

FAST GROWTH FIRMS IN IRELAND - PERFORMANCE AND
FINANCIAL STRUCTURE

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by

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DECLARATION

I declare that this thesis 'Fast Growth Firms in Ireland - Performance and Financial Structure' is based solely on my own work except where duly noted and acknowledged and I declare that this work has not been submitted previously for the award of a diploma or degree at any academic institution.

The research was carried out under the supervision of Mr. Anthony Foley, Senior Lecturer in Economics, Dublin City University Business School

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ABSTRACT

Recent research indicates that only a few new small firms grow to become large employers. This thesis examines the performance of the Enterprise Development Programme [EDP] which was set up to grant assist high growth potential start-ups in Ireland. Of the 239 start-ups grant-assisted under the programme between 1978 and 1992, 129 or 54 per cent were no longer trading in 1994. 4670 jobs were created in surviving firms and the vast majority were created in a small number of fast growth firms. 62 per cent of all jobs were created in 9.2 per cent of EDP start-ups.

The financial structure of the fast growth EDP start-ups is compared with a match group of surviving EDP firms which demonstrated slower growth patterns. Fast growth firms were less likely than match firms to be predominantly owned by the owners and their families. Consistent with this finding new share issues were found to be a relatively more important source of finance for fast growth than for match firms. Fast growth firms also financed a relatively higher proportion of total assets from share premiums, whilst match firms financed a relatively higher proportion of total assets from ordinary shares. As found in previous studies, fast growth firms were also more dependent on government grants than their match counterparts.

DEDICATION

To: Jim Halpin

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ABBREVIATIONS

ANCE	National Agency for Small Business Start-ups (France)
ASE	Annual Survey of Employment
CIP	Census of Industrial Production
CSO	Central Statistics Office
EDP	Enterprise Development Programme
EBC	European Economic Community
ENSR	European Network for SME Research
ESRI	Economic and Social Research Institute
EU	European Union
GDP	Gross Domestic Product
ISP's	Indigenous Small Plants
IDA	Industrial Development Authority
MIT	Massachusetts Institute of Technology
MNC's	Multinational Companies
NESC	National Economic and Social Council
OECD	Organisation for Economic Co-operation and Development
SBP	Small Business Programme
SBA	Small Business Administration
SIP	Small Industries Programme
SME's	Small and Medium sized enterprises
TFSB	Task Force on Small Business

CHAPTER 1: INTRODUCTION

1.1 The research field

In the early eighties unemployment levels rose significantly in the OECD and particularly in the European Union [EU], however, countries such as Japan, America and Germany, which had well established small firms policies experienced lower unemployment. As a result, small firms became increasingly important in government policy to combat unemployment in most other OECD countries including Ireland. Originally, policies focused on the maximisation of small business start-ups. But in the mid to late nineteen eighties there was a major reassessment of the employment potential of new small firms. High failure rates accompanied by low transformation rates have brought into question the impact of a policy of maximising the number of start-ups on long term employment growth.

Recent research indicates that only a handful of start-ups grow to become significant employers [Storey et al., 1987]. These firms have been referred to in the literature as 'fast growth firms' [Storey et al., 1987, op. cit.], 'flyers', [Gallagher and Miller, 1991] and 'entrepreneurial firms' [Birch, 1987]. The term fast growth firm will be used in this study. Given their employment creation potential it has been argued that governments should target fast growth firms for assistance, a policy frequently referred to as 'picking winners' [Storey et al., 1987].

The need to shift the focus of industrial support policy away from the maximisation of formations towards the promotion of growth was evident in Ireland as early as 1982 with the publication of the Telesis Report [1982]. The Telesis Report [1982, p.232] highlighted the poor growth performance of indigenous firms, and emphasised the need to promote 'structurally strong companies' capable of competing internationally. Several subsequent reviews of industrial policy advocated the adoption of a selective small firms support policy, which would target assistance to firms with potential for growth [Department of Industry and Commerce, 1987 and 1990]. In 1992, the

Culliton Report recommended that industrial policy in the nineteen nineties should focus on raising the number of fast growth firms.

Fast growth firms are the central theme of this study. This study represents an independent examination of the survival and employment growth of start-ups qualifying for assistance under the Enterprise Development Programme [EDP], set up specifically to promote indigenous start-ups with high growth potential. It is the first study to examine the financial structure of fast growth firms in Ireland based on annual returns submitted to the Companies' Registration Office.

1.2 The research objective

There are two objectives of the empirical research conducted for this study. One is to evaluate the performance of the EDP which was set up to grant assist high growth potential start-ups. The period examined is from the year of commencement in 1978 to 1992. The evaluation involves estimating the survival rate of EDP start-ups and determining the number of jobs created in surviving firms. It also involves identifying fast growth EDP firms and their contribution to net job creation. The sample of fast growth EDP firms is in turn used to investigate the second research objective which is to determine whether or not there are differences in the financial structure of fast growth firms and a 'match' group of surviving EDP firms with slower growth patterns.

In addition, the study examines whether or not differences in the management structure of fast growth and match firms can be identified from information supplied in their annual returns. The sources of information on small firms used in the study are assessed. Finally, the thesis also reviews; (a) the role of small firms in employment creation in Ireland and other OECD countries, (b) the concept and role of the fast growth firms within an Irish context and (c) the factors determining the growth of small firms.

1.3 Methodology

The fast growth firms are derived from a sample frame of start-ups grant-assisted under the Enterprise Development Programme over the period 1978 to 1992. The list of start-ups grant-assisted under the programme is derived from the Capital Expenditure Accounts, published by the Industrial Development Authority [IDA]. Since 1994 the EDP has been administered by Forbairt.¹ Three different sources were used to identify start-ups surviving in 1994; the Companies' Registration Office's database of registered companies and business names, Dun and Bradstreet credit checking service and current and back issues of the telephone directory. Employment in surviving firms was sourced from Kompass 1994 and by contacting firms directly.

The financial analysis is based a study of fast growth firms in the North East of England, by Storey et al. [1989]. The data is derived from annual returns submitted to the Companies' Office in 1991. The financial structure of fast growth firms is compared with that of a control group of surviving firms with slower growth patterns. In identifying the slow growth firms, a survey design technique based on matched-pairs analysis is used to control for the extraneous variables of age, sector and ownership. The annual returns also provide the basis for a limited examination of the management structure of fast growth and match firms.

1.4 Plan of the study

Chapter 2 examines the growth of employment in small firms in Ireland, the EU and the US. The changing shares of employment in micro, small, medium and large sized firms over the past three decades are examined. The chapter evaluates the contribution of small firms to employment creation which was first highlighted in the study of job generation in the US, by Birch [1979]. The relative importance of new small firms to employment growth is also considered. Chapter 3 discusses the concept of fast growth firms in the

¹ Following the recommendations of the Culliton Report [1992], in 1994, the IDA was restructured, Forbairt was given responsibility for the promotion of indigenous industry and the promotion of foreign investment in Ireland was assigned to the Industrial Development Agency, [IDA] Ireland.

context of empirical research and the changed focus of industrial support policy in Ireland in the nineteen eighties. Chapter 4 reviews the research on the determinants of growth in small firms. In particular, it looks at the role of financing in the growth of firms and whether or not the lack of equity financing is a more pressing problem for fast growth firms. In chapter 5 the derivation of the sample of fast growth firms is described. The selection process of EDP start-ups is examined and the sectoral composition and geographical distribution of start-ups is reported. The survival rate, in 1994, of EDP start-ups grant-assisted over the period 1978 to 1992 is estimated. The distribution of employment in surviving firms by firms size is given and the fast growth firms identified. Chapter 6 reports the transformation rate of EDP firms by sector and geographical region. It also reports the number of jobs created in fast growth firms by sector and by grant size.

In chapter 7 the fast growth firms are matched with a control group of surviving EDP start-ups with slower growth patterns. The comparison of the financial structure of fast growth firms begins with an examination of the actual balance sheet of fast growth and match firms. This is followed by an examination of the relative importance, in terms of total assets, of the different types of assets and sources of finances utilised by the fast growers and match firms. The issue of new share capital in both groups is examined and the shareholdings of the owners reported. The financial structure of firms in Ireland is compared with that of firms in the North East of England reported by Storey et al. [1989]. This is followed by a comparison of the capital structure of fast growth firms with that of indigenous industry as reported in the Review of Industrial Performance [Department of Industry and Commerce, 1990]. The management structure of fast growth and match firms is reported in Chapter 8. Chapter 9 presents the main findings of the study.

CHAPTER 2: THE GROWTH OF SMALL ENTERPRISES

2.1 Introduction

During the seventies, the share of employment in small firms increased in many industrialised economies. This process of deconcentration marked a reversal in the post war trend of the fifties and sixties, when the share of employment in large enterprises increased steadily. The seventies also marked the end of a period of rapid economic growth and low unemployment in most industrialised countries, following the first oil crisis in 1973. As unemployment continued to rise during the eighties, governments became increasingly interested in the ability of small firms to create jobs in times of slow economic growth.

This trend towards deconcentration has also been evident in Ireland. The share of employment in large manufacturing firms in Ireland, with 500 or more employees, fell from 20.5 per cent in 1980 to 13.4 per cent in 1988.¹ Traditionally, Ireland has relied on large multinational firms as a source of employment. However, greater competition in the depressed market for direct foreign investment in the eighties has led to a fundamental shift in industrial policy in favour of indigenous employment creation. In a major review of industrial policy in Ireland, the Culliton Report [1992], endorsed a policy of industrial development and employment generation through the promotion of growth in the indigenous small firm sector.

This chapter examines the growth in importance of small firms in Ireland, the US and the EU. It evaluates the importance of small firms in employment creation which was first highlighted by Birch [1979] in the US. Employment in small firms is created by the expansion of existing firms and the formation of new firms. The relative importance of new small firms to employment growth is considered in the last section.

¹ Derived from Industrial Database supplied by Department of Enterprise and Employment, 1995.

2.2 Defining small firms

There is no unanimity on the definition of the small firm. A car manufacturing firm with 500 employees is considered small within that industry, whereas within the car maintenance industry a firm with 500 employees would be considered large. Furthermore, a 'firm's size may be measured according to its costs, revenues or profits or by the amount of human or physical capital it employs' [Barkham et al., 1994, p.8]. These indices capture different aspects of the firm's activities and may not be directly related.

The most readily available information on small firms is employment data, and size as measured by numbers employed has become the benchmark for distinguishing between small, medium and large firms. Unlike financial data, figures for employment do not have to be converted to a common currency and thus facilitate international comparison.

Employment is the index of size used throughout this chapter. Great care should be exercised in comparing the share of employment in large, medium and small firms in different countries for the following reasons. There is a lack of comprehensive data on small firms. Secondly, data on employment by firm size is available for two different reporting units; the enterprise and the establishment. Establishments are single units of production, while enterprises or firms are independent legal entities, which may incorporate one or more establishments. The contribution of large enterprises to employment will be underestimated in a survey that reports employment by establishment only. The enterprise is the official reporting unit of the EU.

It is also important to note that the definition of a small firm, in terms of numbers employed, varies from one country to another. In Ireland the small firm is defined as having less than 50 employees [Industrial Development

Authority, IDA, 1979], in Britain the figure is 200 [Bolton, 1971]² and in the USA [Small Business Administration, SBA, 1982] the small firm is defined as an enterprise with less than 500 employees.

It is only as recently as 1992 that a common classification system of enterprises in the EU was introduced, with the first publication of 'Enterprises in the European Community' [Eurostat, 1992], now published as 'Enterprise in Europe'. Eurostat classified enterprises in the non-primary sectors into the four size classes given in Figure 2.1. Enterprises with less than ten employees including those with no employees are classified as micro enterprise. The first three size classes combined are defined as small and medium enterprise [SMEs].

Figure 2.1: Classification of enterprises in the EU

Size Class	No. of Employees
Micro enterprises	0 - 9
Small enterprises	10 - 99
Medium enterprises	100 - 499
Large sized enterprises	500 plus

Source: Eurostat, 1992, Enterprises in the European Community.

² This figure is for small firms in the manufacturing sector only, the Bolton Report provided 7 definitions for small firms in different sectors.

2.3 The role of small firms in Europe, the United States of America and Ireland

The role of small firms in employment varies considerably across countries. Table 2.1 shows the distribution of employment in the non-primary private sector in EU member states and the US, by enterprise size. The figures for the EU were published by the European Network for SME Research [ENSR], in 1994, using the Eurostat classification system.

The SBA uses a slightly different classification system for private enterprises in the US. Data in columns 1 and 2 for the US is based on enterprises with less than 20 employees and enterprises with 20 to 99 employees respectively. The size distribution of firms reflects the size of the economy. There is a higher concentration of employment in large enterprises in the highly developed economies of Germany, France, the USA and the United Kingdom. In these countries large enterprises with 500 plus employees have the largest share of employment, accounting for 30 per cent or more of private sector employment. The share of employment in large firms in the US, 40 per cent, is much higher than the EU average of 28 per cent.

Within the EU, micro enterprises, with less than nine employees, account for the largest share of employment in the more peripheral member states of Spain, Portugal, and Greece. In these countries micro industries account for 34 per cent or more of total employment in the private sector. In Greece, for example, the share of private sector employment in micro enterprises is 61 per cent, while firms with 500 or more employees account for 9 per cent of employment. Thus peripheral regions of the EU have a relatively high share of micro enterprises, while larger enterprises still predominate in the highly developed and densely populated regions [Korte, 1986].

