this second requirement, Casson recognises the importance of socioeconomic factors which can influence entrepreneurial activity. Entrepreneurs can gain access to resources through the capital markets, although unless they have a proven track record or 'establishment' connections, they may find it difficult to convince capitalists to back their ideas. On the other hand, they may have been born into wealth, or they may know wealthy individuals who are willing to finance their ventures privately. On this point, Casson argues here that 'family firms' are abundant in most economies because of the problems of accessing finance to gain control of resources. The family firm can provide a reputation for new entrepreneurs even though they may have no personal track record, and can provide finance for family members to branch out on their own. The supply curve will change position if there are changes in the socioeconomic factors which influence the ability of entrepreneurs to access resources.

As in the approaches of Kihlstrom and Laffont, Lucas and Oi discussed earlier, Casson assumes that entrepreneurs reject the opportunity of earning a market determined wage by working for an employer. This wage represents the opportunity cost of entrepreneurship. Thus adjustments occur in the market for entrepreneurs if the opportunity cost of undertaking entrepreneurial activity is greater or less than the expected reward. If it is greater, then potential entrepreneurs choose to become waged employees. If it is less, then potential entrepreneurs choose to undertake entrepreneurial activity. The decision to become active in the market entails that entrepreneurs have to form estimates of their own abilities. New entrants into the market eventually compete away any element of monopoly profit which existing participants have been receiving by virtue of their superior alertness in the first instance. Entrepreneurial returns entail an element of monopoly, and entrepreneurs will seek to maintain their monopoly as long as possible by some means, before it is competed away by other entrepreneurs.

Casson argues that one of the key ways in which active entrepreneurs can maintain a monopoly over their knowledge is by forming a firm. Casson rejects Kirzner's notion that entrepreneurs require no resources to exploit profit opportunities. In order to capitalize on their superior knowledge, entrepreneurs must overcome the problems associated with the successful development and marketing of their products. Casson describes the process of doing so as 'market-making'. By forming a firm, entrepreneurs can internalize and monitor those activities which have recurring costs such as hiring labour or leasing machinery. Once those costs have been borne, firms already active in a particular market are in an advantageous position. They do not have to consider sunk costs as relevant to future decisions. A new entrant, on the other hand, does have to consider set-up costs and the need to recover them over time. In production activities where fixed costs are high, these can only be recovered through building up the volume of business and expanding the firm's operations. Casson argues that entrepreneurs will attempt to protect their superior knowledge and profits for as long as possible by erecting barriers to entry into their markets through undertaking activities such as advertising and quality control.

The management of a firm, however, requires the entrepreneur to possess a wider set of abilities than those of perception, foresight, and imagination, which are necessary to identify profit opportunities in the first place. Entrepreneurs must also have managerial abilities, such as being able to delegate control of the firm to subordinates. Casson, however, in contrast to Knight and Schumpeter, does not distinguish clearly between the skills it takes to undertake the routine activities involved in the day-to-day management of a firm's activities, and the creative abilities which are necessary to make judgemental decisions. Furthermore, successful delegation depends upon subordinates making correct decisions, which Casson takes to mean the decisions which would be taken, with the correct information, by the entrepreneurs themselves. The problem here is that subordinates cannot possess equivalent decision-making abilities or they would also be entrepreneurs. Even though monitoring of subordinates' decision making is feasible, as are routinized decision making systems, these require the entrepreneur to spend

time on low level managerial tasks which could be better spent on making judgmental decisions aimed at future profit-maximizing opportunities.

In summary, Casson's comprehensive theory of entrepreneurship provides a more detailed insight into the nature of entrepreneurial activity than either neoclassical analysis or Austrian analysis on its own. An important additional aspect of Casson's theory is his emphasis on the socioeconomic influences on entrepreneurship. While his attempt to incorporate these influences within a supply curve for entrepreneurs is limited, he is one of the few economists to have attempted to model these factors as determinants of entrepreneurial activity. The problem with his approach, however, is the difficulties involved in specifying and measuring variables such as 'the pace of change', and 'knowing wealthy people', in order to predict the number of active entrepreneurs? Another major deficiency of his theory is that he does not attempt to explain what causes change in exogenous factors. Taking a Schumpeterian viewpoint, it may be argued that rather than the number of active entrepreneurs being determined by the pace of change, the causality here may be reversed. Casson is not concerned with developing a theory of economic evolution, however, so that the market for entrepreneurs is perhaps best thought of as a benchmark for analysing the concept within an equilibrium framework.

2.2.5 Etzioni - Adaptation and Change

The importance of recognising the socioeconomic influences on entrepreneurial activity was raised in Casson's equilibrium-related theory of entrepreneurship. Attention is now directed to another school of economic thought which pays greater attention to the social determinants of economic behaviour, of which Etzioni (1987, 1988) is the key contemporary writer, following in the footsteps of earlier socioeconomists such as Marx (1867) and Weber (1930). It is fundamental to the socioeconomic school of thought that the interplay between social and economic behaviour, and the factors which influence this behaviour cannot be disentangled as in neoclassical economic analysis, where decision making is assumed to be rational in the face of given preferences and constraints that are

known by all individuals.

Within the scope of a socioeconomic analytical framework, Etzioni (1987) develops a theory of entrepreneurship. It is important to realise, however, that this is not a theory of individual entrepreneurs, or a theory which places much emphasis on the possibility of entrepreneurship at an individual level. While Etzioni suggests that some individualistic entrepreneurial activity may occur on an *ad hoc* basis, the most endemic form of entrepreneurship occurs in a collective institutional form, in which decision making is made routine and thus entrepreneurship is made routine. Within institutions, entrepreneurs challenge the decisions of other entrepreneurs, so that the best routines evolve through a process of natural selection. In a sense, this may be conceptualized as representing what is referred to in management theory as 'intrapreneurship'. In common with Casson, Etzioni argues that entrepreneurs are a subset of the population, although their individual characteristics and abilities may vary within the same society, and between different societies. The key defining feature of entrepreneurs is their willingness to adapt to change, and a desire to try out new innovations. In this sense they are the evolutionary force within societies which advance economic and social development.

In common with Schumpeter, Etzioni envisages societal institutions as unwilling to adapt to change, partly because of the fear of the unknown, and partly because of the costs associated with devising and implementing new routines, including the time and effort necessary to establish a new consensus. Thus institutions lag behind in a constantly changing environment, and it is the job of entrepreneurs, who are adaptive to change, to test out new ideas in order to select the best, and discard the rest. Etzioni terms this process 'adaptive reality testing'. An important feature of this process is that most new ideas will not be successful in reality, and therefore most entrepreneurial activity results in failure. Only the best ideas survive and entrepreneurs speculate that the returns from the few ideas that work will more than compensate for the greater number of failures. Furthermore, entrepreneurs do not cause change to occur, they are purely reactive to change; and, they are only required to initiate the process of societal adaptation to change, not to fully

implement it.

Etzioni agrees with Marshall that adaptation to environmental change is primarily an incremental evolutionary process, although he acknowledges that there is scope for exceptional revolutionary changes such as those envisaged by Schumpeter. However, unlike Schumpeter, Etzioni refutes equilibrium as the starting point for entrepreneurial activity. His position is similar to Kirzner's in believing that entrepreneurial activity is most needed during periods of disequilibrium. The more rapidly the environment changes, the larger the potential gain from adaptation, and the greater the potential reward. Thus, a dynamic environment promotes entrepreneurship, although Etzioni argues that this is not the only factor to do so. He takes a more sociological stance in arguing that the key factor promoting entrepreneurial activity is societal legitimation of the function. The legitimation of entrepreneurship, however, varies between societies and is determined by cultural influences such as religious and political beliefs. Thus as Weber (1930) argued, entrepreneurial activity may be promoted more in Protestant societies than in Catholic societies because they are more predisposed towards a work ethic. Some political ideologies, such as communism, are not favourably disposed towards legitimising entrepreneurial activity, while others, such as capitalism, are. Legitimation, Etzioni argues, can affect both the societal preferences for, and institutional constraints placed upon activities such as entrepreneurship.

In summary, Etzioni's analysis of the entrepreneurial function is more overtly sociological in nature than those considered previously in that it stresses the importance of society-wide factors in determining adaptation to change, and thus entrepreneurial activity. Etzioni indicates, however, that his analysis is not incompatible with conventional notions of a market for entrepreneurs such as that of Casson, when more demand for, or supply of, entrepreneurs will lead to their 'production' in greater numbers. Etzioni's analysis, however, is not based on the assumption that there is a market for entrepreneurial services. Additionally, Etzioni's theory is based on the notion of economic evolution, rather than equilibrium, although he does not identify the causes of change. Entrepreneurs

promote adaptation to change, and entrepreneurship is the catalyst of economic evolution.

2.2.6 Evolutionary Theories

The theories of Marshall, Schumpeter and Etzioni have all identified a key role for entrepreneurship in the process of economic evolution, albeit in different ways. Marshall regarded economic evolution as a slow and gradual process which is contributed to in a small way by all business managers. Schumpeter, on the other hand, defined a specific role for entrepreneurship as an endogenous force which disrupts equilibrium and overturns the status quo, thus causing economic evolution. Only a subset of the population who are exceptionally talented individuals are capable of performing this function, according to Schumpeter. Etzioni also identifies entrepreneurs as a subset of the population, but like Marshall, regards economic evolution primarily as an incremental process in which entrepreneurship is an endogenous force that promotes the adaptation to change, through testing out new ideas. In all of these approaches, however, the role of firms as mechanisms through which change is implemented is stressed. Entrepreneurs exist within a wider institutional framework, and firms as organizations in which production takes place, play a key role in either assisting or hindering entrepreneurs in exploiting the profit opportunities they have identified. Furthermore, firms are perceived as being organizations in which decisions are made and implemented through an established set of routines. These routines evolve within an environment which is characterized by change and uncertainty, and in which decisions are made with bounded rationality. It is therefore important that the best decision making routines are devised and implemented in order to ensure that resources are not misallocated as economies evolve.

Nelson and Winter (1982) address this issue from an explicitly organizational perspective, and in doing so they also identify a key role for entrepreneurs in the process of economic evolution. Their evolutionary theory of economic change is based on the work of Simon (1959) and Cyert and March (1963), who analyze how

organizations develop behavioural rules in order to operate efficiently. From this body of work Nelson and Winter develop the concept of an organization as a set of interactive routines. In an organization, many decisions are trivial, and made by many individuals who each have specialised knowledge. Thus, in terms of efficiency an organization can achieve overall what no single individual in that organization could achieve individually. The capabilities of an organization are also believed to be greater than the sum total of its individual parts because of the synergy which is created by linkages between these parts. Furthermore, an organization can wield power, in economic, social and political terms, that no individual can, and therefore has greater scope to influence the environment in which it operates.

Nelson and Winter also incorporate the idea of an organization as a coalition of different interest groups, each with their own agenda. If a firm is divided along functional lines into production, finance, marketing and research and development departments, each department will have its own vested interest, the pursuit of which may raise conflict with other departments. For example, if new products are developed, this has consequences for other departments in that new production processes may have to be implemented, a new marketing campaign may have to be organized, both of which have implications for costs, and resource allocation within the firm (e.g. in terms of relative staffing levels and budget allocations). The efficient operation of an organization depends on the members of that coalition following established routines, otherwise the conflict of interests within the coalition becomes so great as to impede efficiency. These routines may be formally stated, for example in a policy document, or accepted informally as acceptable practices, the boundaries of which are commonly known and not contravened.

Nelson and Winter develop this idea further by identifying three main types of routines: (1) operating routines, which are related to all the production and marketing processes; (2) investment routines, which are usually centralised to the key decision-makers, and not delegated as are other routines; (3) search routines, which are intended to gather information which may help to make the other two

sets of routines more effective. Within this analytical framework, they assume, as do Marshall and Etzioni, that the process of economic evolution is one of natural selection, and therefore not all change is successful. In this context, the 'fittest' routines are generated within an organization by a process of trial and error. The complexity of the organization and the diversity of interest groups within the organization, who exist in a structure of 'competitive collaboration', make the organization slow to adapt and thus resistant to change.

This analysis follows Schumpeter in arguing that in the face of change, existing organizations are only capable of pursuing existing routines. However, Nelson and Winter do not go as far as Schumpeter in assuming that innovative ideas are so radically different that they require the development of an entirely new set of routines. They argue that most new routines are likely to be largely dependent on adaptations of existing ones. In some cases, however, perhaps where obsolete routines are too deeply entrenched, and the environment is very fast-changing, entirely new routines may have to be developed and implemented. This action may have profound consequences for the organization in that new routines will have to be learned, and remembered, very quickly if the organization is to survive. Once the new pattern of routines has been identified, whether they are adaptations or entirely new, the problem for the organization is then how to create a new coalition in order to implement them.

Within this analytical framework, the function of entrepreneurship is again to make judgemental decisions, this time with regard to whether the new pattern of routines is to be a new creation, or an adaptation from an existing pattern. Only entrepreneurs, as a subset of the population, are capable of making such judgemental decisions. In doing so, entrepreneurs are able to stand outside current practice, judge whether or not it can be improved, and then determine in what organizational form improvements can be implemented. This may take the form of a new firm, which is a clean sheet for the development of new routines, or adjustments to an existing firm, if routines are not too deeply entrenched. Entrepreneurial activity is therefore the engine of economic progress, but more than

that, it ensures that resources are not misallocated along the way.

As in the theories of Marshall and Schumpeter, Nelson and Winter also suggest that there is a life-cycle effect in the relationship between firm size and the rate of growth. They suggest that fast growing firms who become large may experience a slowing down of growth after they reach a certain size. However, Nelson and Winter attribute this to the setting of higher target mark-ups and a restraint on further expansion plans in order to avoid driving down prices, both of which are aimed at consolidating the firm's market position.

2.2.7 Econometric Research on Small Firm Performance

The first point to note here is that econometric work which has sought to examine determinants of growth and profitability performance in small firms is sparse and is informed by a limited theoretical base. As noted earlier, while there have been a number of studies which have tested Gibrat's Law using samples of a range of firm size classes, the concern of empirical economic studies which have examined systematic determinants of firm performance has on the whole been with large corporations. This perhaps reflects the predominant concern with the performance of large corporate firms in economic theory. The concern of this thesis, however, is specifically with determinants of small firm performance and not with the nature of possible stochastic growth processes which determine the structure of industries, nor with the performance of large corporate firms. The only economic studies which have examined the existence of systematic relationships between key exogenous and endogenous variables and growth and profitability performance specifically in small owner-managed firms are Dobson and Gerrard (1989) and Reid (1993). These studies will be discussed in detail later in this section but a preliminary consideration here will help to place them in the context of the wider economic literature.

Dobson and Gerrard (1989) examine the relationships between firm size, age, profitability and growth and additionally they examine the impact of firm location

and other exogenous and endogenous variables. Reid (1993), while acknowledging the important contribution of Dobson and Gerrard (1989) to the econometric analysis of small firm performance, is critical of their theoretical basis in that he suggests it is underpinned by theoretical frameworks which are more appropriate to large corporate firms rather than small owner-managed firms. Reid (1993) also examines the relationships between size, age, growth and profitability but he is primarily concerned with examining the impact of exogenous and endogenous factors which relate to small firms' competitive strategies. As such, his analysis is not generally compatible with Dobson and Gerrard's study, or with the wider economic literature in the field of firm performance. He does, however, make some important suggestions relating to the theoretical and methodological issues which researchers face in attempting econometric analyses of small firm performance.

The review of economic research in this field will commence with a broad overview of the large body of work which has examined the relationships between size, profitability and growth in large corporate firms. This is not intended to be exhaustive, rather, it will provide a broader context for the focused consideration of the small firm studies by Dobson and Gerrard (1989) and Reid (1993).

Size, Profitability and Growth in Corporate Firms

Eatwell (1970), who has surveyed early studies with respect to the relationship between firm size and profitability, concludes that there is no constant relationship between the mean rate of profitability by size classes when individual firms are considered, but the grouping of a large sample of firms may produce non-linear relationships. He also notes that intra-class variability of profit rates decreases with increasing size but this is not always consistent. For example, Samuels and Smyth (1968) examine a sample of 186 UK manufacturing, distribution and mining companies for the period 1954-68, which they group into size classes by net assets. They find that size and profitability are inversely related, as are the variability of profit rates within a size class and firm size. Singh and Whittington (1968) examine the relationship more extensively, using two measures of profitability, pre-

tax return on net assets and post-tax return on equity assets. They classify firms by opening size of net assets and find that, in general, the variability of profit rates decreases with firm size, but differences in mean profitability between size classes are not statistically significant. On this basis they conclude that there is no systematic relationship between average profitability and size.

Meeks and Whittington (1975) compare the 100 largest surviving companies over the period 1948-69, with the rest of the 1,955 survivors from a sample of over 3,000 companies, again defining firm size by net assets. They find that the largest 100 firms' average return on net assets and variability of profits were both lower than the other survivors. Whittington (1980) examines a sample of around 1,000 UK companies over the period 1960-74 and concludes that profitability is largely independent of firm size. He finds an insignificant negative relationship between size and profitability, with the variability of profit rates declining with firm size. Thus large firm studies have in general found no systematic evidence of a relationship between firm size and profitability, with any evidence pointing to a negative but insignificant relationship. These studies also find that the variability in profit rates declines with increasing firm size.

Sawyer (1985) indicates that empirical studies of the existence of a systematic relationship between size and growth have found no consistent evidence, with most UK studies for the 1950s finding a positive relationship, and for the 1960s, a negative relationship. For example, Samuels (1965) examines a sample of 400 publicly quoted UK manufacturing companies for the period 1951-60, grouped into size bands on the basis of opening net assets. He finds that larger firms grew at a significantly faster rate than smaller firms, although the degree of variability of growth within a given size class did not differ between larger and smaller firms. Singh and Whittington (1968) examine a sample of 364 manufacturing firms and find significant tendencies for the growth rate to increase with firm size, and the variability of the growth rate to decrease with size. These findings are strengthened when they separate their sample into four industry groups and conduct regression analyses. However, they find that the strength of the relationship is weaker for the

positive relationship between growth rates and size, than for the negative relationship between variability of growth rates and size. Other studies for the 1950s also find evidence of a positive relationship between size and growth (Utton, 1971; Prais, 1976), although these studies have not found this relationship to be significant. In contrast, studies for the 1960s generally find a negative, although again insignificant, relationship between size and growth (Samuels and Chesher, 1972; Aaronovitch and Sawyer, 1975; Cubbin and Leech, 1986).

With regard to the relationship between profitability and growth, Eatwell (1970) has reviewed the evidence on this relationship for the 1950s and 1960s and concludes that there is general evidence of a significant positive relationship between these variables. For example, Singh and Whittington (1968) examine the relationship between the two variables making the theoretical assumption that profitability determines growth. Measuring growth and profitability using the net assets measure, they find evidence in support of a significant positive relationship using single equation estimation. Cubbin and Leech (1986) test the Marris model using a sample of 43 firms taken from *The Times* list of leading British companies over the period 1969-74. Using single equation estimation they also find a significant positive relationship between profitability and growth. However, when they estimate a simultaneous equations system, they find that the relationship between profitability and growth runs in both directions, although neither positive nor negative relationships are found to be significant. Cubbin and Leech (1986) suggest that these findings provide some support for the Marris growth model and suggest that possible bicausality in the growth-profitability relationship needs to be controlled in econometric studies of corporate firm performance.

Dobson and Gerrard (1989)

Dobson and Gerrard examine the determination of growth and profitability in a sample of around 80-90 (depending on the model tested) small firms in the Leeds engineering sector, the majority of which have 11-50 employees. They define small firms as being single plant, independently owned companies, which remained so

over the period 1982-85. These delimiting criteria were selected in order to restrict the analysis to independent, owner-managed firms, and to permit financial data to be obtained from Companies House. Additionally they undertook a survey of these firms to obtain data pertaining to other endogenous variables relating to the managerial practices of owner-managers. The sample of firms used in the analysis was obtained from a larger sample of 297 firms which met the delimiting criteria but the majority of which did not provide complete information to permit their inclusion in the analysis. Accordingly, Dobson and Gerrard indicate that firms with fewer than 10 employees are under-represented in their sample because of data limitations.

In line with Cubbin and Leech (1986), Dobson and Gerrard use both single equation Ordinary Least Squares (OLS) regression analysis and Two-Stage Least Squares (2SLS) simultaneous equations regression analysis. They estimate the following growth and profitability models.

$$\text{Growth} = f(\text{Profitability, Size, Age, Degree of Geographical Diversification, External Finance, Intra-Industry Differences})$$
$$\text{Profitability} = f(\text{Growth, Size, Age, Location, Degree of Supervisory Control, Intra-Industry Differences})$$

The key analytical variables of interest in the context of the previous discussion are firm size and age. These prove to be the key explanatory variables in Dobson and Gerrard's analysis and the theoretical rationale underpinning their inclusion will be covered later in a discussion of their results. Dobson and Gerrard use size measures defined in terms of net total assets, in common with the econometric studies of large corporate firms considered previously, and sales. They calculate growth and profitability ratios using data from company accounts which are averaged over the four year period considered, again using both net assets and sales measures. In

using different measures of growth and profitability they differ from previous studies of corporate performance which have tended to use solely assets measures. Dobson and Gerrard suggest that assets measures are more likely to detect internal influences on firm performance relating to internal efficiencies and inefficiencies experienced by firms. They suggest that sales measures, on the other hand, will tend to detect external influences relating to the firm's market environment. Therefore growth and profitability models are estimated using both net assets and sales measures of size, growth and profitability.

Dobson and Gerrard adopt the averaging procedure for calculating growth and profitability ratios for two reasons: first, in order to reduce the impact of year-to-year fluctuations in performance; second, not all firms in their sample had submitted financial accounts for the full four year period, so the averaging process allowed the inclusion of those firms which had provided only partial financial information. Thus the analysis is essentially of a cross-sectional nature rather than time series. Dobson and Gerrard indicate that a limitation of their analysis is that they were unable to calculate profitability ratios with the inclusion of director's remuneration. Typically in smaller firms, this comprises a larger proportion of expenses deducted from profits and can vary substantially from firm to firm. Thus it is desirable to take account of the impact of this key variable in the calculation of small firm profitability by adding this figure back in the calculation of profit.

A key variable in their analysis is the impact of location on firm performance, which is considered in terms of an urban-peripheral split. Dobson and Gerrard indicate that previous work which has examined the impact of location have identified this as a potentially important determinant of small firm performance. It is pertinent here to explore the key issues arising from the body of work which underpins Dobson and Gerrard's inclusion of location as a key explanatory variable in their analysis. For example, Fothergill and Gudgin (1982) and Keeble (1993) have proposed two main reasons why firms located in an urban site may experience lower profitability. First, firms may face higher operating costs in urban locations due to higher factor prices, especially rents and the cost of land. Second,

firms in urban locations may experience lower productivity levels due to restrictions in the availability of factors, and especially space constraints. These two effects will reinforce each other in that a restricted supply of factors will bid up their prices. In this respect it has been suggested that small firms may be more suited to an urban environment than larger firms (Storey, 1986). Smaller firms tend to require relatively smaller sites to produce their output, which is a distinct advantage in view of the higher costs faced by an urban location.

The general conclusion arising from studies investigating the impact of urban versus rural locations on profitability has been that firms located in urban sites have lower profitability, although this work is largely confined to large multi-plant firms rather than small single plant firms. There have been two large scale UK-wide studies which show contrasts in urban-rural manufacturing profitability. The most comprehensive of these is Moore, Tyler, Rhodes and Tyler (1980), using Census of Production data which has limitations in that some firms submit returns covering plants located in several locations. Using one measure of profitability, profits per employee, they find that in four major conurbations the level of profitability was lower than in their surrounding hinterlands, throughout the period 1958-68. Fothergill and Gudgin (1982) use National Economic Development Council data covering most large and medium-sized companies in the mechanical engineering and clothing manufacturing sectors during the early 1970s. Their location criterion is that at least 75% of a company's plants were located in only one type of area, i.e. urban or rural. The measure of profit used is return on net assets. They take into account variations in profitability between industries by comparing each company's profitability with the median for the specific industry in which it operated. They find that there was a marked tendency for profitability to be lowest in largest cities and to rise with decreasing settlement size. They find that conurbations were approximately 25% less profitable than the average level of profitability in the mechanical engineering sector, and 40-50% less profitable in clothing manufacturing. In both cases these differences were statistically significant. On the basis of the findings from these studies, Dobson and Gerrard examine the impact of location as a possible determinant of small firm performance. They

define the urban-peripheral split in their sample in terms of whether firms were located in the urban centre of inner-city Leeds, or in an outer-city location, which they indicate comprises mostly suburban rather than rural areas.

In line with the Marris-Penrose theoretical framework of firm growth, Dobson and Gerrard include profitability and growth as dependent variables in growth and profitability models respectively, in order to examine possible two-way causation in the relationship between these variables. They also include dummy variables pertaining to the types of activity represented in their sample of engineering firms (mechanical, office machinery, electrical) to control for possible intra-industry differences. With respect to the variables which pertain to differences in managerial practices, they expect firms with a greater degree of geographical dispersion of their markets (i.e. diversification) to exhibit higher growth rates, and firms which find it easier to obtain external finance to achieve higher growth rates. They expect firms with a higher degree of supervisory control to perform better in terms of profitability because of the greater efficiencies associated with a closer monitoring of the workforce.

Turning now to consider the key results from their analysis. Beginning with the OLS estimation of the growth model, Dobson and Gerrard find a positive relationships between profitability and growth using the assets measure, which is significant at the 10% level, but a negative relationship between these variables using the sales measure, which is significant at the 5% level. They attribute this to firms experiencing internal economies of scale through enhanced efficiency as they grow, but facing squeezed sales margins as they face increased competitive pressures in pursuing higher growth rates. They argue that this exemplifies the importance of using both assets and sales measures of these variables in order to detect both internal and external influences on performance. They also find a positive relationship between age and growth, which is significant at the 10% level using the assets measure, and at the 5% level using the sales measure. They attribute this to management in older firms being more motivated to pursue growth, in line with the Mueller life-cycle hypothesis. They find a negative, but

insignificant relationship between size and growth using both assets and sales measures which they attribute to larger firm having exhausted their best opportunities for growth.

OLS estimations of their profitability model also indicate a positive relationship between growth and profitability using the assets measure, which is significant at the 5% level, and a negative relationship between these variables using the sales measure, which is significant at the 10% level. Dobson and Gerrard also find a positive, but insignificant, relationship between size and profitability using both assets and sales measures, which they suggest provides weak evidence of economies of scale in larger firms. They find that the relationship between age and profitability changes depending on which measure of profitability is used. When the assets measure is used, a negative but insignificant relationship is found, but when the sales measure is used a positive relationship is found which is significant at the 10% level. They interpret this as evidence of older firms benefitting from reputation effects which allow them to earn a higher margin on sales, but at the same time managers in older firms may also be more motivated by growth, which may allow diseconomies of scale to creep into the firm's internal operations. In terms of the impact of a firm's location on its profitability, Dobson and Gerrard find a peripheral outer-city location to be associated with higher levels of profitability, although this is only found to be significant at the 10% level using the assets measure.

Overall then, they find stronger results from the OLS analysis using the assets measures and therefore they choose to delimit the 2SLS analysis to the assets growth and profitability equations. However, they find the results from the 2SLS estimations of these equations to be very poor, with the only significant coefficient being on the location variable, this time at the 5% level, confirming the OLS finding that a peripheral location is associated with higher profitability. They also note that there is a reversal of sign on the profit coefficient in the growth equation from positive to negative, whereas the sign on the growth coefficient in the profit equation remains positive. They interpret this as providing some evidence of the

Marris growth model, where firms will operate on that part of the growth-profitability frontier at which there is a trade-off. Along with the fact that there is still a positive relationship between age and growth using 2SLS estimation, they suggest that this is further support for the Mueller life-cycle hypothesis.

In summary, in terms of their model specification and methodology, Dobson and Gerrard's analysis therefore represents a novel approach to the econometric analysis of small firm performance when placed in the context of other studies which have concentrated on stochastic growth processes and the performance of corporate firms. Furthermore, it was the first empirical economic study to concentrate specifically on examining systematic determinants of growth and profitability performance in small firms.

Reid (1993)

Reid takes Dobson and Gerrard's analysis as the starting point for his own econometric analysis of small firm growth and profitability. While commending the originality of their approach, Reid argues that their analysis is deficient in two key respects. First, the theoretical framework underpinning their analysis was developed for much larger corporate firms and as such is not appropriate for the small independent firms in their sample. Second, their use of 2SLS estimation represents a 'limited information' method which is inferior in terms of statistical efficiency to full information estimation techniques such as Three Stage Least Squares (3SLS) analysis. The relative merits of OLS, 2SLS and 3SLS estimation techniques will be discussed in detail in Chapter 4.

On this basis Reid uses OLS and 3SLS methods to estimate growth and profitability equations for a sample of 73 small Scottish firms who participated in an administered questionnaire survey. Thus his financial data, which relate to the period 1982-85, are self-reported by owner-managers rather than obtained from audited published accounts as in Dobson and Gerrard's study. Another key difference between the studies relates to the size distribution of firms in the

respective samples in terms of employee numbers. While Dobson and Gerrard's analysis is largely comprised of firms with 11-50 employees (although they do not give an exact breakdown of the distribution), Reid indicates that the majority of his sample (78%) are comprised of firms with less than 10 employees. In this respect Reid's sample is more representative of the overall distribution of firm sizes in the economy, as it was shown in Chapter 1, while Dobson and Gerrard's sample is largely confined to medium and larger-sized small firms.

The theoretical basis of Reid's analysis is essentially derived from the SCP model and in particular from Porter's (1980) reworking of this into models of competitive rivalry and competitive strategy in different market environments. Essentially Porter argues that firms can either compete on the basis of cost-advantage or product differentiation in generic markets, or focus on particular market segments and defend these niches. Thus small firms can have a large share of a small niche market, although the growth opportunities are limited by the smaller level of market demand in this situation than in generic markets. However, firms will face a much higher degree of competitive rivalry in generic markets than in niche markets and it will be more difficult to defend any competitive advantage they can secure over their rivals. Reid applies this theoretical framework to an analysis of competitive strategy in small firms and in addition to econometric analysis he also uses fieldwork methods to examine this issue. This aspect of Reid's work will be commented on in Chapter 4.

Reid's growth and profitability equations therefore contain a wide range of variables pertaining to: firm size (measured in terms of employees and sales); age; legal form (i.e. sole trader, partnership or private limited company); the competitiveness of the market environment (price competition, product differentiation, market share, extent of advertising). Additionally he includes variables which pertain to financial problems encountered by owner-managers (cash flow difficulties, problems in getting financial support, extent of gearing) which he argues can have a constraining influence on the ability of owner-managers to pursue their competitive strategies. He also includes profitability and growth in the

growth and profitability equations respectively in order to allow for possible bicausality in this relationship.

Reid includes the legal form of the business as a variable in that it may detect the effects of a greater likelihood of managerial hierarchy, and a subsequently a loss of direct control by owner-managers in larger small firms, which he indicates are in general incorporated businesses rather than sole traders or partnerships. Reid suggests that this represents a more appropriate view of managerial evolution in small firms. He suggests that small firms with more developed managerial structures may be expected to display lower levels of profitability when managerial inefficiencies set in as the firm becomes more bureaucratic and growth-oriented. It is interesting to note that in another respect Reid's view conflicts with that of Dobson and Gerrard's, who argue that a greater degree of supervisory control as the firm grows larger will lead to enhanced efficiency and higher levels of profitability. This view accords with that of Casson (1982), who argues that delegation is a key managerial skill on the part of successful entrepreneurs, although Dobson and Gerrard do not themselves make this connection.

Reid measures growth and profitability in terms of total assets, which he argues is the most appropriate measure of these performance indicators in small firms because small firms in general do not display substantial employment growth, and sales growth in small firms is largely determined by the exogenous market environment. Reid argues that small firms typically operate in highly competitive markets which squeeze their profit margins, or in small niche markets in which there is limited potential for expanding sales. In line with Dobson and Gerrard, Reid argues that assets measures are more likely to detect internal efficiencies and inefficiencies, which are an important concern for survival in competitive markets. The view is bolstered in that he finds little evidence of substantial growth in employee numbers or sales across his sample, but strong evidence of 'vigorous' assets growth. He acknowledges, however, that the data in his analysis are limited to the first three years following the firms' inceptions so that there may be a life-cycle effect which is specific to new firms seeking to establish themselves rapidly.

Reid notes that, based on informal evidence his impression is that, “a failure to achieve assets growth is a common reason for the entrepreneur winding up his business” (p190). He suggests that asset growth rates in older established small firms are likely to be substantially less than in new firms.

Turning now to the results from Reid’s analysis, he finds these to be similar for the OLS and 3SLS estimates. Regarding the growth equation, the size and age variables prove to be not significant but both are negatively related to growth. He attributes the insignificance of these variables to their being dominated by the richer range of variables than those conventionally used in econometric analyses of firm performance. Profitability is found to be negatively related to growth, and although this relationship is not significant using OLS analysis, it is significant using 3SLS analysis. In line with Dobson and Gerrard (1989), Reid interprets this as providing some evidence in support of the Marris growth model. However, in view of the fact that the majority of his sample are micro-businesses with fewer than 10 employees it may be questioned whether this is an appropriate interpretation. Furthermore, it seems to contradict his criticism of Dobson and Gerrard for applying theories intended to explain corporate performance, to small firm performance.

The only significant variables in Reid's analysis in general pertain to the competitive strategy variables. It is found that firms that are less dependent on local markets, that have less product differentiation, that have a greater market share and that are less dependent on their rival’s pricing actions, display significantly higher growth rates. Additionally, Reid find that firms that have higher levels of gearing (defined here as debt/owner's injection of finance) will display significantly lower growth rates. Reid interprets this as evidence of overly optimistic expectations about the growth potential leading to over-investment by owner-managers in some firms, which places a constraining interest burden on the firm if expected growth is not achieved. Regarding the profitability equation, the results are generally weaker than for the growth equation and the only significant variables relate to an incorporated business form, a lesser dependency on rivals'

pricing and higher levels of gearing being associated with lower levels of profitability. Growth is again found to be negatively related to profitability, although again this relationship is insignificant using both OLS and 3SLS analysis.

In summary, Reid's analysis seeks to build upon Dobson and Gerrard's general analytical framework and in doing so it makes some important and novel contributions to the econometric analysis of small firm performance. These may be expressed in terms of variable and model specification, and in terms of suggesting appropriate estimation techniques.

2.2.8 Overview of Economic Perspectives

The aim here is to draw out the general themes from the consideration of entrepreneurship and small firm performance in economic theory and research. It has been shown that economic approaches have, on the whole, focused on the function of entrepreneurship in the economic system, rather than on the personal characteristics of those individuals who are entrepreneurial. Entrepreneurs are the key players in the small firm sector, and roles are identified for entrepreneurs not only in new and small firms but also in growing firms and in large, established corporate firms. Common to all these approaches is the notion that it is only entrepreneurs who are capable of strategically deploying resources in production to create profit, regardless of firm size. In larger firms, there is generally a distinction between entrepreneurs and business managers, who do not possess entrepreneurial abilities.

Furthermore, economic theory has generally regarded entrepreneurs as agents of economic change, either in response to opportunities which constantly arise in the economy, or in creating new opportunities to exploit. Entrepreneurs possess scarce creative abilities and stand outside current practice. Only entrepreneurs have the ability to make judgemental decisions which will lead to efficient resource allocation, and the organizational forms which will promote efficient economic evolution. In this regard, economic approaches have, on the whole, focused on the

function of entrepreneurship, rather than the personal characteristics of those individuals who are entrepreneurial. Some economists, such as Casson (1982) and Etzioni (1987), have appreciated the importance of extrinsic socioeconomic factors, while others, such as Schumpeter (1934) have stressed intrinsic psychological factors. However, in all economic approaches the motivation to undertake entrepreneurial activities is profit, with the intrinsic gains to the individual of undertaking entrepreneurial activity relegated to minor importance. Without profit, there is no entrepreneurship.

One of the key implications of the assumption of this behavioural rule pertains to the relationship between entrepreneurship and small firm performance. In conventional economic theory it is assumed that pursuit of profits and growth is rational business behaviour, with the requirement for long-run profit-maximization being exogenously determined by the market environment. Growth is also exogenously determined up to some cost-minimizing size. Beyond this size, further growth is generally assumed to be determined by stochastic processes which can affect all firms equally (including a random distribution of managerial ability), or endogenously determined by the growth-seeking behaviour of managers in established corporate firms, at the expense of profitability. Small firm owner-managers do not have the luxury of deviating from profit-maximizing behaviour.

Economic research on small firm performance is limited in size and scope. The studies by Dobson and Gerrard (1989) and Reid (1993) display theoretical underpinnings which are limited to the traditional economic concern with the SCP model and models of corporate performance. Furthermore, there is no evidence of the wider economics entrepreneurship literature in these studies, and the contributions from alternative economic paradigms have had no influence on the theoretical basis of these studies. Entrepreneurs are merely regarded as business managers, although much more distinctive roles have been attributed to them in alternative economic paradigms, and a wider range of influences on their behaviour have been suggested. There are also some methodological problems with sample selection and data collection in these studies. Dobson and Gerrard use a sample of

firms predominantly within an 11-50 employee size band, with the most commonly found micro-firms being under-represented, whereas Reid uses a sample which is limited to firms in the first three years of their existence of which 78% are micro-firms. Furthermore, while Dobson and Gerrard use financial data taken from company accounts, thus limiting their sample to companies, Reid uses self-reported financial data for firms representing a range of legal business forms. There are therefore substantial problems in comparing these studies in order to derive general conclusions. The only broad conclusions that can be derived from both studies is that size and age effects are found to be of little significance as systematic determinants of small firm performance, despite the fact that there are strong economic theoretical rationale for their importance in this respect.

It also evident in economic approaches in general that the unit of analysis tends to be the firm and not the entrepreneur. On this point, a radically different economic approach to small firm growth has been proposed by Storey (1990), who argues that in economic studies of the small firm, the unit of analysis should be the entrepreneur and not the business establishment. In making this proposition, Storey indicates that there has been a tendency in economic theory to regard small firms as scaled down versions of large firms, whereas there can be fundamental differences between ownership and control structures between firms of different sizes, as the previous discussion has demonstrated. While Storey's argument will be explored in greater detail in Section 2.3 in the consideration of interdisciplinary studies, it is pertinent to explore briefly the implications here in the context of the previous discussion.

In this respect, Storey differentiates between business performance and entrepreneurial performance. He argues that the entrepreneur is interested in maximizing the discounted stream of earnings from a portfolio of business interests. The failure of a business unit may reflect a portfolio adjustment by the entrepreneur, who is seeking out more profitable investment opportunities. Thus small firm expansion occurs through the creation of new enterprises rather than the expansion of existing ones. Large firm expansion, on the other hand, is motivated

by a desire to capture the strategic core of the business and occurs largely through merger activity. While many small firms are 'fattened up' by their owners purely for selling on as profitable going concerns, very little small firm expansion occurs through external methods. However, Storey's approach has been criticised by Acs (1990), who suggests that an evolutionary model of small firm growth is more appropriate, where a Darwinian process of natural selection in the marketplace will ensure that only firms managed by the 'fittest' entrepreneurs will survive and grow. While Storey (1990) notes that there is little empirical support for his hypothesis of portfolio entrepreneurship, this debate serves to illustrate the importance of regarding small firm performance in a different light to that of corporate performance.

This ends the consideration of economic perspectives on entrepreneurship and small firm performance. Attention now turns to consider the contributions to this field from the wider body of interdisciplinary literature, which as it will be demonstrated, economists have tended to neglect in analyses of entrepreneurship and small firm performance.

2.3 Interdisciplinary Perspectives on Entrepreneurship and Small Firm Performance

2.3.1 Synopsis

This section provides the structure for the consideration of the ways in which entrepreneurship and small firm performance has been examined in the body of non-economic and interdisciplinary literature which has emerged in this field of study. The review begins by considering the contributions of the other major social sciences of sociology and psychology towards gaining an understanding of the field of study. Section 2.3.2 reviews sociological perspectives and Section 2.3.3 reviews psychological perspectives. Section 2.3.4 considers the contributions from management science perspectives which have focused on the nature of entrepreneurial management styles on the performance of both small and large

firms. Following the consideration of these broadly subject-specific perspectives, the discussion then turns to perspectives which can be considered to be 'generalist' in that they combine elements from all of the major subject-specific paradigms and focus on entrepreneurship and small firm performance from a more holistic perspective. Section 2.3.5 considers the major theoretical and conceptual contributions from the generalist perspectives and this is followed in Section 2.3.6 with a consideration of the empirical work in this area which has sought to investigate the impact of a range of entrepreneurial and organisational influences on small firm performance. The review of interdisciplinary perspectives concludes in Section 2.3.7 with an overview of the key issues to arise from the discussion.

2.3.2 Sociological Theories

The nature of sociology may be defined in broad terms as representing an attempt to analyze the ways in which groups of individuals interact in societies; and the ways in which the social environment determines the behaviour of these groups. Sociological approaches to entrepreneurship in general stress the societal influences on entrepreneurial activity, which is equated with self-employment, and are largely concerned with the social group which constitute the 'petite bourgeoisie'. This group is defined by the small scale ownership of capital, and represents a contemporary interpretation of Marxist analysis of the bourgeoisie. While Marx predicted that large scale capital accumulation would occur in the hands of an elite group of bourgeois capitalists, this does not explain the increasing trend towards small scale economic activity which has become prevalent in capitalist economies. Accordingly, sociologists have turned their attention to examine the petite bourgeoisie and there are essentially two main pillars of sociological analysis in field of entrepreneurship.

The major sociological analysis of entrepreneurs revolves around the concept of social marginality, or groups which are outside mainstream society. This work originated with Weber (1930), who argued that activities such as entrepreneurship can differ between societies or groups within a society. The key thrust of this

argument is that some groups hold values outwith the cultural norm, and are thus marginalized. This pushes them into pursuing certain forms of activity in order to achieve self-actualization within their own sphere of reference. While Weber stressed the importance of holding certain religious beliefs such as the Calvinist doctrine of predestination, which stresses the importance of austerity and hard work, others have widened the scope of the 'outsider' and have linked outsider groups to small scale economic activity (Stanworth and Curran, 1976). The social marginality thesis proposes that when an individual's perception of their own worth differs from their social role, this may serve to stimulate entrepreneurial activity, which in this sense is a way of proving their own self-worth and showing others what they are capable of achieving. Entrepreneurship may therefore represent a means of social mobility to some people when other doors are closed to them. This need not only apply to ethnic groups, but also to employees frustrated by a lack of promotion opportunities in large organisations. The social marginality thesis does not suggest that all individuals in this situation will undertake entrepreneurial activity, but that it is one form of self-actualization and social mobility which is open to them (Curran, 1986).

Furthermore, outsider groups are not necessarily forced into entrepreneurship by discrimination, it may be that their cultural beliefs are more in favour of entrepreneurial activity than those of mainstream society. Correspondingly, individuals may be socialized into an entrepreneurial culture, even if mainstream culture does not favour entrepreneurial activity, and their role models will be drawn from their own social group. In this regard, it has been suggested that family groupings, in either mainstream or outsider cultures, which have a history of self-employment, can socialize siblings into entrepreneurship and provide role models of entrepreneurial success (Stanworth, Stanworth, Granger and Blyth, 1989; Reynolds, 1991; Storey, 1994).

The second key pillar of sociological analysis in the field of entrepreneurship revolves around the notion that there are different 'types' of entrepreneurs, which can be grouped according to the possession of common attributes. The social

development model proposed by Gibb and Ritchie (1981) suggests a typology of entrepreneurs relating to different stages of the life cycle. The basic premise underlying the model is that different attitudes to entrepreneurship may be determined by different societal pressures, circumstances and opportunities throughout the course of a person's life. This suggests that age may be an important factor at the onset of entrepreneurial activity because different attitudes may arise at different stages of the life cycle (Reynolds, 1991). For example, the attitudes of a thirty-five year old starting a business may vary considerably from those of a person nearing retirement. It is commonly reported in surveys of small firm owners (Storey, 1994) that the middle stage of the life cycle (broadly 35-45 years) are the most common category in terms of first time entrepreneurial activity. Individuals at this stage of the life-cycle may have accumulated substantial human and financial capital, and may feel the need for greater self-actualization. Shapero (1984) also suggests that an important 'triggering factor' such as redundancy or divorce, or some other life crisis or event, will provide the final push into entrepreneurship for many people.

Scase and Goffee (1982) propose a typology of the 'entrepreneurial middle class' of small scale capitalists. They suggest that there are four distinct types of small scale capitalist: first, the self-employed, which statistics have shown to be the most prevalent form of small business; second, the small employer, in which a small number of employees are supervised directly by the owner-manager; third, the owner-controllers, in which the owner-manager takes a more administrative, managerial role in the firm, although still has direct control as far as possible; fourth, the owner-director, in which control has to be devolved due to the substantial size of the firm. Thus each of these entrepreneurial types is related to a different size of small firm, with the largest of these small firms displaying different organizational structures to the smallest firms. Thus it is suggested that within each type of small firm, there will be different organizational cultures and different attitudes on the part of entrepreneurs in managing the firm. In larger small firms, it is more likely that there will be formal management systems and a more structured organizational form, which will lead to a more 'professional' managerial

culture within the firm. This is in contrast to the smallest firms which are under the direct control of the entrepreneur, and a more autocratic and personalized style of management.

In summary, the thrust of sociological analysis is to examine the impact of the social environment on entrepreneurial activity in terms of the wider societal influences on entrepreneurship, and the influence of specific social groupings.

2.3.3 Psychological Theories

While the concern of sociological approaches is with the environmental influences on entrepreneurial activity, the concern of psychological theory is with the internal influences on individual entrepreneurs. In stressing the importance of environmental and situational influences on entrepreneurial behaviour, sociological theory plays down the importance of the past experiences of individuals as possible determinants of this behaviour (Chell, 1985). This view is not held by psychologists, who have developed their own models of entrepreneurial behaviour based on determinants of entrepreneurial activity which are intrinsic to individuals. Two distinctive approaches have been developed by psychologists in the study of entrepreneurship, which is again equated with self-employment, and these are: the psychodynamic model proposed by Kets de Vries (1977); the personality trait models, the seminal work of which was carried out by McClelland (1961).