Micro enterprises are also an important source of employment in the small industrialised economies of the EU, with the exception of Luxembourg. The share of employment in micro enterprises in Denmark, Belgium and the Netherlands is relatively high, but unlike the more peripheral economies, the share of employment in large firms is equally as important.

Table 2.1: Non-primary private sector employment by enterprise size in EU member states and the US in 1990

Country	Average Enterprise Size	Employment Share			SME	LSE
		0-9	10-99	100-499	0-499	500+
Belgium	6	30	25	16	71	29
Denmark	9	31	33	16	80	20
France	7	28	26	15	69	31
Germany *	9	19	27	17	63	38
Greece	3	61	20	10	91	9
Ireland	8	28	28	22	78	22
Italy	4	51	22	10	84	17
Luxembourg	10	19	32	25	76	24
The Netherlands	10	28	26	19	73	28
Portugal	5	34	31	17	82	18
Spain	4	43	27	13	82	18
United Kingdom	8	27	22	17	66	34
EU - 12	6	32	25	15	72	28
US**	n/a	27	19	14	60	40

Source: ENSR, 1994, The European Observatory for SMEs: Second Annual Report, Table 2.8. US: SBA. 1992, The State of Small Business. Table A.27. *Former FRG only. **Data in columns 1 and 2 for US is based on firms with less than 20 employees and 20 to 99 employees respectively.

The share of employment in large firms in Belgium [29 per cent], is slightly greater than the EU average and in the Netherlands the share of employment in large firms is equal to the EU average of 28 per cent. The share of employment in large firms in Denmark [20 per cent] is much lower than the EU average.

In Luxembourg the share of employment in micro enterprises [19 per cent] is much lower than the EU average. Only Germany recorded a similar share of employment for micro enterprises. The share of employment in large enterprises in Luxembourg, 24 per cent, is also lower than the EU average, while the share of employment in small and medium sized enterprises in Luxembourg, 57 per cent, is much higher than the EU average of 40 per cent.

Ireland has the second highest share of employment in small and medium sized enterprises, which account for 50 per cent of private sector employment. As expected the share of employment in large enterprises in Ireland [22 per cent] is lower than the EU average, but is higher than the levels recorded by other peripheral economies including Spain, Greece and Portugal. It is also higher than the level recorded by Italy and Denmark. Most surprising is the share of employment in micro enterprises in Ireland which one would expect to be above the EU average reflecting its peripheral location with the EU. In fact, the share of employment in micro enterprises in Ireland is 4 per cent below the EU average. This may reflect the importance of relatively larger multinational branch plants in employment in Ireland.

Table 2.1 also shows that the average size of enterprises in Ireland was higher than the EU average. The average enterprise in the non-primary private sector in Ireland had eight employees in 1990 compared with the EU average of six employees. The average size of enterprises in Italy, Greece, Spain and Portugal was less six employees. Overall, the size distribution of enterprises reflects differences in GDP per capita and population density in the EU [ENSR, 1993].

2.4 Growth in share of employment in small firms

Table 2.1 highlights differences in the employment share of small enterprises in EU member states and the US in 1990. An examination of the change in the share of employment in small enterprises since the mid-nineteen seventies, however, shows that the trend has been similar. Since the mid nineteen seventies small enterprises have been increasing their share of employment in most OECD economies.

This trend towards decreased concentration marks a reversal of the post-war trend of the nineteen fifties and nineteen sixties when the share of employment in large firms rose steadily. In 1971, the Bolton Committee published the findings of the first comprehensive examination of small enterprises in Britain. It concluded that ;

up to the middle nineteen sixties the contribution of small firms to economic activity was declining in most industries with the possible exception of the road transport and some miscellaneous service trades. . . . it is likely that in most industries this decline has been going on since before the war and there are indications that it has continued since the middle nineteen sixties [Bolton, 1971, p. 67].

The increase in concentration was particularly noticeable in the UK manufacturing sector for which the most comprehensive statistics exist. The share of employment in small manufacturing enterprises fell from 38 per cent in 1935 to 20 per cent in 1963 and the population of small manufacturing firms fell by 1,000 firms per annum over the period 1958 to 1963 [Bolton, 1971, op. cit., pp. 58-60].

This trend towards increased concentration was observed in most OECD economies, with the exception of Japan. In the first edition of the 'State of Small Business' the SBA reported a decline in the contribution of small firms to the US economy over the 20 year period 1955 to 1976 [SBA, 1982]. In

Germany, over the period 1925 to 1970, the share of employment in the largest firms, with 5,000 plus employees, rose from 14.8 per cent to 19 per cent, while the share of employment in the smallest firms, with less than ten employees, fell from 33 per cent to 22 per cent [Stockman et al., 1983, reported in Hull, 1987, p. 225].

In Ireland, there was a slight decline in the share of manufacturing employment in small firms over the period 1929 to 1938. This decline continued after the war, but at a much faster rate. Table 2.2 shows the share of manufacturing employment in Ireland for selective years, over the period 1929 to 1980, by establishment size.

Table 2.2: The distribution of manufacturing employment by establishment size in Ireland, various years, 1929-1980

Year	Establishment size		No. of Employees	
	> 50 %	50 - 99 %	100 - 499 %	> 500 %
1929	33.6	13.7	34.8	17.9
1938	32.7	13.8	39.5	14.2
1946	29.5	13.8	39.4	17.2
1958	26.4	14.5	38.1	20.9
1963	21.9	13.7	39.6	24.9
1968	20.8	13.4	41.2	25.7
1975	20.4	14.9	40.0	24.7
1980	24.9	14.7	38.3	21.4

Source: Kennedy, K., and T. Healy, 1985, Table 2.2, p. 20.
The data for 1980 is based on extended coverage and includes several hundred small establishments not previously recorded. It cannot, therefore, be compared with data for earlier years.

The share of manufacturing employment in small establishments fell by less than 1 per cent over the period 1929 to 1938, and by 8.7 per cent from 1946 to 1968. In contrast the share of employment in larger establishments increased steadily over the same period, from 17.2 per cent in 1946 to 25.7 per cent in 1968. The share of employment in establishments with between 50 and 500 employees remained remarkably stable after 1938. Therefore, the main change in the structure of manufacturing industry in post war Ireland was 'the gain in share of establishments with more than 500 employees at the expense of those with less than 50 employees' [Kennedy and Healy, 1985, p. 21].

The reversal in the process of concentration occurred in Ireland between 1968 and 1975. Though the share of employment in small manufacturing establishments fell over this period, the rate of decline was much slower. The share of manufacturing employment in small establishments fell by 0.4 per cent between 1968 and 1975. Over the same time period the share of manufacturing employment in large firms fell by 1 percentage point, the first decrease since 1938.

The share of manufacturing employment in small establishments rose from 20.4 per cent in 1975 to 24.9 per cent in 1980. However, part of this increase reflects the extended coverage of the Census of Industrial Production [CIP] after 1979. The census for 1979 included several hundred small-scale establishments not previously recorded. Due to the changes in the coverage of the CIP, it is impossible to compare data from the nineteen seventies and the nineteen eighties. However, it is clear that the trough in the share of small firms' employment in Ireland was reached between 1968 and 1975.

This pattern of declining concentration was evident in most EU countries from the early to mid-nineteen seventies. Under the 'Programme of Research and Actions on the Development of the Labour Market', Storey and Johnson [1987], undertook a review of employment creation in small and medium sized enterprises in the member states of the then European

Economic Community [EEC] for the European Commission. Table 2.3, which is taken from the report, shows the change in the share of employment in the manufacturing sector for the member states during the nineteen seventies.

Table 2.3: Percentage change in the share of employment in small and medium sized manufacturing enterprises in European Economic Community during the 1970's

Period	Country	% Share
1971-1983	United Kingdom	6.5%
1971-1981	Italy	4.9%
1970-1983	F.R. Germany (a)	3.5%
1971-1981	France	4.1%
1978-1982	Netherlands	-0.3%
1980-1984	Belgium	0.8%
1973-1980	Luxembourg	1.2%
1981-1984	Spain	1.4%
1970-1984	Portugal	-2.2%
1973-1980	Ireland	15.0%
1973-1983	Denmark	3.8%
1970-1978	Greece (b)	8.5%

Note:
(a) 20 + employees
(b) 1-9 employees
SME is defined as a firm with less than 100 employees

Source: Storey, D.J., and S. Johnson, 1987, 'Job Creation in Small and Medium Sized Enterprises,' Programme of Research and Actions on the Development of the Labour Market, Commission of the European Communities, Vol. 1., Main Report, p. 10.

The share of employment in small manufacturing firms with less than 100 employees rose during the nineteen seventies in all EEC countries with the exception of the Netherlands and Portugal. The rate of change varies substantially across countries, from 0.8 per cent in Belgium to 6.5 per cent in the UK.

In contrast to the findings of the Bolton Committee [1971], which predicted the long term decline of small firms in the UK, Table 2.3 shows that the share

of employment in small manufacturing firms in the UK increased dramatically during the nineteen seventies. The share of employment in UK manufacturing firms with less than 100 employees rose by 6.5 per cent between 1971 and 1983. This increase was unparalleled in any other EU country in Table 2.3.

The process of deconcentration continued in the nineteen eighties. By this time employment data for the whole private sector, based on VAT returns and or private databases such as the Dun and Bradstreet credit ratings, became available in some countries. In the UK, it has been estimated that the share of employment in large firms fell from 42.7 per cent in 1979 to 34.2 per cent in 1989 while the share of small firms with less than 50 employees rose from 33.6 per cent to 42.3 per cent, over the same period [Department of Employment, 1993, Table 2].

In the US, the process of deconcentration occurred at a much slower rate than in the UK. In the US, the share of employment in large firms declined by 4 per cent from 47.5 per cent in 1977 to 42.75 per cent in 1990 [SBA, 1992, p. 61]. It is worth noting that despite the 8.5 per cent decline in the share of employment in large UK firms between 1979 and 1989, the share of employment in large firms in the UK in 1990, 34 per cent, was still much higher than the EU average of 28 per cent in Table 2.1.

Another indicator of the decline in concentration has been the rise in self employment. In the nine members states which formed the EEC in 1970, self employment increased 25 per cent by 1989 while overall employment expanded by 9 per cent [ENSR, 1994, p. 90].

The trend towards deconcentration during the nineteen eighties is also observable in Ireland, particularly in the manufacturing sector. Table 2.4 shows the change in the share of manufacturing employment by establishment size in Ireland over the period 1980 to 1988, based on figures supplied by the Department of Enterprise and Employment.

Table 2.4: Manufacturing employment in Ireland, by establishment size, 1980 to 1988

Year	Establishment Size (000's)					Total
	>50	50-99	100-199	200-499	500+	
1980	61.6	35.1	41.9	51	48.8	238.4
as % of Total	25.8%	14.7%	17.6%	21.4%	20.5%	100%
1988	63.3	30	35.9	42.1	25.1	196.4
as % of Total	32.2%	15.3%	18.3%	21.4%	12.8%	100%
Net Change	1.7	-5.1	-6	-8.9	-23.7	-42
Change in Share	6.4%	0.6%	0.7%	0.0%	-7.7%	

Source: Department of Enterprise and Employment, Industrial Data Base, 1995. Appendix A, Tables 1 and 2 give the annual actual and percentage change in employment by establishment size over the period.

Total manufacturing employment fell by 42 thousand between 1980 and 1988 in Ireland. Small firms, with less than 50 employees, recorded a slight increase of one thousand seven hundred jobs, or 2.7 per cent. All other size categories recorded job losses, with the largest firms recording the greatest losses. Employment in large firms, with 500 plus employees, fell from 44.8 thousand to 23.7 thousand. As a result, the share of employment in small firms increased by 6.4 percentage points to 32.2 per cent, while the share of large firms declined by 7.7 per cent, to 12.8 per cent. Between 1980 and 1988 small firms recorded a much larger increase in their share of manufacturing employment than their 2.7 per cent increase in employment.

A rise in the share of employment in a particular size category does not necessarily mean that the number of jobs in that size category has increased. Between 1980 and 1988, firms in the 50 to 99 size band recorded a fall in employment but a slight rise in employment share. Thus, when overall

employment is declining, variations in the rate of decline within different size bands can cause a change in the share of employment.

This trend towards decreased concentration is not observable in all sectors and sub sectors of the economy. Table 2.4 shows that small manufacturing firms in Ireland increased their share of employment over the period 1980 to 1988. In contrast, the retail distribution sector in Ireland experienced increased concentration during the nineteen eighties. In 1988, 45 per cent of the total number of employees in the grocery trade were employed in enterprises with more than 50 employees, the proportion in 1977 was 12 per cent [Task Force on Small Business, TFSB, 1994, p. 10].

In the United States the share of employment and output in small manufacturing firms increased while the employment share of small firms in the financial services sectors declined, between 1976 and 1986 [Acs and Audretsch, 1993]. In Germany, there was a slight increase in the share of employment in large manufacturing enterprises over the period 1981 to 1986, while the share of small enterprises, with between 20 and 49 employees, declined [Schwalbach, 1990, Table 5.3, p. 67].³

More recent data shows that the process of deconcentration has continued in the late nineteen eighties in most EU countries and in the US. Table 2.5 shows the change in the share of employment in different sized enterprises in the EU, for the non-primary private sector, over the period 1988 to 1990. These are the first years for which harmonised data for member states are available. The table also includes changes in the share of employment in small firms in the US over the same period.

³ The survey did not include very small enterprises, with less than 20 employees.