The psychodynamic model suggests that entrepreneurial behaviour arises from deviant personalities which are developed through abnormal childhood experiences such as deprivation. Thus, current actions and behaviour are the result of early life experiences. It is argued that the experience of deprivation in childhood results in psychological problems in adulthood, such as low self-esteem and an inability to accept authority or work with others. Entrepreneurial activity for such individuals, represents a chance to create their own empire where there are no authority figures presiding over them, and thus their self-esteem and self-confidence is bolstered. In common with the social marginality thesis, the psychodynamic model does not

explain why entrepreneurship is the likely choice for all such individuals (Curran, 1986; Chell, Haworth and Brearley, 1991). Not all small business owner-managers have had a deprived childhood, although the 'rags to riches' story is commonly told as a model of successful entrepreneurship. Furthermore, this approach does not incorporate current life experiences or situations as possible determinants of the decision to undertake entrepreneurial activity. The question then arises of why some individuals who have had similar childhood experiences to others, choose to undertake entrepreneurship at different times in their lives to others, or even at all (Chell, 1985).

The main approach adopted by psychologists, however, is that of correlating certain personality traits with entrepreneurial activity (Chell *et al*, 1991). The seminal work in this field was that of McClelland, who sought to prove that much economic history could be explained in terms of psychological variables. McClelland defined three personality traits which he believed explained social, political and economic change in societies. These were: need for power - the means of influencing other people; need for affiliation - the means of developing friendships with other people; and, need for achievement (nAch). The last of these traits, he predicted to be associated specifically with entrepreneurial activity. All societies showing substantial economic development he found to be associated with the presence of entrepreneurship and high scores for nAch. This study triggered a substantial body of research on the relationship between certain personality traits and entrepreneurial behaviour. For example, Rotter (1966, 1990) found evidence that an 'internal locus of control' is associated with entrepreneurial activity, where a person believes their destiny is of their own making, and is not predetermined by fate. Such people are driven by a need for autonomy over strategic decisions affecting the course of their lives, and independence from external influences.

The methodology adopted by psychologists in the personality trait studies entails precise specification and measurement of these traits using standardized personality inventories. This approach to analysing entrepreneurial behaviour has been strongly criticised on the basis that the attributes being specified and measured are complex

processes which cannot be reduced into simple categories (Curran, 1986; Carsrud and Johnson, 1989; Gartner, 1989; Chell *et al*, 1991). The trait approach assumes that they can, and furthermore that once specified, traits are stable enough to provide universally reliable and valid indicators of human qualities such as creativity and imagination. Furthermore, as Gartner (1988), Chell *et al* (1991) and Shaver and Scott (1991) indicate, much research carried out in this field of study has failed to identify any traits which are associated specifically with successful entrepreneurs as opposed to successful individuals in general. More sophisticated versions of the trait approach have attempted to identify constellations of traits which are associated with entrepreneurial behaviour (e.g. Campbell and Fiske, 1959) but have also failed to discriminate between entrepreneurs and non-entrepreneurs (Carsrud and Johnson, 1989).

A key feature of the personality trait approaches is that traits must also be independent of social context, so that an enterprise culture cannot create more entrepreneurs, only an increase in the number of people possessing such traits can. However, even in economic perspectives such as Casson's which argue that judgemental decision making ability is randomly distributed amongst the population, the supply of entrepreneurs is still partly determined by societal factors. This suggests that the population of entrepreneurs in an economy is determined by quasi-stochastic factors rather than purely stochastic factors as the trait approach implies. Carsrud and Johnson (1989) suggest that economic development cannot possibly rely on entrepreneurs being born rather than made.

In response to this criticism, Robinson, Stimpson, Heufner and Hunt (1991) argue for the importance of attitude as a psychological predictor of entrepreneurial behaviour rather than personality. They assume, however, that while attitude can be determined to an extent by social influences, it can be specified as a psychological variable and measured accurately in the same way that personality traits can, by using standardized psychological testing procedures. The rationale for pursuing this line of enquiry is that attitudes can be changed by propaganda and education programmes, while personality traits cannot. Thus entrepreneurs can, to an extent,

be made and this process can be analyzed with precision.

In summary, psychological theory places emphasis on the internal psychological development of personalities and attitudes which are likely to be manifested in the form of entrepreneurial behaviour, and in doing so it tends to place little emphasis on the social, environmental and situational influences which impact upon entrepreneurial activity.

2.3.4 Management Theories

While the broad concerns of sociological and psychological work in the entrepreneurship and small firm field are with 'which individuals will start their own firms and why?', another body of thought has developed in the management literature. This focuses on the types of managerial behaviour associated with entrepreneurial organizations, defined as those which create and exploit new opportunities for profits and growth and which in the process redeploy resources in the pursuit of these opportunities (Stevenson and Sahlman, 1989; Stevenson and Jarillo, 1990; Covin and Slevin, 1991). Fundamental to this body of thought is the view that there is a difference between entrepreneurial management and administrative management, the latter of which is associated with merely overseeing the pattern of existing resource allocation within organizations in response to known and existing opportunities. Entrepreneurial management, on the other hand is the driving force for change and is associated with innovation and the implementation of strategic policies and flexible and organic organizational structures, in order to maximize the potential of new opportunities.

In this respect, there are strong similarities between this perspective on entrepreneurship and many of the economic perspectives reviewed earlier (e.g. Knight, 1921; Schumpeter, 1934; Penrose, 1959; Casson, 1982). As in these economic approaches, the concern of the entrepreneurial management school is not predominantly with new and small firms but with large corporate firms. However, the entrepreneurial management school go into greater detail concerning the types

of managerial behaviour and strategic policies which are thought to be associated with successful entrepreneurial organizations. These relate not only to the development of efficient organizational structures in response to opportunity-exploitation but also to activities which are aimed at securing competitive advantages over rivals, for example, environmental-scanning, information-gathering, strategic planning and marketing activities (Murray, 1984; Miller and Toulouse, 1986; Cragg and King, 1988; Mintzberg, 1990; Covin and Slevin, 1991). Furthermore, it is also recognised in this approach that entrepreneurial management is a process, which begins with the identification of an opportunity and ends with the rewards being derived from its exploitation.

A variant on this theme is the concern of some managerial theorists with developing 'stages' models of business development. These models take a longitudinal view of the forms of managerial behaviour which are likely to evolve in businesses during the course of their life-cycle, and identify clear stages in the evolution of managerial styles in new and developing businesses. Chell *et al* (1991) note, however, that there is no one model of the stages of business development and that the principle focus of attention in models of this nature is upon the types of problems encountered and the consequent behaviour of the business owner. The key variables in stages models in this respect are the size and age of the business. It is proposed that particular management styles and strategic policies are only appropriate to certain stages of a business's development in terms of its organizational structures and problems faced (Churchill, 1983; Flamholtz, 1986). However, there is no consensus with regard to the number of stages a business is thought to pass through in the process of its development, which as Chell *et al* (1991: p61) indicate, "has led some researchers to reject this approach as futile".

For example, Churchill and Lewis (1983) identify five stages in the process of business development, these being existence, survival, success, take-off and resource maturation. Thus at the start of the business venture the owner has to be concerned with ensuring the viability of the business, particularly in terms of its customer base and financial security. As the business becomes established and

profitable, the owner is faced with a choice of whether to pursue growth or stabilisation. If growth is pursued, a more strategic managerial style is required in which the owner is disengaged from the day-to-day affairs of the business. Once the business has reached a certain size, however, the owner begins delegating managerial tasks and decentralizing control of the business, at which point growth 'takes-off' and eventually the business matures into its optimal organizational structure, although the owner is now faced with the problem of maintaining the business's 'entrepreneurial spirit'.

Flamholtz (1986), on the other hand, identifies a four stage model of business growth beginning with two 'entrepreneurial phases'. These entail first of all the identification of a market opportunity and the initial assembling of resources to produce the product or service in response to that opportunity. A flexible organizational structure must then be developed which can respond efficiently to the day-to-day needs of the business as it expands rapidly in order to exploit its opportunity. Following these stages, Flamholtz suggests that the owner must make a transition to a professionally managed business, so that stage three is the beginning of the process of professionalization. The final stage entails the consolidation of the business as a professionally managed corporate entity in which a corporate culture must be developed to remedy the problems associated with a loss of control over its overall direction, because of its greater size.

The key problem with this approach in general, however, is that there is no inevitability that all businesses will develop from one stage to the next in a rational and predictable manner (Chell *et al*, 1991). Many other researchers have strongly criticised the stages approach in failing to account for the fact that the vast majority of small firms do not grow, or do not grow in a predictable linear fashion (Stanworth and Curran, 1976; Curran, 1986). Bygrave (1989) argues that the entrepreneurship process, which he defines in terms of developing a business venture, is typically discontinuous, non-linear, chaotic and open to a wide range of economic, sociological, psychological and organizational influences which cannot possibly be encapsulated in a simple linear model. Furthermore, Bygrave argues

that given the wide range of potential influences on it, the entrepreneurship process may be highly individualistic between cases. Alternative theories of small firm growth, and profitability performance, which argue against the stages model will be discussed in the section which follows.

In summary, managerial theories of entrepreneurship focus on the forms of managerial behaviour which are associated with entrepreneurial, opportunity-seeking organizations. The focus is on the actions of entrepreneurial managers rather than their personal attributes and influences. Furthermore, entrepreneurial management is regarded as a process in two senses: first, in terms of the actions which managers take in order to create and exploit profit and growth opportunities; second, in terms of the managerial styles which must evolve in the process of pursuing these opportunities, in response to problems which managers face at certain points of a business's development.

2.3.5 Generalist Theories

Thus far the major perspectives on entrepreneurship which have been advanced by each of the mainstream social and management sciences have been considered. Attention will now turn to consider approaches which have synthesised elements from economics, sociology, psychology and the management literature into what may be regarded as interdisciplinary 'generalist' approaches. These are more 'applied' in their orientation in that they seek to explain why some small businesses perform better than others in terms of growth and profitability performance, and in doing so they relate particular aspects of entrepreneurial attributes and behaviour to small firm performance. It is from these generalist approaches that a more rounded view of entrepreneurship and its relationship with the performance of small firms can be derived. Following a consideration of the theoretical and conceptual literature in this field, a review of the empirical generalist studies which have examined determinants of growth and profitability in small firms will be undertaken.

In broad terms, generalist approaches combine insights from the social and management sciences in addressing the key issues identified in the previous discussion: first, why some individuals choose to undertake entrepreneurial activity, i.e. 'who are entrepreneurs?'; second, 'what are the features of entrepreneurship as a process?', i.e. of developing a business venture. A vast amount of literature across disciplines has focused on the personal characteristics and motivations of individuals who choose to undertake entrepreneurial activity (e.g. Cross, 1981; Storey, 1982; Evans and Leighton, 1990; Blanchflower and Oswald, 1988; Burrows, 1992; Storey, 1994; Kirby and Jones-Evans, 1997). The concern of this thesis, however, is not with the determinants of new firm formation *per se*, although these may have some bearing on the ensuing performance of small firms as it will be demonstrated, but on the determinants of the actual growth and profitability performance of existing small firms. Accordingly, the questions posed above may be reformulated in terms of 'what personal attributes and forms of behaviour displayed by entrepreneurs are associated with differing levels of small firm performance?'

In this respect, there has been a vehement debate in the interdisciplinary entrepreneurship literature in that Gartner (1988) has argued that 'who is an entrepreneur?' is the wrong question, while Carland, Hoy, Boulton and Carland (1988) argue that 'who is an entrepreneur?' is a question worth asking. Furthermore, Carland *et al* (1988) and Curran (1986) argue that the term 'entrepreneur' has been used very loosely; and sometimes inappropriately as a synonym for 'owner-manager'. They suggest that the term 'entrepreneur' has cultural values attached to it which give approval to certain forms of activity which contribute positively to economic development. They argue that the vast majority of people who start their own business are not entrepreneurs in this ideal sense. Accordingly, they argue that the 'hallowed' term entrepreneur should be reserved for those individuals who are in the mould of the opportunist, innovative type who are motivated by profits and growth as envisaged in economic theory (Kirzner, 1997; Schumpeter, 1934).

However, there is no general consensus in the interdisciplinary literature as to what

actually constitutes entrepreneurial activity, with others arguing that entrepreneurship entails the creation of a new business venture regardless of its orientation towards high levels of profits and growth (Gartner, 1988). However, as it was noted in Chapter 1, despite the limited number of small firms which do expand to any size, the aggregate importance of the small firm sector is not in dispute. Thus Gartner (1988) and Bygrave (1989) argue that it is a sterile debate as to whether there is a distinction between an owner-manager and an entrepreneur and that the key issue is the behaviour which individuals display in running their firms. Thus Gartner (1988), Bygrave (1989), Naffziger, Hornsby and Kuratko (1994) and Kuratko, Hornsby and Naffziger (1997) argue that the focus of the debate should be placed on the entrepreneurship process after a small firm is created rather than concentrating solely on the factors which lead to its creation.

The key issues which apply to the possible inter-relationships between the personal attributes and behaviour of entrepreneurs in determining small firm performance will now be explored in the ensuing discussion of generalist theories of entrepreneurship and small firm performance. This will begin with a consideration of key theoretical models which have been proposed in the generalist literature, which identify the key factors which are thought to be important determinants of small firm performance. Following this, the discussion will focus on particular aspects of the personal characteristics, motivations, goals and behaviour of entrepreneurs which are thought to be associated with different levels of small firm growth and profitability.

The first of the generalist theories to be considered is that of Smith (1967), who differentiates between different types of entrepreneur who possess different personal characteristics, and who have different motivations and objectives. Smith differentiates between two types of entrepreneurs, which he labels 'craft' and 'opportunistic'. The craft entrepreneur is characterized by a working class, blue collar background, limited education but successful work experiences, a paternalistic management style, and a reluctance to use outside sources of advice and finance. Craft entrepreneurs are not motivated by rational economic objectives

such as profits and growth, but by intrinsic satisfactions such as independence and autonomy, although pursuit of these goals are subject to earning a sufficient minimum level of income to make a living from the business. For these individuals entrepreneurship represents a livelihood rather than a vehicle to accumulate personal wealth. On the other hand, the opportunistic entrepreneur is characterized by a middle class, white collar background, well rounded education, previous managerial experience, an aloof professional management style and a willingness to use external sources of advice and finance. These entrepreneurs are primarily motivated by profits and growth, although the pursuit of these objectives may be subject to an autonomy constraint when the firm grows to some size which is beyond their 'comfort level' of control. At this point opportunistic entrepreneurs are likely to sell the business if presented with an attractive offer.

Filley and Aldag (1978) also devise a typology of entrepreneurs similar to that of Smith's but they distinguish further between two types of opportunistic entrepreneur. They propose a 'promotion' type of entrepreneur, who will pursue profits and high growth rates in the short term, employing a flexible organisational structure in which they are the nexus of control; in comparison to a 'administrative' type of entrepreneur who is more managerially orientated and will grow the firm at a steady rate by developing a hierarchical organisational structure. Thus the performance of a firm will be determined by the type of entrepreneur in control of it. While Smith's and Filley and Aldag's typologies represent perhaps the seminal and most commonly cited typologies in the generalist literature, there are many other typologies along similar lines which have attempted to identify more sophisticated categories than these broad entrepreneurial types (Vesper, 1980; Birley and Westhead, 1990; Woo, Cooper and Dunkelberg, 1991; Lafuente and Salas, 1989; Dana, 1995; Westhead, 1995). The problem with the typology approaches in general, however, is that while the importance of interdisciplinary determinants of entrepreneurial activity are recognised, the analytical approach adopted excludes the possibility of dynamic changes in entrepreneurial types (Chell *et al*, 1991). There is, however, a body of generalist thought which recognises that entrepreneurial development is a dynamic process in which entrepreneurs

continuously interact with their social and economic environment. In particular, key models in this regard are those of Chell (1985) and Stanworth and Curran (1973).

Chell (1985) proposes a model which incorporates a range of such factors, which she terms 'appropriate person variables'. These include skills, perception of new experiences, behaviour towards options, and individual values and standards. Every individual is assumed to be on a learning curve and does not have a fixed entrepreneurial personality, but reacts and defines matters in relation to continuous experiences. Chell argues that at the start of the process of development the entrepreneur has limited skills and finds it hard to cope with the vast amount of new information with which he or she is faced. After a period in which in which the entrepreneur adapts to their new role, and has acquired some of the skills needed to run a business, the firm becomes established.

Growth beyond this point depends upon the motivation and objectives of the entrepreneur which are influenced by their own expectations of what they are capable of achieving and the recognition of their efforts by outside parties, and the entrepreneur's ability to deal with the even greater amount of information which must be processed if expansion is pursued. Chell suggests that one way in which this information processing constraint may be overcome is by delegating specialist function to a management team, although this may be limited by a desire to retain control over the firm's overall direction. Chell's model reflects themes evident in other dynamic generalist models, in that she proposes that there may be changes in entrepreneurial behaviour, in the light of expectations being aligned or misaligned with actual performance outcomes (Greenberger and Sexton, 1988; Cragg and King, 1988; Davidsson, 1989; Herron and Sapienza, 1992; Herron and Robinson, 1993; Naffziger *et al*, 1994). Gibb and Scott (1986) also propose a model of small firm growth which depends upon the confidence levels of entrepreneurs as they develop competency in running a business, and they also recognise that this process may be iterative. Thus entrepreneurs will make mistakes and receive knockbacks, although encountering and resolving such experiences should increase their knowledge and resource base and bolster their confidence.

Stanworth and Curran (1973) propose a 'social action' model of small firm performance. They indicate that their approach is different to the standard 'stage' models evident in the management literature, in which all firms go through clearly defined and hierarchical stages of development. Stanworth and Curran argue that stage theory does not explain why most firms opt to remain at a certain size, and why some people leave employment with large firms to start their own small firm. Their model stresses that firm growth depends upon the willingness of entrepreneurs to assume certain roles at different phases of a firm's development. They identify three such roles, which they term 'latent social identities'. The first of these is the 'artisan' identity, which is broadly comparable to Smith's craft entrepreneurial type, where income generation is secondary to intrinsic satisfactions such as lifestyle and job satisfaction. After a period in which the entrepreneur has gained confidence in running the business, he or she may assume a 'classical entrepreneur' identity, similar to Smith's 'opportunistic' type, where earnings are a core component of the entrepreneur's motivation.

The business may expand rapidly during this phase, although as it does so, forces emerge which push it towards a more bureaucratic structure. This necessitates the delegation of managerial functions, and the entrepreneur has to assume a 'manager' identity, adopting a more administrative function, where goals are oriented towards peer recognition of managerial excellence. The desire to build up a substantial enough capital base to pass on to offspring may also be an important motivating factor in the manager identity. Firms which have grown to this size and organisational structure are the relatively more 'successful' small firms, and thus offspring will be socialised into successful entrepreneurship. Not all entrepreneurs, however, will be willing to adopt the latter two identities, as they may conflict with their original motivations for choosing to undertake entrepreneurship. Some entrepreneurs will simply not want to expand their firms, whether or not they are capable of doing so, in terms of both internal competencies and external market conditions. Others, however, will be willing to assume these latter identities, regardless of whether or not they conflict with, or reinforce, their original motivations for undertaking entrepreneurship.

The complex and turbulent nature of small firm growth suggested in these models is in contrast to the view that firms can grow in an idealised manner by passing through a series of stages in which resources are acquired and managed with increasing effectiveness within the development of a rational and hierarchical organizational structure. Furthermore, the static and dynamic models discussed above identify the key role of the relationships between personal characteristics, motivations and objectives, strategic choices and managerial practices of entrepreneurs in determining small firm performance. Furthermore, the interaction between these variables in determining different levels of growth and profitability performance in small firms is emphasised. These categories of variables will now be examined in greater detail individually, in order to establish the relationships which the literature suggests may exist between each of these categories and small firm performance. Following that, the body of empirical generalist work which has used multivariate analysis to examine the relative importance of these categories on the growth and profitability performance of small firms will be considered.

Personal Characteristics

Beginning with the personal characteristics of entrepreneurs, the key variables in this regard which have been suggested to have some bearing on small firm performance are: the entrepreneur's age, their age at the time of the entrepreneurial event, their level of educational attainment, their employment history in terms of whether or not they have managerial experience and experience of working in a small firm (or small branch/plant), whether or not they have a family history of entrepreneurship, and finally whether or not they are the founders of the firm (Cross, 1981; Storey, 1982; Bates, 1990; Birley and Westhead, 1993; Storey, 1994; Westhead and Birley, 1995). The impact of the age variables reflects the earlier discussion of Gibb and Ritchie's (1981) typology of entrepreneurs according to different stages of the life-cycle. Thus there is thought to be a non-linear relationship between age and firm performance with the middle stage of the life cycle (35-45 years) being associated with the highest levels of performance. This is broadly because of two effects, the first of which relates to levels of motivation to

succeed, and second of which relates to the possession of 'human capital', i.e. relevant skills and abilities to manage a small firm. Entrepreneurs younger than this optimal age group will have the enthusiasm to succeed but not the experience, and additionally they will find it more difficult to raise capital because of their inexperience. Older entrepreneurs, on the other hand, will have the experience, and perhaps the financial capital, but not the motivation as they near retirement. Also with regard to human capital, it is thought that higher levels of education, the possession of previous managerial experience, previous experience of working for a small employer and a family history of entrepreneurship may be associated with higher levels of performance. These variables represent elements of human capital which should be positively associated with the skills and abilities which are necessary to achieve higher levels of growth and profitability performance.

However, Storey (1994: p137) takes an overview of the impact of these variables on small firm performance and cautions against placing too much emphasis on the impact of the personal characteristics of entrepreneurs on the performance of their firms. He indicates that "the identikit picture of the entrepreneur whose business is likely to grow is extremely fuzzy", and that "what the entrepreneur has done prior to establishing the business exerts only a modest influence upon the success of the business".

With regard to the impact of having the firm's founder in control, it has been suggested that founder managers are more likely to have a vested interest in the firm's success and thus be more motivated towards achieving it. Additionally, founder managers are more likely to accept lower remuneration in order to plough back profits into the firm (Begley and Boyd, 1987). Therefore higher levels of profitability and growth may be expected in small firms managed by the founder. On the other hand, it has been suggested that the managerial styles of founders are likely to be different from non-founder managers in that the latter may have more professional managerial styles. In particular, it is suggested that founder managers may be more reluctant to engage in external borrowing as a matter of principle, and this may have an adverse effect on performance (Curran, 1986). Furthermore, non-

founder managers may have little vested interest in the firm other than to gain peer recognition of their managerial abilities and thus they may be more willing to pursue riskier opportunities.

Motivations and Objectives

Regarding motivations for undertaking entrepreneurial activity, a key point to emerge from the previous discussion of economic, sociological and psychological perspectives on entrepreneurship is that it has been suggested that motivations for undertaking entrepreneurial activity can be divided into two sets of factors: those which push individuals into entrepreneurship; and those which pull individuals into it (Storey, 1982, 1994). Thus it may be argued that individuals can be pushed into self-employment by reasons such as a desire for greater job security, or actual redundancy. In such cases self-employment may be preferable to insecure employment or unemployment. Factors that may pull individuals into self-employment may be the identification of market opportunities and innovation. There may also be sociological and psychological pull factors such as a feeling of frustration with working in a large organization, a desire for independence, a desire for greater self-esteem and social mobility. Generally speaking, pull factors are construed as being more positive from an economic point of view, relating to the Austrian idea of exploiting market opportunities to effect efficient resource allocation, or the Schumpeterian model of the entrepreneur redeploying resources to more efficient uses, and pushing forward the production possibility frontier of an economy (Binks and Coyne, 1983; Storey, 1994).

Thus entrepreneurs who are initially pulled into entrepreneurial activity may be expected to display higher levels of growth and profitability performance. Storey (1982) and Binks and Jennings (1986) indicate that while there is no substantial evidence to support the view that firms managed by entrepreneurs who are pushed into entrepreneurship are more likely to fail than those pulled into it, these firms are far less likely to be very profitable and to grow. It is suggested that one key explanation for this may relate to the fact that many entrepreneurs are pushed into

self-employment at the lowest point in the economic cycle. Furthermore, Binks and Jennings (1986) and Storey (1982) indicate that these entrepreneurs tend to set up in the industries in which they have previous experience. Unfortunately, these industries tend to be the ones in decline in which lack of demand has led to job insecurity or redundancy. On the other hand, they suggest that entrepreneurs who are pulled into self-employment by a new market opportunity, will tend to set up in new industries employing new technologies, for which there is growing product demand. Thus they argue that it is pulled entrepreneurs who are motivated by profits and growth, which will form the seed-bed of new growth potential, innovative firms.

While the focus of the discussion thus far has been on the impact of initial motivations for undertaking entrepreneurial activity, other researchers have emphasised the importance of motivations for sustaining entrepreneurial activity rather than choosing to undertake it initially. In this respect Kuratko *et al* (1997) identify four sets of motivations: (i) extrinsic rewards - which relate to the accumulation of personal wealth and income; (ii) independence/autonomy - which relate to a need for personal freedom and control; (iii) intrinsic rewards - which relate to peer recognition and personal growth through meeting new challenges; (iv) family security - which relates to the desire to build up a family business in order to pass it on to family members, and to provide security for one's family. Thus it may be expected that entrepreneurs who are motivated by extrinsic rewards and family security would display higher levels of profitability and growth than those motivated by personal factors. However, Kuratko *et al* acknowledge that they do not attempt to relate the motivations for sustaining entrepreneurial activity to the initial motivations for undertaking it. Thus they do not identify the nature of any dynamic changes in motivations during the course of the business. They suggest that the process by which motivations are reinforced or revised, and the key factors which influence this process, needs to be better understood.

The importance of the non-pecuniary 'independence' motive both as a factor contributing to the choice to undertake entrepreneurial activity, and as a constraint

on the ensuing performance of the firm is widely reported in the interdisciplinary literature (e.g. Smith, 1967; Stanworth and Curran, 1973; Storey, 1982; Filley and Aldag, 1978; Gray & Stanworth, 1985; Chell, 1985; Stanworth *et al*, 1989; Gray, 1990; Chell *et al*, 1991; Davidsson, 1991; Storey, 1994). It is suggested that the desire to retain control of the firm and a failure to delegate authority imposes a constraint on further growth, after some 'comfort' level of organizational size has been reached. Deeks (1976) and Gray (1990), however, suggest that there may be different facets to intrinsic motivations, which are broadly termed 'independence', which may have different implications for the profitability and growth of small firms. Gray (1990) proposes that independence in terms of economic security, may be achieved through building a profitable firm. However, he suggests that a reluctance to delegate tasks, and thus a reluctance to grow, may be evident in firms whose entrepreneurs are seeking to gain independence through pursuing profitability. Gray suggests that such entrepreneurs are likely to sell the business when the comfort level of size has been reached. On the other hand, independence in terms of 'leave me alone', and allowing the firm to be at the mercy of its environment, implies something completely different. Deeks (1976) views this type of independence in business as illusory. A small business cannot be completely self-contained, it is dependent upon suppliers, bankers, customers, and so on.

Deeks (1976) suggests that the analysis of objective-setting by entrepreneurs in small firms requires a more sophisticated approach than making simple assumptions of profit-maximisation, constrained profit maximisation (for those entrepreneurs primarily motivated by autonomy), growth maximisation, or constrained growth maximisation. He suggests that profits may affect other objectives as well as being an end goal in their own right. Growth orientated entrepreneurs will need profits to either provide internal finance for expansion, or to convince lenders or investors to provide external finance. A profitable business also provides greater security for entrepreneurs motivated by personal goals and who do not wish to pursue growth. On the other hand, addressing the profit performance of their business may only be forced upon some entrepreneurs by periods of crisis, and profit performance may be improved by retrenchment rather than growth.

As noted earlier, Storey suggests that there may be portfolio entrepreneurs, who own more than one firm, or who are 'habitual' founders of new firms (Birley and Westhead, 1993). Thus for some entrepreneurs, building up a portfolio of businesses may be one way of achieving security and growth at the same time. In this respect the closure of a business unit may not necessarily constitute entrepreneurial failure. Entrepreneurs may choose to close one business to concentrate on others. These features are not picked up by concentrating on the business as the unit of analysis and not the entrepreneur (Scott and Rosa, 1996). This type of entrepreneurial growth objective may be important in that, as noted in Chapter 1, supply chains are becoming more fragmented in many sectors, and inter-connections between businesses are such that it is becoming more difficult to judge where the boundaries of any single business lie. The implications of this distinction are important in these circumstances, as judging entrepreneurial performance on the basis of a single business unit does not take account of the jobs created, and value added, along the supply chain. If an entrepreneur secures a major contract, subcontracts work down the supply chain and creates £1m turnover and 100 jobs in other businesses, this is not reflected measuring the performance of the entrepreneur's own business.

Another dimension to business growth is that there are societal pressures in favour of it (Stanworth & Curran, 1976). If it socially accepted that growth represents the purpose of being in business in an 'enterprise culture', then failure to grow may be culturally perceived as failure outright. Thus it has been suggested that some entrepreneurs pay 'lip service' to the growth objective (Golby and John, 1968; Stanworth and Curran, 1976). Furthermore, North, Leigh and Smallbone (1991; 1992), in a survey of a panel of nearly 300 small firms in North London over a ten year period, found that firms which actively pursued growth as an objective were no more likely to survive than those who merely aimed to survive in the first place. They find that firms that pursued growth did not always achieve it, and in many cases it resulted in failure due to the extra demand placed on the firm's resources. On the other hand, firms that actively sought to survive, tended to do so by consolidating their business and by seeking to maintain sufficient levels of

profitability and liquidity. While survival was interpreted as an active business objective which mobilised resources to achieve its end, aiming for stability was interpreted as a non-active objective. North *et al* (1991) argue that firms that effectively have no objective to aim for are most likely to fail. These firms are purely reactive to circumstances and are likely to be in trouble when demand for their output falls below some critical level.

Strategic Choices and Managerial Practices

Porter's models of competitive rivalry and competitive strategy, which as it was noted earlier were used as an analytical focus by Reid (1993) in his examination of competitive strategy in small firms, provide a basis upon which to discuss the relationship between the strategic choices made by entrepreneurs and the profitability and growth of their firms. Porter (1981, 1985) essentially converts the Structure-Conduct-Performance model of industrial economics into prescriptive models of business strategy. Porter suggests that there should exist an optimal competitive strategy for any product given the parameters of the market environment, such as product maturity and level of normal profit, and the competitive rivalry evident in the market.

Essentially, he argues that firms can either compete on the basis of cost-advantage or product differentiation in wider markets, or focus on particular market segments, or niche markets. Thus small firms can have a large share of a niche market, although the opportunities of growth are more limited in this situation than in wider markets, for which there is much higher level of product demand. For example, assume that there is a generic market for bread and that large scale producers can supply basic white or brown bread at a cheaper price than smaller producers due to cost advantages they derive from economies of scale. Small scale producers cannot survive under these market conditions. They can, however, focus on a particular market segment in which the consumer is not satisfied with a standard loaf of bread, and target this segment through either cost leadership, or product differentiation. For example, they may produce cheesy garlic bread with sesame

seeds. While this corners off a small segment of the market, which large scale producers are not interested in exploiting, it may be expected that the market for cheesy garlic bread with sesame seeds is more limited than that for plain bread.

Porter considers the concept of 'value' in considerable detail and argues that the value of a product or service is largely determined by the consumer's perception of its worth, rather than the producer's. Thus, for example, even basic commodities such as steel bars can be differentiated if elements of value to the consumer can be supplied exclusively. In this example, steel bars can be differentiated by a firm guaranteeing supply on a particular date, to meet a production run, or by invoicing the customer before a certain date to meet a budget deadline. After sales service, and customer care are two other examples of adding value to products or services. The marketing approach to business is entirely customer-orientated, value is added to a commodity or product to meet consumers' needs. Thus it may be expected that entrepreneurs who display a greater strategic awareness of their market environment (Covin and Slevin, 1989; Gibb and Scott, 1986), and who focus on the customers' requirements will display higher levels of profitability and growth, although the latter variable may be constrained by the limits of demand for products in niche markets (Reid, 1993). Furthermore it has been suggested that in developing an appropriate competitive strategy, entrepreneurs in successful small firms will: (i) undertake information-gathering activities (also referred to as 'environmental scanning') in order to identify their market position (Fahey and King, 1977; Brush, 1992; Mohan-Neill, 1995); (ii) develop formal strategic planning cycles in order to keep ahead of the competition (Bracker, Keats and Pearson, 1988; Matthews and Scott, 1995); (iii) make necessary adjustments to their product and customer base in order to keep ahead of the competition and set the pace in their markets (Smallbone, 1992; Smallbone, Leigh and North, 1993 and 1995); (iv) develop a social network (including family, friends, casual acquaintances and professional contacts), which can increase both the reputation and the knowledge base of entrepreneurs, thus reducing uncertainty in their economic environment, and enabling them to identify new opportunities for profits and growth (Granovetter, 1973; Birley, Cromie and Myers, 1991).

From a programme of indepth interviews with entrepreneurs in 17 Scottish small firms, Reid *et al* (1993) find evidence that all of the entrepreneurs in their sample were aware of the concept of niche marketing, and this formed their competitive strategy in all cases, regardless of the degree of concentration in the particular markets in which they operated (their sample is composed of both service and manufacturing firms). The entrepreneurs' tactics were to create and defend a market niche, i.e. to be big in a small market, rather than small in a big market. This finding is supported by a survey of 293 small manufacturing firms in the London area by Smallbone *et al* (1993 and 1995) and Smallbone and North (1994), who find that the most successful firms in their sample in terms of profitability and growth were those who targeted a profitable market niche, and built upon the reputation they subsequently developed within this niche.

Rosa (1988), however, proposes the 'craft ideology' which he suggests is evident in many small firms. Rosa argues that even if firms supply specialized products to a small market segment, entrepreneurs frequently regard product 'quality' as their key competitive strategy. Quality, however, is perceived in their own eyes, and not from the eyes of the customer. Thus their strategy is essentially product-led, which may or may not be successful depending on whether or not the customer's perception of quality is the same as the producer's. Rosa argues that entrepreneurs who adhere to the craft ideology typically do not make active attempts to identify the customer's perception of quality through market research and a careful monitoring of the market. He also suggests that small firms in this mould commonly rely on their reputation as a means of maintaining their existing customer base, and of generating new business. The more personal approach provided by small businesses operating in a local economy may be one means of creating product differentiation and erecting barriers to entry, although this does not represent an active attempt to do so.

Another strategy firms may employ to achieve profits and growth is diversification, although as it was suggested earlier, this may be difficult for small firms given the resources required (Robson, Gallagher and Daly, 1993). While Porter regards

conglomerate diversification as a strategy, developing new products into new markets, a more likely possibility for the smaller firm is to pursue a strategy of either supplying new products to the same geographical market, or supplying the same products to new geographical markets, including export markets (Smallbone *et al*, 1993 and 1995; Smallbone and North, 1994). Both of these approaches are highly resource intensive. Furthermore, if the resource base is small, the risks of diversification are greater in that resources may be overstretched placing the firm in danger of failure (Robson *et al*, 1993). Accordingly, Robson *et al* (1993) and Perry (1986) suggest that small firms should maintain a core product to ensure long term survival, but ensure that there is sufficient flexibility in production to attack small short term changes in market demand for related products. When these short term gains are exploited, the firm can return to concentrating on the consolidation of its core product, i.e. 'returning to base'. Given the resource requirements of diversification, however it has been suggested that this is not even an option for many small manufacturing firms, and that in periods of difficulty caused by poor trading conditions in their core market, the only option to ensure survival is retrenchment of assets or costs, in order to maintain or improve the profitability of the firm (Robbins & Pearce, 1993). Larger firms may be able to overcome periods of difficult trading through diversifying into new markets.

However, it has been suggested that the extent of strategic management activities may be limited in small firms by a reluctance on the part of entrepreneurs to disengage from day-to-day management of the firm in favour of assuming a more strategic role. In this respect Cragg and King (1988) differentiate between 'hands on' management practices, and purely administrative practices. They relate this dichotomy to Smith's (1967) craft/opportunist typology and suggest that craft entrepreneurs are unlikely to have no involvement in the production side of the business as it provides their greatest intrinsic satisfactions. Furthermore, if craft entrepreneurs believe that they derive competitive advantage from the quality of their products, it is likely that they will want to supervise production directly in order to ensure that exacting standards are met. This gives these entrepreneurs less time to concentrate on administrative duties, such as financial management and at

the highest level of 'administration', strategic decision-making and planning the firm's future. Furthermore, Cragg and King (1988) and Chell (1985) suggest that even opportunist entrepreneurs, who may have little or no production knowledge and who may delegate all supervisory tasks relating to production, may still find it difficult to delegate administrative day-to-day managerial tasks for fear of devolving too much control of the firm. This also constrains the time they have available for the strategic management of the firm.

2.3.6 Generalist Studies of Small Firm Performance

Few generalist studies have attempted rigorous multivariate analyses of the impact of entrepreneurial characteristics, motivations, objectives, strategic choices and managerial practices on the growth and profitability performance of small firms, using financial indicators measured over a sufficient period of time to provide an indication of the underlying trend in performance. Those which have done so have adopted quantitative methodological stances. The following review considers studies by Hornaday and Wheatley (1986), Begley and Boyd (1987) and Cragg and King (1988), all of which attempt to measure the relative impact of key personal and behavioural entrepreneur-specific factors on small firm growth and profitability. Hornaday and Wheatley also attempt to model the functional inter-relationships between the characteristics, motivations, objectives and managerial styles of entrepreneurs in determining small firm performance.

Hornaday and Wheatley (1986)

Hornaday and Wheatley (1986) attempt to examine a causal model of the functional relationships between entrepreneurial characteristics, business objectives and financial performance. They specify these relationships in a simple unidirectional model, whereby financial performance is determined by the objectives pursued by the entrepreneur, which are in turn determined by the characteristics of the entrepreneur and their managerial style. They use interview data from a sample of 31 small firms based in two southeastern cities in the US, in

a non-parametric statistical analysis of the strengths of the relationships identified in their model. The sample is comprised of independently owner and operated clothes retailers and restaurants with between five and 50 employees. The sample of 31 firms who agreed to participate in the interview programme were derived from a population of 55 firms which met the required criteria.

Following Filley and Aldag (1978), Hornaday and Wheatley differentiate between craft, promotion and administrative entrepreneurial types. Of these three types, they suggest that only promotion types will pursue high levels of profitability and growth. They suggest that administrative entrepreneurs are more likely to pursue objectives relating to the development of an efficient organizational structure and steady firm growth. However, their analysis is constrained by the fact that, using a standardised psychological inventory to classify entrepreneurial type, they identify no promotion entrepreneurs in their sample. The sample is comprised of 20 craft entrepreneurs and 11 administrative entrepreneurs and they acknowledge this as calling into question the reliability of the inventory used and that this placed a considerable limitation on the hypotheses they were able to test.

They indicate that the entrepreneurs were asked to state their most important objective for being in business and the first response was taken as the goal for the firm. They find that goal items for craft entrepreneurs fell into two broad categories, survival and growth; and for administrative entrepreneurs, growth and internal efficiency. The financial indicators used are growth rates of sales and total assets over the period 1978-82, and return on sales and return on total assets over the same period. They indicate that the data collected for these measure was self-reported by entrepreneurs during the course of the interview, with entrepreneurs being asked to select the 'closest' figures from a table provided on a show card.

On this basis they use the non-parametric Wilcoxon Rank-Sum Test to detect significant differences in growth and profitability between craft and administrative entrepreneurs. In particular they test three hypotheses: (i) there will be no differences in performance between the two entrepreneurial types; (ii) there will be

no differences in performance between craft entrepreneurs who select survival goals and those who select growth goals; (iii) there will be no difference in growth rates between administrative entrepreneurs who select growth goals and those who select other efficiency goals.

Hornaday and Wheatley find no significant differences in growth or profitability performance between craft and administrative entrepreneurs. However they find that craft entrepreneurs who pursued growth goals did display significantly higher levels of growth than those who pursued survival goals; and that administrative entrepreneurs who pursued growth goals displayed significantly higher growth rates than those who pursued efficiency goals. Thus, regardless of entrepreneurial type, entrepreneurs who pursued growth goals achieved them. However, they find no significant differences with respect to profitability and conclude that,

"In sum, small firms in the sample managed by different managerial types and pursuing different growth goals achieved those goals, but showed similar profitability in doing so".

(Hornaday & Wheatley, 1986, p7)

On this basis, they suggest that there is no 'one best mix' of entrepreneurial type and business goals which lead to higher profitability, and they suggest that more research needs to be undertaken in order to identify the nature of goal-setting by entrepreneurs in order to clarify the impact of different entrepreneurial characteristics and managerial styles.

Begley and Boyd (1987)

Begley and Boyd examine the impact of key entrepreneur and firm-specific characteristics on financial performance using a sample of 471 firms who responded to a postal survey of 1,000 firms randomly selected from the Smaller Business Association Database of New England. The sample comprises of firms with up to 100 employees, with the majority having between 25 and 99 employees,

and a range of manufacturing and service activities are represented.

The survey collected information on: (i) the characteristics of firms (age, employee numbers, sales revenue for previous accounting year, gearing ratio); (ii) the characteristics of entrepreneurs (age, education, years in position, founder-manager or not, gender, marital status, psychological profile - using a psychological assessment instrument - in terms of drive and competitiveness); (iii) financial performance measures (average annual growth of sales for the five year period up till 1981, average annual return on investment and average annual profit margin on sales for this period). They indicate that they use both growth and profitability indicators of financial performance in order to detect the possible influence of different entrepreneurial objectives. They relate this argument to the Smith's (1967) typology in that opportunist entrepreneurs are likely to be growth-oriented whereas craft entrepreneurs are not. Begley and Boyd acknowledge, however, that the financial data are self-reported and ordinal categories were used rather than asking for exact figures in order to help prevent respondents from being discouraged by being asked to provide precise figures.

Using single equation OLS multiple regression analysis to estimate growth and profitability equations containing firm and entrepreneur-specific factors as independent variables, Begley and Boyd find the only significant determinant of growth performance to be the founder-manager variable, with founder-managers displaying higher levels of performance. In terms of profitability, the founder variable is again significant when both sales and assets are used, with founder-managers displaying higher levels of profitability. Begley and Boyd (1986: p15) suggest that founder-manager entrepreneurs who sell their firms "may see growth and profitability as a plateau and decide to move". Entrepreneurs who were relatively younger in terms of their tenure in the present post also displayed significantly higher levels of profitability, although this was only for the sales measure. Begley and Boyd suggest that this may reflect higher levels of motivation and drive to achieve successful financial performance by these entrepreneurs.

However, the results from Begley and Boyd's regression estimations of growth and profitability equations are generally very weak with no clear patterns emerging with respect to any other explanatory variables. Furthermore, unlike the econometric studies of small firm performance by Dobson and Gerrard (1989) and Reid (1993), which were reviewed earlier, Begley and Boyd do not include growth and profitability as explanatory variables in alternative equations, nor do they use systems estimation. Thus they do not control for the possible bicausality in the relationship between these variables.

Cragg and King (1988)

Cragg and King examine the impact of entrepreneurial and organizational characteristics on financial performance using a sample of 179 metal goods manufacturers located in the East Midlands of England. The sample comprises of independently owned and operated firms with less than 50 employees who responded to an initial postal survey of over 1,000 firms. Cragg and King indicate that a telephone survey of a sample of 30 non-respondents indicated that firms with less than five employees were under-represented in the sample.

The entrepreneurial characteristics represented in the study are; age, motivations, objectives and extent of involvement in production and administration.

Organizational characteristics relate to the legal business form, age, employee numbers, sales, extent of planning activities, propensity to introduce new products, number of managers, and number of marketing/sales staff. The key financial indicators used are sales revenue change for the period 1980-85 and profit margin on sales for the single year period, 1985. Cragg and King indicate that the financial data relate to self-reported percentage responses, which were used in order to encourage the response rate.

Before undertaking single equation OLS stepwise regression analysis to estimate growth and profitability equations, Cragg and King use factor analysis to isolate the key explanatory variables which "seemed to make a significant impact on

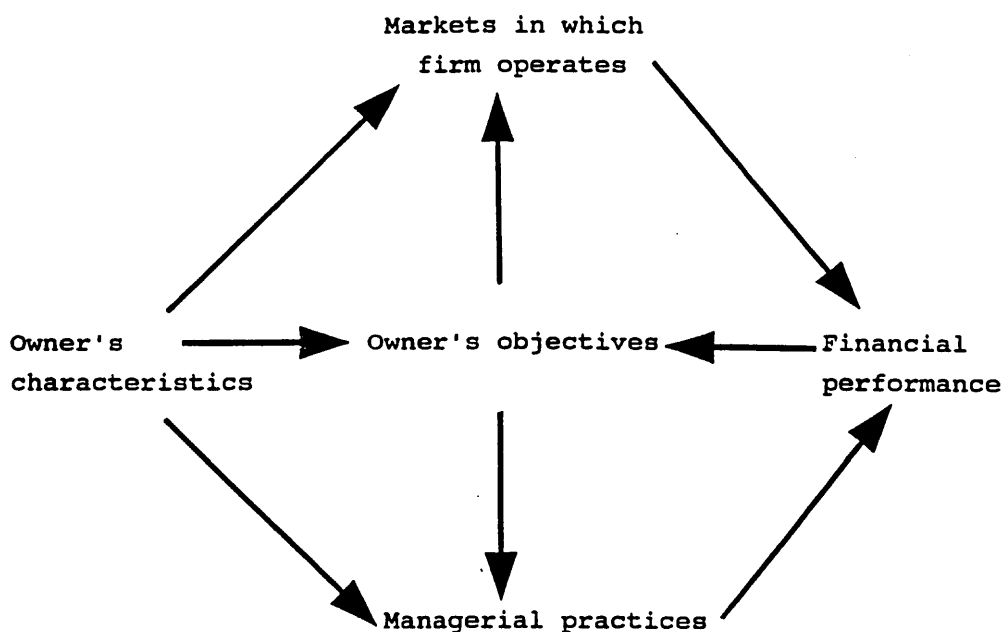
performance" (p58), and to overcome the problem of multicollinearity. For example, they indicate that preliminary correlation analysis showed that larger firms tend to do more forecasting, and that larger firms tended to also have more managers, and higher annual revenue. They indicate that factor analysis isolated two major factors, forecasting and size, which together accounted for 33% of the overall variance. They use the variables which load on these factors as independent variables in the regression analysis. They transform the performance measures logarithmically to overcome skewness, and use logs of the growth and profitability indicators as dependent variables.

Cragg and King find that the regression results are very weak, with only 11% of the variance explained in the profit equation, and 17% of the variance explained in the growth equation. The only significant variables in the profit equation are the size of the firm, which is negatively related to profit, and the extent of planning, which is also negatively related. The only significant variable in the growth equation is the entrepreneur's year of birth, which is positively related to growth. This suggests that younger entrepreneurs manage firms which display significantly higher growth rates, which they attribute to higher levels of motivation and drive on the part of these entrepreneurs. However, based on a self-appraisal of the rather weak results from their analysis, Cragg and King suggest that the whole approach of quantitative analyses of small firm performance has to be questioned. They suggest that the high degree of multicollinearity between entrepreneurial and organizational variables, and the potentially sophisticated inter-relationships which can exist between them, do not predispose quantitative analysis of the type they adopt, to detect the influences of these variables on growth and profitability performance in small firms.

In this regard, Cragg and King suggest that indepth studies which seek to examine the qualitative nature of the nature of the relationships between variables, rather than attempting to measure their quantitative impact, may be more appropriate. Furthermore, Cragg and King indicate that they make no attempt to examine the nature of causal relationships between entrepreneurial and organizational variables.

Their use of factor analysis was merely an intermediate level of descriptive analysis rather than an attempt at the causal modelling of these relationships. In this respect Cragg and King, however, suggest a model of small firm performance which takes account of the qualitative nature of the relationships between key determinants. This model is shown in Figure 3 below.

Figure 3 **Suggested Model of Small Firm Performance**



This model suggests that the characteristics of the entrepreneur determine his or her objectives for the firm which in turn determine its financial performance. This is mediated through the markets the entrepreneur chooses to operate in and the managerial practices he or she employs. A dynamic element is incorporated in the model by the possibility that the firm's financial performance may serve as a feedback mechanism to reinforce or revise the objectives pursued by the entrepreneur. Cragg and King argue that the range of factors represented in the model, along with the dynamic feedback element it incorporates, make the model a more realistic analytical focus than the simple unidirectional model of Hornaday.

and Wheatley (1986). Although Cragg and King do not themselves discuss the ramifications of their model in much detail, it is pertinent to explore some of these here.

It may be suggested, for example, that the model allows for the possibility that those individuals who may be regarded as craft entrepreneurs and predicted to have low profit firms with low growth potential, may develop into innovative, opportunistic entrepreneurs if endogenous and/or exogenous factors conspire to achieve this transformation. To extend the push-pull argument further than the initial motivations for undertaking entrepreneurial activity, it may be suggested that craft entrepreneurs could be pushed into adopting opportunist managerial styles by poor financial performance threatening their survival. Alternatively they may be pulled into realising the profitability and growth potential of their firms by an accumulation of human capital gained through learning by doing in managing their firm; and an upwards revision of their aspirations because of increased self-confidence in their business acumen and managerial ability.

On the other hand, it may be that in some cases there is no active feedback mechanism between business performance and entrepreneurial objectives. Rather it is simply that extrinsic performance-induced objectives outweigh the objectives 'naturally' determined by intrinsic entrepreneurial motivations. This distinction may be important in that the entrepreneur who is pursuing high levels of performance because of adverse circumstances in the short-run, may have less impact on wealth creation in the long-run than the entrepreneur who pursues high performance levels at all times, and uses sound business strategy and managerial practices to achieve this. Once the survival of the firm has been secured, the entrepreneur who is 'pushed' into addressing the performance of their firms may revert back to their former goals.

These suggestions are merely indicative of the potential of this model as an analytical focus, and the model will be discussed further in the overview of interdisciplinary perspectives which now follows.

2.3.7 Overview of Interdisciplinary Perspectives

The review of the body of interdisciplinary literature in the field of entrepreneurship and small firm performance has provided a much richer range of insights into the determination of growth and profitability performance of small firms than the economic literature reviewed previously. Whereas economic studies of small firm performance have tended to focus on the impact of exogenous market influences and purely managerial motivations, the interdisciplinary literature suggests a much wider range of motivations for entrepreneurs in determining the performance of their firms. Key amongst these is the possible impact of the independence/autonomy motive which may exert a constraining influence on the performance of small firms regardless of the managerial capabilities of entrepreneurs. The influence of this motivation is entirely neglected in economic studies.

Furthermore, generalist perspectives on the relationships between entrepreneurs and the performance of their firms have highlighted the potentially complex inter-relationships which may exist between entrepreneurial characteristics, motivations and objectives, and the strategic choices and managerial practices adopted by entrepreneurs in pursuing their goals. Added to this potentially complex scenario is the possible impact of exogenous economic and social influences. While non-economic approaches to analysing small firm performance have stressed entrepreneur and firm-specific variables, Storey (1982, 1994) argues that it is difficult to disentangle these from exogenous factors. Furthermore, Cragg and King (1988) and Storey (1982) argue that many of these variables, such as social class, education and possession of managerial experience may be highly inter-related so that it is difficult to separate out causal variables in the process of entrepreneurial choice and small firm performance. Storey also argues that it is difficult to separate out the relative importance of exogenous and firm-specific constraints on a small firm's performance.

For example, if an entrepreneur does not want to grow because he or she has reached some comfort level of firm size, is this because of intrinsic motivations

and objectives, or because the firm has already reached its optimum level of output given the market it trades in, and further expansion would require managerial skills, such as strategic planning and marketing, which the entrepreneur does not possess? Moreover, are these skills beyond the entrepreneur because he or she has not spent enough time on that side of the business to date, or are they because of a poor education, or lack of previous managerial experience? At the same time, an entrepreneur may have stumbled upon a product or service for which there is high demand, which may pull the entrepreneur into expanding the firm, whether or not they possess the abilities to do so. The product sells itself. The entrepreneur merely has to step up the production side of the business without consideration for marketing the product.

It is clear from the preceding discussion that in order to analyze rigorously the impact of entrepreneurial influences on small firm growth and profitability, a dynamic perspective has to be adopted, such as in the model suggested by Cragg and King (1988). The Cragg and King model, while simplistic, represents an analytical focus which has not been empirically examined. There is, however, a recognition that there is a need for indepth studies of the nature of dynamics in the entrepreneurship process, and in particular in relation to the impact of intrinsic and extrinsic influences on changing entrepreneurial motivations and goal-setting, and the ensuing impact on strategic and managerial behaviour (Naffziger *et al*, 1994; Kuratko *et al*, 1997). Indeed, this recognition was evident in the 1970s with Deeks (1976: p206) arguing that,

"A model of entrepreneurial behaviour that takes account of the expectations that owner-managers have in respect to their business ventures, and that accommodates the possible modification of initial expectations in the light of the owner-managers' experiences of the economic realities of small business management, is likely to prove more useful as a basis for analysis and prediction than the simplistic models of entrepreneurial behaviour adopted by economists and psychologists".

Kuratko *et al* (1997: p31) have recently echoed Deeks' arguments and they raise the question,

"Are there events, real and/or psychological, which cause an entrepreneur's goal set to change over time? This may be a key in understanding sustained entrepreneurship".

The preceding discussion of both economic and non-economic approaches to the study of entrepreneurship and small firm performance has served to identify the multi-faceted nature of this field of study. Indeed the study of entrepreneurship has been suggested to be a unique academic discipline, which Bygrave (1989) has termed the 'entrepreneurship paradigm'. Bygrave argues that the study of entrepreneurial choice and development has evolved by using the established theories and methodologies of other sciences.

Such methods, however, may be inappropriate to the study of entrepreneurship because of the complexity of the variables which determine it. Bygrave argues that statistical methods developed for the study of predictable linear processes cannot be applied to the study of entrepreneurship which is typically a non-linear and discontinuous process. He levels this criticism at economic and psychological studies in particular, which he argues have been dominated by 'physics envy', in the application of sophisticated mathematical procedures to analyze deductive hypotheses. He argues that in an emerging paradigm, the emphasis should be placed on developing qualitative empirical models of entrepreneurship. Interpretation of statistics must be a subjective, qualitative process, which can only be done in an advanced field of study where the knowledge base has been built up to a sufficient extent.

Bygrave argues that an inductive approach to theory development is a precursor to the development of all academic disciplines. Even in the most prestigious of natural sciences, physics, great innovative theories, such as the law of gravity, developed

from empirical observation. Description and explanation precede prediction, although in the study of entrepreneurship Bygrave argues that an understanding of the basic concepts has been over-ridden by a desire to apply highly developed analytical techniques, which were developed for other fields of study, to the prediction of entrepreneurial choice and performance. Bygrave's view is shared by Curran (1986), Cragg and King (1988) and Gibb and Davies (1990), all of whom argue for adopting qualitative methodologies and holistic perspectives on the range of possible determinants of small firm performance, rather than focusing on examining narrow issues using deductive reasoning and quantitative methodologies. The rather weak and limited results from the quantitative studies by Hornaday and Wheatley (1986), Begley and Boyd (1987) and Cragg and King (1988) seem to provide some support for this argument. Furthermore, Hofer and Bygrave (1992) argue for the use of multi-stage, multi-method research designs in studies of entrepreneurship and small firm performance in order to provide more holistic and contextual analyses which can cover a wider range of possible determinants and provide greater analytical rigour. The implications of methodological arguments will be examined further in Chapter 4.

This concludes the consideration of interdisciplinary perspectives on entrepreneurship and small firm performance. The following section now derives conclusions from a general overview of economic and interdisciplinary perspectives, in establishing the theoretical and methodological basis of the research undertaken in this thesis.

2.4 Research Issues

The aim here is to identify the key issues which are the key concern of this research, in order to establish its theoretical and methodological basis. The chief concern here is with establishing the broad paradigm and theoretical stance underpinning the research. The methodological issues will be considered in detail in Chapter 4, in which the methodological stance and research design adopted will be discussed in detail. The discussion of the methodological issues here is therefore

restricted to broad comments which are pertinent in the context of the theoretical framework which is elaborated below.

The review of economic and interdisciplinary theoretical and empirical perspectives on entrepreneurship and small firm performance has revealed some key research issues of concern for this thesis. A review of economic perspectives reveals that economists have, on the whole, taken a limited view of small firm performance which is largely restricted to the conventional paradigms which are predominant in neoclassical economic thought, and in particular in the area of industrial economics. Despite the important role attributed to entrepreneurs in the efficient functioning and development of market economies, and the roles attributed to entrepreneurs in determining the performance of small and large firms, econometric research in this field has taken a managerial rather than an entrepreneurial stance in developing hypotheses regarding the key relationships between entrepreneurs and small firm performance. The strength of economic approaches to the analysis of small firm performance, however, is in the rigorous application of econometric modelling and statistical techniques in hypothesis testing, which can, for example, control for bicausality in relationships between variables such as growth and profitability.

On the other hand, the interdisciplinary literature has identified a much wider range of issues concerning entrepreneurship and small firm performance than is evident in the economics literature alone. Key amongst these issues are: (i) the impact of entrepreneurial, rather than purely managerial motivations in determining small firm performance: (ii) the dynamic inter-relationships between entrepreneurial motivations, objectives, strategic choices and managerial practices, in the entrepreneurship process of developing a small firm. In particular, the interdisciplinary literature stresses the impact of non-pecuniary entrepreneurial motivations as a constraint on small firm performance, which may be evident in entrepreneurs with a wide range of backgrounds and differing levels of managerial ability and business acumen. Some entrepreneurs may just not want to pursue growth beyond some level of firm size, if they believe it will adversely effect their lifestyle and the degree of control they can exert over the firm's direction.

However, it has been suggested that even entrepreneurs who are not growth-oriented may still derive utility from achieving high levels of profitability in that it can provide security in the often unpredictable and hostile environments in which they operate.

The few interdisciplinary studies which have adopted a multivariate generalist perspective in analysing the impact of these variables on growth and profitability performance in small firms, have been limited by the quantitative methodologies they adopt. These methodologies cannot rigorously detect the nature of the qualitative relationships between these key variables. While Cragg and King (1988) propose a simplistic, generalist conceptual model of the qualitative nature of these relationships, this is derived from a criticism of their own and previous studies which have used quantitative methodologies that have, on the whole, produced very weak results. Cragg and King, however, do not themselves empirically examine their own conceptual model. It was also noted that other researchers in the interdisciplinary field have called for the use of a more diverse range of research methodologies in examining the field of entrepreneurship and small firm performance, and in particular for an increased use of qualitative methods. It is suggested that only by using qualitative methods, can researchers gain an fuller understanding of the dynamic inter-relationships which exist between entrepreneurs, their firms and their economic and social environments, in determining the performance of small firms. Furthermore, it has been suggested that the adoption of an holistic entrepreneurship paradigm rather than narrow subject-specific paradigms is a more rigorous way to proceed in this field of study. It is argued that an entrepreneurship paradigm can provide a richer range of insights on the fundamentally multi-faceted nature of entrepreneurship and small firm performance.

On the basis of these key issues which are to the fore in the literature, this thesis adopts an holistic paradigm of the theoretical and conceptual relationships between entrepreneurs and the performance of their firms. It also contends that a range of research methods require to be used in analysing these relationships. To this end a methodological stance is adopted which comprises of the following stages.

1 *Econometric Analysis*

An econometric methodology will be applied in an explanatory analysis of the impact of the key firm-specific variables of size, age and location, but taking an entrepreneurial rather than a managerial stance in developing hypotheses pertaining to the relationships between these variables and small firm profitability and growth. The profitability and growth models are thus specified as follows:

Profitability = f (size, age, location, growth)

Growth = f (size, age, location, profitability)

The aim here is to test hypotheses pertaining to the relationships between the dependent and independent variables contained in these models, which are derived from a general consideration of both the economic and interdisciplinary theoretical and conceptual literature. These hypotheses are given in Chapter 5 on pages 194-196.

2 *Qualitative Analysis*

A qualitative methodology is used in an exploratory analysis of the key qualitative relationships between entrepreneurial characteristics, motivations, objectives, strategic choices and managerial practices in determining the profitability and growth performance of small firms. The aim here is to build upon the findings of the econometric analysis of key firm-specific variables in order to provide more detailed insights than can be obtained by the use of econometric analysis on its own.

The econometric analysis therefore examines established relationships in the theoretical and conceptual literature but which have not been investigated empirically in this fashion before, while the qualitative analysis examines the qualitative nature of these relationships.

The key concern in the qualitative analysis is with the dynamic nature of the entrepreneurship process, and potential changes in the inter-relationships between these key variables in response to intrinsic and extrinsic influences on entrepreneurs. The model proposed by Cragg and King (1988) provides an holistic analytical focus in this respect and is therefore adopted as the conceptual model underpinning this analysis. In particular this analysis is aimed at investigating the following propositions which can be identified from the literature as representing key areas of concern which previous research has not addressed.

- P1: Financial performance serves as feedback mechanism which can 'push' or 'pull' entrepreneurs into revising their business objectives, which in turn can cause a change in their business strategies and managerial practices.
- P2: Profitability is a means goal which can satisfy the end goals of both the security of lifestyle and business growth.

Thus by adopting an holistic paradigm in developing a theoretical and conceptual analytical framework, and by employing a combination of econometric and qualitative research methodologies, this thesis aims to provide a novel examination of pressing research issues in the field of entrepreneurship and small firm performance.

2.5 Summary

This chapter has reviewed the literature in the field of entrepreneurship and small firm performance. In doing so, both economic and interdisciplinary perspectives have been considered. The review raised key issues of relevance in establishing the theoretical and methodological basis of the research undertaken in this thesis. The thesis now continues in Chapter 3 with an elaboration of the spatial area in which the research is undertaken, i.e. Tayside Region in East Central Scotland, in order to establish the relevance of this area as a research arena.

Chapter 3

Small Firms in the Tayside Manufacturing Sector

3.1 Introduction

This aim of this chapter is to set the context for the main study by providing an overview of Tayside Region and its manufacturing sector, and in particular the contribution of small firms. A key element of this overview is to examine differential patterns of manufacturing activity between the urban centre of Tayside Region, Dundee City, and the rest of the region, which is predominantly rural. It will be shown that clear differences between urban and rural areas in Tayside Region makes it particularly interesting as a field of study in this respect.

The chapter begins with a brief survey of the spatial area which constitutes Tayside Region, along with key demographic and socioeconomic indicators. Following this, a more detailed overview of the industrial make-up of the manufacturing sector in Tayside in the 1980s will be provided. In Chapter 1 it was suggested that one of the key economic contributions made by small firms in the 1980s was employment generation. Furthermore, detailed information is available on small firms in the manufacturing sector in Tayside during the 1980s, as a group (Tayside Region Industrial Office) was set up in 1981 within the Planning Department of Tayside Regional Council, whose key aim was to maintain and publish detailed registers of manufacturing firms within Tayside Region.

In order to examine the contribution of small firms towards employment generation in the Tayside manufacturing sector during this period, an employment impact analysis will be undertaken, which constitutes a components of employment change procedure. The rationale for, and methodology of, this form of analysis will be considered, along with a survey of the key points to emerge from previous studies which have used this procedure.

3.2 Tayside Manufacturing Sector

3.2.1 Synopsis

Tayside is located in East Central Scotland, between the Kingdom of Fife and Aberdeen District (see Figure 4). The area as a local government region no longer exists after the restructuring of local government areas in 1995, but the new local authority areas of Dundee, Angus and Perth Councils, on aggregate represent broadly the same spatial area as the old Tayside Region as defined in this study. Section 3.2.2 provides an overview of Tayside with respect to major demographic and socioeconomic indicators collated at the time the analysis was undertaken. Section 3.2.3 considers major trends in the industrial make-up of the Tayside manufacturing sector in the 1980s.

3.2.2 Demographic and Socioeconomic Indicators

The 1991 Population Census reveals the population of Tayside to be just over 385,000, which represented 8% of the population of Scotland. Tayside's population was relatively equally distributed between the major urban centre, Dundee City (43%) and the rest of the region, comprising of Angus, and Perth and Kinross Districts (57%). This section compares Tayside with the whole of Scotland and the UK with respect to the major socioeconomic indicators of unemployment rates, average earnings and home ownership, key variables which have been used in the regional studies discussed in Chapter 1. The unemployment rate in Tayside in 1992 was 9.3%, which is one percentage point lower than that for the whole of Scotland (Regional Trends, 1994). The proportion of long term unemployed in Tayside, however, was higher at 31.9%, compared with 30.6% for the whole of Scotland, and 27.9% for the UK. Average earnings were lower than in Scotland as a whole: average male earnings in Tayside in 1992 were 93.6% of the Scottish average level, and only 89.4% of the UK average. Average female earnings in Tayside in 1992 were 97.2% of the Scottish average, though again were only 89.4% of the UK average.

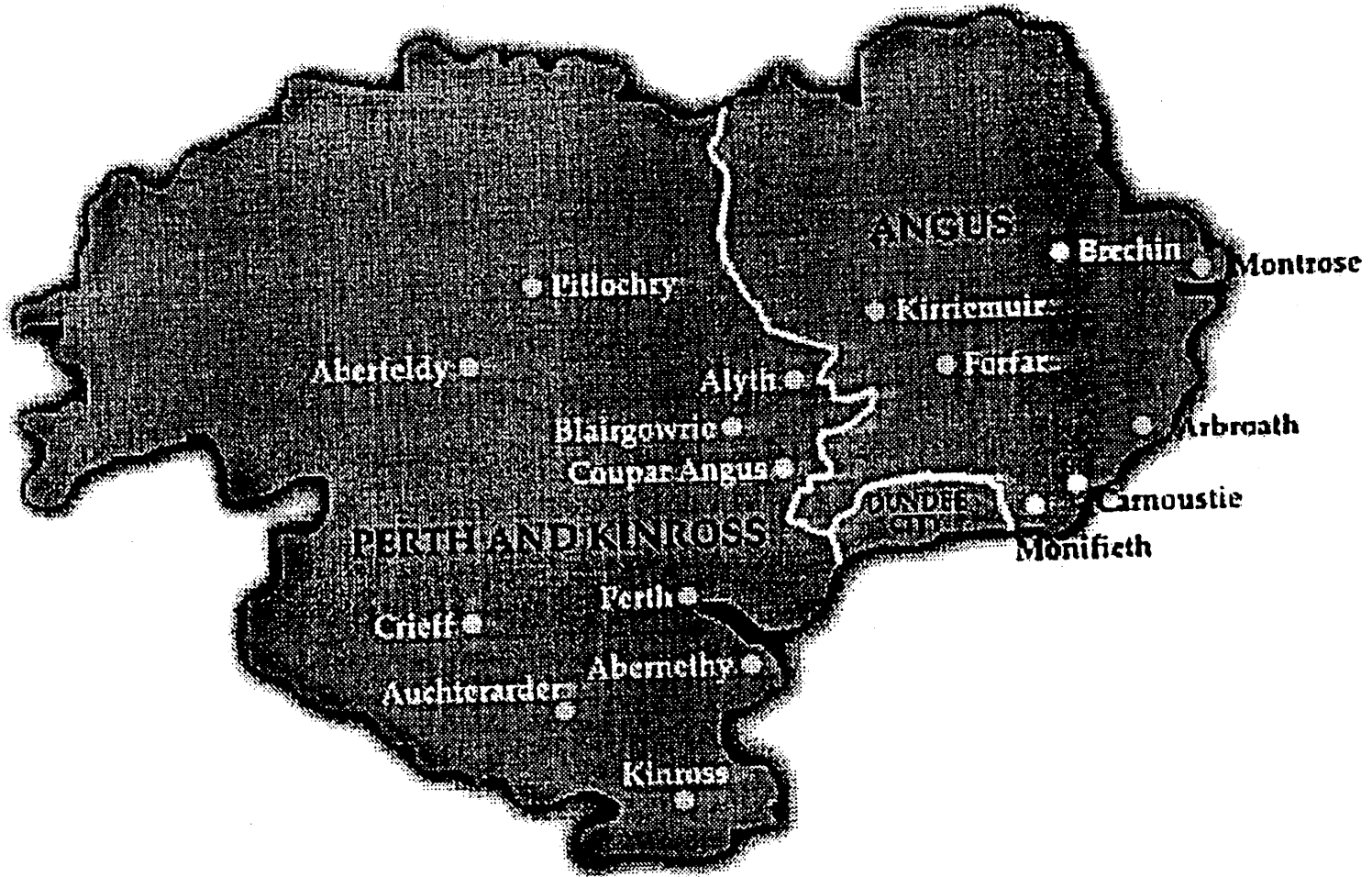


Figure 4 Map of Tayside Region

Comparing the average level of earnings of Tayside in 1992 with those of the South East shows that male earnings were only 77.6%, and female earnings were only 77.8% of the South East figures. Tayside was therefore a relatively less prosperous region than Scotland and the UK in general, and more pronouncedly so in comparison with the considerably more affluent South-East. Taking home ownership as a proxy measure of wealth, as the 'entrepreneurship index' discussed in Chapter 1 does, shows that 52.2% of houses in Tayside were owner-occupied in 1991, which is line with the figure for Scotland, though is lower than 64.8% for the UK, and 67% for the South East, although the Tayside proportion had increased substantially from 33.5% in 1981.

3.2.3 Industrial Trends in Tayside Manufacturing in the 1980s

Tayside is famous for 'jute, jam and journalism', and Dundee as a deep-sea port has a strong heritage of heavy engineering in the shipyards, and laterally in the oil industry. The data for the ensuing descriptive analysis of the Tayside manufacturing sector are partly based on a Tayside Regional Council (TRC) research report (1991), in addition to the figures provided directly to the author by TRC from their industrial database. The nature and content of this database will be elaborated on later in this chapter. Thus there are some discrepancies with respect to employment totals for each of the years 1981 and 1990 between certain tables, due to measurements of the employment stock at different points of each year. However, these discrepancies are minor and do not affect the key trends.

Census of Employment figures reported in TRC (1991) indicate the relative stability of manufacturing activity to the Tayside economy compared with the rest of the Scottish economy. These figures show that while the proportion of employment in the manufacturing sector in Scotland fell by nearly five percentage points from 25.2% to 20.4% over the period 1981-90, the proportion employed in the Tayside manufacturing sector remained stable at around 22% of total employment over the decade. TRC figures for the 1980s, however, show that manufacturing in Tayside remained heavily concentrated in the Textiles, Food and

Drink Manufacturing, Paper Goods, Printing and Publishing, and Engineering industries, as defined in the Standard Industrial Classification (1980). This is illustrated in Table 3-1 contained in Appendix II. All tables referred to henceforth in this chapter are also contained in Appendix II (Volume II, pp 14-28).

The four traditional Tayside industries retained their importance as employers throughout the decade, accounting for around 61% of total manufacturing employment in both 1981 and 1990 (Table 3-1). Both the mechanical engineering, and more notably, the food and drink manufacturing industries increased their employment share, while the textiles and printing and publishing industries declined in relative importance as manufacturing employers. The latter two industries are noted for their domination by large scale employers, a fact which is illustrated in Table 3-2, which shows the proportionate distribution of manufacturing establishments accounted for by each industrial sector. This clearly shows that the mechanical engineering and food and drink manufacturing industries are considerably more fragmented into smaller scale units than textiles and printing and publishing, and mechanical engineering in particular has moved towards smaller scale economic activity over the decade.

Table 3-3 shows that the relative importance of these four sectors to employment is not evenly distributed across the region. Both mechanical engineering and food and drink manufacturing account for a far higher proportion of manufacturing employment in the peripheral areas of Tayside, than in Dundee. Mechanical engineering accounts for only 6% of manufacturing employment in Dundee in 1990, rising from 5.2% in 1981; while the sector accounts for 19.3% of manufacturing employment in the rest of Tayside at the end of the decade, which actually constitutes a slight fall in relative importance from 20.1% in 1981.

The trends are more distinct for food and drink manufacturing. This sector accounts for only 10.4% of manufacturing employment in Dundee in 1990, a slight rise from 9.7% in 1981. By comparison, 30.9% of manufacturing employment in the rest of Tayside in 1990 is accounted for by this sector, which represents a substantial

increase in its relative importance, from 24.7% in 1981. Overall these two sectors represent nearly 50% of all manufacturing employment in the rest of Tayside in 1990, and the four traditional industries together account for over 70%. Dundee, however, is not as highly dependent upon these four industries, which together account for 52.7% of manufacturing employment in 1990. The most important industry in Dundee is clearly paper goods, printing and publishing, which remained the most important industrial employer throughout the decade in the City, accounting for 19.7% of manufacturing employment in both 1981 and 1990.

Turning now to examine trends in manufacturing establishment size, Table 3-4 shows the distribution of establishments for all Tayside according to employment size bands adopted by TRC for their own analytical purposes. It is clear that there has been a considerable shift towards smaller scale manufacturing activity in the region throughout the decade, with the number of establishments with less than ten employees increasing by 32.5% from 243 in 1981 to 322 in 1990. In total, all establishments with less than 50 employees account for 78.4% of all manufacturing establishments in 1981, a proportion which increased in 1990 to 82.6%.

Further inspection of the distribution of all manufacturing establishments between Dundee and the rest of Tayside, however, reveals markedly different trends throughout the decade. This is demonstrated in Table 3-5 which shows that the growth in the number of small establishments during the decade is heavily concentrated in Dundee. The number of establishments with less than 10 employees increased dramatically by 95.7% from just 70 in 1981 to 137 in 1990. This increase clearly played a substantial role in helping to restructure the distribution of establishments in Dundee towards smaller scale activity. The stock of establishments with less than 10 employees increased its share of the total stock from 33.2% in 1981 to 43.8% in 1990. The distribution of establishments in the rest of Tayside remained fairly stable throughout the period, with the stock of establishments with 26-50 employees displaying the largest increase in relative importance, from 13.3% in 1981 to 16.0% in 1990.

The shift to smaller scale activity in the whole of Tayside is further emphasized when the changes in the employment distribution are considered. Table 3-6 shows that it is the largest establishments which account for largest proportion of manufacturing employment, though this importance has diminished throughout the decade. In 1981, all establishments with more than 201 employees in total, account for nearly 55% of manufacturing employment, despite representing only 4.8% of the stock of establishments. This proportion had decreased to 45.4% in 1990, however, with establishments having over 501 employees decreasing in employment terms by over 10%. Aside from the largest establishments, all other size bands experienced an increase in employment over the decade. Total manufacturing employment, however, fell overall as the result of the job losses from the largest establishments.

The relative growth in employment experienced by each size band from the stock of establishments in the base year of 1981, is shown in Table 3-7. The size band which performs the best in terms of employment growth, from its initial employment stock, was that of 51-100 employees, which expanded by 26%. Establishments in this size band were also the most resilient in the first half of the decade, when trading conditions were generally poorer, having experienced a 12.9% increase in employment. In the more economically buoyant second half of the decade, however, it was establishments in the three smallest size bands, 1-10, 11-25 and 26-50 employees, which experienced the largest growth in employment, all having grown by around 25%.

In summary, the statistics discussed above indicate the key trends in employment change in the Tayside manufacturing sector during the 1980s. There has been a clear restructuring towards employment in smaller establishments, with establishments in all size bands under 50 employees having performed the best in terms of growth in employee numbers. Only the largest establishments, those with more than 501 employees, have declined substantially in importance as employers. Tayside manufacturing is, however, still heavily concentrated in the traditional industries, and these industries are not equally distributed in importance throughout

the region. The most important employers in Dundee remain the paper goods, printing and publishing industry, and the textile industry, both of which are heavily skewed towards larger scale activity.

In the rest of Tayside, the mechanical engineering and food and drink manufacturing industries constitute the major employers, with the textile industry, which Table 3-3 shows to be the most important employer in 1981 in the rest of Tayside, having declined substantially over the decade in relative importance. Mechanical engineering and food and drink manufacturing are the most fragmented industrial sectors in terms of establishment numbers, with the former sector having experienced a marked shift towards smaller scale activity over the period. The rapid growth in the number of establishments with less than 10 employees in Dundee is paralleled by a marked increase in the number of mechanical engineering establishments.

3.3 Components of Employment Change Analysis

3.3.1 Analytical Procedure

Turning now to consider the contribution of small firms to employment generation in the Tayside manufacturing sector in the 1980s, the employment impact of small manufacturing firms during the period can be investigated using a components of employment change procedure. This is an employment accounting procedure which derives the net job gain or job loss created by firm openings, expansions, closures and contractions, over a period of time. Net employment change is thus the result of larger gross flows. New jobs may be created by either new firm openings or existing firms expanding; job losses may be caused by either firms closing, or existing firms contracting. The components of employment change procedure is one way of analysing the constituent parts of the job generation process. The procedure is illustrated in Figure 5 below.

Figure 5 **Components of Employment Change Procedure**

$$\begin{array}{l} \text{Openings} \\ \quad + \\ \text{Expansions} \end{array} = \text{Gross Job Gains}$$
$$\begin{array}{l} \quad + \\ \text{Closures} \\ \quad + \\ \text{Contractions} \end{array} = \text{Gross Job Losses}$$
$$\begin{array}{l} \text{Gross Job Gains} \\ \quad + \\ \text{Gross Job Losses} \end{array} = \text{Net Job Gain or Loss}$$

This procedure permits a fuller investigation of employment impact than focusing specifically on individual components of employment change such as firm births and deaths (Storey, 1994).

3.3.2 Components of Employment Change Studies

The seminal study of this nature was undertaken by Birch (1979) who found that firms with less than 20 employees account for 66% of the net job gain in the US economy over the period 1969-76. Birch's analysis was conducted for all sectors in the economy, however, whereas most other studies of this type have been limited to an examination of the manufacturing sector. Commenting on Birch's findings, Storey (1981) argues that by including the service sector in his sample, which tends to have a preponderance of small firms anyway, the pattern of decline in employment in the manufacturing sector in the US was disguised. Most of the new jobs identified by Birch were in the service sector.

National level studies which have examined job generation in all sectors of the UK economy during the 1980s have also found strong evidence that small firms played a significant role. For example, Daly, Campbell, Robson and Gallagher (1991) find that between 1987 and 1989, firms employing less than 10 people created around half a million jobs, almost as many jobs as all other firm sizes grouped together, despite comprising only a quarter of the stock of firms in 1987. This provides support for an earlier study, which finds that firms with less than 20 employees created around half a million jobs during the period 1985-87, when the economy was emerging from a period of recession (Gallagher, cited in Employment

Department, 1992).

In the study reported here, the employment impact of small manufacturing firms in Tayside is examined, and the findings compared with other studies which have sought to analyze the process of job generation, principally at the regional rather than national level. The regional impact of small firms was discussed in Chapter 1, along with the policy rationale for their promotion as vehicles of economic regeneration, principally as engines of employment creation in declining economies. Studies conducted at the regional level in the UK which have concentrated on the manufacturing sector have broadly supported the scenario that the smallest firms in the economy are net employment generators, while the largest firms have shed labour. These findings, however, are typically qualified by the fact that in terms of gross rather than net employment flows, it is the largest firms which are the most important players (Cross, 1981; Storey, 1981; Fothergill & Gudgin, 1982; O'Farrell, 1986; Dobson, 1989). The key findings from these studies are summarised for comparative purposes in Tables 3-8 and 3-9, along with those from Birch's study. The findings from the present study are also provided in these tables and will be referred to in the discussion of the results later in this chapter.

These studies generally conclude that while the small firm sector has increased in importance in the manufacturing sector, it is still the largest scale concerns which have the biggest impact on regional economies. For example, it may take 500 new sole traders to compensate for 500 jobs shed by a branch. Storey is particularly pessimistic about the importance of new firm formation to regenerate depressed economies in the short term.

"Placed in the context that a single decision by the British Steel Corporation involved the loss of 4,000 jobs on a single day in 1980 when it ceased operations in Consett, it is clear that differences in regional rates of new firm formation are insignificant as a short term explanation of differences in the economic performance of regions."

(Storey, 1986, p220)

Furthermore, the largest employers in many regions are typically branch plants of companies owned outside the local economy. Large scale branches have been closed and relocated by parent companies leaving a huge impact on local economies. Many economists have argued that locally founded firms are more likely to provide a sound basis for regional development. Economies dominated by large branches may also foster a culture of dependency, an employee culture, which serves to suppress indigenous entrepreneurship (Storey, 1981).

Dobson (1989) also examines the hypothesis that rural areas are better generators of employment than urban areas. The rationale behind this hypothesis is derived from the core-periphery theory of regional development. In this theory, it is suggested that the urban centres of regions will develop first because of advantages firms derive from internal and external economies of scale gained from an urban location. Closeness to factor and product markets, and the building up of an effective business network serve to make urban locations particularly attractive to firms. However, after some point diseconomies of scale may set in, increased demand in factor markets bids up prices and thus costs, and the accumulation of externalities such as congestion and pollution serve to act against the urban centre of a region, and to force the growth of business activity into more peripheral areas. These may not only be rural areas, but also suburban locations.

More peripheral locations now may not only be more attractive to new firms seeking to set up in business, but also to existing firms in the urban core who are unable to expand because of physical space constraints. Thus investment may be diverted to the rural periphery. Dennis (1980) argues that the process of decentralisation of economic activity from the centre to the periphery of a region is not directly influenced by firms redirecting their activities from the centre to the periphery. Instead, the process is mediated by less direct means, via differences in the opening and closure rates of firms, and differences between firm expansions in different locations.

In his analysis of the Leeds engineering sector, Dobson (1989) finds no evidence to

support this hypothesis, concluding that there was evidence of spatial uniformity in the job generation process between core and periphery locations. However, this contrasts with other studies of urban-rural shifts which do find evidence in support of a core-periphery pattern, with peripheral locations proving to be better job generators than urban locations (Cross, 1981; Gudgin, 1978; Cameron, 1973; Keeble, 1993; Smallbone, North & Leigh, 1993). These studies generally note that peripheral locations also display greater dependency upon the opening of new branch plants in the creation of employment. Keeble (1993) indicates that one possible cause of rural industrialization may be reflected in the practices of large companies, who have been restructuring their operations into rural locations in order to exploit new supplies of labour in the search for higher profits. The development of rural regions into branch economies may be detrimental in the long term for reasons already outlined.

It has also been argued, however, that rural locations may be more attractive to indigenous small firms because they may offer a better quality of life, which may be the most important factor in the location decision for some people (Keeble, Tyler, Broom & Lewis, 1992). Keeble *et al* also find that rural new firm formation is characterised by a much larger amount of inward migration by entrepreneurs, rather than by indigenous entrepreneurship. A consideration of the literature therefore reveals that the process of polarization of economic development between core and periphery locations in a region may be highly complex, with several factors impinging upon the relationship between sub-regions. Results from previous studies in this field in general suggest two clear trends:

- (a) small firms are better net job generators than large firms;
- (b) rural locations are better net job generators than urban locations.

The aim of the analysis now reported in this chapter is therefore to examine differential patterns of employment change in Tayside manufacturing during the 1980s with respect to establishment size and location.

3.3.3 Sources of Data

The data for the analysis were provided by TRC Planning Department who maintained a comprehensive register of manufacturing establishments in Tayside Region from their inception in 1981. TRC used a variety of data collection methods to update this database annually, including a blanket postal survey of all registered establishments, visits to establishments, searches through commercial company databases and through the databases maintained by other business support agencies in Tayside, such as the Chamber of Commerce. Basic information is kept for each establishment on the register, namely employment size, address, contact name, SIC code, and nature of the establishment's activity. The employment data contained in the registers are in size bands, provided in Table 3-4. Actual employee numbers for each establishment are maintained by TRC but are not released in a public form for reasons of confidentiality.

The key limitation of the TRC data is the use of establishment rather than firm size. While sole traders and partnerships are likely to be single establishment organizations, companies are a different matter. As indicated earlier, a company establishment may be one of several branches or plants, with the headquarters based outside of Tayside Region. This limitation, however, is commonly reported in previous studies, which have also relied on secondary data sources which were compiled for some other purpose. There is, however, an advantage of the approach adopted by TRC, in that each establishment is coded by the nature of its activity. Thus all establishments on the register are manufacturing plants and there are no sales outlets or distribution depots. There is also evidence to suggest that new enterprise formation may be a function of local labour markets, with higher formation rates of new indigenous enterprises associated with higher levels of small scale economic activity, regardless of the nature of ownership (Cross, 1981). Thus, the opening of small branch plants may be beneficial to the long term supply of indigenous firms.

Additionally, the TRC database is able to track firms within each size band over a time period and allocate employment change on the basis of the size band at the

start of the period. The analysis is therefore able to control for the possible effects of small firm growth being an artefact of larger firm shrinkage. However, TRC were unable to provide data pertaining to the employment change of individual firms, for confidentiality reasons, so that the analysis is restricted to the overall performance of size bands.

A key issue relating to the sources of data used in components analyses is that some previous studies which have used secondary data sources, have later found that much employment generation in the analysis is attributable to clerical errors by the agency compiling the database. For example, in 1984 Gallagher and Stewart published findings from a UK wide study which found that 31% of gross private sector jobs in the 1970s were created by small firms. Later, however, Gallagher, Thomson and Daly (1990) point out that clerical errors accounted for 87% of employment generation in their sample. This confirmed an earlier critique of Gallagher and Stewart's work by Storey and Johnson (1986), who raised doubts about the quality and accuracy of the database, and other methodological problems concerning the nature of the analysis. Replying to Storey and Johnson's critique at the time, Gallagher and Doyle (1986) accuse them of exaggerating flaws in their data base. In light of the later disclosure, however, Storey and Johnson's critique turned out to be something of an understatement.

Assurances were given by TRC that considerable attention had been directed at ensuring the consistency of information gathering. Employment generation was therefore not an artefact of TRC having become more efficient at gathering data through the years, and thus having identified more establishments opening or expanding because of this. Other statistics provided by TRC, from the Census of Employment, also conform to the trends identified. The TRC database has the advantage over others, such as the Census of Employment, VAT registrations and Factory Inspectorate, in that the level and precision of coverage is superior. TRC claim 100% coverage of manufacturing establishments in the Tayside area, a claim which was rigorously examined by the author, who undertook a substantial search through all available sources of data to confirm this with respect to the 713

manufacturing establishments contained in the 1990 register. This included searching through official statistics and commercial databases such as Kelly's and Kompass, and on-line databases maintained by Dun and Bradstreet and CLC. The search was meticulously documented and information was provided to TRC in reciprocation for their collaboration.

As a result of this search only 27 additional establishments were identified, although on further inspection of their financial accounts gleaned from the FAME database, they were not actually trading, and were presumably set up for a non-trading purpose. Thus the author is confident that the database is of an extremely high quality and not subject to errors of the type described previously. Furthermore, unlike previous regional studies, this study is able to identify the precise employment impact of firms with less than 10 employees, and evidence will be presented which confirms the importance of firms of this size to employment generation in the manufacturing sector in the 1980s. The evidence from this study suggests that previous studies which have not disaggregated the smallest end of the small firm sector have experienced significant limitations in their analyses in omitting to measure the job generating capacity of these micro-firms.

3.3.4 Definitional Issues

Turning to definitional considerations, the analysis was specified to TRC in the following way: first, an opening was defined as an establishment which appeared on the later register, but not the earlier one; an expansion was defined as an establishment which appeared on both registers, and which had increased in employment size; a closure was defined as an establishment which appeared on the earlier register, but not on the later one; a contraction was defined as an establishment which appeared on both registers and which had decreased in employment size. If an establishment had relocated from Dundee City to the rest of Tayside, or vice versa, this was treated as a closure in the first location, and an opening in the second. This method was followed whether or not the establishment had expanded or contracted in the process of migration. This was done to control

for the effects of migration between the core and periphery in Tayside region, and to limit the impact of expansions and contractions to those establishments remaining in the same location throughout the period, following Dennis (1980).

A second definitional issue concerns the core-periphery, or urban-rural split of Tayside. For the purposes of this analysis, it was agreed with TRC that the most sensible approach was to disaggregate Tayside into the urban core, which was taken as the City of Dundee, as defined by TRC in terms of postcode districts; and the rural periphery, which was taken to be the rest of Tayside. Thus, the two districts in Tayside other than Dundee City, namely Angus District and Perth and Kinross District, are aggregated into one location category. Economic activity in the rest of Tayside category is concentrated in the small market towns of Coupar Angus, Blairgowrie, Forfar, Brechin, Montrose and Kinross, and in the larger county towns of Perth and Arbroath (indicated in Figure 4). Thus, there is a distinct difference between the major urban conurbation in Tayside, namely Dundee city, and the other centres of population and economic activity.

3.3.5 Results

The findings from the components of employment change analysis are now considered. These findings have been published in Glancey (1995), which is given in Appendix X (Volume II, pp 68-108). Before disaggregating the analysis to examine the employment impact of different establishment sizes, the components of employment change determined by all manufacturing establishments are summarized in Figures 6 to 8, which show the components of employment change for the period 1981-90 for all Tayside, Dundee, and the rest of Tayside respectively.

Figure 6 shows that over the decade, for the whole of Tayside, there was a net loss of 1,706 jobs. Further investigation reveals that this figure results from a large net loss of 4,084 jobs in the first half of the decade, followed by a net gain of 2,378 jobs in the second half. By far the most important component of job gains is firm

expansions, and the most important component of job losses is firm closures. Firm expansions comprise 72% of all gross job gains in Tayside manufacturing during the decade, with firm closures accounting for 65% of gross job losses. However, as Figures 7 and 8 reveal, the pattern of the relative importance of the different components is not consistent between the two sub-regions under consideration, i.e. Dundee and the rest of Tayside.

Figure 6 Components of Employment Change: Tayside 1981-90

Openings	= 3,818	Job Gains	= 13,599	
Expansions	= 9,781			Net Job Loss = 1,706
Closures	= 9,957	Job Losses	= 15,305	
Contractions	= 5,348			

Figure 7 Components of Employment Change: Dundee 1981-90

Openings	= 2,504	Job Gains	= 7,064	
Expansions	= 4,560			Net Job Loss = 2,298
Closures	= 5,883	Job Losses	= 9,362	
Contractions	= 3,479			

Figure 8 Components of Employment Change: Rest of Tayside 1981- 90

Openings	= 1,314	Job Gains	= 6,535
Expansions	= 5,221		
		Net Job Gain	= 592
Closures	= 4,074	Job Losses	= 5,943
Contractions	= 1,869		

Figure 7 shows that there was a net loss of nearly 3,000 jobs in Dundee over the period, while Figure 8 shows there to be a small net gain of just under 600 jobs in the rest of Tayside. The most important component in the job loss account in Dundee is firm closures, comprise 63% of gross job losses. Firm expansions created the majority of jobs in Dundee, comprising 65% of the gross total. The pattern of employment change in the rest of Tayside is much more biased towards the relative importance of these two components. Firm expansions account for 80% of gross job creation in the rest of Tayside, while closures are by far the most important component of job losses, accounting for 69% of the gross total. Overall, the absolute figures for Dundee are higher than those for the rest of Tayside, with the exception of firm expansions, suggesting a more dynamic process of employment change in Dundee.

These findings provide support for the hypothesis that rural areas are better net job generators than urban areas. They also suggest that the differences in employment change were due to relative differences in the components of employment change within each spatial area. The greater absolute figure for firm expansions in the rest of Tayside, and the much higher relative proportion of gross job creation, also suggests that there were distinct factors which helped to promote *in situ* firm growth in the rural periphery rather than in the urban centre.

Employment Change with Respect to Establishment Size

The components of employment change for each establishment size band for all Tayside over the period 1981-90 is given in Table 3-10. Establishment expansions and contractions are defined by establishment size on the 1981 register. This provides clear support for the hypothesis that small firms are better net job generators, in that establishments with less than 10 employees created a net gain of 5,220 jobs over the period, which is by far the biggest contribution to job generation. All size bands representing establishments with less than 50 employees, however, experienced a net job gain. Only establishments with more than 50 employees experienced a net job loss, with the biggest contribution to job losses, by far, coming from the very largest establishments (501+ employees), which shed nearly 4,500 jobs over the decade. These job losses, along with a combined 2,500 losses from the second and third largest size bands outweighed the positive performance of establishments in the three smallest size bands. An inspection of the make-up of the 5,220 net job gain created by the smallest establishments shows that the most important component is expansions, accounting for 5,404 gross jobs, which comprises 55.2% of the 9,781 gross jobs created by expansions in total.

Overall, the 0-10 employee size band accounts for 42.7% of all gross job creation in Tayside in the 1980s. No clear pattern emerges for all other size bands, the next best performer in terms of gross job creation is the 101-200 employee size band, though this also experienced the second highest gross job loss. There is also no distinct pattern in the relative importance of openings and expansions for all other size bands. The most important component of gross job losses overall is establishment closures, which accounts for by far the largest proportion of gross job losses in all size bands, with the exception of 501+ employees, in which contractions account for the largest proportion. Job losses through the largest establishments contracting represents 59% of all jobs lost through contractions.

An examination of employment change in the whole of Tayside therefore identifies clear differences between the smallest and the largest establishments in the manufacturing sector during the 1980s, providing strong evidence in support of the

job generating capability of the smallest establishments, which played a key role in helping to compensate for the large number of jobs shed by the largest establishments. As noted before, the analysis does not identify the nature of ownership in establishments, therefore the relative importance of branch plants versus independent firms in the process of job generation in this size band is not known. It is clear, however, that if it were not for the exceptional *in situ* expansion performance of establishments in the smallest size band, the net job loss in Tayside manufacturing would have been much higher in the 1980s.