Table 2.5: Percentage change in employment in different sized enterprises in EU member states and the United States, non-primary private sector, 1988-1990

Country	0 - 9 %	10 - 99 %	100 - 499 %	> 500 %
Greece	1.1	-0.6	-0.3	-0.2
Italy	3.3	-1.1	-0.4	-2.0
Spain	4.4	-2.4	-3.6	1.7
Portugal	1.0	2.1	-0.6	-2.5
Denmark	8.2	5.7	-4.7	-9.3
Belgium	1.7	0.5	-0.6	-1.5
Netherlands	1.0	-0.3	-0.2	-0.5
France	0.3	1.1	0.6	-1.9
United Kingdom	-1.1	0.9	-0.1	0.4
Germany	2.0	-0.7	-0.4	-0.9
Luxembourg	-4.4	2.7	3.2	-1.7
EC12	1.6	0.1	-0.6	-1.0
US*	3.7	-0.7	-1.2	-1.4
Ireland	-6.7	-2.0	4.2	4.8

Source: ENSR, 1994. The European Observatory for SMEs: Second Annual Report, Table 2.10. SBA. The State of Small Business, 1992, Table A.27.* Data in columns 1 and 2 for US is based on firms with less than 20 and 20 to 99 respectively.

The overall change reflects the trend of declining concentration. The share of employment in large enterprises in the EU fell by one per cent and by 0.6 per cent in medium sized enterprises over the period 1988 to 1990. The share of employment in micro and small enterprises rose by 1.6 per cent and 0.1 per cent respectively. The percentage change in the share of employment in large and medium sized enterprises is small, which may suggest a deceleration in the rate of decline of larger firms towards the end of the

eighties. However, the time period covered is only two years. Data on employment shares for small firms in Europe in 1986, reported in *Enterprise in Europe 1992*, is not directly comparable due to changes in the methodology.

The overall pattern masks important variations in the changes recorded in different countries. The share of employment in large enterprises fell in all member states over the two year period, with the exception of Ireland, England and Spain. The increase in concentration was most noticeable in Ireland, where both medium and large sized firms increased their share of employment by 4.2 per cent and 4.8 per cent, respectively. In Spain, the increase in share of large firms was accompanied by an increase in the share of micro enterprises and a decline in the share of small and medium sized enterprises. In the UK, the increase in share of large firms was accompanied by a rise in the share of small enterprises and a decline in the share of micro and medium sized enterprises. Ireland was the only member state to experience an increase in the share of both large and medium sized enterprises and a decline in the share of both micro and small enterprises.

The rate of change of employment in large firms also varied across countries. The fall in the share of employment in large enterprises in Denmark was 9.3 per cent, whereas the next largest decline was 2.5 per cent, recorded by Portugal.

2.4.i The share of employment in small firms in Ireland in the 1990's

The reversal in the process of deconcentration in Ireland over the period 1988 and 1990 continued during the nineteen nineties. However, data for the period 1990 to 1994 is only available for the manufacturing sector.

Table 2.4 showed that the share of employment in small manufacturing establishments increased by 6.4 per cent over the period 1980 to 1988, however, this process was reversed over the period 1988 to 1990. Table 2.6 shows the change in manufacturing employment over the period 1980 to

1988, and 1988 to 1990. The change in private sector employment by enterprise size between 1988 and 1990 is also given. The rate of decline in the manufacturing sector over the period 1988 to 1990 was much slower than that recorded by the whole non-primary private sector.

Table 2.6: Percentage change in manufacturing employment in Ireland, 1980-1988, 1988-1990 by establishment size and private sector employment 1988-1990, by enterprise size

Sector	Firm Size		
	>100	100 - 499	500+
Manufacturing			
1980-1988	7.0%	0.7%	-7.7%
1988-1990	-1.3%	0.9%	0.5%
Private Sector			
1988-1990	-8.7%	4.2%	4.8%

Source: ENSR, 1994. The European Observatory for SMEs: Second Annual Report, Table 2.10. Department of Enterprise and Employment, Industrial Data Base, 1995.

The share of employment fell by 1.3 per cent in manufacturing establishments, with less than 100 employees, and by 8.7 per cent in enterprises in the whole private sector, over the period. The share of employment in firms with 500 plus employees rose by 0.5 per cent in the manufacturing sector and by 4.8 per cent in the whole private sector.

The rate of decline in the indigenous manufacturing sector was much slower. Table 2.7 shows the annual average change in share of indigenous manufacturing employment by establishment size over the period 1973 to 1987 and 1987 to 1990, reported by the Economic and Social Research Institute ESRI, [1992].

Table 2.7: Average annual percentage change in indigenous manufacturing employment by establishment size 1973-1987 and 1987-1990

Year	Employment Size Class		
	> 50	50 - 99	200 +
1973 - 1987	1.2%	-1.9%	-6.3%
1987 - 1990	0.3%	2.7%	-1.5%

Source: ESRI, 1992, *The Impact of the Industrial Development Agencies*, A report prepared by the Economic and Social Research Institute to the Industrial Policy Review Group, Table 2.15, p. 69.

The share of manufacturing employment in indigenous small establishments increased in both periods, but at a slower rate after 1987. The average annual increase in employment in small indigenous establishments was 1.2 per cent over the period 1973 to 1987 and 0.3 per cent over the period 1987 to 1990. The share of employment in medium size establishments declined at an average annual rate of 1.9 per cent over the period 1973 to 1987. This decline was replaced by growth after 1987. Medium size indigenous establishments recorded the highest average annual increase in employment [2.7 per cent] over the three year period 1987 to 1990. The largest firms, with 200 or more employees, recorded a decline in both periods. But the rate of decline was much slower after 1987. The ESRI found that;

there was at least a distinct change from the clear-cut process of fragmentation before 1987 in which decline was rapid in the largest size class while the smallest size classes grew quite appreciably [ESRI, 1992, p.70].

While the ESRI concluded that the time period was too short to expect a clear-cut reversal in the process of deconcentration, recent data for the whole

manufacturing sector indicates that this pattern of increasing concentration continued in Ireland after 1990. Table 2. 8 shows the change in the share of employment in the manufacturing sector by establishment size, over the period 1990 to 1994.

Table 2.8: The percentage change in share of manufacturing employment in different sized establishment in Ireland, 1990-1994

Year	Firm Size (000's)					Total
	>50	50-99	100-199	200-499	500+	
1990	62.6	30.9	39.4	42.8	27	202.7
as % of Total	30.9%	15.2%	19.4%	21.1%	13.3%	100%
1994	57.6	34.3	38.4	46.9	27.7	204.9
as % of Total	28.1%	16.7%	18.7%	22.9%	13.5%	100%
Net Change	-5	3.4	-1	4.1	0.7	2.2
Change in Share	-2.8%	1.5%	-0.7%	1.8%	0.2%	

Source: Department of Enterprise and Employment, Industrial Data Base, 1995.

The share of manufacturing employment in small establishments declined from 30.9 per cent in 1990 to 28.1 per cent in 1994. The share of employment in all other size categories rose, with the exception of establishments in the 100 to 199 size category. The share of employment of the largest establishments, with 500 plus employees, rose by 0.2 per cent. Thus, in Ireland, there was a reversal in the process of deconcentration at the end of the eighties. This reversal is less in evidence in the manufacturing sector than in the whole private sector and even less so in the indigenous manufacturing sector over the period 1988 to 1990. However, compared to the early eighties this is a remarkable turnaround. The trend towards increasing concentration is also evident in the manufacturing sector over the period 1990 to 1994. The share of employment in small manufacturing

establishments peaked at 32 per cent in 1988 and has declined each year since then and by 1994 the share of employment in small manufacturing establishments had fallen to 28 per cent.⁴

The examination of employment growth in small firms in this section is based on share analysis; the change in the share of employment in different sized firms over two points in time. A rise in the share of employment in small firms is not sufficient evidence to conclude that small firms are creating employment. It may be for example, that when overall employment is falling, small firms are losing jobs at a slower rate than larger firms.

Shift in share analysis does not capture the affect of expansions and contractions of firms across different size bands on net employment change. Take for example, a study of employment growth based on two size classes; firms with less than 50 employees and firms with more than 50 employees. If, at time t a particular firm had 45 employees, and at the time t +1 employment in this firm had risen by 20 to 65 employees, all other things being equal, shift in share analysis would indicate a fall in the share of employment in small firms and a rise in the share of employment in larger firms. In effect, the expansion of the smaller firm has led to a net gain of 25 jobs. To measure the contribution of small firms to net employment growth more detailed information on 'openings' and 'closures' and changes in size over time, is required.

2.5 The contribution of small firms to employment

Studies which provide a disaggregate analysis of employment change by firm size are known as job generation studies. The data set must allow individual firms to be identified and monitored over time such that all increases resulting from openings and expansions and all decreases resulting from closures or contractions are recorded. . Figure 2.2 provides a summary of the job generation process.

⁴ Appendix A, Tables 1 and 2 give the annual actual and percentage change in employment by establishment size, over the period 1980 to 1994.

Figure 2.2: The job generation process

$$\begin{array}{rcl} \text{Births} & & \\ + & & \\ \text{In Moves} & = \text{OPENINGS} & \\ & + & \\ & \text{EXPANSIONS} & = \text{GROSS JOBS GAINS} \\ & & \\ & & \text{Minus} & = \text{NET JOB CHANGE} \\ & & \\ & \text{CONTRACTIONS} & \\ & + & \\ \text{Out Moves} & = \text{GROSS JOB LOSSES} & \\ + & = \text{CLOSURES} & \\ \text{Deaths} & & \end{array}$$

Source: Storey, D.J., and S. Johnson, 1987a, *Job Generation and Labour Market Change*, MacMillan Press, p. 41.

The data requirements for job generation studies are not easily fulfilled and this has restricted research to regional rather than national analysis in many countries. The most extensive investigation into the job creation process, at national level, have been undertaken in the United States, and the United Kingdom. In most other countries, with the exception of Denmark, only regional and sectoral job generations studies are available. In Ireland, lack of data has limited researchers to the examination of job generation in the manufacturing sector.

2.5.i Job generation in the US

Job generation studies originated from the pioneering work of two research teams in the United States; The Massachusetts Institute of Technology [MIT] led by David Birch and the Brookings Institute led by Catherine Armington and Margoire Odle. Birch [1979], claimed that 82 per cent of net employment growth in the private sector in the United States, over the period 1969 to 1976, was generated in firms with less than 100 employees, with firms with less than 20 employees accounting for 66 per cent of net job growth. This finding represented a major reversal of perceived thinking on employment creation in the United States. However, Birch's claim was seriously

undermined by the findings of Armington and Odle [1982]. Table 2.9 provides a summary of the findings of the early studies conducted by the MIT and the Brookings Institute research teams.

Table 2.9: Job generation in the US: comparison of the MIT and Brookings findings

Study	Period	% Share of Employment in Firms with < 100 Employees	Net Employment Change (Millions)
Birch, 1979	1969-1976	82%	6.75
Armington & Odle, 1982	1978-1980	39%	7.1
Birch & McCracken, 1983	1978-1980	70%	4.85
Armington, 1983	1976-1980	51%	11.53

Source: 1. Birch, D. 1979, 'The Job Generation Process', MIT Program on Neighborhood and Regional Change, Cambridge Mass. 2. Armington, C. and M. Odle, 1982, 'Small Business-How Many Jobs?' Brookings Review, Winter, pp. 14-17. Birch, D., and S. McCracken, 1983, 'The Small Business Share of Job Creation: Lessons learned from the use of a Longitudinal File', MIT Program on Neighborhood and Regional Change, March. 4. Armington, C., 1983, 'Further Examination of sources of recent employment growth: analysis of USEEM data for 1976 to 1980', mimeo, Business Microdata project, Brookings Institute, March.

Armington and Odle [1982], estimated that firms with less than 100 employees were responsible for 39 per cent of net employment growth in the private sector, over the period 1978 to 1980. A year later, using the same data set, Birch and McCracken [1983], estimated the contribution of small firms at 70 per cent, over the same period.

The fact that the two studies produced widely diverging results from the same data set questioned the effectiveness of the job generation exercise. Storey and Johnson [1987a], undertook a detailed review of the methodology used by the Brookings Institute and the MIT research teams, paying particular attention to the studies which overlapped. They found that the variation in the findings reflected differences in the interpretation of the information provided by the Dun and Bradstreet data base.

These differences centred on the treatment of non-updated records, hyperactive growth records, closures, non-branch births and branch births [Storey and Johnson, 1987a, op. cit.]. The authors concluded that while the MIT team 'radically altered' the figures provided by the Brookings Institute:

It remains true that during most periods in the United States from the end of the nineteen sixties, small firms were creating jobs at a faster rate than larger firms. . . It also remains true that during this time the MIT team generally overestimated the contribution of small firms [Storey and Johnson 1987a, op. cit., p. 67].

Storey and Johnson's findings are confirmed by the SBA [1992] which has produced a reliable data set for the period 1976 to 1990. Table 2.10 provides a summary of the results from the biannual job generation studies conducted by the SBA over the period 1976 to 1990. The second last row gives the average contribution of different size firms to employment growth over the period and the last row gives the average share of total employment in different sized firms over the period.