Previous studies which have not been able to disaggregate the size distribution sufficiently to permit a detailed analysis of the smallest establishments, i.e. 0-10 employees, may have underestimated their relative importance. In this analysis, establishments with 11-25 employees performed significantly less well as job generators than their smaller counterparts, and although they were net job generators, they were no more fertile than other larger size bands, and experienced a net job loss if establishments openings are removed from the analysis. As noted in Section 3.3.2, recent UK level studies have also found the 0-10 employee size band to be the most significant job generator in the economy. Furthermore, these establishments have also been found to display exceptionally high levels of job creation through establishment expansions (Daly *et al* 1991).

Spatial Analysis with Respect to Establishment Size

If the size distribution of employment change is disaggregated into the two spatial areas considered in this study, there is clear evidence of differences between Dundee and the rest of Tayside. Table 3-11 shows the components of employment change for Dundee over the decade, while Table 3-12 shows the analysis for the rest of Tayside. A comparative analysis of the two spatial areas shows that there are clear differences between the performance of small and large establishments in the two spatial areas. All establishments with less than 50 employees account for 3,994 jobs in the rest of Tayside, which represents 88% of the total number of jobs created through expansions in the area. On the other hand, these establishments

account for 2,809 jobs in Dundee, which represents 61% of the total number of jobs created through expansions in the area. Thus 39% of these jobs were created by establishments with more than 50 employees, with the largest establishments (501+ employees) accounting for 817 jobs, or 17.9% of the total. However, in both Dundee and the rest of Tayside, the performance of establishments with 0-10 employees is clearly the best, accounting for over 50% of the total in both areas. While the absolute number of jobs created through expansions in these establishments is higher in the rest of Tayside, the proportionate number of jobs created through expansions is similar (51.3% in Dundee, 58.7% in the rest of Tayside).

Establishment openings played a much greater role in employment creation in Dundee, where all size bands experienced significantly greater job creation through openings rather than expansions, with the exception of the smallest and the largest size bands, where expansions are the most important component of gross job generation.

No clear differences are evident with respect to the job loss components, with closures accounting for the largest number of job losses for all size bands in both spatial areas, with the one exception of establishments with 501+ employees in the rest of Tayside, where all job losses were accounted for by contractions. When the net employment change figures are considered, it is clear that the two largest size bands had the greatest impact in Dundee over the decade, shedding over 5,000 jobs between them, with the bulk of these job losses accounted for by the largest establishments (4,296 jobs).

By comparison, these size bands played a relatively minor role in the process of net job change in the rest of Tayside, accounting for a combined net loss of 582 jobs. The 101-200 employee size band accounts for the largest net job loss (1,454 jobs) in the rest of Tayside. Clearly then, Dundee was particularly hard hit by the job losses from the largest establishments, all other size bands in Dundee experienced a net job gain, with the exception of the 26-50 size band, in which

there was a slight net job loss. In the rest of Tayside, only those size bands representing establishments with less than 50 employees experienced a net job gain, though the pattern of net job losses was much more evenly distributed among the larger size bands than in Dundee. This analysis provides further evidence in support of the distinct trends in employment change between Dundee and the rest of Tayside observed earlier, and thus provides further support for the view that these trends are the result of clear differences in the relative importance of the components of employment change between the urban and rural areas.

3.3.6 Discussion of Key Findings

Comparison with Previous Studies

As indicated previously, Tables 3-8 and 3-9 provide comparative figures from other major regional studies of manufacturing employment change, though any comparisons must be qualified by differences in quality of data between studies. Table 3-8 shows the relative importance of each component to net employment change for these studies, and it is clear that expansions have played a far more significant role in the present study than in any previous studies, accounting for over 28% of employment creation expressed as a percentage of base year employment. Closures have also played a more important role in this study than in previous studies, representing a loss of 28.6% of base year employment. The process of employment change in Tayside manufacturing in the 1980s therefore appears to be a more dynamic process than has been observed in other studies which examined earlier periods. Establishment openings are also relatively higher as a percentage of base year total employment than in the other studies, with the exception of Storey (1981) and O'Farrell (1986).

Cross (1981) finds in an earlier study of Tayside manufacturing that the most important component of employment change is *in situ* contractions, and that the general pattern of employment change is not consistent between the Dundee and Outer Tayside, which is assumed to be comparable to the rest of Tayside definition employed in the present study. For the period 1968-77, Cross also finds that

expansions played a more significant role in the peripheral areas of Tayside than in the urban centre, though the patterns are not as distinct as in the present study. The same trends are reported in Dobson's study of West Yorkshire (Dobson 1989), though again the trends are not as distinct. Dobson, however, finds no differences in net job change between the core and peripheral sub-regions of Leeds and the rest of West Yorkshire respectively. Cross, however, finds in accord with this study that the urban centre, Dundee, showed by far the worst employment performance, though a comparison of his study with the present one must be qualified by the fact that he uses different data sources, namely Department of Employment, Scottish Council (Development and Industry), which are not as comprehensive as that of TRC.

The net employment change of each size band, as a percentage of base year total employment, for these studies is shown in Table 3-9, though it must be pointed out that size bands are not always consistent between studies. For the purposes of comparison, the two smallest size bands have been aggregated for this study into a 0-25 employee band, which approximates to the 0-20 employee band used in other studies. Similarly, the 26-50 employee size band in this study is taken as an approximation for the 21-50 size band used in other studies, and the second and third largest size bands are aggregated into one category, 101-500 employees. This clearly demonstrates the importance of the smallest size band in the process of job creation in this study compared to others, the jobs created by establishments with 0-20 employees represent 15.8% of base year total employment, which is by far the biggest impact in any of these regional studies. Table 3-9 also shows the relative stability of manufacturing employment in Tayside during the 1980s compared with other areas in earlier time periods. For example, Dobson (1989) reports net job losses, as a percentage of base year employment, of over 30% in both Leeds Local Authority District (LAD) and the rest of West Yorkshire, and Storey (1981) reports a comparative figure of 14.7% in Cleveland County in North East England.

Key Points to Emerge from Analysis

This analysis provides substantial support for hypotheses that both small firms and rural areas are the best creators of net job gains. Further light is shed on the strong trends identified, when these findings are placed in the context of the information provided in analysis of industrial trends in Tayside manufacturing reported in Section 3.2.3. TRC statistics indicate that the Tayside manufacturing sector has not undergone a substantial degree of sectoral restructuring during the 1980s, as many other regions have, and is still very much dependent on its traditional industries. The rural periphery of Tayside is considerably more concentrated in these industries than Dundee. The mechanical engineering and food manufacturing sectors account for nearly 50% of manufacturing employment in the rest of Tayside. Of the four traditional sectors, these two are the most fragmented in terms of size distribution of establishments, with the other two, textiles and printing and publishing being heavily skewed towards very large scale employers. The latter two industries are far more important employers in Dundee than in the rest of the region. Therefore, it may be, as Keeble (1993) suggests, that successful firms in rural areas are typically operating in growing sectors, filling specialist market niches, rather in declining industries such as textiles manufacturing. There is clearly scope for food manufacturing firms to exploit niches in both local and export markets.

A greater preponderance of smaller scale employers in the mechanical engineering sector, however, may represent a fragmentation of the supply chain, with increased levels of subcontracting. This phenomenon, discussed in Chapter 1, has been observed in the engineering sector in other regions, and may be a consequence of large contractors seeking to make more flexible their operations by subcontracting rather than undertaking these activities in-house (Storey & Johnson, 1987; Shutt & Whittington, 1987). As noted earlier, in a sense this may be less positive in that subcontracting networks represent hidden concentration, although it still may be positive in the sense that increased numbers of smaller independent firms may serve to increase the supply of potential entrepreneurs in Tayside in the longer term, if a larger stock of new firms will 'incubate' further growth of the small firm

sector. Even if a substantial number of owner-managers of small engineering workshops have no other technical skills, in managing their businesses, skills and acumen may be developed which would not be fostered in employment as an operative in a large branch plant.

This analysis has identified clear differences in the make-up of employment change between the urban and rural areas in Tayside, particularly with respect to the impact of establishment size. Dundee, which was considerably more dependent upon large scale employers, experienced large job losses from these employers. If it were not for the high net job gains arising from establishments with 0-10 employees, this impact would have been much more profound. The smallest establishments clearly performed the best in both Dundee and the rest of Tayside. Although the most important job creation component in both areas was *in situ* expansions, a greater number of jobs were created by establishment openings in Dundee than in the rest of Tayside. The number of jobs created by expansions in the periphery was much higher than in Dundee. There are clearly different forces in operation in the two areas.

3.4 Summary

This chapter has provided an overview of Tayside Region and its manufacturing sector and has reported the results from a components of employment change analysis aimed at examining the employment impact of small manufacturing firms in the Tayside manufacturing sector in the 1980s. The rationale for the analysis was considered, along with the methodology and the findings from previous studies. The results from the analysis were discussed in the context of industrial trends in Tayside manufacturing, and the findings from previous studies.

The key points to emerge from the analysis were: (i) small establishments made a significant contribution to job generation in the Tayside manufacturing sector in the 1980s; (ii) expansions by existing establishments were overall the most important component of job generation in Tayside manufacturing in the 1980s; (iii) different

trends emerged with respect to the spatial aspect of employment change. The urban centre of Tayside experienced a greater degree of dynamic restructuring in the 1980s towards smaller scale economic activity and experienced a net job loss due to job losses from large establishments. The rural periphery, however, was more fertile in creating jobs through expansions by existing firms, and experienced a net job gain.

The remainder of the thesis is concerned with the analysis of the relationships between entrepreneurs and the financial performance of small firms, beginning in the following chapter with a consideration of the paradigm and methodology used in this analysis.

Chapter 4

Methodology

4.1 Introduction

This chapter is concerned with the methodology and research design employed in the study. Section 4.2 provides a discussion of the paradigm and methodology underpinning the analysis. This is followed in Section 4.3 with an explanation of the research procedures. The chapter concludes in Section 4.4 with a summary of the main points.

4.2 Justification for Paradigm and Methodology

4.2.1 *Entrepreneurship Paradigm*

Chapter 2 identified the complex nature of small firm performance. The literature review indicated that previous econometric studies of small firm performance have taken a managerial rather than entrepreneurial stance. The present study takes account of the possible impact on performance of entrepreneurial, rather than purely managerial motivations. Furthermore, the consideration of the conceptual model of small firm performance proposed by Cragg and King (1988) raised the possibility that financial performance provides a feedback mechanism. This mechanism may lead to either a revision or reinforcement of the objectives set by entrepreneurs for their firms, and changes in the strategic choices and managerial practices entrepreneurs adopt in pursuit of their objectives.

Fundamental to this thesis is the assumption that an interdisciplinary paradigm provides a more holistic perspective on small firm performance than subject-specific perspectives on their own. In Chapter 2 the notion of an emerging 'entrepreneurship paradigm' (Bygrave, 1989) was discussed. A key feature of this paradigm is the suggestion that more fieldwork studies are needed in order to identify the qualitative nature of inter-relationships between key entrepreneur-

specific, firm-specific and environmental variables. Evidence from fieldwork can more rigorously underpin the advancement of theoretical and methodological development in the understanding of the entrepreneurship process than quantitative studies on their own. There is a common lack of attention to the entrepreneurship process in both economic and interdisciplinary studies. Economic studies have omitted to take account of the impact of entrepreneurial motivations in determining small firm performance. Interdisciplinary studies have focused more on entrepreneurial factors but have not focused on the dynamic development of key entrepreneurial variables such as motivations, objectives and strategies.

The aim of this study is therefore to address the deficiencies in both of these bodies of empirical evidence, and to pull together the bodies of economic and non-economic knowledge into an interdisciplinary, holistic investigation of small firm performance incorporating firm-specific and entrepreneur-specific variables. Furthermore, the aim is to examine the nature of entrepreneurial dynamics in small firms. The methodology employed in this analysis reflects the recognition in the entrepreneurship paradigm that no one research method alone is capable of capturing the diverse range of the facets of small firm performance, and that a range of methods are required, including qualitative fieldwork methods (Hofer and Bygrave, 1992; Chetty, 1996).

4.2.2 Research Methodology

With respect to the nature of the research methodologies, Savage and Black (1995) develop a classification of the nature and applications of research in relation to the level of knowledge which exists in a field of study. First, they identify experiential research, where no preconceptions are imposed on the field by the researcher and conclusions are developed by experience alone. This approach is purely inductive, facts first and theorising second, and offers unparalleled insights into an unresearched field. Second, they identify exploratory research, where the researcher has some preconceptions about the outcome of the research, although this does not entail formal hypothesis testing. Third, they identify explanatory research which

does involve the testing of hypotheses developed before the empirical work has been undertaken. In terms of Savage and Black's classification, it may be argued that the determination of small firm performance is clearly not an unresearched field but qualitative knowledge and conceptual development are relatively poor for the volume of research evidence which has been generated.

The methodology employed in this study comprises of: first, an econometric analysis of firm-specific variables in order to test interdisciplinary hypotheses (specified in Chapter 5, pp 194-196); second, an applied qualitative analysis of entrepreneur-specific variables and the dynamic nature of the inter-relationships between these variables. The qualitative stage of the analysis is informed by the conceptual model of small firm performance developed by Cragg and King (1988) and is aimed at investigating the propositions raised in Chapter 2 pertaining to the nature of entrepreneurial dynamics. Thus the explanatory power of econometric methodology is combined with the exploratory edge of qualitative fieldwork in providing an holistic picture of small firm performance. The concern of the econometric stage is to test hypotheses regarding established relationships between firm-specific variables and performance which are evident in the interdisciplinary literature, but which have not been investigated in the economic literature. The aim of the qualitative stage is to build upon the econometric analysis by examining the qualitative nature of key entrepreneur-specific determinants of performance which have not been investigated previously.

In this regard, it is recognised that the strength of qualitative research is not only in conceptual development and theory-building in relatively new and unresearched fields, but in the continuation of this process as the level of knowledge in a field is built up (Savage and Black, 1995). This process of theory-building from the 'bottom-up', has the advantages of facilitating the development of research hypotheses which are rooted in a substantial degree of realism; and the identification and refinement of the key concepts and variables which are most relevant to the field. Even in fields of study where the level of knowledge is more advanced, the choice of analytical technique is not restricted to statistical

hypothesis testing, qualitative research can also be used for this purpose.

Overall then, the research employs a 'triangulation methodology', which entails combining a number of different research methods in investigating a research field (Denzin, 1978) in order to gain richer insights than the use of single methods alone would provide. Triangulation offers benefits in terms of providing greater reliability and validity in data collection, and in the analysis and interpretation of findings in that it

"...captures a more complete, holistic and contextual portrayal of the units under study".

(Jick, 1979, p603)

The research methods and procedures used are explained below, beginning with the econometric stage of the analysis.

4.3 Research Procedures

4.3.1 Econometric Analysis

Purpose and Rationale

In line with the research issues and hypotheses identified in Chapter 2 and summarised above, the aim of the econometric analysis is to estimate equations which represent the growth and profitability models of small firm performance specified in Chapter 2, using both assets and turnover measures of these variables. These equations are given below. The specification and measurement of variables contained in the equations is explained in the consideration of sampling, data collection and estimation procedures which follows.

Profitability Equations

Model: Profitability = f (size, age, location, growth)

Equations: ROTA = f (SIZE, AGE, LOC, GRTA, S32, S41, S46)
 MARG = f (SIZE, AGE, LOC, TURN, S32, S41, S46)

Growth Equations

Model: Growth = f (size, age, location, profitability)

Equations: GRTA = f (SIZE, AGE, LOC, ROTA, S32, S41, S46)
 TURN = f (SIZE, AGE, LOC, MARG, S32, S41, S46)

where the following variable specifications are used:

ROTA return on total assets

MARG profit margin on sales

GRTA rate of growth of total assets

TURN rate of growth of turnover

SIZE mean of employee size band on 1990 TRC register (0-10 emps = 5;
 11-25 emps = 18; 26-50 emps = 38; 50-200 emps = 112)

AGE 1990 minus date of incorporation

LOC dummy variable; 0 if in Dundee, 1 if in rest of Tayside

S32 dummy variable; 1 if in mechanical engineering sector, 0 if not

S41 dummy variable; 1 if in food manufacturing sector, 0 if not

S46 dummy variable; 1 if in timber & wooden furniture sector, 0 if not

The methods of calculating ROTA, MARG, GRTA and TURN are detailed below. Sectoral variables are included to control for inter-industry effects pertaining to the major sectors represented in the sample of firms used in the analysis. Descriptive characteristics of the sample are provided in Chapter 5. The inclusion of sectoral dummy variables in this analysis does not constitute a rigorous attempt to identify inter-industry effects, rather the sectoral dummies are included as control variables, as in Dobson and Gerrard's (1989) analysis. Measures of growth are included in equations using profitability as the dependent variable and vice versa, in order to control for the effects of possible bicausality in the relationship between these variables.

Sample Selection and Data Collection Procedures

The procedures used in selecting the sample of small firms used in the analysis, and in collecting data for the variables identified above, are best explained as a whole, for reasons which will become apparent. The TRC database of manufacturing establishments, outlined in Chapter 3, was used to provide the population of firms for the econometric analysis. As mentioned previously, TRC maintain basic information on establishments and this does not include information regarding the ownership status of establishments. For the purposes of the performance analysis it was necessary to identify those establishments on the register meeting criteria which enabled them to be included validly in the analysis. The criteria required of establishments were that they had to be:

- (a) companies
- (b) independently owned
- (c) single plant

The rationale for selecting these criteria was that companies have to lodge accounts with the Registrar of Companies thus providing an unobtrusive source of financial

data, which is a potentially sensitive piece of information to collect using primary methods. Furthermore, only those companies which were independent and single plant can be assumed to provide accounts relating solely to that company establishment. Establishments that were branches or subsidiaries would have been included in consolidated accounts. Furthermore, an individual branch may be operating at a loss, while the whole company may be operating profitably. In addition to these criteria, companies had to have lodged at least two sets of financial accounts for the period 1988-90. This was to enable a cross-sectional database to be obtained by taking the averages of figures from each year's accounts, the purpose of which was to reduce fluctuations in reported figures, while picking up the underlying trend in company performance. This follows the method used by Dobson and Gerrard (1989).

A company search was undertaken to identify the population of manufacturing establishments which met the criteria required for inclusion in the analysis. The population of 713 manufacturing establishments on the TRC 1990 register was eventually reduced to 117 independently owned, single plant companies. The search began by using the database of companies maintained by Companies House in Edinburgh to identify company establishments. The ownership status of these establishments was then identified by using available commercial databases, namely Kelly's and Kompass, Dun and Bradstreet, FAME and ICC. These databases, however, tend to have limited coverage of small firms at a regional level. They primarily pick up on the larger company establishments, which tend to be subsidiaries of parent companies. Therefore, a postal survey of all the remaining unidentified company establishments was undertaken. This involved sending a single page questionnaire, along with return envelope, to 275 establishments (refer to Appendix III in Volume II, pp 29-31). The questionnaire was purposely kept to one page, with closed response questions, to elicit as high a response rate as possible, while obtaining the minimum required ownership information. It was addressed to the contact name given for each establishment on the TRC register, or if this was not known, then to the "Chief Executive".

The questionnaire was accompanied by a covering letter, which was designed to provide respondents with basic information regarding the nature and purpose of the research, and to reassure them of the confidential nature of the survey. Respondents were identified by number on the questionnaire and not by name, so that while the survey was not blind, a third party could not identify respondents from the returned questionnaires. A second round of questionnaires was sent out to those who had not replied to the first round, after a two week interval. In order to help increase the response rate the author sent a press release to the local newspaper, which provided details of the nature of the research, its purpose, which was described as being to profile the Tayside manufacturing sector - the 'backbone' of the Tayside economy, and which stressed its confidential nature. Another benefit arose from the press release in that on the day following its publication, Scottish Enterprise Tayside contacted the author and offered their help with the study, including financial assistance. Overall, the postal survey generated a 75% response rate. All in all, of the 713 manufacturing establishments identified as trading in Tayside on the 1990 TRC register, 445 were identified as company establishments. Of the 445 company establishments, 117 (26%) were identified as being independently owned and single plant.

The financial accounts of these companies for the period 1988-90 (the most recent data available at the time the analysis was conducted) were purchased from Companies House with the aid of financial assistance from Scottish Enterprise Tayside. Financial considerations dictated that only three years' accounts could be purchased. However, it was found that due to the limited disclosure requirements of small and medium sized companies, only 38 of the 117 disclosed adequate financial information to permit their inclusion in the analysis. In both cases, and particularly in the case of small firms, they are not required to fully disclose financial information representing the activities of the firm over the accounting period in question. While a true representation of the firm's financial status must be approved by the auditors, only a limited amount of information needs to be disclosed to external users. In the case of small companies, 'modified' accounts need only consist of an adjusted and abbreviated balance sheet presenting no

information on the company's turnover or profit. Medium sized companies are required to disclose profit figures but not turnover. While this placed a limitation on the analysis, it is broadly in line with experience of Dobson & Gerrard (1989) and it is notoriously difficult to obtain financial data on smaller firms. The sample of small firms used in the econometric analysis was therefore the 38 firms which met the analytical criteria, and which provided adequate financial information in their company accounts. While the sample size for this analysis is smaller than previous studies of this nature, it is still sufficient to assume large sample properties for the purposes of statistical estimation.

Data pertaining to each firm's size, age, location and industrial sector were obtained from the TRC database. The size measure used in this study is number of employees, rather the assets and turnover measures more commonly used in previous econometric analyses. While firms may have large assets and turnover, they may still be small in terms of employment size. It is argued here that employee numbers is the most appropriate measure of firm size from the perspective of the interdisciplinary entrepreneurship literature discussed in Chapter 2. Using assets and turnover measures of size may fail to account for the effects of non-pecuniary entrepreneurial motivations, which are most directly related to the employee size of the firm. Assets do not need to be monitored in the sense that they cannot shirk on the job and purposively engage in unproductive behaviour. The management of employees also requires interpersonal skills which the management of assets does not. Therefore, entrepreneurs who may wish to expand their firms in terms of assets or turnover, may ultimately face a self-imposed constraint through a reluctance to increase the size of the workforce, or through a failure to delegate operational functions so as to assume a more strategic role in developing the firm. Furthermore, correlation figures for the size measures of employee numbers, total assets and turnover were calculated, and these figures indicate that while total assets and turnover are highly correlated with a coefficient of 0.9, the coefficients are smaller for the relationships between employees and total assets, and employees and turnover. Respectively, the correlation coefficients for these relationships are 0.7 and 0.6.

The employment measure for each case is taken as the mean of the size band occupied on the TRC 1990 register. This was necessary for reasons of data consistency, as not all companies disclosed their actual number of employees for every, or any, years in their accounts. Because of the small number of cases in the largest two size bands in the sample (51-100 and 101-200), these were aggregated and the mean of means taken as the employment estimate. Another limitation of the data is that the date of incorporation is taken as the measure of each firm's age. While this is the valid measure for the age of the company, it may not correspond to the actual age of the firm, which may have existed previously in an unincorporated legal business form. In addition to the key explanatory variables, three dummy variables are included which are intended to control for possible inter-industry effects of the three industrial sectors which represent the largest proportions of the sectoral distribution of the sample, namely mechanical engineering, food and drink manufacturing and timber and wooden furniture manufacturing. The intention here is not to examine differences between the performance of these sector, there is no way of knowing how typical these firms are of the rest of the sectors in which they operate. Rather, these variables are specifically to control for possible sectoral effects.

With regard to financial data pertaining to firms' profitability and growth rates, taking pieces of financial information from company accounts can be meaningless, and items such as profit have to be related to other items, such as assets, in order to provide meaningful information. To this end financial ratios are calculated to provide valid indicators of the financial performance of firms, but they in turn are only meaningful if they are compared against some standard. This may be the figures of previous years (inter-temporal analysis), or of other firms (cross-sectional analysis).

As with Dobson and Gerrard (1989), this study adopts a cross-sectional analysis. This constituted taking average figures for the items taken from firms' accounts which are used in the calculation of financial ratios for the time period 1988-90, which was the most recent data available when the analysis was undertaken in

1991-92. The nature of the accounts data was such, however, that some companies, because of different accounting year ends, had only submitted two complete years' accounts for the period 1988-90, and partial information for the remainder of the period. Dobson and Gerrard (1989) report a similar experience in their study. Of the 38 companies, eleven provided accounts information for three complete accounting years during the 1988-90 period, with the remainder providing two complete years of accounts information within the period, and other accounts information which partially fell outwith this period.

Therefore, figures were averaged for two time periods; first, for all complete information provided by the 38 firms for the period 1988-90, although only 11 firms had complete information for three years, with the remainder providing complete information for two years within the period; second, for a sub-sample of 30 firms (which is still large enough to assume large sample properties for statistical estimation), which all provided full accounts figures for the two year period 1988-89. The second dataset was taken as a precaution, to ensure that there were no temporal effects which may have affected the consistency of the first dataset. As it transpired, however, the results obtained are not substantially different using each dataset. Thus eight equations were estimated overall, four for each time period, using assets and turnover measures of growth and profitability as dependent variables. The time periods used to take average figures from the accounts is shorter than that of Dobson and Gerrard (1989), who averaged figures for a four year period to provide the data for their analysis. It is less likely that averages for two, or three years will pick up underlying trends in company performance, than four years or longer. While this places a limitation on the analysis, three and two year averages are still preferable to one year figures.

The key measures of growth and profitability performance which have been suggested as providing valid indicators of firm performance and company 'health' (Warren, 1988; Rees, 1990), and which have been used in previous studies of this nature are as follows:

(a) Profitability

Return on Total Assets (ROTA) - this is expressed as profit: total assets, and gives a measure of the annual rate of return on all assets owned by the firm.

Return on Net Total Assets (RONTA) - this also equates to Return on Capital Employed (ROCE), a commonly used ratio. This ratio is expressed as profit:net assets, and gives an indication of the annual rate of return on all assets available to the firm after covering current liabilities.

Profit Margin on Sales - this is expressed as profit:sales, and provides a measure of the ability of a firm to generate profit from a given volume of sales.

(b) Growth

This is commonly measured in terms of the average annual rate of growth of turnover or assets.

In all cases above, the figures can then be multiplied by 100 to express them as a percentage. Dobson and Gerrard (1989) indicate that assets measures of financial performance are more likely to pick up internal determinants, i.e. firm specific factors such as productivity and efficiency. They suggest that sales measures, on the other hand, are more likely to reflect external determinants of performance such as changes in market conditions, for example greater competitive pressure. It is therefore desirable to include both assets and turnover measures of growth and profitability in order to capture both internal and external influences on firm performance. In this study, profitability and growth indicators were therefore calculated as above using both assets and turnover measures.

When taking data from financial accounts in order to calculate these ratios, however, there is the problem of selecting the appropriate measures of items. Taking profit first, the income statement may provide several measures, such as operating profit before tax, operating profit after tax, or retained profit. Each of

these measures has different significance depending on the aspect of business performance under investigation. For the purposes of assessing relative performance on an annual basis, Gee (1985) points out that the most appropriate indicator is the amount of operating profit before tax. In a study which aims to examine the productive use of capital, the operating profit generated from a firm's ordinary activities is the most appropriate measure. Furthermore, as Sawyer (1985) indicates, this figure should also be taken before the deduction of interest payments, so as not to discriminate against those firms with debt in their financial structure.

Similarly, the balance sheet can give several readings of capital. Capital may be taken as: the net book value (nominal value, usually measured at historic cost, minus depreciation) of total assets (fixed and current); or the net book value of total assets net of current liabilities. On the balance sheet, the net assets measure is equivalent to shareholders' funds (share capital plus reserves) plus long term liabilities. This is commonly taken as a wide measure of the capital employed by a firm over the accounting period. However, as Burns and Dewhurst (1986) point out, small firms are typically highly dependent upon working capital as a source of finance, and thus omitting current liabilities from a measure of capital employed is to take too narrow a measure. The correct measure of capital employed used in a cross-sectional analysis must also take into account other considerations. These are, whether a firm owns or leases its assets, and whether any of its assets have been revalued in separate accounting periods. In the latter case, revaluation of assets will have the effect of increasing their value on the balance sheet without the firm having actually acquired more assets. This scenario usually applies to fixed assets such as heritable property.

In the case of whether a firm owns or leases assets, inconsistencies may arise depending on whether the assets are leased under the terms of an operating lease or a finance lease. In the case of the former, the assets are not capitalised on the balance sheet, but leasing costs are still deducted as expenses on the income statement. Assets acquired under a finance lease must be capitalised on the balance sheet, although the firm does not actually own these assets. In a cross-sectional

analysis, if the amounts held under leasing is negligible and their inclusion does not materially affect the results of the ratio calculation, it may be justifiable to ignore the distinction. However, if the adjustments do need to be made, the proper accounting convention of treating the effects of leasing is to remove the assets from the balance sheet in the case of finance leases, and to remove the leasing costs from the income statement in the case of both finance and operating leases (Rees, 1990).

Devine, Lee, Jones and Tyson (1985) indicate other issues which must be addressed in cross-sectional financial analyses, concerning possible inconsistencies between different firm's accounts. These are, first, differences between the treatment of managerial expenses in the calculation of profits. This may be of particular importance for small firms because director's payments, including pension contributions, are likely to be a more significant component of profitability. Therefore, to ensure consistency, it is desirable to add back managerial expenses to operating profits. Dobson and Gerrard (1989) acknowledge the importance of this procedure, but were unable to do this because of data limitations in their study.

There may also be differences in the accounting practices concerning the depreciation of assets, and in stock valuation, although this was not a problem in the study reported here as all firms in the sample obtained employed the same methods of both depreciation and stock valuation. The time period chosen may also affect the quality of the analysis. The shorter the time period chosen, the more likely that temporary extraneous factors will affect comparison between firms. Thus there are inherent problems with the reliability of data taken from financial accounts, although measures can be taken to ensure consistency between cases as far as possible. Before the financial ratios were calculated in this analysis, adjustments were therefore made to ensure consistency between cases with respect to treatment of leased assets, fixed assets and managerial expenses.

Another key issue in this type of analysis is the measure of assets used, i.e. total or net assets. It is argued here that the appropriate measure for small firms is total

assets. Dobson and Gerrard (1989) use the net assets measure in the calculation of profitability, and indicate that they are large fluctuations between years for the same firm, and between different firms. The net assets measure is such that the calculation can obtain negative figures, unlike the total assets measure. A company can have negative net assets, because it can have net current liabilities if its current liabilities exceed its current assets, but it cannot have negative total assets. Smaller firms typically have large current liabilities in their capital structure (Burns and Dewhurst, 1989), and therefore are more prone to having low levels of net assets, or negative net assets, given their smaller total assets figures. For the above reasons, the total assets measure is used. Thus, the results from this study are not strictly comparable with those previous studies which have used the net assets measure, but arguably are more theoretically and analytically valid given that the concern is with the performance of small firms. Reid (1993) also adopts the total assets measure.

Estimation Methods

The estimation method most commonly used in this type of analysis is multiple regression. The objective is to estimate the coefficients of a pair of equations, in which the dependent variables are growth and profitability, and in which there is simultaneity because profitability and growth appear among the explanatory variables in each equation. In this study estimations using ordinary least squares (OLS), two stage least squares (2SLS) and three stage least squares (3SLS) were conducted on both data sets. Four models were analyzed for each data set, using both total assets and turnover measures of profitability and growth.

OLS is used to estimate the coefficients of a single equation, without allowing for possible simultaneity or correlation between the disturbance term of the equation concerned and the disturbance terms of other equations. In general, if the population regression equation is:

$$y_i = \beta_1 + \beta_2 x_{2i} + \dots + \beta_k x_{ki} + u_i \quad (1)$$

the OLS estimators of $\beta_1 \dots \beta_k$ are $\hat{\beta}_1 \dots \hat{\beta}_k$ which minimize $\sum e_i^2$ in the sample regression equation:

$$y_i = \hat{\beta}_1 + \hat{\beta}_2 x_{2i} + \dots + \hat{\beta}_k x_{ki} + e_i \quad (2)$$

Under the following five assumptions:

- (i) $E(u_i) = 0$
- (ii) $\text{var}(u_i) = \sigma^2$
- (iii) $\text{cov}(u_i, u_{i,j}) = 0$ for $j \neq 0$
- (iv) $\text{cov}(u_i, x_{ji}) = 0$ for $j = 2 \dots k$
- (v) the relationship between $x_{2i} \dots x_{ki}$ and y_i is correctly specified as linear;

the Gauss Markov theorem proves that $\hat{\beta}_1 \dots \hat{\beta}_k$ are the best linear unbiased estimators of $\beta_1 \dots \beta_k$ (Johnston, 1986; Greene, 1990); i.e. of all estimators which are linear in y_i and unbiased, $\hat{\beta}_1 \dots \hat{\beta}_k$ are the most efficient (i.e. have the smallest variances). Furthermore, if a sixth assumption is also satisfied:

- (vi) u_i is normally distributed;

then $\hat{\beta}_1 \dots \hat{\beta}_k$ are maximum likelihood estimators of $\beta_1 \dots \beta_k$ and are therefore asymptotically efficient (i.e. no other estimators, including biased and non-linear estimators, are more efficient in large samples).

In cases where more than one equation is required to fully specify the relationships between the variables in the model, the desirable properties of OLS estimators are not satisfied whenever there is simultaneity between two or more variables .

Consider the following system of two equations:

$$y_{1i} = \beta_{11} + \beta_{12} x_{2i} + \dots + \beta_{1k} x_{ki} + \delta_{12} y_{2i} + u_{1i} \quad (3)$$

$$y_{2i} = \beta_{21} + \beta_{22} x_{2i} + \dots + \beta_{2k} x_{ki} + \delta_{21} y_{1i} + u_{2i} \quad (4)$$

Simultaneity is present because y_{2i} is one of the explanatory variables in (3), and similarly y_{1i} is an explanatory variable in (4). Because y_{1i} (and therefore u_{1i}) partially determines y_{2i} , there is non-zero covariance between y_{2i} and u_{1i} on the right hand side of (3); i.e. assumption (iv) is violated, and the OLS estimators $\hat{\beta}_{11} \dots \hat{\beta}_{1k}, \hat{\delta}_{12}$ are biased and inefficient. The same also applies to (4).

However, 2SLS provides an alternative estimation procedure which permits unbiased and efficient estimation of the coefficients of the two equations in the system. For 2SLS to be feasible, a number of exclusive restrictions, known as the identifying restrictions, must be imposed on the terms of (3) and (4) (see Greene, 1990 and 1993). For the purposes of the estimations which follow, identification can be achieved by excluding one of x_{ji} ($j=2\dots k$) from each equation; a different x_{ji} must be excluded in each case.

Stage 1 of 2SLS requires the estimation of the coefficients of the reduced form of (3) and (4):

$$y_{1i} = \pi_{11} + \pi_{12}x_{2i} + \dots + \pi_{1k}x_{ki} + \varepsilon_{1i} \quad (5)$$

$$y_{2i} = \pi_{21} + \pi_{22}x_{2i} + \dots + \pi_{2k}x_{ki} + \varepsilon_{2i} \quad (6)$$

where (5) and (6) are obtained by solving (3) and (4) simultaneously for y_{1i} and y_{2i} . OLS estimation of (5) and (6) yields:

$$\hat{y}_{1i} = \hat{\pi}_{11} + \hat{\pi}_{12}x_{2i} + \dots + \hat{\pi}_{1k}x_{ki} \quad (7)$$

$$\hat{y}_{2i} = \hat{\pi}_{21} + \hat{\pi}_{22}x_{2i} + \dots + \hat{\pi}_{2k}x_{ki} \quad (8)$$

Stage 2 then involves the estimation of (9) and (10), which are the same as (3) and (4) but with \hat{y}_{1i} and \hat{y}_{2i} substituted for y_{1i} and y_{2i} :

$$y_{1i} = \beta_{11} + \beta_{12}x_{2i} + \dots + \beta_{1k}x_{ki} + \delta_{12}\hat{y}_{2i} + v_{1i} \quad (9)$$

$$y_{2i} = \beta_{21} + \beta_{22}x_{2i} + \dots + \beta_{2k}x_{ki} + \delta_{21}\hat{y}_{1i} + v_{2i} \quad (10)$$

\hat{y}_{2i} and \hat{y}_{1i} , which only depend on x_{2i}, \dots, x_{ki} , have zero covariance with v_{1i} and v_{2i} respectively, so OLS estimation of (9) and (10) produces unbiased and efficient estimates of $\beta_{11}, \dots, \beta_{1k}, \delta_{12}, \beta_{21}, \dots, \beta_{2k}, \delta_{21}$.

2SLS estimation of (9) and (10) assumes that the disturbance terms v_{1i} and v_{2i} are entirely random. Therefore, it is implicitly assumed that there is zero cross-equation covariance between the two sets of disturbance terms. In practice, this assumption may well be violated, if, for example, a large error term in the growth equation for firm i is associated with a large error in the profit equation. If this is the case, then the information provided by the cross equation covariance can be exploited to improve the efficiency of the estimators. Three stage least squares (3SLS), by estimating (9) and (10) as a full system, rather than equation by equation using OLS, yields estimators which are more efficient than those produced by 2SLS under these circumstances. Reid (1993) uses 3SLS estimation in his analysis of small firm performance, criticising Dobson and Gerrard's use of 2SLS, which does not make full use of the information in the system. This analysis therefore considered 3SLS estimates of the growth and profitability models in addition to the 2SLS estimates.

For 3SLS, stages 1 and 2 are the same as in 2SLS. However, once the second stage estimation is complete, 3SLS proceeds by estimating the variances of the disturbances $\hat{\sigma}_{11} = (1/n)\sum \hat{v}_{1i}^2$, $\hat{\sigma}_{22} = (1/n)\sum \hat{v}_{2i}^2$ and the cross-equation disturbance covariance $\hat{\sigma}_{12} = (1/n)\sum \hat{v}_{1i}\hat{v}_{2i}$. At stage 3 these are employed to re-estimate the coefficients of the two equations, using a generalized least squares (GLS) procedure, which, intuitively, involves minimizing a weighted sum of squared residuals with the weights determined by the disturbance variances and covariance. When the GLS estimators are obtained, stage 3 can be repeated a number of times

until the estimation results converge. However, it transpired that the estimated correlation coefficients between the residuals of the two equations making up each system of equations for both growth and profitability models were extremely small, rendering the 3SLS estimates identical to the those from the 2SLS analysis. The 3SLS estimates are therefore not reported in Chapter 5.

Diagnostic Tests

The desirable properties of all of the estimation methods discussed above depend on the validity of the statistical assumptions (i) - (v) and (vi). In this section, procedures are discussed for testing the validity of the two assumptions which are most likely to fail in a cross-sectional data set of the type used in this chapter: assumptions (ii) and (vi): homoscedasticity and normality respectively. The tests are discussed in the context of single equation OLS estimations.

To test the validity of the homoscedasticity assumption, White's test is adopted.

The procedure is as follows:

- 1 Using OLS, obtain the estimated model:

$$y_i = \hat{\beta}_1 + \hat{\beta}_2 x_{2i} + \dots + \hat{\beta}_k x_{ki} + e_i \quad (11)$$

and save the residuals e_i .

2. Run the auxiliary regression:

$$e_i^2 = \hat{\gamma}_1 + \hat{\gamma}_2 x_{2i}^2 + \dots + \hat{\gamma}_k x_{ki}^2 + v_i \quad (12)$$

3. The test statistic $\tau = nR^2$ (where R^2 is taken from the auxiliary regression) follows a chi-square distribution with $k-1$ degrees of freedom under the null hypothesis that the disturbances of the original model are homoscedastic. Comparison of τ with the appropriate critical value leads to the acceptance

or rejection of this null hypothesis.

If the homoscedasticity assumption is rejected, the estimators discussed in the previous section are unbiased, but inefficient. Furthermore, t-and F-tests for the statistical significance of the estimated coefficients are invalid.

However, White (1980) provides an alternative procedure for the calculation of standard errors of the estimated coefficients, which allows valid hypothesis tests to be conducted in the usual manner, provided the sample size is sufficiently large. White's heteroscedasticity-consistent estimator of the OLS covariance will therefore be used in the estimations which follow, in cases where heteroscedasticity is detected.

To test the assumption that the disturbances are normally distributed, the Jarque and Bera (1987) skewness-kurtosis test is adopted.

The test statistic is $\tau = \frac{\hat{\rho}_1^2}{6} + \frac{(\hat{\rho}_2 - 3)^2}{24}$

where $\hat{\rho}_1$ = estimate of skewness coefficient for u_1 ;

$\hat{\rho}_2$ = estimate of kurtosis coefficient for u_1 ;

$$\hat{\rho}_1 = \frac{\sum e_i^3/n}{\hat{\sigma}_{MLE}^3} ; \quad \hat{\rho}_2 = \frac{\sum e_i^4/n}{\hat{\sigma}_{MLE}^4} ; \quad \hat{\sigma}_{MLE} = \left(\frac{\sum e_i^2}{n} \right)^{\frac{1}{2}}$$

and e_i are the residuals from (11).

Under a null hypothesis of normality, τ follows a chi-square distribution with two degrees of freedom. Comparison of τ with the appropriate critical value leads to the acceptance or rejection of the null hypothesis. If the normality assumption is rejected, the estimators discussed in the previous section remain best linear unbiased, but cannot be interpreted as maximum likelihood estimators, and are therefore not asymptotically efficient. Therefore, t-and F-tests are strictly invalid, but can be used as approximations provided the sample size is sufficiently large. In cases where the normality assumption may be rejected, with $n=38$, or $n=30$, this

large sample justification is adopted for the use of standard hypothesis testing procedures.

Another problem which may arise in this type of analysis is multicollinearity; i.e., high correlations between independent variables, which make it difficult to separate out the relative impact of each variable in the equation. However, there is no such problem in either of the data sets used in this analysis, with the highest correlation between the relevant explanatory variables in any model being 0.6, between S41, one of the sectoral dummies, and GRTA in the 1988-90 data set. Correlation matrices for both data sets are provided in Tables 4-1 and 4-2, given in Appendix IV (Volume II, pp 32-34). Thus, while Dobson and Gerrard (1989) note that it is generally difficult to separate out the effects of size and age, this is not a problem in this analysis. The highest degree of correlation between the size and age variables used in this analysis is for the 1988-90 data set, where a coefficient of 0.5 is obtained, which is not large enough to suggest multicollinearity.

4.3.2 Qualitative Analysis

Sampling

The sample of firms used in the qualitative analysis was derived from 38 companies used in the econometric analysis, as financial accounts for these companies were already available. The aim was to engage the participation of as many of these companies as possible in a programme of interviews. An additional criterion was used in that companies were required to be under the direct control of one distinct individual, who was assumed to be the entrepreneur. This is in line with the definition of the entrepreneur used in this study as the key strategic decision maker in a small firm. Thus firms in which strategic control was diffused to a large extent in a management team would not have fitted in with this definition.

The method of arranging the interviews followed established fieldwork practices which have been used in previous studies of small firms (e.g. Reid, 1993; Chetty,

1996). This involved first of all sending a pre-letter to entrepreneurs, whose names were obtained from the TRC database, followed a few days later by a telephone call in which interviews were arranged. The rationale for this procedure was to first of all establish the authenticity and confidentiality of the study in the letter, and then to answer any questions and develop an initial rapport with entrepreneurs in the telephone calls, at the same time checking that they met the criterion of being in overall control of the firm. The documentation for this procedure is contained in Appendix V (Volume II, pp 35-43). Overall, 16 entrepreneurs agreed to participate in the study. It was also established during the telephone calls that none of the 16 entrepreneurs had other business interests. There were no 'portfolio' entrepreneurs in the sample so that multiple business ownership could not be investigated as a feature of this study. As in the sample selection process for econometric analysis, the small numbers involved did not permit industry sector to be controlled for as a criterion of selection. Thus the sample of 16 companies operate in a number of manufacturing industries. Descriptive statistics on the sample are provided in Chapter 6.

With regard to the sample size, the concern in qualitative studies is to generate depth of information on each case, observing commonalities and divergencies of experience between cases. Knowledge in the field, and theoretical development builds up in an incremental fashion through the contribution of many studies, each of which can account rigorously for context-specific factors (Yin, 1989; Strauss and Corbin, 1993; Miles and Huberman, 1994, Chetty, 1996). Thus sample size in any one study is not as important an issue as the depth of the data collected, and sample sizes are typically smaller as a result of the greater demands placed on researchers' resources in order to generate information from each case. Some qualitative researchers have argued that a single case study is preferable to a sample of multiple cases, to ensure that sufficient information is generated and added to the body of knowledge which exists overall on the field (Yin, 1989). In fields where the level of knowledge is relatively more advanced, a comparative analysis of a small number of cases, based around common themes identified in the literature, may provide a richer contribution to the body of knowledge (Chetty,

1996). Sample selection is 'purposive' to suit the needs of the study, with the characteristics and context of each case carefully noted.

Data Collection

The primary method of data collection used in this analysis was the unstructured interview. Various forms of interviewing exist, defined by the degree of structure placed upon the interchange between interviewer and subject. The most structured form of interview is similar to an administered questionnaire, where the emphasis is placed upon ensuring reliability of information between cases by standardizing the interview as much as possible. This may be achieved by using the same wording of questions for all interviews, and pre-coding response categories, which forces the respondent's reply into one category. The aim in this method is to reduce as far as possible, any systematic bias placed on the findings by the interviewer, which is less of a problem if the same individual is conducting all of the interviews. This type of interview programme requires a considerable degree of prior instrumentation and piloting, to ensure consistency between cases. The emphasis on the standardisation of the interaction between interviewer and subject is representative of a positivist endeavour to achieve as much objectivity as possible in the process of data collection (Strauss and Corbin, 1990). A semi-structured approach to interviewing would be to include some open-ended questions in the interview schedule, which allows the respondent to elaborate on points of interest, although such responses would again typically be coded into categories.