Table 2.10: Job generation in the US, 1976 to 1990

	Employment				
	Net Change (000's)	Size of Firm			
		1-19 %	20-499 %	<500 %	500+ %
1988-1990	2,664	150.7	-31.9	118.8	-18.8
1986-1988	6,169	24.1	20.8	44.9	55.1
1984-1986	4,611	35.5	16.8	52.3	47.7
1982-1984	4,318	48.8	27.9	76.7	23.3
1980-1982	1,542	97.9	-2.4	95.5	4.5
1978-1980	5,777	26.3	18.8	45.1	54.9
1976-1978	6,062	38.2	34.5	72.7	27.3
Weighted average, 1976-1990	-	46.9	17.9	64.8	35.2
Employment share, 1976-1990	-	20.9	32.0	52.9	47.1

Source: SBA, 1992, *op. cit.*, Table A.31, p. 216.

Large firms, with 500 plus employees created on average 35.2 per cent of net new jobs whilst small firms, with less than 500 employees, created on average 64.8 per cent of net new jobs in the US over the period 1976 to 1990. Small firms, with less than 20 employees, made the greatest contribution to employment growth. Firms in this size class were responsible for 47 per cent of net job growth in the US over the period 1976 to 1990. This figure is more than double the average share of total employment [20.9 per cent] in this size class over the same period. Lower than Birch's earlier estimate of 66 per cent for net job generation in firms with less than 20 employees, it nevertheless confirms his original premise concerning the relative greater importance of small firms to net employment growth.

A number of important points about job generation studies are evident from Table 2.10. Firstly, the table demonstrates that the contribution of small firms to net employment growth varies substantially over different time periods.

In general, it can be seen that in periods of recession, indicated by the low levels of absolute employment growth in column one, small firms contributed a relatively greater proportion of new jobs. Over the period 1980 to 1982 and 1988 to 1990, when net job growth was less than three million, small firms accounted for 98 per cent and 151 per cent of net job growth, respectively. The percentage for 1988 to 1990 is larger than 100 as other size categories recorded negative job creation over this period. The contribution of larger firms over these recessionary years was much lower than their weighted average, of 35 per cent over the whole 14 year period. Over the period 1988 to 1990 the largest firms recorded a net loss in employment of 19 per cent and in the period 1980 to 1982, they contributed only 4.5 per cent to employment growth. Firms in the 20 to 499 size category experienced net employment losses in both these periods and the net loss in this size band over the period 1988 to 1990, 32 per cent, was much higher than that recorded by firms in the 500 plus size band.

Secondly, it is also important to compare the percentage share of employment change attributed to different sized firms with the absolute change in employment across different time periods. In recessionary periods small firms recorded relatively high employment growth in percentage terms. However, the absolute increase in employment was low relative to more buoyant years. Small firms accounted for 98 per cent of net new jobs in the period 1980 to 1982 which constituted 1.51 million of the total increase of 1.54 million jobs. In the period 1976 to 1978, large firms created 1.65 million jobs which represented 27 per cent of the net increase in employment of 6 million.

In the periods 1976 to 1978, 1978 to 1980 and 1986 to 1988, when the largest absolute increases in employment were recorded, the largest firms contributed proportionally more to net employment change than the smallest firms, with the exception of the period 1976 to 1978. This finding concurs with that of the Brookings and MIT teams on the relatively greater contribution of smaller firms to net employment growth in recessionary

periods. In a study of employment change in California, Harris [1983] suggested that the relatively stronger performance of small firms in the manufacturing sector was due to the greater responsiveness of larger firms to cyclical fluctuations.

There is little doubt that on average small firms were creating jobs at a faster rate than larger firms in the US over the period 1976 to 1990. These findings stimulated interest in the employment creation prospects of small firms in Europe. As already pointed out, European studies tend to be based on regional, rather than national data, with the exception of the UK, Denmark and Ireland.

2.5.ii Job generation in the UK

The Department of Employment in the UK has undertaken a major study of employment change in the UK since 1971. The research is being conducted under Colin Gallagher of Newcastle University and Michael Daly from the Department of Employment and is based on Dun and Bradstreet's credit rating database. In 1971 the database covered over 180,000 businesses and represented 75 per cent of private sector employment in the UK.

The first study, by Gallagher and Stewart [1986] examined changes in employment by enterprise size over the period 1971 to 1981. A summary of the findings are reported in Table 2.11 below. Unlike the US, where total employment increased during the nineteen seventies, total employment in the UK fell from 17.7 million in 1971 to 15.4 million in 1981. During the period 1971 to 1981, small firms with less the 20 employees were the only size class to show an increase in employment. Firms with less than 20 employees created over a million net new jobs over the decade. The strong performance of this group, however, could not compensate for the 3.39 million jobs lost in other size classes. The largest firms, with 1,000 plus employees recorded the greatest net loss, accounting for 2.4 million job losses.

Table 2.11: Net employment change by firm size in the UK, 1971 to 1981

Firm Size	Employment 1971 (Millions)	Net Change (Millions)	% of Base Year Employment
1-19	2.05	1.10	6.2%
20-49	0.97	-0.12	-0.7%
50-99	0.96	-0.04	-0.2%
100-499	4.28	-0.51	-2.9%
500-999	1.97	-0.31	-1.8%
1000+	7.47	-2.41	-13.6%
TOTAL	17.70	-2.29	-12.9%

Source: Gallagher, C.C., and H. Stewart, 1986, Jobs and the Business Life Cycle in the UK, Applied Economics, Vol. 18, pp. 875-900

The limitations of the Dun and Bradstreet data posed similar problems for the UK researchers as their US counterparts. As already pointed out, differences in the treatment of these problems resulted in huge variations in the findings of the MIT and Brookings Institute. The UK findings must also be subject to scrutiny. The main problem with the UK data is the over proportional share of rapidly growing firms included in the records [Storey and Johnson, 1987a].

Whilst the UK findings are not directly comparable with those from the US studies, which report the contribution of small firms to net employment growth. It is clear, however, that small firms in the UK recorded net job gains while larger firms recorded net job losses during the nineteen seventies.

Small firms continued to record net job gains in the nineteen eighties, as can be seen from tables 2.12 and 2.13. Table 2.12 shows the net changes in employment in the UK over the period 1985 to 1987 [Gallagher, Daly, Thomason, 1990], Table 2.13, covers the period 1987 to 1989 [Daly et al., 1991].

Table 2.12: Net employment change by firm size in the UK, 1985-1987

Firm Size	Employment 1985 (Millions)	Net Job Generation (Millions)	% of Base Year Total
5-19	3,573	295	8.3%
20-49	1,635	-75	-4.6%
50-99	1,546	73	4.7%
100-499	2,727	47	1.7%
500-999	1,104	73	6.6%
1000+	6,158	-106	-1.7%
TOTAL	16,743	307	1.8%

Source: Gallagher, C., M. Daly and J. Thomason, 1990, The growth of UK companies 1985-1987 and their contribution to job generation. Employment Gazette, February, tables 1 & 2, p. 95.

Total employment in the UK rose slightly from 16.74 million in 1985 to 17.05 million in 1987. Once again, firms in the smallest size band recorded net gains while firms in the largest size band recorded net losses. Firms with less than 20 employees recorded a net gain of 295 thousand jobs while firms in the 1,000 plus size band recorded a net loss of 106 thousand jobs.

Table 2.13: Net employment change by firm size in the UK, 1987-1989

Firm Size	Employment 1987 (Millions)	Net Job Generation (Millions)	% of Increase
1-19	4,741	615	54.4%
20-49	1,318	76	6.7%
50-99	1,150	85	7.5%
100-499	1,966	125	11.1%
500-999	558	55	4.9%
1000+	4,900	174	15.4%
TOTAL	14.633	1.130	100.0%

Source: Daly, M., M. Campbell, G. Robinson, and C.C. Gallagher, 1991, Job creation 1987-1989: The contribution of small and large firms, Employment Gazette, November, table 1, p. 590.

In the period 1987 to 1989, there was a net increase in employment in all size bands, and overall employment increased by 1.13 million to 14.6 million. Small firms accounted for 54.5 per cent of the net increase in employment. This figure is much higher than the 32 per cent share of total employment attributed to firms with less than 20 employees in 1987. In contrast, firms with 1,000 plus employees recorded a net increase of 15 per cent, although they accounted for 33 per cent of total employment in 1987.

The figure for total employment in 1987, 17 million, reported in Table 2.12 [Gallagher, Daly, Thomason, 1990], is much higher than the figure for total employment in 1987 [14.6 million] reported in Table 2.13 [Daly et al., 1991]. No explanation is given for the difference in the figures. The authors do suggest that comparisons between the different studies should be 'undertaken with care since changes can be due to improvements in the methodology' [Daly et al., 1991, op cit., p. 593].

Comparing the three studies, it can be seen that although small firms consistently recorded net gains in employment, it was the variation in the rate of job losses in large established firms which had the greatest effect on total employment change in the UK over the period 1971 to 1989. In spite of the net job creation activities of small firms during the nineteen eighties, it was only over the period 1987 to 1989, when large firms recorded their first net increase, that overall employment in the UK showed a net increase. The researchers concluded that:

While it would be going too far - given the the degree of comparability between the the various studies - to assert that job generation by smaller firms is actually greater in times of recession, it is certainly more resilient to the effects of recession [Daly et al., 1991, op. cit., p. 594].

The greater resilience of small firms to the effects of recession was also observed in the USA by the SBA [1992] and Birch [1979]. The UK studies

demonstrate that over the past two decades small firms were net creators of jobs while large firms recorded net job losses, with the exception of the period 1987 to 1989. Regional job generation studies by Storey, [North East of England, 1981], Fothergill and Gudgin, [East Midlands, 1979] and Cross [Scotland, 1981] have confirmed the overall pattern of net job gains in small firms in the UK.

2.5.iii Job generation in Denmark

In Denmark, the Danish Statistik has examined job generation for the period 1981 to 1989 in all sectors of the economy, and the results were published in the ENSR [1994]. Table 2.14 gives a summary of the findings.

Table 2.14: Job generation in Denmark, 1981-1989

	Firm Size				Total
	1-9	10-99	100-499	>500	
(OOO's)					
Births	288	249	89	40	666
Expansions	446	471	142	51	1,110
Gross New Jobs	734	720	231	91	1,776
Deaths	276	213	70	26	585
Contractions	264	492	194	115	1,065
Gross Job Losses	540	705	264	141	1,650
Net Job Change	194	15	-33	-50	126
Change from 1981 Base (%)	54	2	-6	-12	6

Source: Denmark Statistik cited in the ENSR, 1994, op. cit., p. 99.

Over the period 1981 to 1989, total employment in Denmark rose by 126 thousand, firms with 100 plus employees recorded a net loss of 88 thousand jobs, while the smallest firms, with less than ten employees, recorded a net increase of 194 thousand jobs. The findings are consistent with the US and UK studies, in that small firms were found to be the most important source of

new jobs in Denmark. In Denmark, as in the UK, large firms recorded net job losses while small firms were net job creators.

2.5.iv Job generation in Ireland

In Ireland, O'Farrell [1986] examined job creation in the manufacturing sector over the period 1973 to 1981, using data supplied by the Industrial Development Authority. Two points relating to the data in Table 2.15 should be noted. Firstly, the data is based on establishments as opposed to enterprises. Secondly, the figure for small establishment closures in the Dublin area is an estimate and is therefore listed separately. Prior to 1979, only a sample of establishments with less than 50 employees in the Dublin area were included in the IDA Annual Survey of Employment. All Dublin expansions, contractions and new openings are included. It was estimated that 8,303 jobs were lost through closures in these establishments over the period of the study.

Table 2.15: Net change in manufacturing employment in Ireland, by establishment size, 1973-1981

Establishment Size	Net Change in Employment
0 - 50	+ 20,244
51 - 100	+ 5,500
101 - 200	+ 1,156
201 - 300	+ 553
301 - 500	- 3,662
> 500	- 4,399
Dublin Closures (1)	
> 50 employees	- 8,303
Total	+ 11,089

Source: O'Farrell, 1986, *Entrepreneurs and Industrial Change*, Dublin, IMI. Table 3.3, pp. 30-31.

1. Prior to 1979, only a sample of firms with less than 50 employees in the Dublin area were included in the IDA Annual Survey of Employment. It was estimated that 8,303 jobs were lost in these firms over the period of the study.

When allowance is made for closures in Dublin, the net change in the zero to 50 size group, is plus 11,941. Firms in the 51 to 300 size category generated 7,209 jobs and firms with over 300 employees recorded a net loss of 8,061 jobs. Thus, small firms which represented 26.5 per cent of total manufacturing employment in 1973 'made the greatest contribution to net employment change between 1973 and 1981' [O'Farrell, 1986, op. cit., p. 35].⁵

Multinational companies [MNCs] play a much more important role in employment creation in Ireland than in other EU member states. In 1981 the share of manufacturing employment in foreign owned firms was 34.3 per cent [O'Farrell, 1986, op. cit., p. 30]. Table 2.16 shows that MNCs contributed 22,834 net new jobs compared to the net loss of 11,644 in indigenous firms. The median size of MNCs, 49 employees, was small.

Table 2.16: Net change in manufacturing employment in indigenous and foreign owned establishments in Ireland, 1973 to 1981

Ownership Type	Median Size in 1981	Net Change in Employment
Multinational [MNE] Branches	49	+ 22,834
Irish Multi-Plant IMPs	58	- 6,570
Indigenous Single Plants ISPs	9	+ 3,128
*Dublin Closures > 50 employees		- 8,303
Total		+ 11,089

Source: O'Farrell, 1986, *Entrepreneurs and Industrial Change, Dublin*, IMI. Table 3.4, pp. 32-33.

Indigenous single plants [ISPs], recorded a net increase in employment of 3,000. However, this was offset by the 8,000 jobs losses in small establishments in the Dublin area which according to O'Farrell were 'likely

⁵ Table 3, Appendix A gives full details of gross gains, openings and expansion, and gross losses, closures and expansions, by establishment size.

to have occurred in ISPs' [O'Farrell, 1986, op. cit., p. 31]. This would suggest that larger enterprises in the form of multinational branch plants made the greatest contribution to net employment growth in Ireland over the period 1973 to 1981.

Keating and Keane [1989], examined job creation in existing manufacturing establishments over the period 1979 to 1985, using data supplied by the Central Statistics Office [CSO]. Table 2.17 provides a summary of the findings.

Table 2.17: Changes in manufacturing employment in Ireland, by establishment size, 1979-1985

Size	Category	No. of Firms 1979	No. of Employees 1979	No. of Employees 1985	Change 1979-1985
<20	Expanded	625	5,404	10,401	4,997
	Stable	361	3,652	3,642	-10
	Contracted	565	6,104	3,725	-2,379
	Closed pre 1985	1,030	8,490	-	-8,490
		2,581	23,650	17,768	-5,882
20-49	Expanded	78	6,293	11,115	4,822
	Stable	102	4,961	4,911	-50
	Contracted	164	10,102	5,864	-4,238
	Closed pre 1985	132	8,676	-	-8,676
		476	30,032	21,890	-8,142
50-99	Expanded	63	5,300	8,317	3,017
	Stable	100	7,247	7,215	-32
	Contracted	219	11,721	7,001	-4,720
	Closed pre 1985	132	9,316	-	-9,316
		514	33,584	22,533	-11,051
100+	Expanded	63	11,823	18,293	6,470
	Stable	100	29,887	29,426	-461
	Contracted	219	65,683	38,415	-27,268
	Closed pre 1985	150	33,540	-	-33,540
		532	140,933	86,134	-54,799

Source: Keating W. and T. Keane, 1989, Irish Industrial Structure, 1979 - 1985, A longitudinal Analysis, Journal of Statistical and Social Inquiry Society of Ireland Vol. XXV, Part 1, p. 197.

Two points need to be made about the study. Firstly, the data is based on establishments with three or more employees. Secondly, the examination of employment change by establishment size is limited to those establishments which *existed* in 1979. Therefore, the contribution of *new* establishments to net employment change in different size classes cannot be examined.

Total manufacturing employment in Ireland declined by 40,900 from 228,199 in 1979 to 187,299 in 1985 [Keating and Keane, 1989, *op. cit.*, Table 6, p. 193]. In total, 19,306 jobs were created by the expansion of existing establishments. Small establishments contributed proportionally more jobs through expansions than their share of employment. Expanding small establishments, with less than 20 employees, created 4,997 jobs, or 26 per cent of the total, although they accounted for 10 per cent of employment in 1979. In comparison, 33.5 per cent of jobs created through expansions were generated in larger establishments, with 100 plus employees, although they accounted for 62 per cent of employment in the base year.

As already pointed out, the contribution of small firms to employment change in Ireland may be overestimated given the importance of multinational branch plants to overall employment. Over the period studied, expanding foreign owned firms contributed a higher proportion of jobs through expansions than their share of employment in the base year. Foreign owned firms were responsible for 46 per cent of the jobs created through expansions although they represented 35 per cent of employment in the base year. While the contribution of expanding small establishments may be overestimated in the study, it remains true that larger establishments were losing jobs at a faster rate than smaller establishments over the period 1979 to 1985. Over the six year period 54,799 jobs were lost in existing establishments in the 100 plus size category, compared to 25,075 for all other size categories.

A rise in the share of employment in the small firm sector does not necessarily imply that small firms are creating jobs. Job generation studies

represent an advance on simple analysis of share in that they provide a disaggregate analysis of net employment change by firm size. Early job generation studies in the US produced wildly different results due to methodological differences. Today, it is clear that in the US, the share of employment in small firms rose over the period 1976 to 1990, due to the relatively higher rate at which small firms were creating jobs. In the UK small firms have been net job creators, but unlike their US counterparts, the rising share of employment in small UK firms also reflects the overall decline in employment in large firms, up until 1987. As in the UK, small firms have been the only source of job growth in the nineteen eighties in Ireland and Denmark. However, job generation studies in Ireland underestimate the contribution of branch plants to employment growth. Lack of comprehensive data limits our understanding of the process of deconcentration in most other EU countries.

2.6 Small firms: growth in numbers versus growth in size

There is considerable debate as to whether the growth in numbers of small firms, 'rate of formation', or the growth in size of small firms, 'rate of transformation', has contributed most to employment growth in the small firm sector.

Employment in small firms is created in two ways; through the expansion of existing firms and through the formation of new firms. Table 2.18 shows the proportion of gross employment gains generated by new openings and expansions in Ireland, the US, the UK and Denmark. The table demonstrates that the majority of job gains in the small firms sector are created through openings rather than expansions of small firms, with the exception of Denmark. This is particularly true in the US where 63 per cent of the jobs in small firms with less than 500 employees were created by new firms, formed over the period 1988 to 1990.

Table 2.18: Sources of job gains and losses in small firms; UK, USA, Denmark and Ireland

Country	Time Period	Base Year Employment (OOO's)	Net Change in Size Class (OOO's)	JOB GAINS		JOB LOSSES	
				Openings as % of Total Gain	Expansions as % of Total Gain	Closures as % of Total Gain	Contractions as % of Total Gain
USA	1988-1990	54,051	3,156	63.1%	36.9%	68.5%	31.5%
Denmark	1981-1989	1,776	209	36.9%	63.1%	39.3%	60.7%
UK (a)	1971-1981	302	98	64.0%	36.0%	55.0%	45.0%
UK (b)	1985-1987	521	220	56.3%	43.7%	83.7%	16.5%
UK (c)	1987-1989	606	685	44.4%	55.6%	76.0%	24.0%
Ireland	1973-1981	61	11	56.5%	43.5%	76.3%	23.7%
Small Firms in USA:		<500 employees					
Small Firms in UK:		<50					
Small Firms in Denmark:		<100					
Small Firms in Ireland:		<500					

Source: USA: SBA, 1992, op. cit., p. 212. Denmark: ENSR, 1994, op. cit., p. 99. UK: (a). Gallagher, C.C., and H. Stewart, 1986, op. cit., (b). Gallagher et al., 1990, op. cit., p. 590. (c). Daly et al., 1991, op. cit., p. 92. Ireland: O'Farrell, 1986, op. cit., pp. 32-33.

Furthermore, from 1986 to 1988 and 1984 to 1986, new small firms accounted for 71 per cent and 61 per cent of net job gains in the small firm sector, respectively [SBA, 1992, Table A30, p. 215]. The results are not directly comparable given differences in the size bands, data sources and time periods covered in the studies. It can be seen, however, that new small firms were also the most important source of job gains in Ireland and the UK, with the exception of the period 1987 to 1989. In Denmark, however, expansions of existing firms made the greatest contribution to net employment growth. Expansions accounted for 63 per cent of net employment gains in Denmark.

Table 2.18 also shows that the majority of job losses in small firms resulted from closures. Small firms are much more likely to close rather than contract, when faced with financial difficulties or a down turn in the business cycle. Closures accounted for over 65 per cent of gross job losses in small firms in the US, Ireland and the UK. Denmark provides a remarkable contrast to the other three countries. Not only do expansions account for a much higher proportion of jobs gains in Denmark, but Danish firms recorded a much lower rate of job loss through closures. Closures accounted for 39 per cent of job losses in Denmark compared to 80 per cent in Ireland.

New small firms have a much higher probability of failing than older established firms. The peak period of loss occurs within three years of start-up [Ganguly, 1985] and [McCluskey, 1992]. Ganguly found that 55 to 60 per cent of all businesses which registered for VAT in the UK, between 1972 and 1982, had deregistered by 1982 and that 60 per cent of deregistrations occur within the first three years [Ganguly, *op. cit.*, 1985, p. 146]. While not all VAT deregistrations are the result of business failure, a study of UK data suggests that closures account for the majority of deregistrations [Daly, 1990].

In Ireland, 43 per cent of indigenous start-ups grant assisted for the first time in 1983 had ceased trading after five years [McCluskey, 1992, *op. cit.*, Table 12, Appendix 2]. The Task Force on Small Business found that 37.5 per cent of indigenous and overseas establishments grant aided in 1988 had

ceased trading after four years [TFSB, 1994, p. 36].

In France, the National Agency for Small Business Start-ups [ANCE] has conducted detailed studies of survival and employment creation in new small businesses. Table 2.19 shows the forecast for survival and employment growth for the 1990 cohort of start-ups, after five years, as reported by the ENSR [1994]. ANCE estimated that 44.7 per cent of new businesses started in 1990 would survive until 1995 and that employment would fall to 73.6 per cent of the base year total.

Table 2.19: Estimated survival rate after five years of business established in France in 1990

	Business Type			Total
	One-Man Business	Independent Companies	Subsidiary companies	
% of start-ups	54	42.4	3.6	100
No. persons working in first year (OOO's) (1990)	202.2	245.1	58.9	506.3
% total working in 1990	40.0	48.4	11.6	100.0
Average no. of jobs per business -1990	1.8	2.8	8.0	2.4
Projected no. of persons working in fifth year	74.5	217.0	81.3	373.0
% total working 1995	20.0	58.2	21.8	100.0
Average no. of jobs per business -1995	1.7	5.0	16.0	4.0
Business survival rate (1995/1991) %	39.0	50.0	69.0	44.7
Job generation rate (1995/1991) %	36.8	88.5	138.0	73.6

Source: ANCE, reproduced by the ENSR, 1994, op. cit., p. 98.

There was large variation in the predictions for different types of businesses. One man businesses accounted for 54 per cent of all start-ups but only 39 per cent were expected to survive. Furthermore, only 36.8 per cent of the jobs created in one man businesses were expected to exist in 1995 and the average number of employees was expected to be 1.7. It was predicted that independent companies would maintain employment at 88 per cent of initial levels despite an expected survival rate of 50 per cent. The average number of workers was expected to rise from 2.8 in 1990 to five in 1995. Subsidiary companies which represent 3.6 per cent of start-ups were the only group expected to demonstrate a net increase in employment. It was predicted that employment in this small group would increase by 36 per cent over the five year period and that the average number of employees would rise to 16 by 1995.

It was predicted that employment in the cohort of non-branch start-ups would fall from 447.3 thousand to 291.5 thousand, or to 65 per cent of start-up levels, indicating than many of the newly created jobs were transient. Thus the high failure rate of new/small firms raises questions about their contribution to long term employment generation, since many of the jobs created are subsequently lost.

It is also claimed that many of the jobs generated in new firms are simply replacing jobs lost in failed firms [Storey and Johnson, 1987a]. This process represents a redistribution of employment and leaves overall employment unchanged. The extent to which new firms are simply replacing failed ones is unknown. But it would appear that industrial policy makers in Ireland are becoming increasingly conscious of this factor in assessing new projects for grant assistance. As a result of excess capacity amongst existing grant aided firms in the domestic market, Forbairt, cut back on the number of grant aided start-ups in Ireland in the late nineteen eighties [TFBS, 1994].

In sum, relatively higher formation rates accompanied by high failure rates limit the contribution of small firms to long term employment growth.

2.7 Conclusion

During the nineteen seventies there was a reversal in the process of concentration which so characterised the post war period of the nineteen fifties and nineteen sixties. Although the data for countries is not directly comparable, an examination of employment data for OECD countries shows that the share of employment in small firms rose during the nineteen seventies and nineteen eighties. The first set of harmonised data on employment change in the EU shows that small enterprises increased their share of employment over the period 1988 to 1990 in most EU member states. The share of employment in small firms in the EU rose by 1.2 per cent over the two year period. In the US small firms also continued to increase their share of overall employment over the period 1988 to 1990.

In contrast to the US and the EU, there was a dramatic reversal in the process of deconcentration in Ireland over the period 1988 to 1990. Over the period 1988 to 1990, the share of employment in small firms declined in Ireland by 6.7 per cent while that of firms with 500 or more employees rose by 4.5 per cent. Figures for the manufacturing sector indicate that this process continued over the period 1990 to 1994.

While the overall trend is towards smaller firm size, the process of deconcentration has not occurred in all regions and sectors, at the same rate, or at the same time. The UK recorded the highest rate of deconcentration over the past two decades but the share of employment in large UK firms is still much higher than the EU average. Variations in the role of small firms in employment creation reflects differences in overall industrial size structure, mix of industries, location, ownership and the business cycle.

The analysis of employment share in different sized firms reveals very little about the dynamic of the job generation process. Evidence from national job generation studies, in the US, UK, Ireland and Denmark indicate that small firms are the most important source of employment growth and in the case of Ireland and Denmark the only source of employment growth.

Employment in small firms is created by the expansion of existing firms and the formation of new firms. An examination of job generation reveals that the vast majority of jobs are created in new firms. Given the high failure rate of new small firms many of the jobs generated are short lived or simply replace existing jobs. Therefore, an increase in the rate of transformation is more important for long term employment growth than an increase in the rate of formations. Some researchers suggest that a very small number of fast growing small firm create the majority of jobs generated in a given cohort of new firms. The concept of the 'fast growth firm' is examined in the next chapter.