A researcher informed by an interpretivist paradigm, for example in ethnographic and anthropological studies (Stewart, 1991; Dana, 1996), would not be so concerned with achieving objectivity in the interaction between interviewer and subject. Here it is recognised that the researcher is the research instrument (Burgess, 1982). Given the nature of human interaction, an attempt to impose a structure on the nature of this interaction may actually serve to destroy any rapport between the two parties. For example, if a person consents to be interviewed, they presumably think that the researcher is interested in obtaining their views on a

matter, or in hearing about their experiences. If that interviewer then stifles any attempt by the respondent to express those views, in order to explicitly direct the respondent to providing the exact information required to complete the questionnaire or interview schedule, this places an un-natural structure on what is a natural human interaction. In the author's experience as a research interviewer on many projects involving standardised and semi-structured techniques, adherence to the wording of the questionnaire, or forcing the respondent to return to the point, more often than not serves to reduce the interview into a question and answer session, where the questioner holds all of the power and controls the interaction. Also, from the author's experience of being interviewed in such a manner, it is somewhat demoralising to have one's strongly held, and sometimes complex views on a matter, reduced to a simple category such as 'strongly agree'.

Burgess (1982) indicates the value of the unstructured interview in field research from an interpretivist perspective, as essentially representing in the eyes of the informant (as opposed to respondent, which suggests a more passive role), a normal conversation. The intention is not to restrict the researcher's perspective, or the informant's perception of the interaction, by adopting a standard set of questions. Palmer describes the unstructured interview in the following manner.

"...(the unstructured interview) assumes the appearance of a natural interesting conversation. But to the proficient interviewer it is always a controlled conversation which he guides and bends to the service of his research interest".

(Palmer, cited in Burgess, 1982: p107)

Thus, as in an ordinary conversation, there are natural parameters such as dealing with specific subject matter. A normal conversation would not jump wildly from subject to subject. At the same time, if a person is asked to express their views, the other party would not typically cut them short if they deviated from the point. Thus, the skill in this form of interviewing is to guide the informant in as unobtrusive manner as possible, so that the rapport between interviewer and

informant is not broken. Whyte (1982) suggests several methods of achieving this end, ranging from a very non-directive approach such as nodding the head, or an impartial utterance such as 'uh-huh', to a more directive approach such as 'that's very interesting and ties in with what you were saying earlier, could we return to that earlier point?'. At all times though, the informant has perceived control of the interview, as they would do in conversation if their views are sought. The interviewer intervenes as little as possible, after placing the parameters on the conversation by detailing the nature of the substantive information to be discussed.

With regard to interview structure, Reid *et al* (1993) argue that in a previously researched field of study in which a body of knowledge exists (unlike in 'pure' anthropological research in an entirely new field) a degree of prior instrumentation should serve to enhance the interviewing process. This does not, however, entail devising a standard set of questions, but focusing the parameters of the interview around the key elements in the literature. The generalist conceptual model of small firm performance proposed by Cragg and King (1988), and discussed in Chapter 2, therefore provides a focus for the agenda of topics pertinent to the interview programme in this study. The method of interviewing here follows Reid *et al* (1993), in that the elements contained in the analytical model were broken down into thematic topics, namely entrepreneurial characteristics, motivations, objectives, markets operated in, managerial practices, and performance constraints. Within these topics, the informant was allowed to elaborate on any points of interest, although an agenda of probe points was used by the author to unobtrusively guide the focus of the interview to ensure a sufficient depth and breadth of information to address the research questions rigorously. The interview agenda is also given in Appendix V (Volume II, pp 35-43).

Building and maintaining a rapport with the informant was the critical element in these interviews given the sensitivity of much of the information requested. No time limit was placed on the interview and the time taken varied between one and three hours, with around two hours being the norm. The order of the points covered in the agenda did not always relate to the order of the points covered in the

interview. Furthermore, the author did not attempt to hinder the flow of the interview by taking copious notes. Direct quotations of particular interest were noted, and bullet points were made of the pertinent content of the interview. The interviews were not taped as it was thought that this would make the informants more wary of what they were saying, and more conscious of their verbal presentation, which would hinder the flow of thought (Reid *et al*, 1993). If an informant was not forthcoming with a piece of information in the course of the interview, no matter how subtly they were directed towards giving it, then the point was left. The informant was not pressed on the point, an attempt to do so could only have served to compromise rapport. Most informants, however, were happy to provide most of the information required, though some points were more relevant to some informants than to others.

The flexibility of the interview technique allowed informants to concentrate on the points that were of most relevance to them, which could only have served to enhance rapport. The interview agenda therefore served as an aide memoir for the author, although as the programme of interviews progressed, it became increasingly unnecessary to refer to it. The interview agenda and the author's interview technique were tested in the field in the first instance in a programme of four pilot interviews, although these interviews all proved successful and were used in the final analysis. The visit to the research site also typically involved a tour of the premises and the provision of company brochures. Interview reports were constructed from field notes within hours of the completion of the interview in all cases.

Many of the entrepreneurs commended the author on using this research method, and in choosing to visit the research site rather than sending a postal questionnaire. Entrepreneurs felt that the research method replicated established business protocol, in contrast to the many academic questionnaires which they received, and which they indicated that they spent little time in completing, if at all.

Criticisms of interview data generated in this way (e.g. Curran, 1997) are usually

couched in terms of: (1) the data represents retrospective accounts of the interviewee's experiences, therefore their memory recall can be questioned; (2) interviewees may 'embellish' their experiences in an *ex post* rationalisation. The information required in a study of the entrepreneurship process, however, represents major life experiences so that problems of memory recall of major events are less likely. Most entrepreneurs could be expected to recall their expectations, motivations and objectives, and the critical experiences and events which relate to the performance of their firms. The use of archive data in the form of financial accounts also serves to reinforce the validity and reliability of the interview data. As to whether entrepreneurs can be trusted to provide accurate information, the rapport built up during the course of the interaction should serve to maximise the likelihood of this occurring. It is difficult to lie consistently to someone's face over a period of time, especially if they have other means at their disposal to verify information. Again, it must be stressed that rapport is the key to the success of this endeavour, which cannot be built up from a faceless postal or telephone survey. It is more likely that embellishments will occur in responses to these methods than in a face-to-face interaction conducted over a period of time.

It is acknowledged, however, that the qualitative analysis would have benefitted from a longitudinal aspect to the research design. This would have been preferable in examining more fully the inter-temporal aspects of entrepreneurial dynamics. The interview method could then have been supplemented by other fieldwork methods such as direct or participant observation. The time period necessary to undertake a rigorous longitudinal study of this nature, however, which Hofer and Bygrave (1992) suggest to be at least 2-5 years, precluded such a research design from being a feasible option in this study.

The only element in the conceptual model which was not sought in the interview was the financial information. Given the particular sensitivity of this information, it was thought best to collect it unobtrusively. It was thought to be important to obtain detailed financial information over a period sufficient enough to detect underlying trends in performance - in this case, five years - in order to provide a

rigorous account of the performance of firms. Thus, the characteristics, motivations, objectives, practices and experiences of the informant, gleaned from the interview were combined with detailed financial data to provide a sound basis with which to address the research objectives. One point to emerge previously was that entrepreneurs are reticent to comment upon financial information. Therefore it was decided to obtain an additional two years accounts, over and above the three years already held, and these were purchased for the 16 companies with the aid of a research grant from University of Abertay. Thus five year's financial data were held for these companies, covering the period 1988-92. The financial ratios used in the econometric stage were recalculated for the extended period using the same rationale and method.

Analytical Procedures

Analytical data for each entrepreneur and their firm are given in Chapter 6, in which the cases are reconstructed around the analytical model informing the study. This represents a series of 16 case studies (Yin, 1989; Chetty, 1996) presented as entrepreneurial 'profiles', which provide an intra-site analysis of the data (Reid *et al*, 1993). The purpose of the intra-site analysis is to provide rich and detailed accounts of each case, which individually can provide comparators for other studies of entrepreneurs which use a similar methodology, and which can be used as the basis for a comparative inter-site analysis, which is undertaken in Chapter 7. The inter-site analysis uses data reduction techniques for qualitative data suggested by Romano (1986), Yin (1989), Strauss and Corbin (1990) and Miles and Huberman (1994), which have been used in other studies of entrepreneurs in small firms by Reid *et al* (1993), Chetty (1996), Kirby and Jones-Evans (1997) and Glancey, Greig and Pettigrew (forthcoming). These comprise two steps: first, a comparative analysis of the sample of cases with respect to the key elements of the conceptual model from which the interview agenda was generated; second, a textual data matrix analysis which examines key themes relevant to an understanding of the nature of entrepreneurial dynamics, for example, the impact of changes in objectives on strategic choices by entrepreneurs.

4.4 Summary

This chapter has provided the justification for, and a description of, the methodology and research design used in this study of small firm performance. In summary, a triangulated methodology is used in developing a two-stage research design. This comprises two elements: first, an econometric analysis of firm specific determinants of small firm performance, aimed at examining hypotheses which incorporate the impact of entrepreneurial motivations; second, a qualitative analysis of the impact of entrepreneur-specific variables on small firm performance, which specifically addresses the qualitative nature of these relationships, and which addresses in particular the dynamic aspects of inter-relationships between these variables in determining small firm performance.

The econometric analysis of firm-specific determinants of small firm performance uses OLS and 2SLS procedures to estimate models incorporating firm size, age and location as the key independent variables, along with sectoral dummy variables to control for inter-industry effects, and measures of growth and profitability as both dependent and independent variables. Profitability is included as an independent variable in growth equations and vice versa, to control for possible bicausality in the relationship between these variables. Data for each independent, single plant company used in the analysis are a combination of firm-level information from the TRC database, and financial ratios calculated from accounts obtained for each company. Eight equations are estimated overall, for the time periods 1988-90 and 1988-89, using both assets and turnover based measures of profitability and growth as dependent variables. The key features of the econometric analysis are the use of employee numbers as the most theoretically valid measure of firm size, taking into account entrepreneurial motivations; and the rigorous handling of the financial information used in the analysis.

The qualitative analysis of entrepreneurial variables uses a methodology based around a previously untested conceptual model of the dynamic inter-relationships between entrepreneurial variables in determining small firm performance. It uses established fieldwork procedures in arranging and conducting a programme of

depth interviews. Intra-site analysis is undertaken to reconstruct interview and financial accounts data in the form of entrepreneurial profiles; and comparative inter-site analysis is undertaken to identify key themes evident across the sample of 16 entrepreneurs. Chapter 5 will now begin the report and discussion of the results from the analysis with a consideration of the findings from the econometric stage.

Chapter 5

Econometric Results

5.1 Introduction

This chapter reports the results for the econometric analysis. This begins in Section 5.2 with a restatement of the theoretical framework underpinning this analysis, in the form of hypotheses which are suggested in the economic and interdisciplinary entrepreneurship literature. Section 5.3 provides descriptive statistics for the sample of firms used in this analysis. Section 5.4 considers the results from the OLS and 2SLS estimations of the growth and profitability equations specified in Chapter 4. Here the findings will be compared with those from previous econometric analyses of small firm performance (Dobson and Gerrard, 1989; Reid, 1993) and points of agreement and conflict with the findings from these studies will be noted. As indicated in Chapters 2 and 4, however, it must be remembered that these studies are not directly comparable with each other, and with this study. This is both in terms of the theoretical basis of the hypotheses tested, and the specification and measurement of the variables used in the analyses. A fuller discussion of the results from the econometric analysis will be undertaken in Chapter 8, in tandem with the results from the qualitative analysis, and in the context of the wider economic and interdisciplinary literature. Chapter 8 will derive conclusions and implications from the study from an holistic perspective. Finally in Chapter 5, Section 5.5 provides a summary of the key points.

5.2 Theoretical Framework

The review of the theoretical and empirical literature in Chapter 2 identifies the following hypotheses with respect to the possible relationships between dependent and independent variables in the growth and profitability equations. These hypotheses incorporate ideas from the interdisciplinary entrepreneurship literature, in addition to the traditional economic literature which has informed previous econometric analyses of small firm performance. These hypotheses have not been

collectively specified or tested in previous econometric studies of small firm performance.

Size and profitability

A positive relationship between size and profitability can be expected as larger firms may benefit from economies of scale, and these firms may have become large because their entrepreneurs have in the past pursued profits in order to provide finance for expansion, as well as personal income. On the other hand, there may be an off-setting tendency if firms which grow at a rate faster than that which the entrepreneur can manage, experience diseconomies of scale which reduce profitability.

Size and growth

A positive relationship between size and growth can be expected as larger firms may have achieved their size as a result of being managed by entrepreneurs with greater levels of entrepreneurial acumen and managerial ability. Such an association may be observed until the entrepreneur gets near, or reaches his or her comfort level of firm size. A point may also be reached at which an expanding firm simply exhausts its best opportunities for growth, although diversification may enable the firm to circumvent this problem.

Age and profitability/growth

A positive relationship between firm age and profitability or growth can be expected if older firms benefit from dynamic economies of scale by learning from experience. Older firms may also benefit from reputation effects, which allow them to earn a higher margin on sales. On the other hand, there may be an off-setting tendency if older firms have developed routines which are out of touch with changes in market conditions (including both consumer preferences and technological developments).

Location and profitability/growth

Firms located in rural areas may be more profitable and may experience higher growth rates than those in urban areas, if the latter face higher costs because of higher factor prices due to greater competition for factors of production (especially land and labour). Urban firms may also experience space constraints which limit the scope for their expansion. On the other hand, there may be an off-setting tendency if firms in urban locations are better positioned (i.e. closer to their markets, or to the infrastructure through which they access their markets) to take advantage of changes in market conditions.

Profitability and growth

If small firm entrepreneurs typically rely on retained profits as their primary source of capital for expansion, so as to avoid external lenders having a 'stake' in the firm, then a positive relationship between profitability and growth can be expected.

Additionally, entrepreneurs who are more receptive to the idea of raising external finance will find it easier to do so if their firms are profitable. A higher growth rate may also lead to higher profitability through efficiency enhancing learning effects. On the other hand, there may be an off-setting tendency if: (a) the firm attempts to grow at a rate beyond that with which the entrepreneur can cope and dynamic diseconomies of scale set in; (b) growth is achieved through cutting margins in existing markets, rather than through diversification into new markets. Both of these deficiencies may be caused by the entrepreneur choosing not to delegate day-to-day managerial tasks in favour of assuming a more strategic role in determining the firm's direction.

5.3 Sample Statistics

It was indicated in Chapter 4 that two datasets were used in the econometric analysis; first, the 38 firms which provided accounts information for the three year period 1988-90, even although accounting year ends were not always consistent between firms; second, the 30 firms which provided complete accounts information

for the two year period 1988-89. A consideration of the sample statistics for these two datasets reveals that the samples of firms are very similar with respect to the size, location and age distributions. The size distribution of the sample of firms for the first dataset of 38 companies is given in Table 1.

**Table 1 Econometric Analysis: Size Distribution of Sample - 1988-90
Dataset (n=38)**

<i>Employee Size Band</i>	<i>Number of Firms</i>	<i>Cumulative Frequency (%)</i>
1-10	21	60
11-25	8	80
26-50	5	90
51-100	2	95
101-200	2	100
n	38	

Source: **Compiled by author**

Table 1 shows that the sample of 38 firms is clearly skewed towards the smallest end of the size distribution. With regard to firm age, 55% (n=21) of firms in the sample were incorporated in the 1980s, with a mean age of 17 years ($\sigma=18$). In terms of location, this sample of firms is fairly equally split between Dundee (n=18, 47%) and the rest of Tayside (n=20, 53%). This sample is skewed towards a few key industrial sectors, with mechanical engineering representing the largest proportion (n=13, 34%), followed by timber and wooden furniture manufacturing (n=6, 16%) and then food manufacturing (n=5, 13%). Together these three sectors represent 63% of the sample.

The size distribution of the second dataset of 30 firms is given in Table 2 below.

**Table 2 Econometric Analysis: Size Distribution of Sample - 1988-89
Dataset (n=30)**

<i>Employee Size Band</i>	<i>Number of Firms</i>	<i>Cumulative Frequency (%)</i>
1-10	14	47
11-25	8	74
26-50	5	91
51-100	1	94
101-200	2	100
n	30	

Source: Compiled by author

The sample of 30 firms reflects the skew towards the smallest firms evident in the sample of 38 firms. With respect to location, the proportionate distribution of firms is identical to that of the first dataset, with 47% (n=14) of firms located in Dundee, and 53% (n=16) located in the rest of Tayside. The age distribution is also very similar, with exactly one half of this sample incorporated in the 1980s, with a mean age of 20 years ($\sigma=19$). This sample is similarly skewed towards the three industrial sectors representing the largest proportions in the sample of 38 firms, with 10 of the 30 firms (33%) operating in the mechanical engineering sector, four operating in food manufacturing (13%) and four in timber and wooden furniture manufacturing (13%). Together these three sectors represent 59% of this second dataset. On the whole, the two samples comprising the two datasets used in the analysis are consistent in terms of their distribution with respect to the key firm-specific variables, and appear to be no substantial differences which could influence the respective analyses for each dataset.

Therefore, compared with the samples used in previous studies by Dobson and Gerrard (1989) and Reid (1993), the sample used in this study is comprised of a wider range of firm sizes, albeit confined to companies and not any other legal business forms. Additionally, the sample here is comprised of established small firms who have survived for a substantial period of time, unlike Reid's sample of firms in their first three years since inception.

The sample also represents location characteristics, which as Chapter 3 demonstrated, display a clear difference between urban and peripheral areas, unlike Dobson and Gerrard's location distribution between city-centre and suburban areas. Overall then, it may be suggested that the sample used in this research represents a more appropriate range of the firm-specific characteristics under investigation than samples used in previous analyses of this nature.

5.4 Results

The results from this analysis have been published in Glancey (1998), which is given in Appendix X (Vol II, pp 91-108). The consideration of the results will begin by considering the single equation OLS estimates for profit and growth models, using both assets and turnover measures, for both datasets, 1988-90 (n=38), and 1988-89 (n=30). Following this, 2SLS estimates will be considered. Variable specifications are given in Chapter 4 (pp 168-69).

5.4.1 OLS Estimates - 1988-90 Dataset

OLS estimates for the profit and growth equations using data for all 38 companies are presented in Equations 1 to 4 in Table 5-1, which is given in Appendix VI (Volume II, pp 44-48). Tables 5-2 to 5-4, which also report results from the econometric analysis, are also contained in Appendix VI.

Beginning with Equations 1 and 2, which report the estimates for profitability and growth equations respectively using the assets measure, no significant results are obtained in the profitability equation. The assets growth equation obtains much stronger results than the profit equation, finding significant coefficients on all of the key independent variables with the exception of ROTA. A positive relationship is identified between SIZE and GRTA, which is significant at the 10% level, so that the larger firms in the sample display the highest rates of assets growth. This finding conflicts with Dobson and Gerrard (1989) and Reid (1993), both of whom who find an insignificant relationship between size and growth, with a negative

sign on the size coefficient.

With regard to the other key independent variables, i.e. LOC and AGE, there is a negative relationship between LOC and GRTA which is significant at the 10% level, and also a negative relationship between AGE and GRTA which is significant at the 1% level. This suggests that those firms based in Dundee, and the youngest firms in the sample, have higher growth rates. The significant negative coefficient on AGE in the growth equation conflicts with Dobson and Gerrard (1989) who find a significant positive relationship, and with Reid (1993) who finds this relationship to be negative but insignificant. Overall then, the assets growth equation provides significant evidence that more capable entrepreneurs, who are more in touch with market conditions, and who are closer to their markets, will display higher rates of assets growth.

The results from OLS estimation of the profit and growth equations are somewhat different, however, if the turnover measure is employed, which is in accord with the experience of Dobson and Gerrard (1989). Results from the relevant equations using the turnover measure are shown in Equation 3 for the profitability equation, and Equation 4 for the turnover growth model. Taking the profitability equation first, the signs on all of the key independent variables are reversed from those obtained using the assets measure. As in Equation 1, however, no coefficients are found to be significant. In the turnover growth equation (Equation 4), the only significant coefficient is on LOC, which is significant at the 10% level. Thus the turnover growth equation also provides evidence in support of urban firms benefitting from being closer to their markets.

5.4.2 OLS Estimates - 1988-89 Dataset

As before, the equations using the assets measure will be considered first, the profit equation is shown in Equation 5, and the growth equation in Equation 6, both of which are given in Table 5-2.

Beginning with the estimates for the profitability equation, Equation 5 shows that like the profitability equations considered previously, no significant coefficients are found for any independent variables, standard errors are large, and the explanatory power of the equation is very weak. The assets growth equation, like Equation 2, is also much stronger than its related profit equation in terms of its explanatory power. As in Equation 2, all coefficients are found to be significant with the exception of ROTA, with the signs on coefficients remaining unchanged. SIZE and LOC are now significant at the 1% level, in addition to AGE, which is significant at the 1% level in both Equation 2 and Equation 6. Thus there is further evidence that larger and younger firms, and those based in Dundee, display higher rates of assets growth. The general conclusions drawn from the consideration of Equation 2 therefore appear to hold for Equation 6, but with stronger evidence.

Turning now to consider the estimates for the 1988-89 data using the turnover measure, the results are presented in Equation 7, which shows the profitability equation, and Equation 8, which shows the growth equation. Both equations are also given in Table 5-2. Beginning with the profit equation, again there are no significant coefficients. In the turnover growth equation there is a significant positive coefficient for SIZE and a significant negative coefficient for AGE, both at the 10% level. The signs on these coefficients remain unchanged from Equation 4. LOC is again significant but this time at the 5% level compared with the 10% level of significance in Equation 4. Thus the conclusions derived from Equation 4 appear to hold for Equation 8 in that larger and younger firms, and those based in Dundee, display higher growth rates of turnover.

5.4.3 2SLS Estimates

Following Dobson and Gerrard (1989), only the single equations with the strongest results from the OLS analysis, in terms of the estimated coefficients, will be considered here. The strongest results are obtained in the growth equations using the assets measure (Equations 2 and 6), which are the only equations found to have significant F-statistics. Dobson and Gerrard also find that their assets-based

equations provide the strongest results in their OLS analysis. Furthermore, the results are stronger for the assets growth model, Equation 6, using the 1988-89 dataset. Therefore this equation, and the associated profit equation using the assets measure (Equation 5), form the simultaneous equations systems reported here. 2SLS estimates were also obtained using the 1988-90 dataset, but these were not substantially different from those reported here (a comparison of 2SLS estimates for both datasets is given in Table 5-4).

Two systems of equations are therefore estimated, using GRTA and ROTA as dependent and independent variables alternately. The results reported below are for GRTA and ROTA simultaneous equation systems using data for 1988-89, with 30 observations. Estimates for the growth system are shown in Equation 9, and for the profit system in Equation 10, both of which are given in Table 5-3.

Taking the 2SLS growth model first, because of the identifying restrictions in this estimation procedure, which were explained in Chapter 4, one of the independent variables has to be omitted from the growth system of equations. This is LOC, the location variable, which is the least significant of the key independent variables in Equation 6. To control fully for sectoral effects, all three sectoral dummies are retained in Equation 9. Using the same reasoning AGE is omitted from the profit equation in Equation 10.

Equation 9 shows that SIZE is the only significant variable in the 2SLS growth system. SIZE is found to be positively related to growth as in Equation 6, but this time only at the 10% level. AGE is still negatively related to growth as it was in Equation 6, but the coefficient is no longer significant. The profit equation, shown in Equation 10, contains no significant variables, and the signs on the coefficients for SIZE, LOC and GRTA are unchanged from the OLS estimates in Equation 5. Therefore, in Equation 9, as in Equation 6, there is significant evidence that smaller firms do not grow as fast as larger firms. It may be that non-pecuniary entrepreneurial motivations related to autonomy over decision making are acting as a constraint on growth, along with lesser managerial ability and poorer commercial

acumen on the part of entrepreneurs in smaller firms. In general then, the findings from the 2SLS analysis of growth and profitability using the assets measure are more consistent with the findings from the OLS analysis here than in the previous study by Dobson and Gerrard (1989), if not any stronger.

The cross-sectional nature of the data, however, may be a limitation on the 2SLS analysis. It may be argued that growth is determined by past profitability, and *vice versa*, so that these explanatory variables should be lagged variables in a time-series analysis. However, the limited timespan of the accounts data used here is such that a time series analysis was not feasible. Thus growth over the periods considered is assumed to be determined by average profitability over the same period, which, despite serving to reduce the effects of year-by-year fluctuations, makes it more difficult for the 2SLS procedure to detect simultaneity. For example, it may be profitability in years previous to the period considered, which is determining growth during the period. Similarly, profitability may be determined by previous growth. Thus the crude nature of the data may account for the poorer results from the 2SLS assets growth equations, while the OLS assets growth equations are significant for both time periods. However, the direction of the key relationships identified in the OLS estimates are reinforced in the 2SLS estimates, which was not the case in the previous study by Dobson and Gerrard (1989).

5.4.4 Key Findings

The key points to emerge from the econometric analysis are therefore as follows.

- (i) The stronger results are obtained from the OLS assets growth equations; with firm size, location and age all significant variables in the determination of assets growth. Larger firms in the sample have significantly higher rates of assets growth in both datasets, while previous studies have generally identified an insignificant relationship with a negative coefficient. A significant positive relationship between size and rate of growth of assets is also found in the 2SLS assets growth estimates, which provides further

support for the importance of firm size as a key determinant of small firm growth. There may be evidence here of larger firms being associated with growth-oriented entrepreneurs. Furthermore, given the greater managerial ability and commercial acumen required in managing a larger workforce, it may be that the entrepreneurs in the larger firms are better able to cope with higher rates of growth.

- (ii) From the OLS estimates it is found that firms based in an urban location display significantly higher rates of assets growth. Thus there is no evidence here to suggest that firms based in Dundee have been less efficient due to disadvantages specifically associated with their urban location. In point of fact, the situation is reversed, so that there must be specific factors which are contributing to the greater inefficiency in the rest of Tayside. It may be that urban firms are benefitting from being closer to their markets and infrastructure.
- (iii) From the OLS estimates it is found that younger firms display significantly higher rates of assets growth. Thus there is no evidence that younger firms are disadvantaged by the greater experience and reputation which is expected to be associated with older firms. Younger firms may be more in touch with market conditions which may explain their superior growth rates, while older firms may have developed routines which are out of touch with market conditions.
- (iv) The only other equations reporting significant OLS estimates are the sales growth equations in both datasets. Firm size is again significantly positively related to growth, which provides further support for the argument that entrepreneurs in larger firms have acquired a critical mass of managerial ability and commercial acumen which fuels higher growth rates. Firm location and age are both significantly negatively related to sales growth as in the assets growth equations. Therefore, the key independent variables SIZE, LOC and AGE are all significantly related to growth in the OLS

estimates regardless of whether the assets or turnover measure is used, with the signs on coefficients remaining consistent. Thus there is strong evidence from the OLS estimates of the growth equations that larger and younger firms which are based in an urban location display higher growth rates.

- (v) No significant results are found in any of the profit equations. However, in terms of the signs on the coefficients, there is a negative association between firm size and profitability in both the OLS and 2SLS estimates of profit equations using the assets measure, which implies that smaller firms are more profitable. However, there is a positive association between profitability and growth, which in addition to the findings from the OLS and 2SLS assets growth equations that larger firms grow faster, implies that there may be other factors at work which are acting as a constraint on the growth of smaller firms. These may relate to non-pecuniary entrepreneurial motivations, in that entrepreneurs in smaller firms are more likely to be motivated by non-pecuniary returns relating to entrepreneurial autonomy, and are less likely to be growth-oriented as a result. As it was suggested in Chapter 2, in smaller firms, profits may represent a source of security to maintain a comfortable lifestyle and autonomy in the workplace rather than a source of fuel for growth beyond the 'comfort' level of firm size. However, as the results from the profitability equations are insignificant, there is no conclusive evidence from this analysis in support of these conjectures. Given the complexity of the relationships between profitability and growth, and profitability and autonomy, it does appear that a qualitative analysis may be more appropriate in seeking to gain an understanding of these relationships. This is the concern of Chapters 6 and 7.

However, the fact that no significant results are found here when profitability is used as a dependent or an independent variable is commonly reported in the econometric literature in this field of study. Despite the rigorous methodological attempts to ensure the validity and consistency of the profit figure used in this study, it is notoriously difficult to gain a true

representation of a firm's profit from published accounts. Additionally, the failure to find any significant determinants of profitability may simply reflect noise in the profit series dominating effects which may exist between variables which cannot be detected in samples of 38 and 30.

While the findings from this econometric study of small firm performance are generally weak, with the exception of the assets growth equations, some differences from previous empirical studies of this nature can be identified, in particular with respect to the impact of firm size on performance. In contrast to previous studies by Dobson and Gerrard (1989) and Reid (1993), it is found here using both OLS and 2SLS estimation methods that larger small firms display better growth performance. On this basis, it may be concluded that small firm growth could be associated with more capable entrepreneurs who are motivated by pecuniary returns, as the interdisciplinary literature suggests, while entrepreneurs in smaller firms are not likely to be growth-oriented.

Therefore, personal variables pertaining to entrepreneurial motivations, objectives and managerial practices may be the key determinants of small firm growth and profitability performance. This is exemplified by the fact that larger firms are found to have higher rates of sales growth, in addition to assets growth. It may be that these firms, as traditional economic theory predicts, are passively responding to increases in demand for their product and expanding the firm to a minimum efficient scale. Alternatively, it may be that the entrepreneurs in these firms are strategically marketing their product thus creating demand, which requires greater commercial acumen and the active pursuit of a growth objective.

Overall, while this analysis is limited to an examination of firm-specific variables, it does provide some limited evidence which suggests that entrepreneurial factors have an important bearing on small firm performance. Thus there is some support for the argument that these factors play a more significant role in the determination of small firm performance than traditional economic theory alone has considered. As noted in Chapters 2 and 4, it is the aim of the second stage of the

study, the qualitative analysis, to build upon the findings from the econometric analysis, by investigating the impact of these entrepreneur-specific influences on small firm performance in greater depth. A discussion of the findings from both econometric and qualitative analyses will be considered from a holistic perspective in Chapter 8.

5.5 Summary

This chapter has considered the results from an econometric analysis of firm-specific determinants of small firm performance. The second stage of the study, which comprises a qualitative analysis of small firm performance, is concerned with investigating in greater depth, the impact of entrepreneur-specific factors. The consideration of the results from the qualitative analysis begins in Chapter 6 with the intra-site analyses of the sample of entrepreneurs who participated in that stage of the analysis.

Chapter 6

Profiles of Small Firm Performance

6.1 Introduction

In this chapter, profiles of the sixteen entrepreneurs, and their firms, who participated in the qualitative study are presented. These profiles are based on the information obtained from the programme of interviews, and from the financial accounts obtained for each company. The use of profiles in this way allows the reader more scope to examine and interpret the 'raw' data before undertaking a comparative analysis, which is the concern of Chapter 7. Furthermore, future research in the field which uses a design similar to that used in this study will be able to compare their results directly with that provided here.

Each profile presented in this chapter is a blend of descriptive material pertaining to the entrepreneur and their firm, their financial performance indicators, and their motivations, objectives and practices since the 'entrepreneurial event', i.e. when the present entrepreneurial activity was first undertaken. The profiles have been constructed so that no specific information is provided which could lead to the identification of individual cases. Accordingly, descriptive figures for employee numbers, total assets and sales are given in size bands. The only specific figures given relate to the entrepreneur's age at time of interview, age at the time of the entrepreneurial event, and the length of time spent in their post. Direct quotations by informants are given whenever appropriate, to allow them to express their views and experiences in their own words. Some informants were more articulate than others, and the distribution of quotations reflects this.

The financial performance indicators are the same as those used in the econometric analysis, although as indicated in Chapter 4, performance is measured over a five year period. Measures of profitability used are therefore, average annual return on total assets 1988-92, and average annual profit margin on sales 1988-92. Measures of growth are, average annual growth of total assets 1988-92, and average annual

growth of sales 1988-92.

The nature of the sample was such that it was skewed towards two particular sectors, mechanical engineering (six cases), and food manufacturing (five cases). Accordingly, the profiles presented below will be grouped into either of these two sectoral headings, or under a general heading of 'other manufacturing firms', for which there are five cases. This is done for reasons of clarity and convenience, rather than attempting to represent a rigorous comparative sectorial analysis.

Descriptive statistics for the 16 firms are presented in Table 6-1, given in Appendix VII (Volume II, pp 49-52). All tables referred to henceforth are also contained in Appendix VII. Table 6-1 shows that, while the sample is skewed towards firms located in the rest of Tayside, a range of firm sizes are represented. With respect to employee numbers at time of interview, it can be seen that 11 of the 16 firms have less than 50 employees, with the majority of those having less than 10 employees. Of the remaining five firms, two have between 100 and 200 employees. Only the five larger firms had total assets and sales in excess of £1m at the time of interview. The profiles will now begin with the entrepreneurs in mechanical engineering firms.

6.2 Mechanical Engineering Firms

The mechanical engineering firms in the sample are mostly at the smallest end of the size distribution, with one clear exception, Firm 3, which had over 100 employees at the time of interview. Firms 2 and 4 are located in Dundee, with the remainder located in the rest of Tayside. Financial performance figures for these six firms are presented in Table 6-2 and summary statistics on key measures of central tendency and dispersion for the five firms are provided in Table 6-5.

6.2.1 Profile: Firm 1 - Mr A

The firm's sole activity is subcontracted precision engineering work. Mr A is 59 years old and is the sole owner of the firm, which he founded at the age of 40. He has had no other business interests.

Mr A has no academic qualifications, however, he does not regard his lack of formal educational attainment to have hindered his career in any way. He believes that education is of secondary importance in engineering, with the most important type of learning being 'hands on' experience. After serving an apprenticeship, Mr A joined a major engineering plant in Dundee, serving several years as a tool-maker, which gave him a training in the more specialist precision engineering field. He had no supervisory experience in this post despite the length of time served. While in this post, Mr A was offered the chance, by a former colleague, to be Works Manager for a newly formed precision engineering company. Mr A accepted this post and spent several years gaining "excellent managerial experience". The company experienced rapid growth during its early years - "we went from nothing to having over 100 employees". Mr A had experienced no difficulties managing a high growth company, believing that "while management was a new ball game, its mainly just down to commonsense".

However, the company was bought out after eight years of trading and after the ninth year Mr A handed in his notice. He was "incompatible with the new managing director". He had, however, planned for six months before to start his own precision engineering firm in the same area. He had experienced no problems instigating the entrepreneurial event, financing the company through a large overdraft raised with the assistance of a solicitor, using his personal insurance policies as security. Mr A did not perceive the move as risky, having already proved his managerial abilities. His primary motivation for starting his own business was needing "more control". The change of ownership in his previous company had triggered a deep rooted dissatisfaction with working as an employee. During the post, Mr A had effectively been in charge of the plant, but his decision making authority had been undermined by the new ownership of the firm. Mr A

believes that "being your own boss", i.e. having both ownership and control is the only way to ensure security, commenting,

"...you have no security in business if you're an employee".

Mr A also noted that the financial rewards are much greater in terms of both level and security because of the greater motivation associated with the entrepreneurial position. Financial rewards are subsidiary, however, to the "personal growth" associated with entrepreneurship.

His primary objective when he started the firm was to "create a company doing a good job", using his previous experience of managing a high growth company. Based on this experience, Mr A had realised that there was a shortage of highly skilled companies in precision engineering, so that it was effectively a niche market. While, the engineering sector was extremely diverse, precision tool making was at the "quality end of the market". Targeting this corner of the market and trading on reputation remained the firm's competitive strategy. The firm had built up a customer base not only locally and nationally, but also overseas. Mr A believes in the importance of the personal touch in attracting business in a demand led market - "being flexible" in meeting customer requirements.

Most of his trade, he believes, is generated through reputation, with the customer contacting the firm, rather than the firm actively seeking out new customers. He stressed the importance of "up front dealings in a cut throat market". Mr A had set out to "recreate the growth pattern" of his previous company, though this growth was expressed in terms of sales. Mr A defined the ultimate size of the company as 15 employees which he had almost achieved, having almost doubled the initial size of the workforce during his stewardship of the firm. He described his operation as "tight and profitable", with a minimal level of white collar staff, who are all involved in the production side too. Mr A indicated that the firm "had never been a high profit company", though in its years of trading it had only made a loss once. Mr A does not regard the "profit motive" as the driving force of his firm,

commenting that personal wealth was not his primary motivation.

Mr A perceives the importance of profit in terms of reinvesting in the firm, so that there is no need to borrow. He indicated that he "was against debt", only ever using hire purchase (HP) when necessary. He is also against using any kind of external advisors. His perception of consultants, having used them on both technical and business matters, is that they are "grossly overpaid and useless". Mr A prefers to "work things out" inside the firm, believing that "you have to be self critical". His attitude to employees is paternalistic. He indicated that he had "never hired and fired", believing that temporary workers would be less loyal and therefore less productive. He had been forced to lay-off two workers in recent years because of "the reality of business", but had subsequently re-employed one of them. He described "punishing good workers" as one of the dissatisfying aspects of his position, though "its different if its a disciplinary matter". Mr A also indicated that he was "happy to delegate" production activities, concentrating solely on administration.

While he trained his own workers and had little labour turnover, he had had many arguments with other employers in the area regarding the demise of apprenticeships, which he perceived would "assist the decimation of the engineering base". Company closures in the area had also created a bad debt problem, but Mr A was philosophical about this, regarding it as "another part of the reality of business". He also believes that general political and economic factors have contributed to the demise of engineering in the UK. He commented,

"We need long term subsidization, not one-off grants, and packages to relocate to certain areas. I've seen companies come and go, looking for regional grants - what good is that? How will that help us compete with the Far East?".

6.2.2 Profile: Firm 2 - Mr B

The firm's sole activity is subcontracted precision engineering work. Mr B is 56 years old and founded the firm at 44 years of age. He is the sole owner of the firm and has had no other business interests.

Mr B left school with no formal qualifications and served an apprenticeship in a large heavy engineering plant in Dundee. He does not believe that college education is important in the engineering sector, indicating that "hands on experience is always the best way". He does, however, think that education is more relevant to light engineering, which is becoming more computerised, though the majority of locally based light engineering firms, he commented, still use "the old ways". In this regard he bemoans the lack of apprenticeships now, with modern college based training geared more towards single task operations, using computerised equipment which is not universally used in the industry. He believes that only time served tradesmen have experience of the whole engineering process, and the firm had experienced recruitment problems because of the shortage of suitably skilled labour in the area.

After completing his apprenticeship, Mr B worked for several large engineering plants in Dundee, laterally becoming trained in precision engineering and eventually gaining a supervisory position in a large plant specialising in precision engineering. He held this post for several years until there was a major restructuring of the company's activities and the plant "was hit by a policy change". After six months "of doing nothing", the plant was closed down, making several hundred tool-makers redundant. No alternative jobs were offered to supervisors, and Mr B, because of union rules, was been unable to work 'hands on' as a tool-maker in his supervisory capacity. He therefore perceived that under the circumstances "there was not much hope of another job".

In those last six months, the job insecurity had led Mr B to consider the reality of founding his own engineering firm, commenting that this "had always been an ambition" but became a reality when he was finally made redundant, his source of

finance being his redundancy money. He perceived the entrepreneurial event as risky given the instability of the engineering sector and the poor economic conditions at the time, though he had no other choice given the circumstances. Mr B had made contacts with contractors outside Tayside during his time as supervisor and negotiated potential work from those contacts in the last few months of his previous employment. All potential contracts, however, were dependent upon the new firm having adequate premises and capital equipment. Mr B approached a development agency, who insisted that he produce a business plan. After doing so, Mr B was offered an industrial unit, which he equipped with machinery obtained on HP.

Mr B did not believe that he had a business objective as such at the time, other than to "earn a weekly wage". He had given no thought as to whether the venture was long or short term. Mr B was 'surprised' by the success of the firm, perceiving success in terms of survival rather than growth. He was not motivated by profit and earnings, his objectives have always been "survival and a comfortable livelihood". While he is satisfied with the current size and performance of the firm, he remarked that "in the early days there was a temptation to expand". The firm had expanded in terms of assets and employees, having to move into the present larger premises, but Mr B had cut back on the workforce when it had reached "unmanageable numbers", which in his opinion were 11 or more employees.

He stated that at those levels, in a small unit, employees became less productive through talking to each other, and, "an us and them" atmosphere had begun to develop. Mr B commented that this attitude developed from "the workers and not the management", but had soured his experience of employee management. This had led him to become more involved in the production side, whereas from the onset his role had been mainly supervisory, preferring to concentrate on the administrative side. Consequently, he cut the workforce to its original level, which represents half of the highest level attained during his stewardship of the firm.

Mr B commented that "it would take a hell of a carrot" to consider expanding the

firm's operations now, especially as the firm is entirely self-financed through retained profit and no problems have ever been encountered in obtaining work. No attempts are made to actively seek new customers, with quality and reputation being the key components of the firm's competitive strategy. Mr B explained that the customer portfolio is "a flow rather than a constant base", though, "at times its easy to swallowed up by one customer". This latter point had led Mr B to move towards a policy of accepting smaller, easily manageable projects in order to diversify the portfolio of customers at any one time. The firm does work for companies outside Tayside, through contacts made by Mr B in his last employment and through recommendations. The firm has no long term debt and Mr B is not favourably disposed towards external advisors, whom he described as "just talking shop" and, "pointing out the obvious". He had sought business advice from local agencies in the early days of the venture, but did not believe that this was vital to the survival of the firm.

Mr B believes that there have been no major constraints on the firm's activities other than a few minor cash flow problems, which he described as "part of the business". It was impossible to operate without extended trade credit so that late payment by one firm was passed along the line. The firm had experienced some difficulties in the past in obtaining suitably skilled labour, to prevent the need to undertake training, though this was not a problem at present. Mr B was overall optimistic about the future of the engineering sector in Tayside. He explained that the sector had undergone restructuring with the demise of the large scale, heavy engineering plants to smaller plants undertaking more highly skilled work, for which there is an adequate level of demand to ensure survival. He commented,

"There is good potential for the survival of small firms like us. Only the dubious ones fail".

6.2.3 Profile: Firm 3 - Mr C

The firm's sole activity is subcontracted precision engineering work. Mr C is 64 years old and the sole owner of the firm, which was founded by his father. He was 36 years of age when he took control of the firm following his father's retirement. He has had no other business interests. His father had previously founded a firm which served as a subcontractor to a subsidiary of a multinational company located in the area. When the subsidiary closed, his father sold the firm and after a short break founded the present firm, arranging several major contracts in advance.

Mr C attended medical school, completing four years of a six year course before realising that he did not wish to become a doctor. He left medical school to work for his father's firm, though he had no formal engineering qualifications. He commented that 'hands on' experience was the best way of learning the engineering trade, though now there is a bigger role for education given the shift towards precision engineering. He believes though that "a degree opens the first door and then they start to learn the trade". Two of his sons presently employed in the firm are graduate engineers.

After his father's first firm was sold, Mr C took up a managerial appointment with the multinational company to whom the firm had been subcontractor. However, he knew that this was a "temporary arrangement" while his father was making preparations for founding the new firm. Mr C had "always wanted to work for the family firm" and had never considered any other employment opportunities since leaving medical school. When the entrepreneurial event was instigated, Mr C believed he was fully prepared to take over ownership and control of the firm. He had worked in all aspects of the firm, and had held a senior managerial post with the multinational company, so that "there were no skills lacking". The firm was already well established and highly profitable so that no problems were encountered when Mr C took over its stewardship.

Mr C regards the most satisfying aspect of the entrepreneurial position as being "to keep a lot of guys in work" and he commented on the importance and excellence

of the engineering base in the area. Producing "high quality specialist products" is another of his motivating factors. Mr C regards the pursuit of honesty, integrity and excellence to be synonymous with the reputation of his family. He is strongly motivated by perpetuating the reputation which had been built up by his father, and which he intends to hand on to his sons. He was dismissive of selling the firm for an attractive offer. He commented,

"This is a very profitable company. I could pick up the phone and sell it tomorrow if I wanted to. I wouldn't even consider it, money isn't everything".

Mr C was satisfied with the firm's performance in terms of both profit and growth. Employee numbers had almost doubled during the course of his stewardship. The firm had established a strong reputation and had built up a loyal customer base. While he was satisfied with the present size of the firm, Mr C believes that "you can never stand still in business". His attitude to profit is that "you can take what the market can afford, or you can make your own market". The firm invests continuously in new technology and is involved in collaborative research and development projects with both UK and US universities. Mr C commented, "If you do the job right, the profits will come", though, "they're not top of my list of objectives".

Mr C believes that the firm has cornered a niche market which is difficult to expand other than by exporting heavily. His competitive strategy is "a reputation for a quality product at a competitive price", which was achieved through "running a tight, efficient and competitive company". Although the firm is entirely self-financed, Mr C has no objections to borrowing, commenting that "we've just never had to". He believes that forward planning has given the firm the edge in the market. He operates a three year plan, with investment, production and marketing all geared to achieve the objectives of the plan, whether developing a new product, or exporting to a new market. Mr C commented that "whatever the objective, we've always achieved it". Though the firm does not have a sales team, Mr C indicated

that "we've got BS5750 accreditation and I'll jump on a plane and visit any potential customer, anywhere". Mr C had also produced a brochure of the firm's activities and attended trade gatherings to seek out potential customers, though "they usually look us up".

Mr C is heavily involved in all aspects of the firm's administration from day-to-day management, finance and quotations to longer term planning and research and development. He described his approach as "very much hands-on" and though he is not actively involved in the production side, he described himself as a "trouble shooter", dealing with problems which his supervisors could not solve. He is keen to delegate tasks, though all supervisors in the firm are family members. However, he stressed that they had attained the posts on merit and not through nepotism. Although Mr C is "not averse to using outside help" on the research and development side, he is "not impressed" with business consultants, though he made it clear that he was referring to private sector consultants rather than public sector.

Mr C had employed consultants to help the firm gain BS5750 accreditation, which was "necessary if you're a subcontractor", though he believes that the firm could have done it without any assistance, commenting "if consultants are so good, why aren't they in business themselves". However he has had only good experiences with local development agencies, whom he believes "would pull out all the stops to help you". Mr C indicated that the firm was a member of several trade associations and local commercial associations.

Mr C saw no constraints on the firm's activities and commented that the recession had not really affected the firm due to its heavy export base. No problems had been encountered in obtaining skilled labour and the firm had a strong policy of training "good people", which was necessary because of the highly specialized nature of its activities.

6.2.4 Profile: Firm 4 - Mr D

The firm's main activity is subcontracted light engineering, though larger scale heavy engineering projects are also undertaken. Mr D is 51 years old and the sole owner of the firm, which he founded at the age of 40. Mr D did have other business interests at one time, in the form of shareholdings, but these had failed and he had made a large loss on his investment, indicating that he "wouldn't consider it again".