CHAPTER 3: THE CONCEPT AND ROLE OF FAST GROWTH FIRMS

3.1 Introduction

There has been a major reassessment of the employment potential of new small firms in the late eighties and early nineties. Although the number of small firms increased in most OECD countries, throughout the nineteen eighties, their net contribution to employment has been disappointing, particularly in the EU. SMEs were responsible for 75 per cent of jobs created in the non-primary sector in the EU over the period 1989 to 1992 [ENSR, 1993], but overall employment in the EU fell and unemployment rose. Unemployment in the EU rose from 8.9 per cent to 9.4 per cent over the period 1989 to 1992 and employment in the 12 member states declined by 1.7 per cent [European Economy, 1994, table 3, p. 15]. Job generation studies indicate that overall employment in the UK was lower in 1989 than in 1971, despite the net job creating activities of small firms. The poor performance of small firms is attributable to the high failure rate experienced by new small firms and the poor growth performance of surviving firms.

Chapter 2 showed how high formation rates accompanied by high failure rates limits the contribution of new small firms to long term employment growth. The employment potential of new small firms is also limited by the poor growth performance achieved by the majority of survivors. Recent research indicates that only a handful of new small firms grow to become significant employers [Storey et al., 1987,]. This group have been referred to in the literature as 'fast growth firms' [Storey et al., 1987, op. cit.], 'flyers', [Gallagher and Miller, 1991] and 'entrepreneurial firms' [Birch, 1987]. The term fast growth firm will be used in this study.

The term fast growth firm is not a new one. The Bolton Report [1971] recognised the importance of the small firms sector as a seedbed for the development of larger firms and commissioned a specific study on the financial restraints of fast growth [Tamari, 1972]. Storey et al. [1987] has argued that given their employment creation potential, governments should

target assistance to fast growth firms, a policy frequently referred to as 'picking winners'. This policy of 'picking winners' has become increasingly compelling from the point of view of industrial policy makers seeking to maximise the number of jobs created from a limited tax budget. This chapter assesses the empirical evidence on job creation in fast growth firms. The role of the fast growth firms is examined in the context of the changing structure of small firm policy in Ireland. Firstly, research on the desire to grow amongst small firm owner-managers is examined.

3.2 The Growth Objective

The hypothesis that only a handful of small businesses grow to become significant employers is reinforced by research findings on small business owner-managers' views on growth. Research suggests that most small firms do not actively aim to grow, therefore, it is not surprising that very few actually achieve growth.

Table 3.1: Small firms plans for growth, UK, 1988

	All small firms Number	%
Stay the same (No growth plans)	408,690	55
Likely to expand, and expansion seen as:	339,280	45
Slow steady growth (Slow growth firms)	261,620	35
More rapid expansion probably with either new products or entering new markets (Fast growth firms)	73,520	10
Don't know, no answer	4,140	
Total all independent firms with fewer than 50 workers/employees	747,970	100

Source: Hakim, C. 1989. 'Identifying Fast Growth Firms,' *Employment Gazette*, January, Table 8, p. 35.

In a survey of three quarters of a million small businesses, with fewer than 50 workers, in the UK in 1988, 55 per cent of participants did not plan further growth [Hakim, 1989]. Table 3.1 shows that only one in ten businesses in the UK planned rapid expansion.

These findings suggest that the majority of small business owner-managers are not strictly speaking entrepreneurs as defined in the classical theory of the firm. Independence, rather than financial gain is the main motivating factor of most small business owner-managers [Bolton Report, 1971], [Scase and Goffee, 1986]. Neither can they be considered innovators since most owner-managers are 'simply cloning an existing, well proven form of enterprise' [Curran, 1986]. Many owner-managers view loss of control as a major disincentive to the pursuit of growth [Stanworth and Curran, 1976] and [O'Connor and Woods, 1983]. Hakim illustrates that very few owner-managers desire growth but how is this reflected in the performance of their firms? The growth of new small firms is examined in the next section.

3.3 The Contribution of Fast Growth Firms to Employment Growth

The basis for Storey's definition of fast growth firms lies in the distribution of employment in new firms ten years after their foundation. Storey et al. [1987, p.153] examined employment creation in 1,145 new firms formed in the North East of England, over the period 1965 to 1978. Table 3. 2 shows the distribution of employment in surviving firms in 1978.

Table 3.2: Distribution of employment in surviving new manufacturing firms in North East England formed over the period 1965 to 1978

Employment size in 1978	Survivors		Total Employment in 1978	% of Total 1978 Employment (2)
	No.	% (1)		
1-9	429	55.4	1,862	15.7
10-24	217	28.1	3,297	27.8
25-49	81	10.5	2,693	22.7
50-99	39	5	2,629	22.2
100+	8	1	1,376	11.6
Total	774	100	11,857	100

(1) Survivors of all new firms formed over period 1965 - 1978.
(2) % of total 1978 employment in new firms in each size group.

Source : Storey et al., 1987, *The Performance of Small Firms: Profits, Jobs and Failures*. Table 5.1, p. 153.

Although according to the authors, the sample under-represents short life firms, 33 per cent of firms formed over the period had failed by 1978. There were 11,857 jobs in 774 surviving firms in 1978. Of the 774 surviving firms only 47 had more than 50 employees. These firms represented 6 per cent of survivors and 4 per cent of start-ups. Firms with 50 or more workers, employed just over 4000 workers between them in 1978 which represented 34 per cent of jobs created.

On the basis of these findings, Storey postulated that if 100 firms are formed today, the fastest growing four will have created 40 per cent of jobs by year ten [Storey et al., op. cit., 1987]. In a more recent publication the proportion of jobs attributed to the fastest growing firms was augmented to 50 per cent [Storey, 1994]. Storey's original study was based on firms formed over the period 1965 to 1978. Therefore, there is an implicit assumption here that the distribution of employment amongst the cohort of firms formed in year t , will be the same as that of firms formed over that ten year period in year t plus ten.

As found with job generation studies in Chapter 2, data requirements have

limited the number of studies available on employment growth in new small firms. All new firms formed in a given region within a specific time period must be identified, including those that subsequently fail. Employment levels in the cut off year for surviving firms must be obtained. Technically, employment in the year of foundation should be compared with the target set for employment growth to ensure that the firms were not large initially.

Table 3.3, shows the proportion of employment in fast growth firms in five other studies. Most of the studies examine employment creation in new small enterprises with the exception of Birch [1987] which examines employment creation in existing firms. This study is not comparable with the other studies in Table 3.3. Table 3.3 illustrates that the vast majority of jobs are created in a relative small proportion of small firms, with the exception of the studies by Daly et al. [1991] and TFSB [1994].

The proportion of fast growth firms identified in different regions varies considerably. In the North East of England, fast growth firms represented 4 per cent of start-ups [Storey et al, 1987, op. cit.], in the South East of England, the proportion was 18 per cent [Gallagher and Miller, 1991], while in the West Lothian region of Scotland, 12 per cent of start-ups experienced fast growth [Turok, 1991]. The studies by the TFSB [1994] and Daly et al. [1991] found that fast growth firms were not responsible for the vast majority of jobs created.

Gallagher and Miller [1991] examined employment creation in 20,000 new businesses formed in the South East region of the UK between 1980 and 1982. The data is based on information supplied by the Dun and Bradstreet credit rating company and covers both the manufacturing and services sectors. Fast growth firms represented 18 per cent of the sample but were responsible for 92 per cent of total jobs created in these new businesses by 1987.

Table 3.3: The Contribution of fast growth firms to employment growth, various regions

Study		Fast Growth Firms as % of Sample	Employment Share of Fast Growth Firms
<u>Storey et al. (1987)</u>			
Region:	North East England	4%	46%
Time Period:	1965-1978		
Sector:	Manufacturing		
Sample Size:	774		
Total Employment	11,587		
<u>Gallagher & Miller (1991)</u>			
Region:	South East England	18%	92%
Time Period:	1980-1987		
Sector:	All		
Sample Size:	20,000		
Total Employment	626,778		
Region:	Scotland	11.0%	68.0%
Time Period:	1980-1987		
Sector:	All		
Sample Size:	2,600		
Total Employment	50,588		
<u>Turok (1991)</u>			
Region:	West Lothian	12%	46%
Time Period:	1983-1989		
Sector:	All		
Sample Size:	166		
Total Employment	849		
<u>Birch (1987)</u>			
Region:	US	18%	86%
Time Period:	1981-1985		
<u>Daly et al. (1991)</u>			
Region:	UK	7%	0.5%
Time Period:	1987-1989		
Sector:	All		
<u>TFSB 1994</u>			
Region	Ireland	1.0%	18.0%
Time Period:	1983 -1988		
Sector:	indigenous grant assisted manufacturing and internationally traded services		
Sample size	455		

Source: North East of England: Storey et al., 1987, Table 5.11 p. 153. Scotland: Turok, 1991, p. 33. South East England: Gallagher, C.C. and P Miller, 1991, p, 96. UK: Daly, M. et al, 1991, Table. 4, p. 593. Ireland: TFSB, 1994, p. 42. USA: Birch, D.J., 1987, Figure 2.5, p. 37.

The researchers compared the performance of start-ups in this prosperous region with new firms in the peripheral region of Scotland. The South East region around the UK capital accounts for 50 per cent of the nation's GDP [Gallagher and Miller, 1991, op. cit.]. As expected, the level of formation was much higher in the South East than in Scotland. The number of start-ups in Scotland was 2,600 or 10 per cent of the number formed in the South East region. Fast growth firms in Scotland represented 11 per cent of the sample but accounted for 68 per cent of jobs created by 1987.

The findings indicate that despite differences in the level of formation, fast growth firms were responsible for the vast majority of jobs created in both regions. The proportion of fast growth firms in Scotland [11 per cent] was lower than the proportion of fast growth firms in the South East as was their share of employment [68 per cent]. The rate of growth of firms in the peripheral region was lower than that of firms in the core, as indicated by the difference in average firm size in both regions in 1987. Fast growth firms in the South East were on average twice the size of their Scottish counterparts. Fast growth firms in the South East employed on average 348 people compared to an average of 160 for their Scottish counterparts. The success of the South East region in producing both a higher proportion of fast growth firms and higher growth rates, reflects the contribution of the finance and banking sector to employment creation in this region. The finance and banking sector accounted for 60 per cent of jobs created in fast growth firms in the South East [Gallagher and Miller, 1991, op. cit., p. 97]. Thus location and the mix of industries will affect the proportion of fast growth firms and their growth rates.

Great care must be exercised in comparing fast growth studies, within the same region and over the same time period. Table 3.3 indicates that fast growth firms in the West Lothian region were responsible for the vast majority of jobs created in firms formed in 1983 and surviving until 1987. Fast growth firms accounted for 12 per cent of start-ups and 46 per cent of employment in survivors [Turok, 1991]. However, none of the West Lothian

companies would qualify as fast growth firms according to the definition of fast growth set out by Gallagher and Miller.

Table 3. 4: Alternative definitions of fast growth firms in Scotland

Gallagher and Miller, 1991	Turok, 1991
<p>1. Region Scotland</p>	<p>1. Region West Lothian, Scotland</p>
<p>2. Sample Size 2600 new firms</p>	<p>2. Sample Size 166 new firms</p>
<p>3. Reporting Unit Includes branch and non-branch start-ups</p>	<p>3. Reporting Unit Privately-owned partnerships, sole-traders and companies</p>
<p>4. Sector All sectors</p>	<p>4. Sector Manufacturing, Construction, Distribution, Transport & Business Services.</p>
<p>5. Period 1980 -1987</p>	<p>5. Period 1983-1987</p>
<p>6. Data Dun and Bradstreet credit rating company</p>	<p>6. Data Independent Survey of all new and potential entrepreneurs sourced in: local business directories, lists of occupants of industrial premises, client lists from support agencies, recipients of financial aid and participants on business training courses</p>
<p>7. Definition of Fast Growth New firms formed between 1980 and 1982 which in 1987, had reached a turnover of £3.5 million or employment of 50 people</p>	<p>7. Definition of Fast Growth New firms formed between 1983 and 1987 which either increased employment by 4 in the last 12 months or employed more than 10 people within 5 years of foundation</p>

Source: Turok, 1991, op. cit. Gallagher, C.C., and P. Miller, 1991, op. cit.

Table 3.4 shows the differences in the definition of fast growth firms in both studies. In the West Lothian region fast growth businesses were defined as those employing ten people or more within five years of foundation, or businesses that had increased their employment by four in the last 12 months [Turok, 1991, op. cit.]. In contrast fast growers in Scotland were defined as those firms formed between 1980 and 1982 which in 1987 had reached a turnover of £3.5 million or employment of 50 people [Gallagher and Miller, 1991, op. cit.].

The definition of fast growth firms reflects differences in the data source and the reporting units covered in the two study. The Turok study is based on an independent survey of all new firms formed in the West Lothian region. The study was designed to identify new entrepreneurs/firms at the earliest stages in their development, even potential entrepreneurs, including participants on business training courses were contacted. The study by Gallagher and Miller is based on a secondary source of information; the Dun and Bradstreet's credit rating database.

It is most likely that firms included in the Dun and Bradstreet data base will be on average much older and larger than those covered in the West Lothian study. It was already noted in Chapter 2 that the Dun and Bradstreet database includes an over proportionate share of fast growth firms [Storey and Johnson, 1987a]. Furthermore, unlike the Turok study which only includes privately owned businesses, the study by Gallagher and Miller includes new branch plants. Subsidiaries do not face the same problems as privately owned firms and have a much greater propensity to grow. New branch plants accounted for 83 per cent of employment in fast growth firms in the study by Gallagher and Miller [1991, op. cit., p.95]. Hence, the inclusion of subsidiaries will augment the proportion of fast growth firms and their growth rates.