Mr D has no formal educational qualifications, having served an apprenticeship in a shipyard after leaving school, remaining in the ship yards for the duration of his working life before the entrepreneurial event. In the three years previous to the event he had been employed as a foreman in a large engineering plant which specialised in ship repair. However, this plant had closed when the owners had relocated its operations, making Mr D redundant. At the time, he did not believe that there were any other job opportunities available, and was "forced to start his own business in order to earn a living". He did not, however, perceive the venture as risky at the time, believing that there were good opportunities for small engineering firms to specialize in ship repair. His considerable knowledge of the industry and the network of contacts he had made over the years "gave the business a running start", the finance being provided from his redundancy package. However, he had no ambitions for the firm in terms of growth and profitability, his goal for the business was survival.

Initially, Mr D's wife undertook all of the administration, and he commented that he had relied heavily on his accountant for advice, as he "had no commercial acumen". His accountant advised on the implementation of formal financial management systems, which Mr D's wife was in charge of implementing, while he was primarily concerned with production. Initially, he landed a few contracts through his contacts, but the firm's customer base quickly grew. This increase in demand led Mr D to expand the firm's operations rapidly and seek larger premises to accommodate the growing workforce and stock of capital equipment. The firm's workforce has quadrupled during the course of his stewardship. Mr D commented

on the importance of learning by experience in engineering, which could only be done through serving an apprenticeship. He is not impressed with college education and would not consider employing any engineer who was not time served. He also remarked that he would encourage further training for "any man with good potential".

Commenting on the success of the firm in terms of growth and profitability, he indicated,

"It just happened. The jobs got bigger and we just branched out. We have always been profitable".

The firm's success was attributable to growing demand for its work and Mr D had been reactive in the face of his growing customer base. The only problem he had encountered in the early days of the venture was his own ability to manage not just the production side of the firm but also to make "business decisions". He commented,

"There's no manual telling you how to be a managing director. You just have to learn by doing, and by making mistakes".

He indicated though, that it was very much his wife who is in charge of the day to day administration, his function in the administration side of the business is in contract negotiation, which he finds stressful and consequently not as rewarding as hands-on operative work. He commented that he still derives the greatest satisfaction from working on the shopfloor with the men. However, he is now unable to do as much hands-on work as he would like due to ill-health and his role on the shopfloor is largely as a foreman. Ill-health had forced him to delegate more, but he still prefers to oversee the workshop because "I don't like the men to be careless". He indicated that his reputation had been built on the quality of the work undertaken, and he didn't trust the workforce to come up to his own high standards unless he was there to push them on.

Mr D indicated that the financial rewards from his firm are much greater than from his previous employment, however, he is not primarily motivated by financial gain, explaining that his motivations are more personal. He expressed these in terms of "surviving when many go down", and "a sense of achievement". Another satisfying aspect of the entrepreneurial position for him, is being able to "help men in employment". His attitude to his workforce is paternalistic and he has always been reluctant to lay-off men, having never employed temporary workers. Throughout his stewardship of the firm there had been little staff turnover.

Mr D indicated that his competitive strategy was based on "building a reputation", which had been rewarded by "customers coming to us". He made no active attempt to seek out new customers, explaining that he "turned down nothing" that was offered to him. His customer base is diverse, ranging from very small scale precision engineering work for local companies, to larger scale projects for multinational companies with plants located in Scotland. The nature of the work undertaken had changed over the years away from heavy engineering such as ship repair, to more light engineering work such as components manufacture. This had been largely determined, however, by the nature of the contracts offered, rather than by a conscious strategy to target the growing light engineering sector instead of the declining heavy engineering sector. He indicated that the firm attained BS5750 accreditation on its own initiative, which is a prerequisite to attract the larger contracts.

He has no plans to expand the business beyond its current size, in any respect. He is satisfied with the size of the workforce, which he described as "still manageable", and taking on more contracts would require larger premises and more capital equipment. He indicated that this would require some borrowing, which he was opposed to, preferring to be entirely self financed through retained profit. He remarked "I don't like too many overheads". In addition, "there would be more hassle with admin". He commented that he was "no manager", and "was not interested in office work". Further expansion would require a more active role in the administration side on his part, which he had no intention of doing. He also

indicated that he would have no qualms about selling the firm if offered the right price.

He commented that although he does not mind working the long hours required, his motivation has "waned through time". He is not positive about external sources of advice or finance. At the start of the venture he had approached a development agency for grant aid, but had been refused. Finance, however, had never been a constraint on the firm's development. Mr D explained that the current constraints on the firm's activities were entirely internally imposed. He has no ambition to expand the firm's activities and his objective now is to maintain the firm's profitability at its present level.

6.2.5 Profile: Firm 5 - Mr E

The firm's sole activity is subcontracted light engineering work. Mr E is 54 years old and took over the firm at the age of 42. The firm had previously traded for thirty years and was owned by two partners who had appointed Mr E as a manager, and Mr E bought out the firm when they retired. He has no other current business interests, but has had controlling interests in two other engineering firms in the past few years, which he sold at a profit. He is presently considering a number of other possible investment opportunities.

Mr E served an apprenticeship in a large engineering plant in Glasgow, and indicated that he had "not been motivated by study", preferring to get 'hands on' experience in his chosen career, though his brothers had gone on to university to study engineering. However, he did not consider that college education was important in the engineering profession. While he had experienced no problem obtaining time served men in the past, he commented that now firms were "being forced to take on college trained workers" due a shortage of apprenticeships. After Mr E had served his time as an apprentice, he worked with several large engineering plants in the Glasgow area, gradually moving up the managerial ladder. His last two posts before the entrepreneurial event were as Plant Manager, the most

senior managerial post in an engineering plant.

In his last post he had moved from Glasgow to Tayside, though soon after he did so the plant was closed down by the owners. He indicated that this event had been a major surprise to everyone employed at the plant, and that he had led a management team attempting a buy-out of the plant, believing that it was economically viable and had been closed "for the wrong reasons". However, he had not intended to stay with the management buy-out, preferring to accept an offer made by the previous owners of his present firm, having known the partners for a number of years. His experience of working for large employers had been soured by the events which led to the plant's closure.

However, he soon realised that the firm "was going downhill" though this was largely due to the partners both being near retirement age and experiencing ill-health. At the time he had no ownership stake and in attempt to salvage the firm he organized the appointment of a trustee, with the help of a development agency. He used his own personal capital to buy joint ownership of the firm along with the agency, subsequently buying out their equity. He indicated that doing so had "cost me dearly", though he was strongly motivated to possess 100% ownership of the firm. Prior to the entrepreneurial event he had not seriously considered "being my own boss", though he believed at the time that "bosses get big bucks, but they deserve it". Managing his own firm had reinforced this conviction. He remarked, "the men get paid whether the contracts come in or not", and, "I have the hassle of bringing in the work, their jobs are down to me".

Being an employer though, was one of his greatest satisfactions with the entrepreneurial position. His attitude to his workforce is paternalistic and he indicated that most were long term employees, with the only cutbacks in the workforce occurring through natural wastage and not redundancy. He indicated that the recent recession had hit the engineering sector hard in the area, though he hoped to expand the workforce again once the contracts coming in started to increase. The firm's workforce is less than a half of its original level. Closures of

previous customers had caused a bad debt problem, and consequently, cash flow difficulties.

Although Mr E was firm in his conviction that 'bosses' deserve good financial rewards, these have never been his primary motivation. He indicated, however, that the financial rewards had been much better than those from any of his previous employment, though they were counterbalanced by the "hassle of being your own boss". Additionally, he commented that "you only need so much of a salary to survive". His primary motivation for instigating the entrepreneurial event, which had not changed subsequently, was to gain autonomy and control over decision making. While he indicated that he would have no hesitation in selling the firm for an attractive offer, he would undoubtedly start another firm rather than retire, and he would not consider working for another employer. He stressed the intrinsic satisfactions gained from the entrepreneurial position such as "knowing you can do it", and "being able to achieve something". While he acknowledges that "knowing that the buck stops here" is one of the dissatisfying aspects, he remarked,

"I would rather make my own decisions, rightly or wrongly".

When employed as a manager by the previous owners of the firm he had been given a good deal of autonomy over decision making, although he was still accountable to the owners, a situation which he did not like. His primary objective at the start of the entrepreneurial event was "to build a successful business and a well known company".

This objective was orientated towards expanding the turnover of the firm, which had grown to his satisfaction, and the firm had always been profitable in the years of his stewardship. His attitude to growth, however, was that it largely depended on extraneous factors such as the state of the economy, and the general level of demand for engineering. He indicated that the current recession had "been really sore", though he had survived by "cutting the cloth". Profitability levels had fallen to unsatisfactory levels in the past two years, though he was optimistic about

recovering if he could ensure the survival of the firm.

Declining profitability had meant that the firm's operations could not be entirely self financed, which was his preferred option, and he had forced to take on an overdraft. His attitude to borrowing is very negative and he indicated that he only used overdraft facilities to provide working capital, when necessary, and would not consider a term loan. The current poor financial situation had also led him to formalize his plans for expanding the firm in the future. He indicated that he has set turnover targets and planned an efficiency programme to increase the profitability levels of the firm back to acceptable levels. He commented, "now we've got to cut the cloth according to the means". He believes that the constraints on the firm's activities are entirely externally imposed. He had been reactive to a particularly hard hitting recession.

His competitive strategy has always been based on product quality and reputation, he commented,

"We're not price cutters and we're certainly not the cheapest firm in the area".

Most of his "diverse customer base" is composed of long term customers. He commented "they come back to us because of the quality of the work". Most of the customer base is local, though the firm occasionally undertakes contracts out of Tayside. He has recently started to advertise in nationally circulated trade journals to reach a wider market, previously having relied on local reputation and some advertising in local newspapers. He indicated that he was now solely involved in the administrative aspects of the firm, undertaking the sales and marketing functions on a more serious basis as part of his plan to expand turnover. One of his employees was the 'works director', with responsibility for managing the day- to-day operations. Mr E indicated that he had no objections at all to delegating this side of the business "as long as the work was done". The firm had used no external agencies for advice other than accountancy and law firms and Mr E indicated that

he always acted on their advice in financial management and contract negotiation.

6.2.6 Profile: Firm 6 - Mr F

The firm's sole activity is agricultural machinery production. Mr F is 60 years old and the sole owner of the firm, which he founded at 19 years of age. He currently has no other business interests, though had once purchased an English firm to provide a distribution outlet. This venture failed due to lack of custom, which Mr F attributed to English customers having perceived difficulties in obtaining parts and service, when the parent company was located in Scotland.

Mr F indicated that he has never been interested in 'textbook study', preferring to join the family limespreading business after leaving school with no qualifications. This involved working with tractors, and gave Mr F 'hands on' experience of the maintenance of the vehicles. While he has no formal training as an engineer, he believes himself to have a 'natural acumen' for engineering. Consequently, he decided to branch out into the design and manufacture of tractors, obtaining the present premises in the early 1950s, using it as the headquarters for the family firm, which his brother concentrated on after their father retired, with Mr F taking sole responsibility for the tractor business, which began with no employees.

While he indicated that his designs were 'market leaders' and he was acknowledged as an expert in the field, he was still defensive about his credibility, having had no formal education or training. Mr F stressed how innovative his designs are, commenting that it is the design side which has always given him the greatest pleasure from the business, and was his primary motivation for starting the firm, which had remained unchanged. He was dismissive of the profit motive in business, and the pursuit of financial reward, commenting that "the profit side didn't come into the decision". He had seen the need for a purpose designed tractor and had pursued this for the sake of producing it, rather than for the profit potential of filling this need. He was scornful of small businesses who were motivated by profit and commented,

"People who try to become millionaires in three years are charging too much. I suppose I'm a bit of a socialist".

His objectives for the firm on its inception were to develop the product as far as possible, to provide him with the intrinsic satisfactions of invention and innovation. His financial motivation has always been restricted to "earning a livelihood". His objectives had not changed through the years. He indicated that the firm had primarily traded on its reputation for the majority of its life, and that it subsequently supplied a "very small niche market", though vehicles were sold nationwide. The firm has always relied heavily on repeat business and Mr F commented that, "a lot of people don't even know we produce these vehicles". While he had developed a large network of contacts through trading nationally, and through attending trade shows he indicated that,

"At times I lose trace of the market. I'm too involved in design".

While he is responsible for all the administrative functions in the firm, he is still heavily involved in production. While he believes that he has "always worked on the principal of delegating as much as possible", he is solely responsible for the development of a design from start to finish. This includes writing the considerable technical documentation for customer use. He commented,

"Nobody else does it as well, I want to see an idea followed through to the end, not picked up and developed by other people".

In recent years he had cut the workforce down to a 'skeletal' number, which represents a third of its highest number, in order to ensure the firm's survival. However, he indicated that the firm had always had a high turnover of labour, commenting, "maybe I'm impossible to work with". He explained that due to his 'inept' management of the firm, he had been forced at several points during his stewardship to adopt a more "business-like approach". While he had never been primarily concerned with the profitability of the firm, he commented that this had

been "stupidity".

Whereas before Mr F had relied on the firm's reputation in order to attract customers, he had recently employed a firm of public relations consultants to design a new 'corporate logo' for the firm and publicity brochures. He commented that their input "was a waste of time", and that he had subsequently produced his own publicity material. He had also recently negotiated a contract with an English company who were now marketing the firm's products in England, indicating that to ensure its survival, the firm has "got to find new customers". Whereas before the firm had been reactive to demand for its products, it was now having to be more proactive.

The current drive to be more market-orientated had arisen from "profound financial troubles", which had accrued due to his poor management of the firm, and which he believes had been compounded by the current recession. The firm only produced a few vehicles per year to order. The low volume meant that the firm could not buy components in bulk and therefore had to pay virtually retail prices. The high cost base and low volume meant that the price 'had' to be high, though Mr F was reticent about pricing the product correctly; his perception being that increasing the price would cut demand, even though he operates in a "small niche market", with advance orders. He commented:

"I suppose I subconsciously try to cut the price lower than I should, margins are less than they could be".

He believes that he could treble the sales of the product if he sold through agents, but was reluctant to do this because the product was "too specialized" and he perceives that agents would not be able to service the vehicles to the correct standard. Therefore the quality of the products in the eyes of the customers would diminish and repeat business would tail off. Reluctance to sell through agents was also the factor inhibiting the firm from exporting its products.

While the small volume of production was a constraint on performance, Mr F indicated that he has no plans to expand the firm. He commented:

"How do you know if the increase in business can be sustained? I'm only interested in long term sustained business",

"Increasing output for short term profit doesn't interest me. You can't miss what you don't have".

The firm had never been profitable enough to be self financed, and had been forced to rely heavily on trade credit, a situation which Mr F found unsatisfactory.

Although he had received grant aid from development agencies in the past to develop his designs, he considered their "short termist attitude unreasonable and no good", indicating that they wanted immediate results, while products took time to develop. He was not generally impressed with government initiatives to develop the small firm sector and commented,

"Most small businesses don't want handouts, you can't plan ahead based on handouts. You don't know if you'll get them from one year to the next".

6.3 Food Manufacturing Firms

All but one of the five food manufacturing firms are located in the rest of Tayside, with the only Dundee-based firm being Firm 10. These five firms are generally larger than the mechanical engineering, and other manufacturing, firms, with only one, Firm 9, employing less than 10 workers at the time of interview, and three of the other four all employing more than 50 employees. Firm 11 represents the largest, with over 100 employees. Financial performance figures for these five firms are given in Table 6-3, with summary statistics contained in Table 6-6.

6.3.1 Profile: Firm 7 - Mr G

The firm's sole activity is food manufacturing. Mr G is 44 years old, and the sole owner of the firm, having taken over ownership of the firm at 34 years of age. The firm was previously owned by his brother to whom the firm was handed down by his father and grandfather. Mr G has had no other business interests.

Mr G gained a City and Guilds in Catering from a technical college after leaving school and in his first employment attended college on a day release basis, gaining an advanced City and Guilds. In subsequent posts he had gained several other further catering qualifications, indicating that the reason for advancing his professional education to a high level was to further his career. While he regards education as important, however, he commented "its not everything", and that, "you have to have practical skills too".

On leaving college Mr G took up a position as apprentice chef with a prestigious Edinburgh hotel, taking a year out to travel around Europe gaining experience in continental kitchens. After completing his apprenticeship, he remained with the hotel as Head Chef in one of its restaurants, eventually leaving to become Head Chef in a smaller restaurant in Edinburgh. He then took up a post as Head Chef with a large hotel in Tayside. This post was significant in Mr G's career, in that whereas previously he had been largely concerned with the quality of the cooking, this position gave him experience of budgeting. He commented,

"It was there that I learned the importance of profit margins".

In addition to this post Mr G lectured part-time at a local technical college, eventually leaving the hotel to become a full-time lecturer. It was during this post that he gained part-time experience of managing his own firm by undertaking outside catering contracts. He regarded the financial rewards from this activity as "a healthy supplement to my teaching income".

Mr G entered into entrepreneurship full-time through chance rather than design. He

indicated that it was "family commitments" which forced him to bail out the failing family business. The circumstances were that his brother had taken over control of the firm and had made some critical errors of judgement, resulting in the firm being put in the hands of receivers. Mr G had "felt obliged to rescue the firm" and had bought over the firm from the receivers. The main problem he faced in doing this was that no bank was willing to lend to him as he had no references. He therefore employed an accountant to make up a cash flow projection, and on this basis one bank extended him an overdraft, which in addition to his healthy personal capital base allowed him to buy out the firm. However, for the next year he kept his teaching job as he viewed the prospect of going into the business full-time as too risky. He then realised that this was an opportunity to extend his business ambitions, which had proved to be successful, and to earn more substantial financial rewards.

His primary business objectives at the start were "to expand sales, improve productivity and improve product quality". He believes that "profit is everything in business", perceiving the importance of profit in terms of both internal finance, and personal financial reward, the latter of which he regards as a strong motivating factor. However, he did not regard expansion as a primary objective now, rather it was survival that was the most pressing issue, although sales were still expanding steadily in the firm's core local markets. His attitude to expansion had changed during the course of his stewardship of the firm. He commented,

"Expansion can be more trouble than its worth...as my turnover has increased, profit margins have been cut, what you gain in one respect you lose in another".

Employee numbers had also grown rapidly during his stewardship of the firm, increasing more than three times. Commenting on his change of heart regarding expansion, he indicated a failed attempt to expand the business into a new 'custom-made' premises. The reasons given for this were the unreasonable interest terms imposed on the loan by the bank, which made the loan too risky.

His perception of risk was due to the general state of the economy. While local markets had weathered the recession well, there was no guarantee that this situation would persist. He indicated that the firm was financed solely by equity and retained profits, the reason being to keep control over the firm and to reduce the risks of trading. In addition to the failed attempt to expand the firm, he commented on the "headaches" caused by too rapid expansion, i.e. the extra administration. Before, he used to be able to do the accounts on a weekly basis himself, but now the accounts were all computerised and he only saw the annual figures to get an indication of the firm's financial performance. He commented,

"I used to have an overall picture in my head of how the company was doing, which I don't have any more".

Mr G considered the most satisfying aspect of entrepreneurship as having more control over his future, but this was tempered by,

"...the loneliness of being your own boss. You can feel isolated when you've got no-one to bounce ideas off".

Overall, he believes entrepreneurship is preferable to working for an employer, though he would not hesitate to sell the firm if presented with an attractive offer and is not sure if he would found another firm. Mr G has no direct involvement in production activities, preferring to 'guide' production rather than take a hands-on approach. He undertakes all of the administration work and the product development function. He indicated that he constantly tries to develop new products, which is the basis of his competitive strategy, rather than price-cutting. He regards the firm as operating in the "quality end of the market", and the prices reflect this. His attitude to managing employees is paternalistic. He commented:

"I think of the ideas and then try to convince them (the employees) that it was really theirs (with respect to product development)",

"You've got to get on with your workers, the business is their job as well as yours. Its important to get their loyalty".

He has no problem with delegating production activities, but prefers to do all of the administration "in order to keep control over the company". He has no qualms about seeking external business advice, indicating that his accountant is his primary source of advice. The firm had received a company audit and a marketing grant from development agencies during his stewardship. With regard to external finance however, he views lenders as a threat to his autonomy, commenting that "they'd have a stake in your company". Mr G saw no pressing constraints on the firm's performance, but emphasised that he wished to steady the company's growth to gain more control over administration. The risk of recession hitting the local economy had postponed his plans for further expansion.

6.3.2 Profile: Firm 8 - Mr H

The firm's sole activity is food manufacturing. Mr H is 56 years old and is the fifth generation owner/manager of the family firm. He is the majority owner of the firm, and nearly all of his immediate family work for the firm in managerial roles. Mr H took over control of the firm when he was 32 years of age has had no other business interests.

After leaving school, Mr H read Business French at university, which he indicated was for "business purposes" rather than for educational reasons, commenting that "the business was starting to export to France". He started working for the firm when he was still attending high school, and subsequently university. On leaving university he joined the firm full-time, working for several years initially as a lorry driver. He commented that this experience was invaluable in building up a network of contacts. He has worked for the company for the majority of his adult life, apart from a short commission in the armed forces, working in every aspect of the firm's

operations in order to gain 'hands-on' experience. Mr H commented,

"I've a lot of control over the business because I've done it all, and more".

The entrepreneurial event was instigated when his father retired, although he commented,

"You don't really "take over" a family business. Whoever has most business acumen takes charge, but the whole family are still involved - you can't make decisions without thinking about them".

His primary motivation has always been to perpetuate the firm, which he describes as "a family tradition", though he is unsure what will happen to the firm when he retires, believing the decision to be his sons'. He believes that the best way to ensure business survival is to expand into new markets, thus increasing profitability. In this regard he commented, "profit is all important", and, "you can't stay still in business, you've got to keep ahead". He stressed the importance of spotting gaps in the market rather than following trends, indicating that product development is soundly based on market research. In order to maintain a profitable and growing firm, he believes it is necessary to forecast trends properly and his approach to forecasting is based on, "judgement, gut feeling and experience". To this end he had targeted the "quality end" of the market, particularly on the export side. He strongly believes that, "reputation and quality open a lot of markets".

This was evident in the his latest export venture in which the firm had just secured a major contract to supply 'gourmet' products to a prestigious French retailer. While the firm has always had a strong export base, he described a failed venture into the Spanish market, in which the firm lost out through bad debt. He described this as "a painful experience", the result of which was more thorough research and a tougher line with the customer. This was evident in the French venture in which the French customer had twice forced the firm to cut their price, and after a third attempt to drive the price down further, Mr H had called the deal off. After

thinking that the deal had been lost, the French firm later accepted his price.

The overall result of the "upmarket strategy" was to restructure the company's turnover figure, from being composed of high volume and low value, to low volume and high value. He commented,

"We'll really see the benefit of the last five years in the future. I forecast that both sales and profits will increase in the next five years".

Mr H believes in forward planning, as part of his current expansion programme he had invested in new capital equipment, the aim which was to internalize the supply chain as far as possible. This expansion strategy is based on borrowing, which he has no problem with, citing the advantages of gearing, though he indicated that his accountant sometimes questioned the riskiness of his plans. He commented,

"Before I've finished one project, I start another. Its the only way to do business, you have to keep ahead of the game - I think I've done it well".

Related to diversification, he also indicated his preference for achieving a diversified customer portfolio, commenting that, "its easy to get lost in the demands of just one customer". However, he indicated that his objective of expanding the company is not now with regard to employee numbers. During his stewardship of the firm, employee numbers have almost doubled to a level which he still regards as manageable.

Mr H indicated that he is completely satisfied with his entrepreneurial status, and commented,

"I've no regrets. People often ask me if I could have worked for someone else; I could, if someone above me had superior knowledge I would have no problem".

In this regard, he referred to his time in the armed forces, when taking orders was part of military discipline. He commented that he does not like people "with a chip on their shoulder", believing that,

"No matter what your goal is, its attitude that matters, not circumstances".

Mr H regards the most dissatisfying aspect of the entrepreneurial position as having less security, manifested through variability in salary, indicating that financial rewards had always reflected the firm's profitability. However, he regards the negative aspects of entrepreneurial status as being of minor importance. He had taken over what was already a well established company, and had made it even more successful and the firm's export drive had recently been rewarded by the winning an export award.

Mr H's main functions in the firm are in sales and marketing, though he also has 'hands on' involvement with product and process development, overseeing a 'design team', comprising of external consultants. He has a personal touch to relationships with suppliers and customers, indicating that, "I like to foster good relations, it gives me the edge". His approach is based on honesty and integrity, and, "honouring gentlemen's agreements". While in the trade it was common practice to switch orders for the purpose of expediency, he indicated that it was "not my way of doing business".

His approach to employee management is to delegate responsibility to family members. He has no problem with delegation "as long as people were doing their job properly". Another factor contributing to good family relations in the firm, he indicated, is to "keep the family informed". He indicated that he is heavily involved in local trade and commercial associations, commenting that "business is my hobby". Mr H perceives there to be no internal or external constraints on the firm's performance and he commented,

"We've weathered the recession by diversifying".

6.3.3 Profile: Firm 9 - Mr J

The firm's sole activity is food manufacturing. Mr J is 43 years old and founded the firm at the age of 36. Until three months before the interview he was the sole owner of the firm but he had sold the firm to a food manufacturing group. He had been retained as company manager on a three year contract and is solely responsible for the strategic management of the firm, though he now has no ownership stake in the firm. He has had no other business interests.

Mr J is highly educated and professionally qualified. He graduated in civil engineering and then trained as a professional civil engineer with a major engineering group, qualifying both as a Chartered Engineer and a Chartered Surveyor. He held several senior managerial posts on various contracts before taking up a post overseas as a development manager on a major engineering project. After ten years of working abroad, Mr J and his wife decided to return to Scotland. On their return, Mr G was unable to find a suitably senior post, commenting, "the only jobs at my level were in London", though he wanted to stay in Scotland. He explained that "working abroad you're given a huge amount of responsibility" and Mr J was not willing to accept a position in Scotland, though still financially rewarding, which would be commensurate with less autonomy and status. Mr J decided then to found his own company, though he was not certain in what line of activity, having a vague idea about producing a specialist organic food product. This was based on an idea proposed by his wife who had some experience of the product from a business run by her father. Mr J decided to study for an Master of Business Administration degree to prepare and plan more fully for the proposed venture.

After completing the degree, which he described as "invaluable business experience", he had planned what he believed was a sound venture. By adding value to what was already a product with a niche market he believed he would further segment the market for the product. At the same time, there would be no need to incur the costs of manufacturing the basic product. Mr J commented

"Everything was becoming environmentally friendly, I believed there was a growing market for organic products".

Mr J applied textbook competitive strategy to target a market in which there was very little competition and growing opportunities; he had identified only two other direct competitors in the UK. His primary objective at the start of the venture was to "expand the company as far as possible", with a view to selling the company at some time in the future. Mr J prepared a business plan, on the basis of which he was given premises in by a development agency, along with a term loan to purchase capital equipment, choosing to locate in Tayside because his wife's family originate from the area. However, his main source of capital for the new venture was debt raised using his house as collateral, which he perceived as being risky, though a strong motivating factor. He commented, "You know you have to succeed when your house is on the line".

Mr J negotiated contracts with two leading supermarket chains, which for the first year of trading, were his sole customers, of which one accounted for 80% of sales. After the first year, the company suffered a serious crisis when this customer withdrew its order. Mr J commented, "the business almost went down but it was a lesson". He had believed that supplying the supermarkets was the best way of reaching a wide range of consumers, rather than attempting to negotiate contracts with a large number of small retail outlets. One of the advantages of supplying supermarkets on their own labels, he indicated, was that "there was no need to market the product at the retail end". Therefore costs were not incurred through design of labels, packaging, etc. However, he realised that he had relied too heavily on a narrow customer base and in subsequent years had taken action to diversify his customer base, which he described as now being "a flow of customers rather than a base". His main customers were still mainly supermarket chains, though in addition to the major national chains, he had also targeted the smaller franchise and regional chains.

In order to supply some of the smaller retailers, he had to design and produce the

firm's own label, for which purpose he employed the services of a design consultant. He had also encountered problems with obtaining a constant supply of the base product and had therefore decided to change his strategy and produce this in-house. This required capital investment and the employment of a specialist in the field of food technology. This investment ate heavily into the firm's funds, which Mr J described as "a major problem", though it was essential because "you can never stand still in business". The investment was also financed primarily through debt because of the poor profit performance of the firm, though retained profit was a "secondary source of finance when available". Mr J was more concerned with expanding the company as quickly as possible than with establishing high levels of profitability.

Mr J had been single minded in the pursuit of his long term objective to expand the firm and was not concerned by the short term performance of the firm, other than to ensure its survival. He indicated that he took minimal director's expenses from the firm and that financial reward was not a motivation for founding and developing the firm. He described the most satisfying aspects of the entrepreneurial position as being to have "autonomy and control over decision making". Mr J derived a great deal of personal satisfaction in developing the firm to a level where it could be sold as a going concern with good potential for development. Along the way, he had encountered problems in the sales, marketing and production sides but had quickly adapted the firm's activities to solve these problems. He indicated that although he employed the services of specialists and consultants "wherever possible", he was still very much involved in all aspects of the firm's operations, though his main input was in the marketing and product development sides of the business. Mr J was also very knowledgeable about the technical aspects of food production, upon which he commented, "I picked it up as I went along". He regarded being kept on as the firm's manager as proof of his all-round managerial abilities.

Since the takeover, the firm had been relieved of its financial constraints and he was now seeking to expand the firm into new premises with larger production and

storage facilities. He commented "I took the business as far as I could go", and his plan now was to continue the expansion of the firm in terms of assets, sales and employment, the employment level previously having remained unchanged. The firm had begun to export into Europe in the latter years of his ownership, but the export potential was now much greater given the greater financial resources available. Mr H did not think that poor economic conditions had affected the firm's performance during his stewardship because of the product's specialist nature.

6.3.4 Profile Firm 10 - Mr K

The firm's sole activity is food manufacturing. Mr K is 46 years old and is the Chief Executive of the firm, in which he has a minority shareholding. He took control of the firm when it was bought out by his previous employers. The firm had previously been founded and run by a local businessman in the early 1980's, but had been run down and was almost bankrupt. Mr K's employers at the time, who were based outside Tayside, had decided that "it was a good buy" and had acquired the firm before it went into the hands of receivers. Mr K was appointed as the Chief Executive of the new entity when he was 41 years old. Mr K indicated that the firm was bought out because it was in the same line of production, was situated in an enterprise zone, and was an inexpensive purchase.

Mr K is from a farming family and is a graduate in Agriculture. After completing a farm management training scheme, he gained employment as production manager for a food company, and was subsequently offered a development management post with a small agricultural marketing co-operative in Scotland, moving from England. He accepted the post, which gave him experience of the whole supply chain. Instead of regarding vegetables as a commodity, as most farmers do, he indicated that he became more interested in their marketing as a product. This post gave him a thorough knowledge of the production chain, which he commented "makes me sympathetic to production practices and changes in production techniques". He indicated that he often now pursues capital investment programmes to update the firm's production processes, often against his accountant's advice.

He remained with the co-operative, eventually becoming an executive director until it bought out the present firm in Dundee and he was appointed as Chief Executive. He indicated that the co-operative had been forced to incorporate in order to expand its activities and to get guaranteed prices for its products. Before the acquisition, the Dundee firm had been run down into operating with a third of its normal turnover and Mr described the firm at the time as "a small firm with a large firm's structure". The management functions were clearly divided and it was relatively easy for Mr K to delegate responsibility for the major functional areas of the business. He indicated that he has no interest in the day-to-day operations of the firm and is happy to delegate these to the appropriate managers.

His involvement in the firm is largely on the sales and marketing side, and liaising with the product development team. He explained that he was basically a farmer who had "learned about business through experience". His interest in marketing, provoked by working for the cooperative, means that he has a heavy involvement in all aspects of the firm's marketing strategy, being principally involved 'hands on' in the planning and development of packaging, and product promotion. He is reluctant to delegate decision making in these functions, and he commented,

"I like to make the right decisions and everyone else to make the wrong ones".

His attitude to staff is 'professional' and while he has no qualms about laying-off people, he is concerned with "the social effects of business decisions", such as creating unemployment. He has implemented staff training programmes, which encourage staff to pursue internal promotion to supervisory operative positions, with the aim of obtaining a more content and productive workforce. With regard to his managerial team, he commented "I hope I stand far enough back to allow the managers to get some satisfaction from their job", though he has no qualms about vetoing "silly decisions". He indicated that he had he had sacked managerial employees for not meeting performance targets.

Mr K described the most satisfying aspect of the entrepreneurial position as,

"When I get management accounts which show figures ahead of budget".

He indicated that his objectives from the start of the venture had been to maximize the financial performance of the firm, not only to make the firm as efficient and profitable as possible to satisfy the shareholders, but also,

"To build a successful independent food company and expand through diversification".

The firm had gone from an initial loss making position into profit, and had doubled its turnover. He indicated that this rapid growth had been achieved with "a tight grip on finance, not overtrading" and he now planned further expansion, not only in turnover but also in assets and employment. Employee numbers had increased by a quarter during his stewardship. Mr K derived a great deal of satisfaction from the management of the firm's finances, commenting that his bankers had complemented him on the firm's cash management. He is satisfied with the firm's financial performance to date and indicated that he has no objections to either external finance or sources of advice. The firm had borrowed heavily to invest in new projects, and had used the services of consultants to advise on the technical aspects of food production, and to set up training programmes and incentive schemes for both operative and managerial staff.

Mr K also referred to the advice he was able to receive from the other executive and non-executive directors, commenting that he was "not as isolated as other small businessmen are". He commented that most small businesses lack a network of contacts due to the reclusive and autocratic management style of the owner-manager. He indicated that he would have no qualms about overseeing the sale of the firm, or alternatively in seeking an outside equity stake. He regards himself as aloof from the firm, with his intrinsic rewards expressed in terms of managerial esteem.

Mr K indicated that the firm had weathered the recession through diversifying its activities into niche markets. Rather than targeting the quality end of the market, the firm had gone in the opposite direction and had targeted the market for cheap budget food. Profit margins were small in this market due to the low price of the products, so that Mr K's concern was with reducing the cost base of the firm through increasing efficiency and productivity. He indicated that gross margins had been cut in other product lines due to increasing costs, without being able to increase price due to greater competition. He is optimistic about the firm's future and its ability to achieve his plans for expansion. Turnover in the budget products had increased as economic conditions had worsened, and the firm also supplied a wide range of private label customers such as supermarket chains.

He indicated that most of the firm's products are distributed in England, and that the retail customers had confidence in the "whole team", by which he meant the product, the facilities, the management, workforce and the distribution network. This also gives him a great deal of satisfaction and it is one of his objectives to maintain the firm's standards in the eyes of the large retail customers. He does not believe that the firm faces any constraints on its activities, commenting that this was down to the careful management of the firm. Additionally, operating in niche markets and trading nationally had protected the firm from the effects of recession.

6.3.5 Profile: Firm 11 - Mr L

The firm's sole activity is food manufacturing. Mr L is 60 years old, and equal part-owner of the firm, which was founded last century. His family has a long association with the firm, though he indicated that "this is not a family business". Mr L is the Chief Executive, with specific responsibility for sales. One of the other partners is responsible for the technical aspects of production (possessing a PhD), and the other partner is responsible for financial management. Mr L has had no other 'serious' business interests in terms of investments, but has acted in an advisory capacity to other businesses. He is also a member of a trade association, though indicated that he is not presently an office bearer, commenting "I'm one of

yesterday's men".

Mr L read economics at university after completing national service. Although his father had been an army officer, he indicated that he found national service "not much good for anything" in terms of self-development. He commented that his degree had been a 'suitable' preparation for entering the firm as a management trainee, which he did immediately after graduating. He has remained with the firm since, with no spells of alternative employment. His position as management trainee entailed spending periods of time in all the managerial functions to obtain "a good working knowledge of the business".

Mr L indicated that the firm at that time had no Chief Executive, commenting that "things just evolved", with regard to strategic decision-making. At the age of 37, 'things evolved' so that Mr L assumed the role of Chief Executive, with responsibility for the longer term planning and direction of the firm's activities, rather than the day-to-day management. He indicated that his managerial training and wide range of experience in the firm's operations had prepared him well for this position. Mr L believes that he had displayed the greatest business acumen in the management team and was happy to take on the role. Mr L described his objectives at the start of his stewardship as being

"To maintain the most profitable lines, and very little else".

Mr L did not mention growth at all as an objective, and it became clear that the firm's competitive strategy was based on its 'heritage' and reputation as a 'foremost' supplier of its product in Scotland. Mr L indicated that "there had been a most tremendous revolution" in the trade, with the product having previously been a luxury good, though now it is mass produced and no longer a luxury. The firm is no longer a major producer, though it played a major part in the revolution which turned the product into a mass produced good.

Mr L indicated that in the 1960s the firm had undertaken a substantial research and

development programme to develop mass production of the product. During this time, and in the period since, the firm had liaised closely with university departments on the technical aspects of production. He indicated, however, that the firm had never employed the services of any consultants on the marketing or financial side of the business. Mr L was somewhat disdainful of the concept of marketing and commented that "there is no niche market for our product", believing that the product is essentially a commodity which cannot be turned into a marketable product. Mr L indicated that the firm had pioneered the mass production of its product, but could not keep the processes a secret, and therefore effectively signalled the opportunities to other producers. The firm had received substantial grant aid to develop the techniques, which had been awarded on the basis of the firm's reputation as the market leader. However, once the techniques were seized upon by other producers, the firm was quickly pushed off its perch.

Mr L indicated that the supply of its product had become extremely volatile as a consequence and that the firm was effectively at the mercy of the market. He outlined the model of perfect competition in describing the supply situation, in that the "price of the product was outwith the control of the producer". Mass production and increased supply to the market had lowered the price significantly in the years following the innovation so that the price could not cover the firm's costs of production. The firm had consistently made large losses, though was able to survive by "living off its fat", referring to the large reserves which it had accumulated as a market leader. Mr L believes that the firm had survived because the loyalty of its employees and its customers, which had been maintained by the firm's reputation and history, which was international, reflecting its strong export base.

Mr L's attitude to the employees is paternalistic and he indicated that most employees were long term and several generations of them had worked for the firm. Employee numbers had remained stable during his stewardship of the firm. However, he commented that reputation and heritage were not enough to "stay afloat in fast changing world", and Mr L had been forced in recent years to adopt a

more 'businesslike' approach to the management of the firm. This entailed implementing a self-financed investment programme aimed at increasing the efficiency of the firm, thus reducing the cost base. He believes that the firm is now one of the most efficient producers in the market. His objective now is to improve the profitability of the firm by diversifying into secondary markets, which entails adding value to the core product. While he did not believe that these markets were large at present, they would grow in the future, and that the idea of diversification was "worth exploring", despite his reluctance to consider any form of marketing in the past.

However, he also intended to improve the marketability of the firm by stressing its reputation as a leading producer based on 150 years of experience. While small scale production of the firm's core product, using traditional techniques, was no longer economically viable, he planned to preserve this activity by developing a heritage centre for visitors. He believed that this would be "a good sales pitch", though it was clear that he was intent on preserving this activity as the 'quality' side of the firm's business. This was in preference to making a complete concession to mass production. Although Mr L had overseen the development of the mass production process, he indicated that he was more concerned with its development for "science's sake" rather than for "business reasons". He perceives that the firm had to a large extent been the victim of its own success.

Mr L stressed the importance of maintaining the firm's historical reputation for excellence. He considered that the firm had been profitable in the past because of the quality of its product and its reputation, which had created a loyal customer base. Mr L was dismissive of financial gain as a motivation for being in business, he preferred to stress its heritage and achievements. While he indicated that general trading conditions had had a very detrimental affect on the firm's performance, which had not been helped by the recession, he did not believe that there were any internal constraints. He commented

"We rarely come across a problem we can't solve".

6.4 Other Manufacturing Firms

This category represents the remaining five of the 16 firms, and is comprised of a miscellaneous range of manufacturing activities, namely: Firm 12, a furniture manufacturer; Firms 13 and 16, both textiles manufacturers; Firm 14, a commercial printer; Firm 15, a healthcare product manufacturer. All but Firm 16 have less than 10 employees at the time of interview, and of the five, Firms 14 and 15 are located in Dundee. The financial performance indicators for these firms are given in Table 6-4, with summary statistics provided in Table 6-7.

6.4.1 Profile: Firm 12 - Mr M

The firm's main activity is furniture manufacture. Mr M is 56 years old and is the majority owner of the firm, with his son as the other director. He bought over the company from receivers at the age of 38 and has had no other business interests.

Mr M emigrated to Scotland after the second world war, having received only "basic schooling" in his home country. Soon after arriving in Scotland he attended evening classes in order to gain university entry qualifications. He then read Mathematics at university, graduating in the late 1950s. Mr M's son is also a graduate, having read Forestry and Mr M has strong views about the importance of education, commenting that, "an education gives you a better chance."

Mr M had various casual jobs between arriving in Scotland and attending university. After graduating, he worked for a major Edinburgh brewery as a mathematician and remained with the company until the entrepreneurial event. He held several senior posts and his last post before leaving the company was Systems Manager, which involved heading a team of statisticians responsible for mathematical simulations of the company's operations. While in this post he had a failed attempt at a part-time data-processing business. The reason given for the failure of the venture was a lack of demand for the service in the Edinburgh area at the time.

Mr M instigated the entrepreneurial event after having worked for many years in secure and highly paid employment. He had accumulated substantial personal capital, and his wife also had a highly paid job. Mr M indicated that he had easy access to company information in Edinburgh and had looked for a "good buy", having planned to become self-employed for four or five years previous to the event. This turned out to be a failed sawmill business in Tayside. No problems had been encountered in buying over the firm from receivers, with the capital being provided mostly from personal savings, though a small grant was obtained from a development agency. His motivation for instigating the entrepreneurial event was a dissatisfaction with his previous employment. He commented,

"I had gone as high as I could, and I saw a lot of my colleagues being moved sideways, but not up the way. I wanted some control over where I was going, more stability".

Financial rewards were not a consideration and Mr M indicated that the financial rewards have never been near the same level as those from his previous employment. He had no experience of manufacturing furniture prior to the event, but the firm came with a sizeable house in a scenic location and his wife was also able to transfer employment to the area, thus providing some financial stability to the venture. He commented that, "my wife is the breadwinner". A steady income along with no external borrowing reduced the risk of the venture, though Mr M indicated that, "I wasn't sure if I would be any good at the job". However, he was sure that this was going to be a long term venture.

Mr M described his primary business objective, which had remained unchanged since inception as being

"...just to make enough money to keep ticking over".

However, he currently has plans for "steady expansion on the mass production side". A second workshop on the premises had recently been equipped with

secondhand machinery to this end. The expansion of the firm was being financed out of a small profit, and working capital. On the importance of profit, however, he commented,

"Profit is nice but it isn't the main factor, its a bonus".

He indicated that his plans were aimed at handing the firm onto his son, which was a much more important consideration than financial reward, and that he was winding down his involvement in the firm. Mr M stressed that the sole reason for instigating the entrepreneurial event was to gain more control over his life, which arose from a dissatisfaction with being an employee. The firm is a livelihood, with the role of profits and growth being to ensure the continuance of the firm, so that his son may take over, rather than to provide substantial financial reward. Mr M regards entrepreneurial status as, "more fulfilling", and, "less stressful".

Mr M described his main function in the firm as administrative, taking care of the financial and commercial side of the firm. His son is responsible for the high volume production side of the firm and Mr M commented that "things really took off when my son joined the firm after graduating". On the production side, Mr M undertakes custom-made, craftsman jobs and restoration work. While he undertakes the 'office jobs', given his considerable managerial and numerical expertise, he still feels the need for hands-on work. This need is not directed at the financially important but routine mass production activities, but specialist one-off craftsman jobs.

The company has one major customer whom Mr M described as "helping to keep the place going". In addition to this customer, the company supplies specialist products to customers all over the UK. He indicated that his competitive strategy is based solely on reputation and referral and that he made no effort to seek out new customers. With respect to external finance, he indicated that he had no objection to leasing assets or taking them on HP, but did not want to borrow from banks. He had made a recent approach to a development agency but had found them "too

bureaucratic", and had refused a proposed loan which he felt "had too high interest and unrealistic conditions". He also commented that, "I'd feel as though I was indebted to them". He preferred to be self-financed in order to retain control of the firm. He had never sought advice or information from any external parties. His attitude to employees was clearly paternalistic, he talked at length about the hobbies and interests of his employees and there was a convivial atmosphere about the firm. Employee numbers have remained unchanged during his stewardship, with most being long term.

Regarding constraints on the firm's activities, Mr M described trading conditions as, "slow and competitive". Trade had fallen over the past few years. The contract with the major customer, and the good relations with existing customers throughout the country had helped to stabilize trading and Mr M commented "it could have been a lot tougher". His main concern was to perpetuate the firm in order to hand it onto his son, and what the son did with the firm (sell, expand, maintain at present level of activity), was entirely up to him.

6.4.2 Profile: Firm 13 - Mr N

The firm's sole activity is textiles manufacture. Mr N is 46 years old and is the sole owner of the firm. He founded the firm at the age of 36, through a management buy-out of a plant owned by his previous employers. He has had no other business interests. His family has a strong self-employment background, with the previous three generations of his family owning and managing a family firm which was also in the textile business.

Mr N is educated to graduate level, having taken a Diploma in Management and Business Studies at college. He commented that this qualification had provided a valuable basis for his ensuing business career, though it had been supplemented heavily by knowledge acquired through 'hands-on' experience. His attitude to education is very positive and he is supportive of the growth in business education in the higher education sector, as a sound general introduction to business.

After graduating, Mr N joined the family textile firm, gaining experience in all aspects of the business, eventually settling into the role of sales director. He remained with the firm for several years until his father sold out to a major textile company. The company retained the services of Mr N, though relocated him to another of their subsidiaries, where he remained in the position of sales manager. After two years, the holding company indicated that they intended to run down the subsidiary and Mr N was asked to preside over the streamlining, and at the same time was allowed to act as an overseas agent for other Scottish textile companies. Mr N indicated that this experience was invaluable in building up a network of contacts,

After the streamlining, the holding company indicated that they intended to sell off the subsidiary, and offered it as a management buy-out to Mr N. However, they gave only one month's notice before the firm's impending closure. Mr N felt that he had no option other than to accept the offer though he perceived it as being risky given "family considerations". His motivation for instigating the entrepreneurial event was "necessity", having perceived that alternative employment opportunities in the area were not good. He had not previously considered starting his own firm and indicated that he had no other goals at the start of the venture other than "to make it work", which entailed ensuring the firm's survival in the short term, and providing a livelihood. His accountant assisted him in putting together a financial package to buy out the subsidiary, which consisted largely of long term bank loans. He indicated that he has no objections against borrowing, and has subsequently obtained an additional term loan from a development agency. He commented that "the borrowing requirement will never decrease" given his long term plan to expand the firm which will require constant investment.

His primary objective at the start of the venture was "to make the company more efficient", which was aimed at increasing the volume of production gradually and expanding the turnover of the firm in the longer term. He commented

"The potential was there for a high quality element in the market, but the market has tight margins, therefore the price has to be right".

Consequently, by improving the efficiency of production, and operating with minimal overheads and as small a workforce as possible, Mr N hoped to achieve his objective of maintaining the profitability of the company while gradually expanding turnover. The workforce inherited from the subsidiary had been cut to a third of its original level during his stewardship. His substantial experience of the textile industry had taught him that,

"There's no such thing as an overnight success. The secret is stability and gradual expansion".

He indicated that the family firm had expanded too rapidly and subsequently experienced difficulties through overtrading. This experience had made him "learn the hard way". His objectives had not changed during his stewardship of the firm, it had taken several years to "get the gross margin right" and to "establish volume consistent with turnover". He had increased profitability by clearing out the least profitable lines and concentrating on the most viable in terms of production and sales. The turnover of the firm was now at the same level as when it was most successful as a subsidiary, though the product base was narrower and the customer base wider.

Mr N indicated that his motivations have always been largely personal rather than financial, commenting, "I don't look on financial rewards as the be all and end all". However, he is satisfied with the level of financial rewards thus far, though they had provided "a comfortable rather than extravagant living". He commented,

"The way of life is more important for me. Its been a very interesting experience".

However, he noted that the downside to the entrepreneurial position is the level of

commitment required, which impacts on family life, though he had tried to minimize this as far as possible. However, the years had taken their toll, and Mr N commented

"I have the experience and knowledge, but not the same drive or energy".

With regard to selling the firm, he indicated that this was dependent on whether his family wished to perpetuate the firm as a family business. Mr N commented though, that if the decision was entirely his own, "I don't think I would hesitate to sell it", and he was sure that he would never work for another employer, and would only consider self-employment as an alternative.

His competitive strategy had been carefully planned since the start of the venture. He described the nature of the market the firm operates in as a "highly specialized corner of the textile trade". Additionally, high product quality was a necessity to even survive in the market. Subsequently his strategy at the start of the venture was to "enter the market at a competitive price and gradually build up the quality of the product base". His gradual approach to increasing volume has successfully led to increases in both profitability and turnover and the present strategy is "more of the same". The firm also has a strong export base, a factor which had prompted Mr N to computerise the firm's administration activities, which he believes had facilitated the expansion of turnover.

Mr N is responsible for all the managerial functions. His vast experience of the trade and considerable managerial experience had equipped him well for the entrepreneurial position. He commented,

"I know what we can sell and what we can produce. I know what the potential is, the business is there, we have to find it".

He believes that the firm is now in a good position, as only the "strongest firms" in the market had survived the recession. The "next big jump in turnover" was

dependent on more marketing, and to reach the demand for the product he planned to undertake more advertising and publicity. His marketing strategy in the past had been to personally visit customers, though he had not been able to do this in recent years, having had to devote all of his time to the day-to-day management of the firm. He indicated that this was the biggest internal constraint on the firm's activities, and that "we really need another body", to take over the financial management of the firm in particular, which he indicated takes up most of his time. However, although he had no involvement in production side of the firm, he was reluctant to delegate any of the managerial functions. He commented

"Delegation only works if you have the right people. Its very difficult to delegate, having done it all yourself to begin with".

However, he believes that he is going to be forced to delegate managerial duties in the future. However, he has no problems with seeking external advice, having used several development agencies for this purpose. While reluctance to employ and delegate was the firm's biggest internal constraint, Mr N also perceives external constraints on the firm's activities, in terms of the general decline of the textile industry in the UK. He commented,

"Trade is run down, the industry has been hammered over the years. Textiles led the industrial revolution but it's one sector with very little government protection or support. There's now little capacity and a scramble to get additional production".

6.4.3 Profile: Firm 14 - Mr P

The firm's sole activity is subcontracted commercial printing. Mr P is 40 years old and is the sole owner of the firm. He founded that firm at 35 years of age and has had no other business interests.

Mr P left school with Ordinary grade qualifications and joined a large printing firm

in Perthshire as an apprentice. He qualified as a time served printer with a City and Guilds qualification and was subsequently employed in several large printing firms in Tayside, indicating that moving around firms was "the done thing" in the printing trade in Tayside at the time, when there was always demand for skilled tradesmen. However, Mr P indicated that when he was 30 years old, he had become disillusioned with the lack of promotion opportunities into supervisory and managerial positions.

While he had always worked long hours and was keen to do well in his job and progress into more senior positions, his effort had not rewarded in this respect. He consequently decided to study for an Higher National Certificate in Printing and Technical Production by open learning, having believed that this would enhance his promotion prospects. He indicated that the Higher National Certificate was the most important aspect of his education and training, more so than his apprenticeship, which he regards as "a good grounding". He believes that apprenticeships are important for obtaining the basic craft skills, but college based course are more appropriate for managerial positions. He indicated that the Higher National Certificate had been a vital factor in giving him the confidence to eventually found his own firm.

Passing the Higher National Certificate obtained the desired result for Mr P, and he was rewarded with a job as an assistant production manager with another large printing firm in Dundee. However, he soon discovered that even in a managerial position he had little autonomy over "making important decisions", which he found "intensely frustrating". Moreover, he perceived that the 'real' decision makers, namely the Board of Directors, were not trained printers and had no real idea about the technical side of the business, and some of their decisions did not accord with Mr P's idea of how the production side of the firm should be managed. He commented,

"There was nothing special about the Directors. I felt that I could do their job, but they couldn't have done mine".

Based on this perception he decided to set up his own firm. His original intention had been to resign and offer to buy-out the production division of the firm for which he had managerial responsibility. However, when he tendered his resignation and made this proposal, the firm offered to set him up on his own, providing the capital equipment, with additional finance for working capital. This was in return for undertaking a substantial amount of the work for which his division was responsible, on a subcontracted basis.

This offer served to reduce his perception of the risk involved in instigating the entrepreneurial event. He indicated that he would have had to borrow heavily to finance the buy-out deal, and though he was willing to do so, this had been a major concern. He also received assistance with finding premises from a development agency. It is the autonomy over decision making that was and still is his strongest motivation, though he indicated that financial rewards had also been a consideration, but to a lesser extent. The actual rewards from entrepreneurship have been "about the same", though he was not disappointed with this, perceiving the importance of financial rewards more as "getting the rewards for your own efforts". He had no ambitions to pursue high levels of profit, and indicated that he was satisfied with earning enough profit to "make a good living". He indicated that before the entrepreneurial event he had not considered the option of buying a high street franchise, even though they tended, on the whole to be very profitable, because of the poorer quality of the work undertaken. He was not willing to compromise the standard of his work for financial gain.

He indicated that while he was dissatisfied with not being able to spend as much time as he would like with his family, they had been very supportive of the venture and his son was about to leave school and join the firm as an apprentice printer. Mr P has ambitions to pass the business onto his son. He indicated that he would not consider selling the firm because of this ambition, commenting that if even if he were to sell, he would not consider working for another employer but would undoubtedly start up another firm.

His primary objective on the inception of the firm was "to expand the business a little bit", and this had not changed during the course of his stewardship. He explained that the nature of the printing industry was such that there were very small firms and very large firms, with nothing in between. He explained that in the "less technological" sector of the industry, a 'large' firm would be around 10 employees, and only in the much larger scale, technologically advanced sector, would firms employ hundreds of workers. He had spent his working career in the latter sector, indicating that the smaller scale sector essentially operated in a different market. Mr P's ambition was to compete in the smaller scale sector, and to expand up to 10 employees which he regarded as a suitable number "to run a tight ship". He commented "the bigger you are, the more hassle you get". He had almost achieved this target, having doubled the original number of employees in the firm.

However, he indicated that the firm had a high turnover of labour, mainly because most workers employed were not tradesmen and failed to come up to his standards. He indicated that the demise of apprenticeships had caused a shortage of skilled labour in the area. He explained that his expansion plans are constrained by both the nature of the industry and by his desire to retain control and avoid the 'hassle' of running a larger firm. While he had tried to delegate responsibility for production, to allow more time for administration, he indicated that he had to be heavily involved in production because of the labour problem. His main goal now is to be financed solely through retained profit, which was aimed at continuing the firm's investment plan without the risk of taking on long term debt. The firm's investment programme provides the basis for its competitive strategy, and Mr P believes it necessary to continuously update technical equipment to ensure that the quality of the service is maintained. He commented "I don't regard investment as a cost".

His competitive strategy is to aim at a niche market for high quality commercial printing work which the high street franchises were not capable of competing in. Additionally, because of Mr P's technical expertise and the equipment owned, the firm was able to take on smaller batch contracts which were not pursued by the

larger scale firms. The firm has also undertaken work outside of Tayside, though Mr P has no plans to extend the firm's geographical markets. He believes that the firm had "not really started from scratch" in attracting customers, having taken over the existing customer base of his previous employers, and having built up a network of trade contacts. Mr P indicated that he did a little advertising locally to attract new customers, though he believes that most were attracted by the firm's reputation. He indicated that bad debt had been a major problem for the firm and Mr P commented that "trying to get money out of people" was his worst managerial task. This problem was largely caused by debtors closing down, though he believes that the firm "had weathered the storm", and is positive about its future prospects.

6.4.4 Profile: Firm 15 - Mr Q

The firm's sole activity is the manufacture of healthcare products. Mr Q is 65 years old and the sole owner of the firm which he founded at 48 years of age. He has no other current business interests but at one time he was a partner in a joint venture in the same product area with a university academic. However, this had not worked out and he sold out his interest in the firm to his partner.

Mr Q is a graduate and a qualified healthcare professional, having trained in a variety of disciplines. He has a positive attitude towards higher education, which served as the gateway for his professional ambitions. After his extensive training he practised as healthcare professional for over 20 years, though at the same time he designed and manufactured healthcare products "as a hobby". These products, which were manufactured on an *ad hoc* basis, eventually "grew in popularity", and Mr Q realised their potential to the profession. Consequently, he founded the firm, which was initially managed by his son (who was not a healthcare professional) while he maintained his practice. However, he changed his surgery hours to part-time so that he could spend more time on product development, describing his role in the firm as "an inventor". After nearly ten years of trading, Mr Q gave up his practice to take over full-time management of the firm. The firm had encountered

serious technical difficulties on the production side, and his son was unable to cope. Mr Q had no qualms about taking over control of the firm from his son as he had "never considered starting the business to pass it on".

Although Mr Q had been led to found the firm to an extent by increasing demand for his specialist products, his primary motivation was more personal. He commented, "I've always wanted to have my own business". This motivation, he commented, had been "my driving force from my teenage years". The firm gave him an opportunity to further express this ambition, initially with the safety net of his continuing part-time healthcare practice. Financial gain, however, was not a motivating factor. He considered "making products to benefit patients" to be more important than profit. When he took over control of the firm, Mr Q found managing a manufacturing business difficult. He commented:

"I had no business experience, though you simply learn by doing",

"When you are an inventor, you'll always face problems. People are only interested in large scale production".

Mr Q indicated that access to suitable levels of finance had always been a constraint on increasing production, with the main source of finance being personal equity, with working capital financed through overdrafts. Mr Q made it clear, however, that he had no growth objective other than to expand the product range gradually. He commented that he is "not motivated by growth", which he associates with "losing control of my product range". His primary objective, which had remained unchanged was "to produce quality products". His definition of quality is closely tied to the fact that he only designs and produces in natural materials rather than cheaper synthetic materials. Mr Q was adamant that his unique designs required the best materials. He explained that there are also technical difficulties associated with the use of natural materials in the production process. Consequently, Mr Q had been forced to develop his own production equipment due to the fact that there was none commercially available.

He indicated that the firm's financial performance had been consistently poor and that while in the past he had not been concerned about the costs and efficiency, in the last two years he had been forced to make a serious attempt to get the firm into better shape. His lack of business acumen and lack of interest in the commercial side of the firm, combined with his product obsession, had run the firm down to the extent that "our heads are barely above water". A prolonged period of ill-health, and family pressures, had also had an impact on the firm's performance during his stewardship, the long hours he worked had eventually taken their toll on his health and his marriage.

He had recently set targets for turnover, which was now at its highest level, and was considering expanding his workforce, which had remained unchanged, if the growth in turnover could be sustained. The change of heart regarding business practice had also served to revise Mr Q's attitude to product development. He commented,

"Before, I made things because they were needed. Now I'm more commercially orientated".

Consistently poor financial performance had forced Mr Q to adopt a more customer focused approach to innovation, whereas before he was primarily concerned with developing products for which he hoped there would be a demand. The new drive towards commercial viability, however, was still not aimed at high levels of profitability, rather it was to ensure the survival of the firm. He remarked "money is still not my primary motivation, its a bonus".

Mr Q indicated that an overseas firm had recently made him an attractive offer to relocate the firm, and still retain management, however, he had declined the offer believing that he would have lost control over product development. Mr Q indicated that although he is now more commercially aware, his involvement in the management of the firm is still very much on the innovation and design side. While he is unwilling to delegate any product development related tasks, he has no

problems delegating other managerial functions. After his period of ill-health, he had employed a full-time company secretary to look after the finance and general administration. Mr Q indicated that the secretary had made a substantial difference to the firm's operations, commenting that previously he had "bungled" his way through administrative duties.

He perceives the market for his products as a "highly specialized niche market", and that the firm had no direct competition. However, the market for the firm's products was small compared to other markets for healthcare products, although a substantial part of the firm's turnover was accounted for by exports. The firm sold through distributors, so Mr Q undertook no direct selling and he indicated that he made little effort to seek new custom, undertaking a little advertising in trade journals. Although he has no plans to undertake more marketing, he had been forced to revise his product range as part of the recent rationalization of the firm's activities. He indicated that the firm had too many products and that he was planning to concentrate on increasing the sales of the few products which were most viable. He also believes that production could be more efficient, but commented "you can't do everything".

Mr Q has no objection to using external sources of advice on the product development side, having collaborated with academics from several Scottish universities. However, he had not used any source of business advice other than his accountant, with his positive attitude to external consultants being solely directed at technical advisors. He is not favourably disposed to using external finance, with personal capital and retained profit being the firm's main sources of finance. He has never used a term loan, and when in overdraft, made every effort to pay it off as soon as possible. A lack of finance, however, was the biggest constraint on the firm's activities. Mr Q was developing a new product and had applied for a SMART award but had failed to win it. He still planned to develop the product, but this would involve rationalizing some of the firm's other activities rather than borrowing to invest. He was confident that the new product would be a success, but still perceived success in terms of the product's usefulness to the profession,

and not in financial gain. He did not believe that the recession had affected the domestic market for his products due to their exclusive nature.

6.4.5 Profile: Firm 16 - Mr R

The firm's sole activity is textiles manufacture. Mr R is 39 years old and is the second generation owner-manager of the family firm which he joined at the age of 32 and took control of at 35. He has recently obtained controlling interests in two other firms in Tayside, in the same line of production.

After gaining Higher grades from school, Mr R trained as an officer in the armed forces, and while he has no formal academic education above high school level, he indicated that the educational side of officer training "was of university standard". After completing officer training, he accepted a short commission, commenting that the most valuable aspect of this experience was to develop his man-management skills. After leaving the armed forces, Mr R took up a post as graduate trainee with a major conglomerate, indicating that he "wanted to learn about business and not go straight into management".

The trainee post involved working on all aspects of the commercial side of the business and after 18 months working at various locations throughout the UK, he was moved to an overseas subsidiary in a managerial capacity. After completing the training programme, Mr R joined the family firm as a sales representative, rather than as a manager, the purpose of which was "to get to know the business". Mr R worked in this capacity for the three years before he assumed control of the firm. He indicated that from the onset of his career, his work experiences had been tailored towards taking over the reins of the family firm.

Mr R took control of the firm on his father's retirement, confident in his abilities to manage the firm successfully. His primary objective was "to make the company as profitable as possible" and the strategy to achieve this end was expansion through diversification, moving the company away from primarily local markets into

national markets. Additionally, he sought to "develop the business with exclusive products", thus targeting niche markets. This strategy was initially successful, but then the firm started overtrading. Mr R indicated that rapidly increasing turnover had been achieved through cutting prices, while margins had been already been adversely affected by rising costs.

The firm's turnover doubled over the first four years of Mr R's stewardship, however, the firm's overheads had increased sharply as new premises had been acquired in England as distribution depots, and these costs had decimated profit levels. Additional problems were experienced during the period because of inadequate funding levels and cash-flow difficulties, both of which Mr R attributed to bad advice by the firm's accountants. These financial problems had only recently come to the fore when the firm was faced with the threat of a takeover, which he fended off. However, Mr R indicated that with regard to selling the firm for the 'right' price. He commented,

"I would certainly consider it, I've no plans to pass the business on".

The firm's main source of finance has been retained profit, plus a small overdraft, though Mr R has no objection to term loans in principle as long as the level of equity was maintained. After a shaky spell of trading, the business was now more stable, with steadier levels of turnover and better cash flow. Mr R summed up his stewardship of the firm during the period as, "too fast expansion, without adequate management controls". He indicated that one of the depots in England had been sold and that he now had a clear strategy for breaking down the supply chain of the firm's products, negotiating exclusive licensing contracts with firms in England, and in export markets overseas. He commented that there were great opportunities to be exploited in the export markets, which the firm had just begun to realise. He believes that these licensing contracts had solved the firm's distribution problem, commenting that "trying to run the operation from arm's length was a big problem", and,

"Operating in Scotland, you're sheltered to a great extent. We chose the wrong time to expand into England - the recession came and we had no long term customers".

Mr R indicated that he had learned from his mistakes, had taken "appropriate action" and was now satisfied with the firm's position. Overhead targets had been implemented and to achieve these targets a substantial restructuring of the firm's management functions had been undertaken. This aim of this was to facilitate tighter control over the firm's operations and to provide more accurate management information on which to base decisions. Greater control of debtors was also a primary objective of the new regime, with bad debt now being the firm's single biggest problem. Mr R's objectives for the business now were to have controlled expansion with adequate levels of funding, which "may require venture capital on our terms".

Mr R's primary motivation has always related to the firm's financial performance, though he had been too ambitious, allowing rapid expansion without adequate control. His attempt to diversify into the English market had been ill-conceived and crippled by large overheads, bad debt, and the generally more depressed state of the English economy at the time. He had been forced to take stock of the whole company's internal structure, including his advisors, and had implemented a new organizational structure. This move was aimed at achieving performance related objectives - further expansion and enhanced profitability. Mr R indicated that his greatest weakness is financial management, a task which he had previously undertaken himself, but had now delegated after the takeover threat, when the firm's poor financial management was highlighted.

Mr R regards the "control aspect" as the most satisfying aspect of the entrepreneurship, though financial rewards also "play a major part". He also regards one of the most positive aspects of being an entrepreneur as providing employment, however, this is tempered by the responsibility of being an employer, and having a "moral conscience". As part of the firm's recent rationalization, he had been forced

to sack employees for the first time, which represented a fifth of the initial workforce, a task which had perturbed him. He indicated that his main involvement in the firm has always been in product development and marketing, although he indicated that he has no problem with delegating these tasks to his managers once the strategies have been devised. His product development and marketing strategies are aimed at producing "unique products of very high quality". To this end the company has employed the services of public and private sector agencies as consultants, and works closely with a major Scottish university on the research and development of new products. He also indicated that the firm had received substantial grants from development agencies. Mr R explained that he has a substantial network of contacts, and is an active member of several local commercial associations, commenting that meeting "like-minded people" was one of the most enjoyable aspects of being in business.

6.5 Summary

This chapter has provided the intra-site analyses of the qualitative stage of this study in the form of entrepreneurial profiles, combining textual data from the interview with financial data from the Company accounts collected for each firm. Chapter 7 will provide a comparative analysis of the sample which addresses the specific issues pertinent to the research questions RQ1 and RQ2, and which builds upon the results from the econometric analysis that entrepreneurial motivations may be a key determinant of small firm performance.

Chapter 7

Comparative Qualitative Analysis

7.1 Introduction

This chapter reports the results from the inter-site analysis of the entrepreneurial profiles presented in Chapter 6. As noted in Chapter 4, qualitative data reduction techniques are employed in order to facilitate a comparative analysis of the sample of 16 entrepreneurs. These will be elaborated here in Section 7.2. In summary, this comprises partitioning the sample into 'high' and 'low' performers and examining the patterns within each group and across the whole sample with respect to entrepreneurial characteristics, motivations, objectives, strategies and managerial practices. Furthermore, the propositions P1 and P2, stated in Section 2.4 (p 136), are investigated here.

The first of these suggested that there may be dynamic changes in objective-setting during the course of entrepreneurial ventures which are manifested in changes in strategies and managerial practices. The second suggested that the pursuit of profitability can satisfy both growth and non-growth motivated entrepreneurs. Section 7.3 examines the sample with respect to the patterns of key entrepreneurial characteristics. Sections 7.4 and 7.5 consider the objectives, strategies and managerial practices evident in the 'high' and 'low' performers, respectively, in the sample. Section 7.6 provides an overview of the key findings. As with the consideration of the econometrics results in Chapter 5, the discussion in Section 7.6 is delimited to elaborating on the key points to arise from the inter-site analysis. These points will be developed further in Chapter 8, in the context of the econometric results, and in the context of the wider literature considered in Chapter 2. Finally, a summary of the chapter is provided in Section 7.7.

7.2 Selecting 'High' and 'Low' Performers

To facilitate a comparative qualitative analysis of the determinants of small firm performance some method of partitioning the sample with respect to the measures of financial performance has to be adopted. The method used is to bluntly partition the sample into two groups, namely 'high' and 'low' performers, and to then compare these groups with respect to entrepreneurial characteristics, motivations, objectives and managerial practices. The yardstick of 'high' performance adopted is that firms must have achieved above average performance in at least three of the four measures of growth and profitability, thus displaying wholly or largely better performance than the 'low' performers who did not achieve this yardstick. Given the sample size and the nature of this comparative analysis, which entails that any conclusions have to be restricted to the sample and not inferred to a wider population, it is argued that this is a valid and non-arbitrary way to proceed. Furthermore, the measure of the statistical 'average' adopted is the median, which by definition partitions the sample into roughly equal halves for each of the indicators, and is not as highly affected by extra high or extra low values as the arithmetic mean. The results of partitioning the sample using this method are shown in Figure 7-1, given in Appendix VIII (Volume II, pp 53-63), which also shows a descriptive analysis of the sample with respect to key entrepreneurial characteristics. This is the concern of the following section. As noted in Chapter 4, data reduction techniques are employed in the comparative qualitative analysis, including textual data matrices. The following Data Matrices are also given in Appendix VIII:

- (a) Figure 7-3 Data Matrix 1 - for initial entrepreneurial motivations, objectives, strategies and subsequent performance constraints in the group of 'high' performers
- (b) Figure 7-4 Data Matrix 2 - for the initial entrepreneurial motivations, objectives, strategies and subsequent performance constraints for the group of 'low' performers;

- (c) Figure 7-5 Data Matrix 3 - for changes in objectives, causes of change and ways in which change was manifested.

These data matrices provide an analytical focus for the ensuing discussion and will be referred to throughout the course of the chapter. Descriptive statistics relating to the location and employee size of the seven 'high performing firms are given in Table 7-1, contained in Appendix IX (Volume II, pp 64-67). Four of these firms are located in Dundee, and at the time of interview only two of the seven had more than 25 employees, with both of these having over 50 but less than 100 employees. Three of the firms, those of Mr A, Mr D and Mr H, had moved up one size band between the time of the entrepreneurial event and the time of interview. Summary statistics for the financial indicators are given in Table 7-3, also contained in Appendix IX. These show that the seven firms achieved, on average, around 20% for all the performance indicators, with the exception of return on total assets, for which both the mean and the median are above 36% for the five year period.

Descriptive statistics for the 'low' performing entrepreneurs' firms are given in Table 7-2, contained in Appendix IX , along with summary financial statistics in Table 7-4. Eight of these nine firms are located in the rest of Tayside, with only that of Mr Q located in Dundee. Again, a range of firm sizes are represented, with five of these nine firms in the smallest employee size band at the time of interview, two firms in the 'middle' size bands between 26 and 100 employees, and two larger firms with over 100 employees, those of Mr C and Mr L. Only two of these nine firms had moved into a higher size band from the time of the entrepreneurial event. One of the 'low' performing entrepreneurs, Mr E, had moved down a size band, from the 11-25 employees size band down to having less than 10 employees at the time of interview. Summary financial statistics clearly indicate that the average performance by these nine firms is substantially lower than the previous group in all four financial indicators. Median values for the indicators are all below 10%, with the exception of total assets growth which is slightly higher. Thus the median values for the 'high' performers is more than twice that for the 'low' performers in

all four indicators and the only loss-making firms, those of Mr F, Mr J and Mr Q are contained in the latter group.

7.3 Entrepreneurial Characteristics, Motivations, and Financial Performance

In Chapter 2 the following entrepreneurial characteristics were identified which should theoretically be associated with higher levels of small firm performance:

- (a) age
- (b) age at the time of the entrepreneurial event
- (c) length of time spent in the entrepreneurial position
- (d) level of educational attainment
- (e) previous managerial/ supervisory experience
- (f) previous small firm experience
- (g) founding the firm
- (h) having a family history of self-employment.

As noted in the previous section, Figure 7-1 shows a descriptive analysis of the sample with respect to these key entrepreneurial characteristics. Just as partitioning criteria are used to divide the sample into groups with respect to financial performance, a similar method is also adopted to partition the sample for analytical purposes, with respect to these entrepreneurial characteristics. The key to Figure 7-1, given in Appendix VIII, describes these criteria.

The following discussion will consider the sample of 16 entrepreneurs in terms of these entrepreneurial characteristics. This will focus on: first, the patterns evident in the sample for each of these characteristics in turn; second, an overview of the sample partitioned into the groups of 'high' and 'low' performers, with respect to their relative distribution of these characteristics overall. The discussion will also consider the role of entrepreneurial motivations in choosing to undertake entrepreneurial activity in the sample.

The first point to note is that this a sample of quite old entrepreneurs, with a mean age at the time of interview of 52 years ($\sigma= 8.5$) and a median of 55 years (IQ range = 45-60). The youngest entrepreneur in the sample was 39 years old at the time of interview, and the oldest was 65 years. Thus while a range of ages are represented, half of the sample is in what may be termed 'late middle age' (>55 years), which as the interdisciplinary literature suggests, may be expected to be associated with particular motivations. For example, with retirement in the near horizon, these entrepreneurs' motivation to continue entrepreneurial activity may be expected to decline and they may therefore display lower levels of financial performance. However, younger entrepreneurs who are further off retirement may have a greater incentive to pursue higher levels of financial performance. In Figure 7-1, the distribution of ages at the time of interview is therefore partitioned around the sample median.

An examination of the distribution of ages at the time of the entrepreneurial event shows that the mean age in this respect is 37 years ($\sigma= 6.3$), with a median age of 36.5 years (IQ range= 35-41), a minimum age of 19 years, and a maximum of 48 years. Therefore there is a clear trend towards entrepreneurs having instigated the entrepreneurial event in the 'critical' age group identified in the interdisciplinary literature, when the individual has amassed sufficient human and financial capital, and has the drive and motivation to succeed. In Figure 7-1, the sample is partitioned into two groups, those instigating the entrepreneurial event in the interquartile age group, who may be expected to display above average performance, and the rest.

While the age at the instigation of the entrepreneurial event may be an important determinant of the course of business success in subsequent years, an associated variable in a sample of firms such as this, who have traded for a number of years, is the length of time in the entrepreneurial position. In this sample, the mean length of time in this respect is 15 years ($\sigma= 10$) with a median of 12 years (IQ range= 8-22), a minimum of four years, and a maximum of 41 years. Therefore, although there are entrepreneurs in the sample who are relatively 'young' in terms of tenure

of their positions, most entrepreneurs have held the position for at least two complete trade cycles, and may be expected to have gained human capital through learning from experience. In this respect, the sample has been partitioned into those entrepreneurs who have an above average length of time in the position, and the rest, with the former expected to display above average performance.

With respect to those characteristics which been suggested to represent specific elements of human capital appropriate to managing a small firm; namely education, managerial experience, small firm experience, and a family history of self-employment, these variables are all well represented in the sample. Taking education first, 11 of the 16 entrepreneurs have undertaken further or higher education of some variety, though only one of the mechanical engineering firms is represented in this figure, with the entrepreneur, Mr C, having partially completed a medical degree. Interestingly, this was the only entrepreneur in a mechanical engineering firm to appreciate the growing importance of college-training in engineering, although he ultimately placed the greatest importance on hands-on experience. Only Mr C and Mr F had not served apprenticeships, however, while Mr C was clearly destined for high level management in the family firm, rather than working hands-on in production, Mr F is entirely self-taught.

The view that practical experience is the most important component of learning in the engineering sector was shared by the other four engineering entrepreneurs, who all displayed some antipathy towards college education. While this perception was mostly directed at production activities, it was also extended to include learning administrative management functions by Mr D, although the impression given by the engineering entrepreneurs, other than Mr C and Mr E, was that administration was most definitely an ancillary activity. On the other hand, there was a general consensus among the non-engineering entrepreneurs, that educational advancement was an important factor in their ability to manage their firms. While Mr J regarded studying for a Master of Business Administration degree as a vital component in the planning of his venture, Mr P regarded successfully completing a Higher National Certificate by open learning, while holding a job, as the critical factor

which led to his managerial advancement. Mr P also regarded this as an important determinant of his decision to instigate the entrepreneurial event.

While the entrepreneurs in the sample have overall displayed high levels of educational attainment, all but Mr F had previous managerial or supervisory experience. Mr F had founded the firm at the age of 19, after having worked in the family firm previously, and is therefore a different case from the others, who all worked for varying time periods with other employers. While the definition employed of what constitutes managerial experience is broad, for example Mr D held the most senior management post in an engineering plant compared with Mr B who was a production supervisor, the experience of coping with any managerial responsibility may be expected to contribute to good performance.

Twelve of the entrepreneurs also had previous experience of working in a small firm, or a small plant, with two, namely Mr G and Mr M having previously attempted part-time business ventures while in full-time employment. However, in the case of Mr G, this venture was successful, which was an important factor in his decision to go into entrepreneurship full-time. This was not so in Mr M's case, where the venture failed, which Mr M attributed to insufficient demand. Eight of the entrepreneurs indicated a family history of self-employment, either directly in the case of a family firm which they had inherited, namely Mr C, Mr G, Mr H and Mr R, or indirectly through a family association with the firm, i.e. Mr J (through his wife's family), Mr L, and Mr N. Of the four inheritors of a family firm, Mr C and Mr H expressed strong motivations to ensure the firm's survival and perpetuation, and both saw the best way of doing this essentially as being to aim for high performance levels through sound business practices. Of the first generation managers, Mr P also expressed ambitions to pass the firm on to his son, whom he was about to employ as an apprentice and Mr M's primary motivation since his son joined the firm was to build up the business in order to pass it on.

With respect to the remaining characteristic expected to be associated with higher performance, i.e. being the firm's founder, nine of the entrepreneur's founded their

firms, though only Mr B, Mr D and Mr N were 'pushed' in the face of redundancy. Mr A, Mr E, Mr H, and Mr P all indicated that the reason for founding the firm was related to gaining more control over decision-making and managerial responsibility. As the interdisciplinary literature suggests, this motivation may be interpreted as a 'pull' factor, given that they were all employed in management posts at the time of their decision and it was therefore a purposeful decision to choose entrepreneurship over paid employment. It is assumed here that Mr E, Mr M, Mr N and Mr P are the founders of their firms in the sense that they represent first generation managers, although with the exception of Mr M, they all took over going concerns in which they were previously employed as managers. The remaining two founders, Mr F and Mr Q both appear to have been attracted to self-employment as a means of expressing personal ambitions related to product development, although not from a perspective of financial reward, but for the intrinsic satisfactions gained from putting their own designs into production. Therefore, in a sense both of these entrepreneurs were again 'pulled' into entrepreneurship by a need to gain control over decision-making rather than the financial rewards which could be gained from exploiting the commercial potential of their designs.

In point of fact, the general consensus in this sample was that financial rewards were not a key motivating factor in their decision to undertake entrepreneurial activity, or during the subsequent course of the firm. As noted earlier, a summary analysis of initial entrepreneurial motivations is given in Data Matrix 1, for 'high' performers, and Data Matrix 2 for 'low' performers. On the whole, financial rewards were subsidiary to more intrinsic satisfactions such as proof of managerial ability, and autonomy, a factor which appears to be critical in choosing entrepreneurship for many of these entrepreneurs. The only entrepreneurs in the sample who regarded financial rewards as a key motivating factor were Mr G and Mr R, and along with Mr H, they were the only entrepreneurs to make an explicit connection with the performance of the firm and their own personal gain. However Mr G, unlike Mr H, has no particular allegiance to his family firm, and although he bailed it out he clearly saw it as an opportunity to advance his earning potential.

Most other entrepreneurs in the sample gave some indication that they were content to earn a 'comfortable' standard of living, rather than accumulating large personal wealth.

However, some of the entrepreneurs expressed particularly strong views against the 'profit motive', such as Mr F, Mr L and Mr Q, who all derided the image of the sharp-suited small business tycoon, gaining at others' expense. In the case of Mr L, the advances he had overseen in the development of process technology in his industry actually served to disadvantage his firm, because these were made for 'science's' sake rather than to create new markets and higher demand for the firm's products. There was also a consensus in the sample that profit was primarily important as a means of self-financing the firm's operations thus avoiding the need to take on long term debt. External borrowing was perceived as increasing risk and reducing control over decision-making, making profitability a means of avoiding these, rather than a vehicle for personal gain.

Overall then, while Figure 7-1 indicates that this sample of entrepreneurs is abundant in the characteristics which are expected to be associated with higher levels of performance, rational economic motivations for undertaking entrepreneurial activity are clearly not in abundance. The discussion will now turn to an overview of the sample with regard to patterns evident in the possession of the entrepreneurial characteristics considered above.

From Figure 7-1, it can be seen that seven entrepreneurs displayed above average performance on at least three of the four indicators, namely Mr A, Mr B, Mr D, Mr H, Mr K, Mr M and Mr P, with Mr B, Mr D, Mr H and Mr M scoring above average on all four indicators. The distribution of characteristics for the 'high' and 'low' performers is shown more clearly in Figure 7-2, given in Appendix VIII.

From Figure 7-2, it is clear that there are no obvious divergent patterns of distribution of characteristics between the two groups, with both groups possessing, on average, 4-5 of the characteristics per head. The only clear difference between

the two groups is with respect to the 'family' variable, with only one 'high' performer having a family history of self-employment, though the firm in question was not inherited from the family. On the other hand, six 'low' performers scored on the 'family' variable, with the family having a direct connection with the firm in all cases. This appears to conflict with the theoretical position that the human capital gained from a family history of self-employment should be associated with higher performance.

Perhaps another point to note here is that three of the 'high' performers are entrepreneurs in mechanical engineering firms, namely, Mr A, Mr B and Mr D, with the latter two having been pushed into entrepreneurship through redundancy, and with all three possessing no formal education beyond school level, preferring to 'learn by doing'. Also of interest is the fact that only three of seven 'high' performers had previous experience in a small firm. In the case of Mr A this was in the form of managing a high growth small engineering firm, while Mr K had been a senior manager in the small cooperative which bought out his present firm, and Mr H gained this experience directly in the family firm. On the other hand, all but one of the nine 'low' performers had gained previous small firm experience of some variety, whether this was directly connected to their present firms or not. Only Mr J had no previous small firm experience, having professionally trained and worked for large engineering concerns overseeing large scale structural development projects.

At this point, the preliminary comparative analysis of the two performance groups with respect to entrepreneurial characteristics and initial motivations will conclude. While no substantial differences are apparent between the 'high' and 'low' performers in the sample, a closer examination of the data must now be undertaken with respect to objectives, managerial practices (including strategies) and changes in these variables during the course of the business venture.

7.4 Objectives, Strategies, Managerial Practices - 'High' Performers

It must be remembered that in the conceptual model underpinning this analysis, the variables through which the impact of entrepreneurial objectives on financial performance are mediated are strategic choices and managerial practices of entrepreneur. There is also the possibility of a dynamic change in objectives, strategies and practices as a reaction to financial performance. A summary analysis of the group of 'high' performers with respect to these variables is given in Data Matrices 1 and 3 (Figures 7-3 and 7-5). The following discussion will elaborate on the major points of interest in the data matrices.

In terms of the objectives pursued by these entrepreneurs, most were concerned with survival and earning a livelihood, with the only significant exception being Mr K who pursued the objective of maximising the firm's financial performance from the outset. In terms of the initial strategies pursued by entrepreneurs to achieve their objectives, the only clear sectoral difference exists in the subcontractors, namely the mechanical engineering entrepreneurs (Mr A, Mr B and Mr D) and the commercial printing entrepreneur (Mr P) who all perceived that producing good quality work is a sufficient means by which to attract customers. Mr B and Mr P both reported difficulties with obtaining skilled labour and both also revealed that they had experienced difficulties in managing their employees. Mr B had initially expanded the workforce, eventually cutting it back to its original level after it reached what in his opinion was an unmanageable size.

Of these four entrepreneurs, Mr A and Mr P founded their firms in order to gain more control over decision-making, and Mr B and Mr D did so because of redundancy. Although the competitive strategy of all four of these firms is based around building a reputation with contractors for quality of service, the two pushed into self-employment by redundancy, who only had experience of production management, and whose aim at first was merely to survive, both displayed 'high' performance in all four financial indicators. However, it is clear they believed this to have happened because of exogenous factors relating to high levels of market demand and not through any conscious strategy on their part to pursue growth and

profitability. They had merely overseen production to ensure standards were maintained at a high level, and both relied on contacts made while they were with their previous employers. While Mr D clearly had no interest in the administrative side of the business, delegating this entirely to his wife, Mr B expressed a desire to concentrate on this side of the business but an inability to do so in case a complete delegation of production resulted in a drop in the standard of work.

Mr B had, however, learned that relying too heavily on a small number of large customers was a dangerous strategy, especially given the problems of bad debt, which all the subcontractors commented upon. Consequently, he had taken steps to diversify his customer base into smaller contracts, thus spreading the risk. The experience of Mr P is similar to Mr B in that while he also expressed a preference to delegate production and concentrate on developing the commercial side of the business, he also had experienced problems with employees not producing work to his standards. Mr A, the only 'high' performing subcontractor, already had a model of expansion for his firm, having achieved this in a previous firm, and was also the only one of the four whose was solely involved in the administrative side of the firm's operations, choosing to delegate production completely. However, Mr A agreed with the other three subcontractors discussed here, in that he envisaged an upper limit to the expansion of the firm in terms of employee numbers. All four entrepreneurs perceived this limit in terms of maintaining control of the firm, principally to oversee the quality of production, although in the cases of Mr D and Mr P, it was also to avoid the extra 'hassle' of an increased administrative workload.

The experiences of the four entrepreneurs discussed above contrast sharply with the remaining three 'high' performers. The food manufacturing entrepreneurs, Mr H and Mr K both have in common that their objectives for the firm were aimed at pursuing high levels of financial performance, in the case of Mr H, as already noted, in order to ensure the survival of the firm. Mr K, however, is a different case in that he is a professional manager. Therefore, it may be expected that his objectives would be related to the performance of the firm, and his motivations

related to his managerial esteem, he has been with the firm and overseen its development for a number of years. However, despite this he feels that he has no 'personal' stake in the firm.

Both Mr H and Mr K have implemented hierarchical management structures, although they still perceive the need to retain control over key strategic functions such as product development and marketing. Both have aimed for expansion through targeting niche markets, although Mr H has redirected the firm into an 'upmarket' strategy by targeting the 'quality end of the market', and like the subcontractors discussed above he is concerned with maintaining a reputation for excellence. Mr K, however, had no qualms about going in the opposite direction and targeting the inferior end of the market, which meant that efficiency was a key issue in maintaining profitability. This is reflected in his willingness to sack employees who do not meet performance targets, unlike the other 'high' performers, with Mr A and Mr D in particular displaying considerable loyalty to, and concern for, the welfare of their employees. Additionally Mr H and Mr K are both willing to employ external finance and advisors in the pursuit of their objectives, which contrasts with the position of the other 'high' performers, who are all motivated to be self-financed, and who do not see the benefits to be gained from seeking external advice, particularly on commercial matters, which is generally their weakest area.

The remaining 'high' performer is Mr M, who is a case apart from the rest of the group. As noted before, Mr M had achieved a high managerial position in his previous employment, and his sole motivation for entrepreneurship in a sector in which he had no previous experience, was autonomy. While this was primarily directed towards control of decision making in the workplace, he also perceived this in a wider sense in terms of having more control over his destiny. While he had risen to senior management in a 'rags to riches' manner after arriving in Scotland as an immigrant after the second world war, he perceived that further career advancement into the highest echelons in the company was hindered by factors outwith his control and not by his ability. Given that he had already

accumulated substantial financial capital and that his wife was earning a good wage, financial gain did not come into his decision, or in his objectives for the firm. However, after several years of 'ticking over' and learning a new trade, the entry of his son into the firm completely changed his objectives and he became motivated towards expanding the most profitable production line in the firm in order to pass on a healthy firm with good potential for his son to develop as a career. This was the triggering factor which transformed the firm from what was more of a hobby, concerned with generating enough income to pay the small number of employees, and to avoid having to take on debt, into a business entity with growth potential for his son to exploit. He had allowed his son to remain solely involved in production during the period of metamorphosis, while he directed the development of the firm's commercial potential.

Thus, to conclude this consideration of the seven 'high' performers in the sample of 16 entrepreneurs, it would appear that only Mr K has a firm which seems likely to develop into a substantially larger entity, although it is already the largest of these firms. The possibility of small firm growth being lateral is not evident in the firms in this group, with only Mr D having had any other business interests, this being an equity stake in another engineering firm, though this was not a controlling interest. However, this business subsequently failed which soured his perception of the possibility of expanding his business interests into other ventures, even though he was not willing to expand his current firm.

7.5 Objectives, Strategies, Managerial Practices - 'Low' Performers

A summary analysis of the group of 'low' performers with respect to objectives, strategic choices and managerial practices is given in Data Matrices 2 and 3 (Figures 7-4 and 7-5). As was the case with the 'high' performers the following discussion will elaborate on points of interest in the data matrices.

The group of nine 'low' performers is equally split between the three sectoral categories of mechanical engineering, food manufacturing and other manufacturing.

Of the three engineering entrepreneurs (Mr C, Mr E and Mr F), Mr C's firm is amongst the largest in the sample overall, with Mr C having inherited the firm from his father. The firms of Mr C and Mr E differ from that of Mr F in that they are subcontractors, while Mr F manufactures complete saleable products made to his own design, rather than the customer's specifications. While Mr C has in common with all the subcontractors in the sample, that he perceives the demand for his product to be attracted by quality and reputation, this strategy is on a much larger scale and is innovation driven. This requires large scale capital investment and to achieve this, as he does, without external borrowing entails that efficiency in production must be achieved. Mr C is primarily motivated by passing on the firm to his sons, and presumably in preparation for this, as was the case when he worked for his father, he delegates managerial duties to them. Although Mr C has almost doubled the workforce during the course of his stewardship, and indicated complete satisfaction with the firm's overall performance, he now has no expansion plans, and like Mr H his drive for innovation is aimed at maintaining profitability at the present size.

Mr E is akin to the smaller subcontractors in the sample, in that his motivations are orientated towards autonomy over decision-making. Mr E had risen to a high level of management which again is reflected in his willingness to delegate production activities in order to allow him to concentrate on the commercial side of the business. However, like the other subcontractors, he also believes that growth is primarily determined by the level of demand in the market, which in turn is determined by economy-wide factors. The majority of his work is local and he has no export base. However, his attitude had been revised when profitability had fallen to critically low levels. He had been forced not only to reduce the cost base of the firm through increasing efficiency, which included not replacing employees when they left the firm (rather than laying men off), but also to think more seriously about attracting customers through marketing techniques such as advertising, rather than relying on the work coming to him. Mr E made no reference to gaining work through his contacts in the trade, and had relied heavily on the long term customer base of the firm built up by the previous owners. This strategy had undoubtedly

contributed to the ensuing financial problems when recession hit the local economy. Mr E's experience is perhaps a warning to the 'high' performing subcontractors in that relying on customers coming to the firm, rather than actively generating demand, is a risky strategy. Mr E, however, has formalised his plans to expand the firm, which he hoped to achieve through not only a lower cost base but increased marketing.

Mr F, the other mechanical engineering entrepreneur, is similar in virtually all respects to Mr Q, the healthcare products manufacturer, in terms of his experiences during his stewardship of the firm, but his background is completely different. While Mr Q is a highly educated and highly trained professional, Mr F is completely self-taught in his trade. However, their motivations for founding their firms are identical in that they are both primarily inventors. Both, by their own admission, are clearly product-obsessed, and have never had any intention of allowing third parties to interfere with their designs even though, again by their own admission, they have little commercial acumen, or indeed little interest in business. Their firms are a vehicle for their personal ambitions to be recognised as inventors of unique products for which there is a 'vital need'. In this respect they desire complete control over product development, and will not delegate any activity which threatens this. Both of these entrepreneurs have also experienced considerable financial difficulties which they have been forced to address in order to ensure the survival of the firm.

However, while Mr F regards his drive to be more commercial in his management of the firm in terms of marketing the products more effectively, he is still reluctant to do anything which would lead to the firm's expansion. Even though he acknowledges that there is considerable demand for his products, and that he is a 'market leader' in terms of his designs, he regards expansion as being synonymous with a loss of control. Expansion, however, may be the answer to his problems in that the extremely small scale nature of his production of a complex engineering product is a major cause of his financial difficulties. His policy of buying components 'just-in-time' at virtually retail prices, his policy of only producing to

order, and his reluctance to allow a sufficient profit margin on sales to at least allow the firm to be self-financed are clearly evidence that this firm is unlikely to expand. His drive to be more commercial is merely aimed at survival, and it seems unlikely that his powerful control motivations will give way to sounder business practices.

It also seems doubtful that Mr Q's performance will ever reach high levels, given that his drive to be more commercially-orientated is solely aimed at changing his product line, rather than actively marketing it. He sells his products solely through agents, and has no direct contact with his customers, with his perception of market need related to his prior experience as a practising healthcare professional. He acknowledges that he has a small niche market for his products, which has limited growth potential, which is not assisted by his insistence on using more durable materials in the production of his goods. Additionally, while he acknowledges that the cost base of the firm could be reduced through increasing efficiency, he has no plans to implement measures which could achieve this. Like Mr F, it seems unlikely that the intrinsic motivations related to invention will ever give way to a serious attempt to realise the firm's potential through expansion. Expansion, he believes, would compromise his autonomy over what he perceives should be produced, rather than what there is actually a market for. Another factor in both of these cases is clearly the age of the entrepreneurs, with both being over 60 years old. However, neither indicated any intention of retiring and Mr Q had turned down an attractive offer to buy the firm.