Chapter 2 showed that new foreign-owned branch plants made the greatest contribution to employment growth, in Ireland over, the period 1973 to 1981. Once branch plants are excluded the proportion of fast growth firms in

Ireland is greatly reduced. Table 3.3 shows that the proportion of fast growth firms in Ireland is much lower than in any of the other studies, despite the high level of government support. Only four out of 455, or 1 per cent of grant-aided start-ups in 1983 employed 50 or more employees after five years [TFSB, op. cit., p.42]. The TFSB study is based on the Industrial Database compiled by the Department of Enterprise and Employment which reports employment at establishment rather than at enterprise level¹. Employment in these four firms represented 18 per cent of total employment created by 1988 in surviving grant-assisted start-ups. This figure is much lower than the proportion of employment attributed to fast growth firms in the other studies.

No significant improvement was found when the study was extended to examine employment creation in the 1983 cohort of start-ups after nine years. In 1992, the number of fast growth firms had risen to five and their share of employment had fallen to 15 per cent [TFSB, 1994, op. cit., p. 42]. While fast growth firms were responsible for a disproportionate number of net new jobs, Ireland produced a lower proportion of fast growth firms than other regions.

The low transformation rate amongst small firms in Ireland is confirmed in a study by McCluskey [1992] of employment creation in grant-aided start-ups in Ireland over the ten year period 1981 to 1990. Table 3.5 shows the distribution of employment by establishment size in 1990, for all grant-aided establishments formed over the period 1981 to 1990, in manufacturing and internationally traded services sectors.

The majority of start-ups in the manufacturing and internationally traded services sectors in Ireland during the nineteen eighties were grant aided. In total, 3,417 establishments were grant aided between 1981 and 1990 and this represents 70 per cent of start-ups in these two sectors. The closure rate of establishments formed over the ten year period is also given. In 1990, 30.8

¹ In Chapter 2, it was noted that establishment data will underestimate the size of businesses in a study as subsidiaries are counted as separate units. The effect on a sample of start-up firms is likely to be very small.

per cent of grant-aided start-ups formed over the period 1981 to 1990 had failed and the majority of start-ups remained small. Some 66 per cent of grant-aided start-ups employed less than 50 employees in 1990. Of the 3,417 start-ups formed over the ten year period, only 2.7 per cent employed 50 or more employees in 1990.

Table 3.5: The distribution of employment in grant-aided indigenous and foreign-owned start-ups, in Ireland, formed, 1981-1990, surviving in 1990, by firm size

Size	Irish % of 1981-90 Start-ups	Foreign % of 1981-90 Start-ups
Closed	30.8	26.3
<50	66.4	45.9
50-99	1.9	12.6
100-199	0.7	10.6
200-499	0.1	3.8
500+	0	0.8

Source. McCluskey, 1992, *Employment, Grants and Industrial Policy; Analysis of the Performance of Manufacturing Industry 1980-1990*. Dublin Economic Workshop, Economic Policy Conference Economic Issues Arising From the Culliton Report, 16th - 18th October 1992. Kenmare, Appendix 2, Table 16.

The share of employment created by the 2.7 per cent of fast growth firms cannot be determined as McCluskey does not give the number of jobs in each size band in 1990. The rate of transformation is significantly higher than the 1 per cent found by the TFSB [1994] for the cohort of 1983 start-ups, but lower than the 4 per cent found for firms in the North East of England [Storey et al., 1987]. The TFSB concluded 'that compared to the USA and the UK fast growth firms are less in evidence in Ireland and make a smaller contribution to job generation' [TFSB, 1994, op. cit., p. 44]. A closer examination reveals that the results from other regions, outside of the North East of England, are not directly comparable given the methodological difference in the studies. But in comparison with the North East of England,

it remains true that Ireland produced a lower proportion of fast growth. It is most likely, that Ireland's peripheral status and the small size of the domestic market, affects the growth potential of Irish start-ups. In a comparison of job generation in Ireland, Northern Ireland and the British Midlands over the period 1973-1985, it was found that new firms in Ireland experienced a lower growth rate than their counterparts in Northern Ireland and the British Midlands [Gudgin, 1989].

Table 3.5 also shows the number of foreign-owned start-ups in Ireland, formed over the period 1981 to 1990, that had 50 or more employees in 1990. As expected, foreign-owned start-ups had a higher transformation rate than their Irish counterparts. Some 28 per cent of foreign-owned firms employed 50 or more employees by 1990. Thus the proportion of fast growth firms in Ireland and their contribution to employment would be much higher if new branch start-ups were included in the study. foreign-owned firms had a lower failure rate than Irish owned firms and a higher proportion of foreign firms had 50 or more employees in 1990.

The time period covered in a study will also affect the proportion of fast growth firms and their growth rates. In contrast to the other studies, Daly et al. [1991] found that over the two year period 1987 to 1989, fast growth firms were responsible for only 4.5 per cent of net new jobs. Table 3.6 shows net employment creation for the cohort of firms in the smallest size category, with less than five employees, in the UK, over the period 1987 to 1989. Some 48,000 firms, or 13.5 per cent of the total, moved into the five to nine size category. This group of modestly expanding firms were responsible for the vast majority [56 per cent] of jobs created over the two year period.

Less than 5 per cent of jobs were created by firms which expanded beyond 20 people. Daly et al. concluded that 'overall job creation was due to a large number of firms and was not concentrated in a few cases of very rapid expansions' [Daly et al., op. cit., p. 589].

Table 3.6: Net employment creation in surviving UK firms with less than five employees in 1989

Firm size in 1989	Firms Number of Jobs	% of Total	Employment Number of Jobs	% of Total
1 - 4	300,749	83.8	23,000	9
5 - 9	48,409	13.5	148,000	56.5
10 - 19	8,784	2.5	79,000	30
20+	594	0.2	12,000	4.5
Total	358,536	100	262,000	100

Source: Daly, M. et al, 1991., op, cit., Table. 4, p. 593.

The time period covered in the study, two years, only captures the start-up or short term pattern of job generation in small firms. New small firms tend to grow much faster in relative terms in their first two to three years. However, many of these firms will either fail or reach their desired size, in terms of employees, within the first three years of business and grow no further. In Ireland, employment peaked three years after start up in successive cohorts of firms formed between 1981 and 1990 and the general pattern was for employment in five to nine year old firms to contract [McCluskey, 1992]. Therefore, in the long run, the distribution of employment will be concentrated in a small proportion of firms.

This raises the important issue as to what period of time should be considered in assessing the employment contribution of new firms. Storey [1994] argues that the appropriate period is a decade for two reasons. Firstly, it takes a minimum of a decade for start-ups to affect overall employment levels and secondly, it is only after this period of time that the temporary contribution of failures will be eliminated [Storey, 1994, op. cit.]. The major disadvantage in limiting the time period to ten years, according to Storey, is that growth into a larger enterprise normally takes more than a decade from start-up.

The task of tracking the growth of firms is not a straightforward one. Birch [1979 and 1987] draws attention to the volatility of employment levels in individual firms. He demonstrated that enterprises that had the highest employment growth in one time period also had the highest odds of declining in the proceeding period. In the study of employment creation in the 1983 cohort of start-ups in Ireland, the TFSB noted that the only start-up that had made it into the 100 to 245 size band in the five years up to 1988, had gone out of business by 1992 [TFSB , 1994, op. cit., p. 42].

Evidence from a later study by Storey et al. [1989] also raises concern over the survival of jobs in fast growth firms. In comparing the survival rate of 24 fast growth employment firms with 15 high profit firms, identified from their original 1987 database, it was found that 33 per cent of the fast growth firms failed and none of the high profit firms had failed [Storey et al, 1989, op cit p. 3]. This highlights the disparity between growth and performance, in that rapid growth in terms of employment may reflect poor business decision making which is then followed by rapid decline.

Rapid growth requires extra financing and the internal resources of the firm, such as retained profits, have to be supplemented by external sources of finance. For the newly established small firm high cost short term borrowings may be the only financing option available. Without access to external equity finance the firm will become highly geared and very vulnerable to changes in sales and profits. Thus rapid growth can be accompanied by poor financial performance and therefore result in failure. The poor survival rate of fast growth firms also draws attention to the weakness of relying on a single criterion, namely employment growth, in measuring the growth of firms.

The high failure rate of fast growth firms, poses the question as to whether or not employment is the most appropriate measure of small firm growth. Employment has long been the accepted index of size in small firms, whereas profits are the accepted measure of performance. Storey et al. [1989] and

Kinsella et al. [1994] used profitability as a measure of fast growth. There are two main problem in identifying fast growth high profit companies. Firstly, there is very little financial data available on small firms and small firm owner-managers are very reluctant to disclose financial information. Secondly, the thresholds set for growth in profits will be affected by inflation. As a result, a complex three tier selection system had to be devised to identify fast growth high profit companies. In comparison, the selection of fast growth employment is straightforward.

The use of employment as the sole index of size assumes a direct and positive relationship between growth in output and growth in employment. There has been considerable debate over the trends in employment and output growth in Ireland over the last decade, where strong output growth was accompanied by declining employment. This was the result of rapid growth in a few sectors, predominantly modern, which experienced high and rapidly rising productivity. Although these sectors experienced employment growth, rising productivity meant that employment grew at a slower pace than output [ESRI, 1992]. Thus the rate of employment growth resulting from a rise in output will vary across industries. Firms in the service sector and traditional sectors such as textiles are more likely to employ extra labour as output rises, whereas the high-tech small firm is more likely to invest in new equipment. Given the lack of financial data on small firms and current interest in job creation in small firms, employment remains the most widely used measure of size in small firm research.

This section has examined the role of new firms in employment creation. In general the studies examined confirmed Storey's original hypothesis concerning the relative importance of a few fast growth firms to long term employment growth. However, there are large variations in the relative proportion of fast growth firms and their contribution to employment reported in the studies. Chapter 2 illustrated the methodological problems associated with job generation studies when the MIT and the Brookings Institute in the US produced widely different results using the same database.

It would seem that the reader would need to be equally vigilant in comparing fast growth studies. Table 3.6 provides a summary of the factors which contribute to the variation in the results found in the different studies discussed in this section.

Table 3.7: Factors contributing to variations in the results of fast growth studies

Location	There is some evidence to suggest that the proportion of fast growth firms and their growth rates are influenced by the overall level of economic activity in a region.
Time Period	In the short-run, (a period of less than 3 years), employment is more evenly distributed amongst small firms. In the long-run, (a period of 5 years or more), the distribution of employment in new/small firms is more concentrated.
Definition of fast growth	The threshold set for employment growth will affect the proportion of fast growth identified.
Sectors	Studies covering the service sector seem to produce a higher proportions of fast growth firms, and higher growth rates than other sectors.
Reporting Unit / Ownership	A high proportion of fast growth firms and higher growth rates will be found in a study that includes new branch plant start-ups.
Data Source	The data source will affect the size classes included in the study as well as their age. The Dun and Bradstreet database, by its nature, includes an over proportionate share of fast growth firms.

Variations in the contribution of fast growth firms to employment growth reflect differences in the data sources, definitions of fast growth, reporting units, size classes, regions and time periods covered in the studies examined.

In particular, the inclusion of new branch plants will have a major effect on the proportion of fast growth firms and their contribution to employment in a given study. While the exclusion of new branch plants accounts for some of the variation in the performance of start-ups in Ireland and the South East of England, it remains true that in comparison to non-branch start-ups in the North East of England, Ireland had a lower proportion of fast growth firms. It may be that Ireland's peripheral status affects the emergence of fast growth firms and their contribution to employment.

3.4 The role of fast growth firms and industrial policy in Ireland

Although several reasons are put forward to justify state intervention in the small firm's sector, the main justification for small firm policies throughout Europe is their role in employment creation [Stanworth and Gray, 1991], [ENSR, 1994]. The promotion of regional economic balance, innovation and competition are secondary objectives of small firm policy.

In the late nineteen seventies and early nineteen eighties job generation studies in the US and UK highlighted the key role played by small firms in the creation of new jobs. In the early eighties unemployment levels rose significantly in the OECD and particularly in the EU. During this time countries, such as Japan, America and Germany, which had well established small firms policies experienced lower unemployment. As a result, small firms became increasingly important in government policy to combat unemployment throughout Europe. This shift in focus in favour of employment creation in small firms is particularly noticeable in Ireland.

During the sixties and seventies Ireland had been particularly successful in attracting foreign investment given its proximity to Europe and its relatively lower wage levels. Throughout this period Irish industrial policy makers focused on the promotion of overseas investment, which was seen as the main source of economic development and employment creation. The promotion of indigenous industry was a secondary objective of industrial

policy until the mid-nineteen eighties. As a result, the introduction of a specific policy for small firms came much later in Ireland than in other OECD countries such as Japan, Germany and the US. In these three countries small business legislation was enacted during the nineteen fifties and the early nineteen sixties [Bannock, 1980]. In Ireland, the Small Industries Programme, [SIP], now known as the Small Business Programme [SBP] was set up in 1967.

At first the SIP was spatially selective and focused on the promotion of enterprise in Designated Areas [O'Farrell, 1986]. By 1977, however, the Programme had been extended to all regions. The main objective of the Programme was to promote a culture of enterprise in Ireland, through the maximisation of start-ups. The role of small firm start-ups in providing a regional economic balance and as a seedbed for larger indigenous firms was also recognised. The SIP provided grant assistance for small scale start-ups, and it was not until 1978 that the needs of indigenous start-ups with strong growth potential were met with the introduction of the Enterprise Development Programme [EDP].