Mr G, Mr J and Mr R have also undergone similar experiences despite divergencies in their backgrounds, in that they have all pursued rapid expansion through strategies of diversifying into niche markets through product development. Mr J and Mr R are two of the 'youngest' entrepreneurs in the sample in terms of tenure in their posts, and both have caused profitability levels to drop to critical levels in their pursuit of rapid expansion. However, Mr J aimed to do this from the start of the venture, with his long term goal of building up the business to sell it superseding any concern with short term profitability. This strategy was successful

in that the firm had been bought out, which provided Mr J with considerable satisfaction in terms of managerial esteem, especially as he had been retained as the business manager. However, Mr R is a different case, in that he had been forced to fend off a takeover attempt when profitability reached critical levels, and had taken measures to put the firm on a sounder footing. These represented setting realistic performance targets and implementing a new managerial structure to achieve them.

The experiences of Mr G are in a similar vein, in that expansion had been achieved at the expense of overtrading and declining profitability. Mr G had also been forced to reconsider his plans because of declining levels of profit, although he had done so before the firm went into a loss-making position. However, unlike Mr R, Mr G is reluctant to borrow, preferring to be self-financed. Therefore, like Mr E, Mr R and Mr G had been forced to revise their longer term objectives in order to consolidate their firms' position, although it would seem that of the three, it is Mr R's firm which has the greatest growth potential. This is because 'learning by doing' from his experience of retrenchment is also associated with a willingness to borrow and a long term aim to build up the product base and the geographical markets for the firm's products through licensing agreements. He is also willing to delegate managerial duties, unlike Mr E and Mr G, who perceive that delegation, in favour of assuming a more strategic role, would result in a loss of control.

This reluctance to delegate managerial duties in the administrative side of the business is also evident in the case of Mr N, whose firm is below average on all four performance indicators, and who has cut his workforce during the course of his stewardship. Mr N again illustrates that sound commercial acumen, a market-orientated strategy, and sound financial management of the firm are not enough to ensure a profitable high growth firm. He has aimed for and achieved steady expansion, whilst maintaining efficiency, perhaps reflecting his considerable managerial experience, and his knowledge of the market for his products. However, by his own admission, the major constraint on the growth of the firm, even though it's profitability has been consolidated, is his reluctance to lose control over

administration. The fear of delegating managerial responsibilities in his absence is preventing him from exploiting his marketing ability in order to generate more sales.

The remaining 'low' performing entrepreneur is Mr L, whose firm is the largest in the sample, although he displays none of the strategic and managerial acumen of Mr K, the other larger food manufacturer. Indeed, his policies and experiences are more akin to the smaller firms in the sample in that his primary concern is to perpetuate the firm's heritage and its reputation for product quality. While he had pursued a considerably successful programme of process development, this had not been undertaken to develop the firm's market, which he believed was akin to perfect competition. Furthermore, this had actually caused the financial problems which he had been forced to address. The firm had survived because of its accumulated reserves during a period when he had implemented a retrenchment programme aimed at reducing the cost base of the firm through increasing efficiency. However, this was aimed not at expansion, but survival, with his overriding motivation still being to perpetuate the firm's heritage. This is evident in that while Mr L was planning to take a more marketing-orientated policy of diversifying the firm's products into secondary markets by adding-value, he is also developing a 'heritage' centre. It is evident that he perceives this as a means of perpetuating the firm's 'reputation for quality', while he is making concessions to the needs of mass markets, even though he believes it will be a 'good sales pitch'.

7.6 Key Findings

The comparative analysis has shown that while small firm entrepreneurs are indeed a heterogeneous population, as the sample of entrepreneurs and firms here exemplify, there are commonalities of motivations and experience which do not appear to be confined to any 'type' of entrepreneur or firm. A general consideration of the key characteristics of the entrepreneurs in the sample revealed no clear differences in the pattern of distribution of these characteristics between the 'high' and 'low' performing firms in the sample.

In this sample of entrepreneurs there is little evidence in accord with the economic ideal of the innovative, opportunistic profit-maximizer, who will expand the firm as far as possible given the limitations of managerial ability and market conditions. Perhaps some of the subcontractors in the sample (i.e. Mr B, Mr D and Mr E) are more at the mercy of external factors, although this is largely a conscious decision on their part. Essentially these entrepreneurs have 'drifted' into growth rather than actively achieving it through a planned strategy. While Mr B is, relatively speaking, one of the highest performers in the sample, he has not experienced any periods of difficulty which have forced him to address some of his managerial deficiencies. Other than making adjustments to the customer base, an activity which was commonly undertaken by many entrepreneurs in the sample, he has not been forced to think more strategically about his management of the firm.

Another general point to emerge from the analysis is that learning from experience appears to be a powerful tool by which entrepreneurs can accumulate human capital, although the process is clearly not linear, with the greatest levels perhaps attained during the periods of the worst performance. Entrepreneurs in the sample who experienced bad periods clearly emerged 'fitter' than before. Moreover, while there is no clear relationship in this analysis between those characteristics such as education and managerial experience, which should pick up the effects of human capital, and which should be associated with a greater ability to learn from experience, this may be largely explained by differences in the intrinsic motivations of entrepreneurs.

This analysis demonstrates the critical importance of entrepreneurial motivations as determinants of small firm performance. Furthermore, the key issue appears to be not just why individuals are motivated to undertake entrepreneurial activity in the first place, but why they continue to do it, and what satisfactions they expect to derive from it? The most common theme in this sample of entrepreneurs, regardless of their backgrounds, is the need to retain autonomy over decisions and not to have other individuals making decisions which will determine their success or failure in the workplace. This appears to be the factor which is constraining the growth of

many firms in the sample, regardless of the level of managerial ability, or the objectives pursued for the firm. Furthermore, this fear of losing control is not necessarily a 'perceived' fear, but one based on previous experience, and as such it is able to exert a powerful influence on the performance of the firm. Evidence from this analysis suggests that the autonomy motive is a constraint on small firm growth which is pandemic in the sample, with the exception of those entrepreneurs who were specifically motivated to pursue growth from the start of their ventures.

There is also evidence from this analysis to support the proposition that financial performance is a feedback mechanism which forces entrepreneurs into pursuing business-oriented objectives and to address their managerial deficiencies. However, there is little evidence in this sample of entrepreneurs that this revision of objectives and practices has actually served to revise underlying entrepreneurial motivations. This is exemplified by a comparison of the two growth-oriented entrepreneurs Mr R and Mr G. Only Mr R, who has pursued growth from the outset of his stewardship of the firm, and who has learned from experience during a bad period caused by overtrading, seems to possess the attributes conducive to a high growth firm, in that he is willing to delegate managerial duties. By way of contrast, Mr G also experienced overtrading in the pursuit of rapid growth and had been forced to consolidate profitability levels in order to regain control of the firm. However, he is still unwilling to expand the firm beyond some level where control of decision making has to be delegated. The nature of the control motive is such that it appears to exert a powerful influence in constraining the growth potential of firms in this sample.

Furthermore, there is also evidence from this analysis that even if profitability is pursued as an initial or a revised objective it appears, on the whole, to be related to security and independence from external influences, in order to protect entrepreneurial autonomy, rather than a fuel for growth. This may suggest that the pursuit of profitability is a means to an end, whether this end is survival, stability, personal income, or in a small number of cases in this sample, growth. Profitability appears to satisfy those entrepreneurs who are motivated by growth, and require

finance to achieve this; and also those entrepreneurs who are motivated by autonomy and who seek security of tenure in the entrepreneurial position and freedom from external influences.

All of these important issues, which have been raised from the qualitative analysis, will be discussed further in Chapter 8, where they will be considered in the context of the results from the econometric analysis, and in the context of the wider literature considered in Chapter 2.

7.7 Summary

This chapter has reported the key findings from the inter-site analysis of the 16 entrepreneurs who participated in the qualitative stage of the study. Using data reduction techniques for qualitative data the sample was partitioned (into 'high' and 'low' performers) and patterns in the data with respect to entrepreneurial characteristics, motivations, objectives, strategies and managerial practices were examined. The nature of entrepreneurial dynamics was also examined with respect to changes in objective-setting and the causes of this behaviour, and its effect on strategies and managerial practices. Evidence was found which provides further support for the findings from the econometric analysis. The inter-site qualitative analysis finds evidence which suggests that entrepreneurial motivation is an important determinant of small firm performance, regardless of the antecedent influences on entrepreneurial behaviour, and the objectives set by entrepreneurs. The qualitative stage of the study has demonstrated the depth of information which can be generated using qualitative methodology and fieldwork research procedures. The final chapter in this thesis, Chapter 8, will pull together the findings, and the experiences gained from both stages of this study in addressing the research questions set at the outset of this thesis, in the context of the existing body of knowledge.

Chapter 8

Conclusions and Implications

8.1 Introduction

The aim of this chapter is threefold: first, to derive general conclusions from an holistic consideration of the research which address the research questions RQ1, RQ2 and RQ3, specified in Section 1.2 (p 21); second, to comment on the implications of the research from both theoretical and methodological perspectives; third, to suggest directions for further research in the field of entrepreneurship and small firm performance. The chapter is structured in the following manner. First, in Section 8.2 the general conclusions derived from the research are discussed in the context of the existing body of knowledge in this field of study. Section 8.3 then provides a discussion of the wider implications of the research from theoretical and practical perspectives. Finally, Section 8.4 provides a discussion of the implications of this study for further research in the field.

8.2 Conclusions about Research Questions

8.2.1 RQ1 *"What are the determinants of small firm performance?"*

The results from this research suggest that firm size is an important firm-specific determinant of small firm growth, and that entrepreneurial motivations have an important influence on small firm performance. These conclusions may be justified on the following basis. The results from the econometric analysis show that larger small firms display significantly higher growth rates than smaller firms; and yet, in terms of the signs on the coefficients, smaller firms are more profitable and profitability is positively related to growth, although these relationships are not found to be significant. This may imply, however, that there is a constraining influence on growth in smaller firms which could be related to non-pecuniary entrepreneurial motivations, which in turn may be manifested in the pursuit of non-

growth business objectives. Entrepreneurs in smaller firms may view profitability as a means of retaining autonomy over their firms, and of achieving independence from external influences. Growth-oriented entrepreneurs, on the other hand, may view profitability primarily as a means of fuelling growth and generating personal income. The findings from the qualitative analysis lend support to this argument in that non-pecuniary control motivations were found to be a key constraining influence on firm growth, and these motivations were evident in firms managed by entrepreneurs from a range of backgrounds and operating in a range of markets.

These conclusions must be qualified, however, in that the sample of established small firms under investigation in this study is delimited to the manufacturing sector in Tayside Region. Thus, taking into account the context-specific parameters on the study, any findings from the study overall can only reasonably be inferred to the population of small independent firms in the Tayside manufacturing sector. It was demonstrated in Chapter 3 that while the Tayside manufacturing sector has experienced a significant increase in the number of small establishments, it is still heavily dependent on traditional industries which may be associated with particular sectoral influences. Furthermore, the clear differentiation between urban and rural areas in Tayside is also associated with different trends in the prevalence of particular manufacturing activities in these spatial areas. In turn, particular manufacturing activities such as engineering and food manufacturing have experienced different patterns of change in their size distribution of firms, for potentially different reasons.

Conclusions regarding the importance of entrepreneurial motivations and in particular with respect to their relationships with aspects of the strategic and managerial behaviour of entrepreneurs will be discussed in greater detail in the following section. The remaining discussion in this section will be chiefly concerned with the econometric analysis of firm-specific determinants of growth and profitability in small firms.

The econometric analysis undertaken in this study also finds that younger firms,

and firms that are located in urban areas, display significantly higher growth rates. It is found, however, these variables are only significant if single equation OLS analysis is used. The use of simultaneous equation 2SLS analysis renders these variables insignificant, while firm size remains significant. The OLS findings suggest that younger firms who may be more in touch with their markets, and urban firms who may be spatially closer to their markets, are better positioned to exploit opportunities for growth.

The finding that larger small firms display higher growth rates contrasts with previous studies of this nature by Dobson and Gerrard (1989) and Reid (1993), both of which identify an insignificant relationship between size and growth with a negative sign on the size coefficient. The finding that younger firms are found to display higher growth rates is in accord with the findings from Reid's study in terms of the sign on the age coefficient, although Reid finds the relationship to be insignificant, but conflicts with those from Dobson and Gerrard's study. Dobson and Gerrard find a significant positive relationship between age and growth, which they attribute to management in older firms being more likely to be growth-oriented as they gain a greater degree of control over setting the firm's objectives. With regard to location, Dobson and Gerrard follow previous studies of the urban-periphery location effect and only include this as a variable in their profitability model, so that there is no direct comparison in this regard between this study and Dobson and Gerrard's study. However, the coefficient on the location variable in the present study is only marginally significant, so that only limited emphasis can be placed on its importance as a determinant of small firm growth.

Turning now to consider possible explanations for key differences between this study and previous studies, the first point to note is that a key feature of this study has been the adoption of an interdisciplinary paradigm in developing the conceptual basis of the research and in identifying the key research issues which the research has sought to address. As the literature review in Chapter 2 revealed, the paradigm adopted in this study encompasses insights from economic and multidisciplinary generalist perspectives into an analysis of key firm and entrepreneur-specific

influences on the growth and profitability performance of small firms. Thus the theoretical framework underpinning the study has been informed by a wider range of perspectives than in previous studies. In this regard the hypotheses pertaining to the key firm-specific factors which are suggested in the economic and multidisciplinary literature, are developed from an entrepreneurial stance, rather than a narrow managerial stance.

There are also differences between the nature of the samples used in previous studies, and the measures of size, growth and profitability used. The sample used in the econometric analysis undertaken in this study comprises a more diverse range of firm sizes than in previous studies, ranging from the smallest micro-firms to firms with in excess of 100 employees. Dobson and Gerrard (1989), however, use a sample of firms which mainly have 11-50 employees, and Reid (1993) uses a sample of firms which mainly have less than 10 employees. Thus a wider range of entrepreneurial influences which may be related to firm size, are likely to be in evidence in this study than in previous studies. Furthermore, while Reid's analysis is confined to firms in their first three years since inception, the sample used in this study is comprised of older, established firms. Thus it can be suggested that life-cycle effects which are relevant to new firms seeking to establish themselves are not likely to be dominant in this analysis, while they are likely to be in Reid's analysis.

Regarding measures of size, growth and profitability, in taking an entrepreneurial rather than a managerial stance, this study uses an employee measure of size, which it has been argued, may be better able to detect the influence of non-pecuniary entrepreneurial motivations. Dobson and Gerrard, on the other hand, use assets and sales measures of size which may be less likely to detect the impact of entrepreneurial motivations. It is argued here that entrepreneurs may still pursue growth in terms of sales and assets even if they do not wish to pursue growth in terms of employee numbers. While Reid uses an employee measure, his sample is comprised of very young firms, mostly with less than 10 employees so that it unlikely that a range of pecuniary and non-pecuniary entrepreneurial motivations

will be evident.

Regarding profitability and growth measures, this study is also unique in that it is the only study to use both total assets and sales measures in calculating financial ratios, with a number of key adjustments made in order to ensure consistency in use of accounting practices between firms, which may have an important bearing on the validity of the data used in the analysis. Dobson and Gerrard, on the other hand, use the net assets measure, which it has been suggested, is more relevant to the corporate sector than it is to the small firm sector. While Reid uses the total assets measure, his financial data are obtained from a questionnaire survey and thus it can be questioned if financial data obtained in this fashion are likely to be as reliable as data obtained from audited company accounts, which both the present study and Dobson and Gerrard use. However, Dobson and Gerrard do not make adjustments to key accounting items in order to ensure consistency between firms as this study does and as such the validity of their data may also be questioned.

In summary, this study comprises a number of original contributions to the econometric analysis of small firm growth and profitability performance. The first of these relates to the development of hypotheses which integrate insights from the conventional economic literature and the interdisciplinary entrepreneurship literature concerning the possible impact of entrepreneurial motivations on small firm growth and profitability. The second contribution relates to the use of employee numbers as the most appropriate measure of small firm size for investigating the impact of entrepreneurial motivations. The third contribution relates to the attempt to make adjustments to total assets and profit data reported by individual firms in order to ensure consistency in their treatment between firms. The key finding from the study is that larger small firms display significantly higher growth rates, a finding which supports hypotheses which suggest that entrepreneurs in larger small firms will be associated with higher levels of managerial and commercial acumen and will be motivated by goals which relate to personal income and business growth. Smaller firms, on the other hand, are more likely to be associated with entrepreneurs who are motivated more by lifestyle goals, and in particular to a desire to retain control

over a substantial degree of decision making within the firm. Profitability may be a means of achieving these goals, rather than as means of generating personal income and business growth. This suggests the need for future econometric studies of small firm performance to take entrepreneurial motivations into account.

8.2.2 RQ2 *"What are the roles played by entrepreneurial motivations, objectives, and strategic choices in determining small firm performance?"*

The results from this research suggest that entrepreneurial motivations, goal-setting and strategic choices are important entrepreneur-specific influences on small firm performance, but it is motivations for undertaking entrepreneurial activity that may have the greatest impact on the growth and profitability performance of small firms. Entrepreneurial motivations, and in particular the non-pecuniary autonomy motive, appear to be the key determinants of entrepreneurial behaviour in terms of the strategic choices and managerial practices adopted in the sample of entrepreneurs in Tayside manufacturing firms. Furthermore, this research finds that while many entrepreneurs in the sample were pushed into pursuing sounder business policies in order to ensure the survival of their firms in periods of crisis, it was not evident that their intrinsic motivations for undertaking entrepreneurial activity were revised in the process. This is regardless of whether their initial motivations were pecuniary or non-pecuniary, and whether the initial goals they pursued were growth-oriented or not. There is no evidence from this study that non-growth oriented entrepreneurs can transform into growth-oriented entrepreneurs as a result of the positive revision of their performance expectations in surviving a period of crisis, or as a result of achieving a higher level of performance than they initially expected. This is regardless of whether they were initially 'pushed' into entrepreneurship through redundancy or job insecurity, or 'pulled' into entrepreneurship through identifying an opportunity or through a desire for autonomy or self-actualization.

These conclusions may be justified on the following basis. As noted previously, the econometric analysis provided support for hypotheses which suggested that entrepreneurial motivations may play a key role in determining the growth and profitability of small firms. However, a review of the interdisciplinary literature, which identified the theoretical importance of pecuniary and non-pecuniary entrepreneurial motivations as determinants of small firm performance, revealed that no empirical studies have undertaken a multivariate analysis of the qualitative relationships which exist between entrepreneurial characteristics, motivations and goals, and strategic choices. Previous empirical studies by Hornaday and Wheatley (1986), Begley and Boyd (1987) and Cragg and King (1988) have used quantitative methodologies in investigating these relationships and on the whole have produced weak and inconclusive results. Furthermore, these studies have been dogged by problems associated with multicollinearity between entrepreneurial variables which has limited their potential to investigate the nature of causal relationships between these variables. It is suggested in the literature (e.g. Cragg and King, 1988; Kuratko *et al*, 1997) that the qualitative nature of the relationships between these variables, and in particular between motivations, goals and strategic choices, need to be understood more fully before their causal relationships can be specified and measured. To this end, this research sought to investigate the nature of the qualitative relationships between these variables and examined two propositions which have been suggested but not empirically investigated in the literature.

The first of these propositions relates to the potential for financial performance to act as a feedback mechanism which can 'push' or 'pull' entrepreneurs into revising their goals, and in turn their strategic choices. There is evidence from this study that entrepreneurs who did revise their goals were generally pushed into doing so by poor financial performance, and comprised of both entrepreneurs who were both growth and non-growth oriented initially. In all of these cases the revised goal was to ensure the survival of the firm through improving the firm's profitability, a goal which was manifested in the adoption of more market-oriented strategies and more rational management policies aimed at improving efficiency. However, in all cases it was evident that the underlying entrepreneurial motivations, whether pecuniary or

non-pecuniary, were not changed as a result of this experience. The second of the propositions relates to the potential for profitability to be a means to achieving different growth and non-growth goals. The evidence from this research provides support for this proposition in that whether profitability was pursued as an initial objective or as a revised objective, its pursuit was either directed at ensuring the survival of the firm, thus preserving entrepreneurial autonomy, or as a fuel for growth which obviated the need to engage in external borrowing. The evidence from this study also suggests that the autonomy motive is predominant in this sample of Tayside manufacturing entrepreneurs, regardless of their background characteristics and business objectives. A descriptive analysis of the patterns in the sample with respect to key entrepreneurial characteristics suggested in the literature, revealed that there were no substantial differences in the distribution of the characteristics between entrepreneurs in high and low performing firms. However, the autonomy motive was evident in entrepreneurs from different backgrounds who were pursuing both growth and non-growth goals, and who were using different business strategies.

Thus the results from the exploratory qualitative analysis undertaken in this study provide support for the views expressed by Cragg and King (1988) and Kuratko *et al* (1997) that the nature of entrepreneurial dynamics needs to be examined more rigorously. In particular, the impact of extrinsic and intrinsic influences on entrepreneurial motivations, and the impact of entrepreneurial motivations on the strategic choices of entrepreneurs, need to be understood more fully. There are potentially complex dynamic inter-relationships between these variables which simplistic unidirectional modelling and static quantitative analyses cannot possibly detect. Although the sample used in this research is delimited to 16 entrepreneurs in manufacturing companies in a local economy, a range of entrepreneur and firm-specific variables are represented in the sample. Even so, there are clear trends in relation to entrepreneurial dynamics that do not appear to be confined to any particular 'types' of entrepreneurs or firms. In general the results from the qualitative analysis provide strong support for the interpretation of the results from the econometric analysis and suggest further the vital need for econometric

analyses of small firm performance to take into account the potential impact of entrepreneurial motivations on growth and profitability. In particular, the evidence from this sample of entrepreneurs suggests that the entrepreneurial autonomy motivation exerts a powerful influence on the growth and profitability of small firms.

In summary, this study provides a number of contributions towards gaining an understanding of the relationships between entrepreneurial motivations, goal-setting and strategic choices in determining small firm performance. The first contribution relates to the evidence found in support of a feedback mechanism between performance and goal-setting, which in turn can influence the strategic choices adopted by entrepreneurs. The second contribution relates to the evidence found in support of the view that goal-setting is a more complex process in small firms than the assumption that entrepreneurs will pursue a single dominant goal, whether this is related to pecuniary or non-pecuniary factors. Evidence from this study suggests that entrepreneurs pursue means goals and end goals, and that profitability in particular can satisfy entrepreneurs pursuing both growth and non-growth end-goals. More specifically, profitability appears to be a key means of providing security from external influences which can potentially compromise the degree of entrepreneurial autonomy over the firm's direction. This is regardless of whether the desire for autonomy is expressed in terms of mere survival in the entrepreneurial position, or in terms of pursuing self-financed growth without the influence of external lenders. However, given that there are no previous empirical studies of this nature with which to compare the findings from the qualitative analysis, any conclusions derived from the findings here must be restricted to the sample of entrepreneurs under examination. The broad support which is given to the propositions though, suggest that they are worthy of further analysis in a wider range of contexts. Possible directions for further research will be suggested in Section 8.4.

The chief contribution from this study, however, is that the findings from the econometric and qualitative analyses together, provide support for the view that

entrepreneurial motivations may be a fundamentally important determinant of small firm performance. This is in the sense that they may influence the long-term goal-setting and strategic behaviour of entrepreneurs to a greater extent than do extrinsic economic influences. This may be the case even if entrepreneurs are forced to make short-term changes to their goals and strategies in response to periods of financial crisis.

8.2.3 RQ3 *"What is the best way to analyze small firm performance?"*

On the basis of this research, it may be concluded that adopting an interdisciplinary theoretical paradigm, along with a triangulated research methodology which incorporates a range of data collection and analytical techniques, is an effective way of analysing small firm performance. It must be noted, however, that this study applies a triangulated methodology at the broad level of the sample of small firms under investigation, rather than at the level of individual firms. Thus insights from the econometric analysis of the impact of key firm-specific variables on the growth and profitability performance of the sample, are combined with insights from a more detailed qualitative analysis of the inter-relationships between key entrepreneur-specific variables, using a sub-sample of these firms.

The literature review revealed that entrepreneur-specific variables pertaining to motivations, strategic choices and managerial practices cannot easily be analyzed using a quantitative methodology due to: (1) difficulties in specifying appropriate measures of these variables; (2) the complex inter-relationships which may exist between these variables, which make it difficult for the exact nature and direction of causality to be detected. On the other hand, the firm-specific variables of size, age and location can more readily be specified and measured. Thus, in turn, the quantitative impact of these variables on growth and profitability can more readily be measured, and the nature of causality detected. An aim of this study was therefore to synthesise the relative advantages of both quantitative and qualitative research methods from a broad analytical perspective, in order to provide

complementary insights into the determination of small firm performance, taking into account a range of influences identified in the theoretical and conceptual literature.

Furthermore, it may be argued that the paradigm and methodology adopted in this research has proved to be more effective at analysing the multi-faceted nature of small firm performance than previous studies which have been restricted by the adoption of narrow subject-specific theoretical paradigms and solely quantitative methodologies which cannot detect the intricate nature of the relationships between entrepreneurial variables. These conclusions may be justified on the following basis.

The review of the theoretical and empirical literature revealed that several authors, most notably Bygrave (1989) and Hofer and Bygrave (1992), have called for the adoption of multidisciplinary paradigms in analysing the entrepreneurship process of developing a small firm, and for the use of a wider range of research methodologies in empirical studies of this process, in particular qualitative methodologies. Furthermore, Hofer and Bygrave suggest that adopting triangulated methodologies may offer richer perspectives than single method studies, and that validity and reliability of data can be enhanced by the use of different methods. A review of previous research in the field which has attempted to relate entrepreneurial and firm characteristics to the growth and profitability performance of small firms, revealed several weaknesses relating to theoretical and methodological issues. It was shown that econometric studies have been informed by a narrow range of economic paradigms, but which in examining the impact of key firm-specific characteristics, have employed rigorous estimation techniques which can control for the influence of factors such as bicausality in the relationship between growth and profitability. On the other hand, generalist studies have been informed by a wider range of theoretical paradigms, but have been limited to relatively simplistic quantitative analyses of variables pertaining to entrepreneurial characteristics and behaviour which are potentially highly correlated, and in which there may exist complex and dynamic relationships which cannot be detected in

simplistic unidirectional models of these relationships.

Accordingly the purpose of the research undertaken in this thesis was to address these theoretical and methodological weaknesses by adopting both an interdisciplinary theoretical stance and a triangulated methodology, which combines the rigour of an econometric methodology as means of hypothesis testing, with the rigour of qualitative methodology as a means of exploring the nature of relationships between complex systems of variables. Thus hypotheses were developed which accounted for the potential impact of entrepreneurial influences, in particular motivations, on small firm performance, which could be analyzed using key firm-specific variables; and propositions were developed which could inform an exploratory qualitative analysis of the relationships between key entrepreneurial variables. This was evident in that the results from the econometric stage of the study provided some support for the impact of entrepreneurial motivations as a possible constraining influence on small firm growth, and these results were borne out by the results from the qualitative stage of the analysis. However, if the econometric analysis had been undertaken on its own, the much richer range of insights into the way in which entrepreneurial motivations interact with the goals pursued by entrepreneurs and the strategic choices they adopt in the pursuit of these goals, would not have been obtained.

With respect to the use of financial data in this study, this data was obtained from unobtrusive secondary sources thus circumventing the problems of obtaining reliable data from the primary source. Obtaining the financial data from a secondary source permitted the researcher to make key adjustments to enhance the reliability of this important data between cases. In an analysis of growth and profitability, it is paramount to ensure that reliable and valid data are used with respect to these variables. It must be noted, however, that while the financial data provided the means by which the sample is bisected into different performance categories, in order to address the research propositions P1 and P2 using qualitative data gained from interviews, these data were not integrated with qualitative data at the level of individual firms. Only broad comments on growth and profitability

performance were sought from entrepreneurs during the programme of interviews. However, this was done to prevent the rapport necessary to generate a detailed coverage of the range of issues identified in the interview agenda, being compromised by the interviewer probing for detailed comments on specific performance figures.

In addition, as it was noted earlier, it is notoriously difficult to gain an accurate representation of a small firm's profit from published accounts. The general points covered during the course of interviews suggest, in line with research proposition P2, that profits may represent different means of achieving different ends for small firm entrepreneurs. Thus non-growth entrepreneurs may still pursue high levels of profitability in order to provide greater levels of personal income. A key advantage of the financial analysis undertaken in this study is that it was possible to add back Director's Expenses in the calculation of the profit figure, and the interview data from this study lend support to the argument that this is an important component of the profit figure in small firms' published accounts. Future studies should therefore take this into consideration and may look further into the potentially different aspects of the relationship between profitability and entrepreneurial autonomy. Furthermore, while the financial data were incorporated into this analysis at the broad level of the whole sample in line with the overall purpose of this study, future studies seeking to address specifically the issue of what profitability means to small firm entrepreneurs, may seek to integrate financial data with interview data at the level of individual firms.

It may also be concluded that the theoretical and methodological framework developed in this analysis can provide a basis for future research in the field, although some qualifications must be made in this regard. While support was found for the key impact of entrepreneurial motivations on small firm performance, the results from the econometric analysis were overall rather weak, with the exception of the assets growth model. No significant determinants of profitability were identified, although the results from the qualitative analysis suggested that the pursuit of profitability may be a means of achieving security of entrepreneurial

autonomy rather than an over-riding goal in its own right. However, the sample size used in the econometric analysis may have been insufficiently large to detect these influences on profitability so that a larger sample size may have served to enhance the explanatory power of this analysis. Additionally, while any interpretation of the results from the qualitative analysis must be restricted to the sample of Tayside manufacturing entrepreneurs, the results provide a comparative basis for further research which uses a comparable methodology. This is in terms of both the trends identified in the comparative inter-site analysis, and in the provision of a series of intra-site analyses, in which context-specific factors are identified. Suggestions for further research in the field of entrepreneurial dynamics are made in Section 8.4.

In summary, this study represents an attempt to address theoretical and methodological issues which are to the fore in the literature, and in particular it addresses the nature of entrepreneurial dynamics in determining small firm performance. In doing so it provides a number of contributions to theoretical and methodological issues in the field of entrepreneurship and small firm performance. These contributions relate to the development of multidisciplinary research hypotheses and propositions which have not been empirically examined previously in this field of study using a comparable triangulated research design, which combines econometric and qualitative methodologies at a sample level. Furthermore, the two-stage research design used in the study contains contributions to the application of research techniques in the study of entrepreneurship and small firm performance. These relate to the careful adjustment of the financial data to provide a rigorous basis for both econometric and qualitative analyses, and the development of a qualitative research design which is based around a conceptual model of the qualitative relationships which may exist between key entrepreneurial variables. Both the theoretical and methodological frameworks developed in this study can be used as a basis for further research.

8.3 Implications for Theory and Practice

The aim of this section is to derive possible implications of the research for theoreticians and practitioners working in the field of entrepreneurship and small firm performance. In examining the implications of the research in this regard, it is perhaps helpful to include some comments concerning the experiences of the author in using the material from the research, as a Lecturer in Entrepreneurial Economics and Small Business Development, and as an advisor in the field of small firm performance. Here the intention is to provide a critical appraisal of the conclusions derived from the research for a wider audience than researchers in the field.

Beginning with the theoretical implications, perhaps the major implication in this regard concerns economists, who it may be suggested, need to embrace a wider body of knowledge in the development of theoretical models of small firm performance. While the need for an entrepreneurship paradigm, which is suggested in the interdisciplinary literature, has provided the theoretical basis of this research, it was evident from the review of the economic literature that the conventional theoretical paradigms employed by economists are unable to capture the multi-faceted nature of small firm performance. It was demonstrated, however, that alternative economic paradigms have identified a more purposeful and dynamic role for entrepreneurs in both small and large firms, but that these approaches are subsidiary to the predominant neoclassical paradigm. It was noted in the introduction to the review of economic perspectives that Kirchoff (1991) has argued that the study of entrepreneurship and small firm performance has raised doubts about the ability of neoclassical economics to analyze rigorously this field. Although Casson has attempted to incorporate a wider range of influences into a comprehensive neoclassical model, his approach is still confined to the predominant static equilibrium paradigm of neoclassical economics.

Despite the fact that a range of social, psychological and business management influences are suggested in the socioeconomic and evolutionary economic paradigms, these are still not evident in the mainstream economic theoretical literature to any great extent. The experiences of the author as a Lecturer in

Entrepreneurial Economics are testament to this argument. For example, in developing a course in Entrepreneurial Economics, which is concerned with the theoretical basis of the relationships between entrepreneurs and business performance, the author found that there is no textbook which comprehensively covers the range of issues suggested in the neoclassical, Austrian, socioeconomic and evolutionary paradigms. Furthermore, in developing a course in small business development, the author found that there is no textbook which covers the range of theoretical issues which are covered in both the economic and interdisciplinary literature pertaining to the relationships between entrepreneurs and the performance of their firms.

In this regard, the author has used the review of the theoretical literature undertaken in this thesis as the basis for course material, which has subsequently formed the basis of a textbook entitled 'Entrepreneurial Economics' (Glancey and McQuaid, forthcoming). This book is aimed at providing a comprehensive overview of the theoretical issues pertaining to entrepreneurship and small firm performance, across a range of economic and other subject-specific and generalist paradigms. Furthermore, it is the contention of the author that in asking the question "what economics is relevant for business education in particular?", which is perhaps one of the key issues facing teachers of economics today, that a multi-theoretical paradigm needs to be adopted from the outset, which can cover the issues concerning entrepreneurship and business performance as a central tenet of economics education in business programmes. While a fuller exploration of these issues is outwith the scope of this thesis, nonetheless the limited consideration here demonstrates the importance of entrepreneurship and small firm performance as a major theoretical concern for economists.

A second implication of this research with respect to theory is that it may be suggested that the emphasis in generalist models of small firm performance should be placed on modelling the dynamic relationships between entrepreneurial motivations, goal-setting and strategic and managerial behaviour. While the conceptual model suggested by Cragg and King (1988), which was used as the

basis for the qualitative analysis undertaken in this research, is perhaps simplistic, nonetheless it provides a valuable analytical focus on the nature of entrepreneurial dynamics in the process of developing a small firm. From a theoretical perspective, however, the nature of the impact of entrepreneurial motivations on the decision-making and strategic and managerial behaviour of entrepreneurs needs to be modelled with greater complexity. More complex theoretical models should take account of the potential influences on entrepreneurial motivations by intrinsic and extrinsic influences, and the possibility that there may be means goals and end goals pursued by entrepreneurs, which can be manifested in a range of different business strategies and managerial practices. For example, it was suggested that one possible way of achieving small firm growth without devolving a substantial degree of entrepreneurial autonomy, was for entrepreneurs to pursue lateral growth in developing a portfolio of small firms. Thus portfolio entrepreneurship may be one of achieving enhanced profitability (through diversification), growth, and security of entrepreneurial autonomy at the same time. While there was no evidence of this type of entrepreneurial behaviour in this research, it does not preclude this possibility in a wider arena. The exploratory nature of the analysis and the limited scope of the sample used in this research do not provide a sufficient basis upon which to propose a complex model of small firm performance, but the results from the research do provide support for the argument that there is a need for such a model. It may be argued that further research into the nature of entrepreneurial dynamics across a wider range of contexts is necessary in order to provide the basis for the development of more complex causal models.

Turning now to derive the implications of the research for practitioners, the concern here will be with practitioners in both public and private sectors, to whom the issues concerning entrepreneurship and small firm performance are of key relevance. Beginning with public sector practitioners in the field of economic development, who are concerned with devising and implementing policies aimed at improving the performance of small firms, and the small firm sector in general. In this regard, the author's experiences as a Lecturer in Small Business Development on a Master of Science programme aimed at economic development practitioners,

serve to illustrate the implications of this research for this group. In attempting to understand the potential for economic development of small firms, of key concern to practitioners in this area, is the question of whether it is better to implement a policy aimed at the 'blanket' promotion of new firm creation, and thus let the growth-oriented entrepreneurs, who will make the greatest individual contribution to economic development, come to the fore by virtue of 'natural' intrinsic and extrinsic forces; or is it better to 'pick winners', i.e. to actively pursue a policy of selectivity, and to target assistance at potentially growth-oriented entrepreneurs. This dichotomy has formed a vehement debate in the policy literature (Storey, 1994). However, from the perspective of seeking to engender the theoretical knowledge and practical competencies in economic development practitioners, in order for them to make an informed judgement on this debate, it is necessary for practitioners to appreciate the 'natural' processes by which growth-oriented entrepreneurs develop, and the issues surrounding the question of "how can potential winners be identified?". Practitioners therefore have to comprehend the nature and dynamics of the entrepreneurship process in terms of the characteristics, motivations, goals, strategic choices and managerial practices of entrepreneurs in small firms.

In this regard, the author has used the material from the theoretical review undertaken in this thesis along with the intra-site analyses gained from the qualitative analysis in order to provide a student-centred instructional methodology in which practitioners can relate the key theoretical issues involved to case studies of real world small firm entrepreneurs. In summary, this methodology involves students deconstructing the case studies in terms of the theory, and reconstructing them in terms of the practical implications for policy. A more detailed elaboration of the instructional methodology used is contained in Glancey (forthcoming). Fundamental to the understanding of these issues, however, is the nature of entrepreneurial dynamics and in particular the possibility that regardless of the backgrounds and personal characteristics of entrepreneurs, there may be the potential for non-growth entrepreneurs to be pulled or pushed into pursuing growth strategies, and for lifestyle entrepreneurs to be pulled or pushed into pursuing

sound business strategies aimed at improving profitability, thus ensuring their survival.

The other group of practitioners to whom the issues raised in this research may have important implications, are private sector companies engaged in providing services for entrepreneurs in small firms with the aim of making a profitable return. The example used here will be financial service practitioners, as the author has experience of acting in an advisory capacity to companies in this sector, although the issues which will be elaborated in the following discussion are of relevance to a wider private sector audience. The first point which can be made is that in numerical terms, the small firm sector is a big market for financial service providers. Furthermore, it is the aggregate contribution of small firms that is important albeit the contribution of individual small firms may be small. Even if a large proportion of small firms are not highly profitable or growth-orientated, they still need to survive, they will still need working capital and a sound cash flow, and they will potentially need a wide range of financial services. It may be argued that the key issue in lifestyle firms is survivability, and a sound portfolio of survivable lifestyle firms may offer a good return for financial service providers.

Here it is important for practitioners to understand the nature of the sector in which the firm operates, and the markets they are serving. A small subcontractor firmly embedded in a supply chain producing a product for which there is a good level of demand, is likely to survive. For those small firms that are growth-orientated, there is a need for practitioners to distinguish between firms that are entrepreneur-controlled, and those that have a more developed managerial structure. In the case of the former, it is largely the entrepreneur that is the key to whether the firm will succeed or not, and growth in such firms may be manifested in forms other than the expansion of the existing business unit. It may be argued that autocratic entrepreneur-controlled small firms are relatively higher risk offering a higher return than hierarchical small firms, which are likely to offer a more steady and predictable return. In hierarchical small firms there is likely to be a greater diversity of skills, abilities and experience which places less onus on the

entrepreneur as the key determinant of the firm's performance. In both cases though, the wider sectoral and product market influences must again be taken into account in developing a portfolio of growth-orientated small firms.

In this regard it is important for financial service practitioners to separate the entrepreneur from the firm as a unit of analysis. Therefore, it is important to look beyond the balance sheets of small firms and to consider the 'human capital' of entrepreneurs, and in particular their motivations and goals for the firm.

Furthermore, for some entrepreneurs it is only during the bad times that they may acquire the managerial skills and the commercial acumen to put their firm on a sounder footing. Surviving periods of rough trading, whether self-inflicted by not using sound business strategies in the first instance, or by increased competitive pressures in the marketplace, may be a good indication of the future survivability, and in some cases the growth potential of the firm. The 'hard' financial information presented in such cases is, however, likely to be off-putting, but it does not tell the whole story. Learning from experience may be a leveller in the small firm sector, regardless of entrepreneurs' educational and employment backgrounds.

The other key aspect here is that the small firm sector essentially encompasses key features of both the personal and corporate markets for financial services. There is potentially as big a market for personal financial products as there is for business products in the small firm sector. Developing a relationship with small firm entrepreneurs, and understanding their goals and needs, could be a profitable exercise if a portfolio of firms is considered. There are implications here too for the development and application of credit scoring techniques to the small firm sector, both as screening and decision making systems. In developing and applying credit scoring to small firms, it is important to not just focus on quantitative financial criteria, but to include the more qualitative 'human' aspects of small firm performance. The author is currently working on the development of credit scoring techniques for small firms, taking these factors into consideration. This work is discussed in the following section, in which the implications for further research are derived.

8.4 Implications for Further Research

This research has raised a number of issues which are of concern for further studies. It has already been suggested that the research hypotheses and propositions appear to merit further investigation using larger samples from a more diverse range of contexts than that used in this study. It may be suggested that econometric analyses of small firm performance need to take into account the impact of entrepreneurial motivations in analysing the determinants of growth and profitability in established small firms. Furthermore, larger samples should make it easier for the estimation techniques employed to detect the impact of these influences. Future econometric studies may also benefit from using financial data taken over a longer period of time than that used in this study. It is suggested that using, for example, five years of data would make it easier for the estimation techniques to detect the influences of both entrepreneurial factors, and bicausality in the relationship between growth and profitability. It is also suggested that future econometric studies of samples in other contexts would benefit from a qualitative follow-up stage in order to provide more a more rigorous interpretation of the estimation results. In this sense, triangulated methodology which combines the explanatory power of econometric methodology with the exploratory edge of qualitative fieldwork, appears to offer a more rigorous perspective on the influence of firm-specific variables on small firm performance, than using either methodology on its own.

It is also suggested that the nature of entrepreneurial dynamics in small firms needs to be investigated more fully and that the most analytically rigorous way of doing this is to apply qualitative methodology and field research techniques in analysing the ways in which the relationships between the motivations, goals and strategic choices of entrepreneurs develop over time in relation to changes in intrinsic and extrinsic influences. This, arguably, is the key concern in analysing the impact of entrepreneur-specific factors on small firm performance, and supersedes any concern with attempting to identify particular personal attributes and antecedent influences on entrepreneurs which can be predicted to 'cause' high levels of growth and profitability. As Storey (1994) suggests, this has proven to be a rather fruitless

research direction.

By developing a fuller understanding of the nature of entrepreneurial dynamics across a wide range of contexts, it may be possible to develop more complex, holistic and recursive models of the relationships between entrepreneurial motivations, goals and strategic choices, which take account of intrinsic and extrinsic influences. Furthermore, while this study was not able to incorporate a longitudinal aspect, it may be suggested that there is a greater need for longitudinal studies of entrepreneurial dynamics which can follow the progress of entrepreneurs over a period of time, and analyze rigorously the relative importance of different influences on key entrepreneurial variables. In studies of this nature, a fuller range of qualitative methods should be used, in particular ethnographic techniques where the researcher is immersed in the field for a period of time.

It is pertinent to conclude this thesis by indicating that subsequent to completing the empirical work for this thesis, the author has been engaged in two funded research projects which are a direct consequence of the work undertaken here. The first of these projects comprises an examination of entrepreneurial tendencies in the small hotel sector, and the second comprises an examination of entrepreneurship and growth and profitability in a sample of small firms located in the former Strathclyde Region of Scotland. In view of the previous suggestions for ways in which triangulated methodologies can provide greater insights into a field of study, it is of relevance to provide a brief discussion here of the nature of both of these projects, as they both employ triangulated methodologies, along with holistic multidisciplinary theoretical paradigms.

The small hotels study was undertaken in St Andrews in East Central Scotland and was aimed at applying the theoretical basis of the research undertaken in this thesis to a sector which has not received much empirical attention in the entrepreneurship and small firms literature. A research design was employed which combined an initial programme of a number of indepth interviews with small hotel proprietors, based on the elements of the Cragg and King (1988) model, followed by a wider

survey of the remainder of the small hotels population in St Andrews. The survey was undertaken in order to investigate hypotheses which were derived from key issues identified in the interviews, which pertained specifically to the small hotels sector. The findings from the analysis identified clear entrepreneurial tendencies amongst the sample of small hotel proprietors, and furthermore it identified the importance of dynamic changes in the goal-setting and strategic behaviour of these individuals in response to changes in intrinsic and extrinsic influences. A more detailed exposition of this project is given in Glancey and Pettigrew (1997).

The Strathclyde project employs a multi-stage research design which is based upon an initial programme of 100 indepth interviews with small firm entrepreneurs in the region, operating in a number of key manufacturing and service sectors. The interview data has been used in a number of ways, including an analysis of entrepreneurial dynamics in small business service firms, and as the basis for developing a credit scoring model for small firms lending. With regard to entrepreneurial dynamics in small business service firms, this analysis found further support for the propositions in this thesis that financial performance acts as a feedback mechanism which can push or pull entrepreneurs into revising their goals and in turn their strategic choices, and that profitability is a means goal which can satisfy both growth and non-growth oriented entrepreneurs. A more detailed exposition of this aspect of the study is given in Glancey, Greig and Pettigrew (forthcoming).

With regard to the development of a credit scoring model, the aim here is to use the richness of the interview data to inform an econometric analysis of vectors of entrepreneurial variables on growth and profitability performance, which in turn forms the basis for the development of a discriminant model which can be applied in small firms lending. A more detailed exposition of this aspect of the study is given in Glancey, Greig and Pettigrew (1997). At the time of writing, the author is also engaged in preparing a research design for a further longitudinal study of entrepreneurial dynamics along the lines suggested above, which will use an ethnographic methodology combining observation and unstructured interviewing,

for a small number of entrepreneurs participating in the wider study. In developing research methodologies for these projects, it is the contention of author, as in this thesis, that in attempting to analyze entrepreneurs and small firm performance, a range of theoretical and methodological paradigms must be utilised. As an economist, the author's views concur with those of Reid (1987: p3), who argues that,

"...there are many ways in which the economist can look at the business enterprise, each of which involves a blend of theory and empirical evidence. Unfortunately, one gets the impression that many microeconomists have had no direct contact with firms: their experience of the object on which some lavish such intricate mathematical analysis is entirely second hand".

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