With the onset of recession, following the second oil crisis in 1979, the level of internationally mobile investment locating in Ireland declined and fell sharply after 1981 [O'Farrell, 1986]. The increasing competition for internationally mobile investment accompanied by rising unemployment led to a reassessment of the role of indigenous industry in Ireland. In 1982, the publication of the Review of Industrial Policy by NESC and the Telesis Consultancy Group, marked a watershed in industrial policy in Ireland. The Telesis Report recommended three fundamental changes in industrial policy;

The need to give greater priority to indigenous industry

The need to focus state assistance on specific barriers to growth, in particular, the need to shift the focus of support away from fixed asset financing towards the 'software' of

business support in areas such as marketing, management and research and development.

The need to move away from the support of the non-trading sector towards the promotion of structurally strong Irish companies capable of competing in the international market place. [Telesis Report, op. cit., 1982, pp. 229-235].

The Telesis Group placed indigenous industry at the centre of Ireland's industrial development. The last recommendation is of particular importance, as it highlighted the need to promote the growth of new indigenous companies.

Perhaps the greatest need for Ireland's Industrial Policy in the nineteen eighties is the better management of indigenous industry. . . not enough attention has been paid to the necessary strength and structure required for a firm to succeed competitively in the international marketplace once it has been created [Telesis Report, 1982, p. 232].

Prior to this, the focus of indigenous support policy was on the maximisation of start-ups. The shift in favour of growth, introduced by the Telesis Group, remains the key objective of industrial policy in Ireland today.

In line with the recommendations of the Telesis Report a series of policy changes have been undertaken since the mid-nineteen eighties. Although, overall funding declined over the period 1985 to 1990, the proportion of funding going to indigenous industry rose from 50.9 per cent to 54 per cent of the industrial budget over the period 1985 to 1989 [Department of Industry and Commerce, 1990]. Furthermore, a series of programmes were introduced to tackle the structural weaknesses of large and medium sized indigenous industry, including the National Linkages Programme [1985], the Company Development Programme [1984], the Science and Technology Development

Programme [1987]. In addition, a series of marketing schemes were introduced by the trade board, Coras Tractala.

A similar range of initiatives which focused on the 'software' of business support were also introduced to promote the development of small industries. Included in these new initiatives were the MENTOR and PATRON programmes which were set up by the then IDA to provide technical and management expertise for small firms. This shift in focus in favour of growth is reflected in the declining portion of funds allocated to capital investment. The proportion of the industrial budget going to support capital investment fell from 61 per cent in 1985 to 47 per cent in 1991, the proportion directed at technology doubled from 10 to 20 per cent, while the proportion going to marketing rose by 3 percentage points to 14 per cent, over the same period [ESRI, 1992, Table 1.3].

The proportion of fixed asset grants allocated to small firms showed the greatest decline over the period 1985 to 1989. Table 3. 8 shows the proportion of total grant payments allocated to small indigenous industry and medium and large sized indigenous industry firms under different support programmes, in 1985 and 1989.

The proportion of capital grants going to medium and large sized indigenous firms fell from 71.2 per cent to 62.8 per cent, while the proportion of capital grant going to small firms fell from 70.2 per cent to 47 per cent over the same time period.

The table also indicates that there was a shift towards employment grants in the small firm sector over the period. The proportion of total grant payment allocated to employment support in the small firms sector rose from 2.8 per cent in 1985 to 35 per cent in 1989.

Table 3.8: The structure of grants payments to Irish industry in 1985 and 1989

	Medium/Large 1985	Industries 1989	Small Industries 1985	1989
Total Grants paid (000's)	26,700	23,484	30,242	24,586
% of total grants allocated to:				
Fixed Assets	71.2	62.8	70.2	43
Employment	0	1.7	2.8	38.7
R & D %	15.5	15	1	2
Other non-fixed assets	13.3	20.5	26	16.3

Source: The Department of Industry and Commerce, 1990, Review of Industrial Performance 1990, Appendix 4.4, Table 3 & 4, pp. 154 & 155.

Not only did the proportion of employment grants allocated to small firms rise but the allocation of employment grants to small industries became increasingly selective of firms with potential for employment growth. In 1988, a two tier support programme based on employment creation in small firm start-ups was introduced. Start-ups with the potential to create up to 15 jobs were eligible for employment grants only, at a maximum of five thousand pounds per job created. Firms with the potential to create more than 15 jobs were also eligible for a range of non employment grants including capital, management and product development grants [Department of Industry and Commerce, 1990, p. 78]. Whilst, the concept of fast growth firms was not specifically adopted in Ireland until the publication of the Culliton Report in 1992, it is clear that by the end of the eighties, the selection of companies with potential for employment growth was seen as a priority in relation to government support under the Small Industries Programme.

The increased emphasis on employment growth in Ireland is also reflected in

the evaluation of the Small Industries Programme by the Department of Industry and Commerce in The Review of Industrial Performance in 1990:

The Small Industries Programme has made limited contribution to date to the objective of providing a seedbed for major Irish Companies; Since 1973 only 1 per cent have grown to employ over 50 people [Department of Industry and Commerce, 1990, op. cit., p. 81].

Given the low transformation rate of grant-aided indigenous start-ups the Department concluded that the objective of increased selectivity in small firm support policy had not been achieved. It restated the need to shift the focus of small firm support policy away from the maximisation of start-ups to the transformation 'of small companies into larger indigenous internationally-trading enterprises' [Department of Industry and Commerce, 1990, op. cit.].

In 1991 the Industrial Policy Review Group under the chairmanship of Jim Culliton was established by the Minister of Industry and Commerce to undertake a major examination of industrial policy in Ireland. 17 separate reports were commissioned by the Group. A summary of the findings and recommendations were published in the Culliton Report [1992].

The Group also requested the Department of Enterprise and Employment to conduct an internal study of grant-aided industry in Ireland [McCluskey, 1992, op. cit.]. In contrast to the findings of the Department of Industry and Commerce, McCluskey [1992] found that there had been a shift in support policy away from the maximisation of start-ups in Ireland over the period 1985 to 1990. Table 3.9 shows the proportion of start-ups grant assisted over the period 1980 to 1990. The proportion of indigenous start-ups grant assisted fell from a peak of 76 per cent in 1985 to 53 per cent in 1990.

Table 3.9: The Proportion of start-ups grant-aided in Ireland, 1981 to 199

Year	Start-ups	% Grant-assisted
1981	528	68
1982	450	74
1983	462	73.2
1984	370	69.7
1985	595	75.8
1986	557	74.7
1987	538	72.3
1988	578	67.1
1989	453	68.2
1990	332	53

Source: McCluskey, 1992, *op cit.*, Appendix 2, Tables 11 and 15.

Table 3.9 also shows, however, that the number of start-ups also declined from a peak of 595 in 1985 to 332 in 1990. The decline in the proportion of start-ups grant assisted after 1985 illustrates that the government had achieved part of its objective of increased selectivity in industrial support policy. The focus of industrial support had been shifting away from the maximisation of start-ups. But how successfully has support been redirected to growth firms? The relatively low transformation rate experienced by new grant-aided indigenous firms in Ireland has already been noted in the last section [McCluskey, 1992], [TFSB, 1994]. Comparing the results of the TFSB study with that of the Department of Industry and Commerce, it can be seen that the 1983 cohort of grant-aided start-ups performed no better than the 1973 cohort, as the transformation rate in both studies was 1 per cent.

McCluskey [1992, *op. cit.*] reported a higher transformation rate [2.7 per cent] for all grant-assisted start-ups over the period 1980 to 1990. This may indicate that the government was more successful in targeting growth firms in the late nineteen eighties. This is the conclusion drawn by the ESRI [1992] in its submission to the Industrial Policy Review Group which examined the role of government agencies in industrial policy. The ESRI [1992] found that the successful implementation of the objective of 'increasingly targeting

industrial support selectively to growth firms' was reflected in the rate of employment growth achieved by the cohort of start-ups grant-aided after 1987 [ESRI, 1992, op. cit].

The ESRI examined employment growth in grant-aided start-ups, excluding the Mid-West region, between 1984 and 1990. Firms grant-aided over the period 1987 to 1990 recorded a much higher average employment growth, in their start-up phase, than those receiving grants in earlier years. Firms grant assisted in 1988 recorded a 17.4 percentage increase in employment in their first year while firms grant assisted in 1984 recorded a 2.1 percentage increase in their first year of business [ESRI, 1992, op. cit., Table 3.2]. According to the ESRI, the difference in growth rates reflects improvements in the selection process;

more recently grant-assisted firms have been of better average quality than older ones, in terms of ability to generate employment. This implies that grant-assistance has increasingly been directed selectively, as intended, to companies with good prospects for increasing their employment [ESRI, 1992, op cit., p. 94].

The success of a policy of increased selectivity, in relation to the cohort of new firms grant-aided over the period 1987 to 1990, will only be determined when their employment levels for the period 1990 to 1993 are examined. As already noted, the vast majority of failures occur within three years of start-up and most new small firms reach peak employment within this period [McCluskey, 1992]. Will the 1987 to 1990 cohort of start-ups produce a higher proportion of fast growth firms than the 1 per cent produced by the 1973 [Department of Industry and Commerce, 1990] and the 1983 [TFSB , 1994] cohorts? This question is of vital importance for future economic development and employment growth in Ireland. The fact that McCluskey [1992] found a higher transformation rate amongst firms formed over the period 1980 to 1990, suggests that a higher proportion of fast growth firms

were formed in the mid to late nineteen eighties.

In another report commissioned by the Industrial Policy Review Group on the role of financial institutions in the development of indigenous industry, Kinsella [1992] used Storey's findings to justify the adoption of a policy of support for fast growth firms in Ireland. In a survey of financing in fast growth firms in both the Republic and Northern Ireland, Kinsella found that the lack of equity financing appeared to be a particular problem for fast growth firms and argued that;

The progressive reduction of grant aid should not preclude the possibility, in cases of identifiable FGF [sic]², of assisting with start up finance through grants [Kinsella, 1992, p. 9].

The role of fast growth firms and the need to provide adequate finance for their development was recognised by the Industrial Policy Review Group in its final report [Culliton Report, 1992]. The central crucial role of fast growth firms in Ireland's economic development is outlined in the Group's vision of Ireland in the year 2000;

helped by the enhanced availability of seed capital and development capital, substantial numbers of fast-growth firms will be reaching maturity, a focus on promoting clusters of firms in niches of national competitive advantage will supersede a policy of "picking winners" [Culliton Report, 1992, op. cit., p. 23].

This statement clearly indicates that by 1992 industrial policy makers in Ireland were committed to a policy of support for fast growth firms. It also indicates that in the long run the government intends to shift the focus of support away from individual firms in favour of promoting niche sectors. Thus, it is clear that in the short run the success of indigenous industrial policy centres on raising the number of fast growth firms in Ireland. The

² FGF denotes fast growth firms.

importance of this policy objective has been reiterated in subsequent policy reviews [TFSB, 1994],[NESC, 1993].

3.5 Conclusion

The success of a region not only depends on the overall level of entrepreneurial activity, but on the emergence of a sufficient number of larger firms from each successive cohort of new firms.

Storey postulated that if a 100 firms are formed today, the fastest growing four will have create 40 per cent of jobs, by year ten [Storey et al, 1987]. In general, the examination of available studies confirms Storey's original hypothesis, with the exception of studies conducted in Ireland. In comparison with the other regions, fast growth firms are less in evidence in Ireland. A closer examination reveals that the results from other regions, outside of the North East of England, are not directly comparable due to difference in the types of firms covered in these studies. In particular, the inclusion of branch plant start-ups and service sector firms will have a major effect on the proportion of fast growth firms and their contribution to employment in a given study. While the exclusion of new branch plants accounts for much of the variation in the performance of start-ups in Ireland and Scotland, it remains true that in comparison to non-branch start-ups in the North East of England, Ireland produced a lower proportion of fast growth firms.

Storey has long argued the case for a selective small firms policy, a policy frequently referred to as 'picking winners.' A review of key documents reveals that during the late nineteen eighties industrial support policy in Ireland became increasingly consistent with a policy of 'picking winners'. This is evident in the shift in industrial policy away from the maximisation of start-ups in favour of the promotion of growth. This resulted in a decline in the proportion of start-ups grant assisted after 1985. The role of government agencies in raising the proportion of fast growth firms is

central to the success of industrial development in post Culliton Ireland.

In theory a policy of picking winners is compelling, in practice such a policy may be inoperable, if government support agencies are unable to distinguish fast growth start-ups from the total population of start-ups. The identification of fast growth start-ups is examined in the next chapter.

CHAPTER 4: THE DETERMINANTS OF FAST GROWTH

4.1 Introduction

There is limited understanding of the growth process in small firms. This questions whether a policy of support for fast growth firms is operable, given that it may be impossible to identify such firms. In the absence of a theoretical framework one approach has been to test the significance of key variables on the growth of small firms. Storey et al. [1989] undertook a multi-variate study of the determinants of growth in small firms using a research design technique based on matched-pairs analysis. The aim of the study was to identify the key qualitative differences between 20 fast growth firms and a control group of 20 match firms. The two groups were tested for differences in four key areas; the owner-manager's background, management markets and marketing and finance. This study was replicated in Ireland by Kinsella et al. [1994] in the early nineteen nineties and published by the IMI in 1994. These two studies form the basis of the discussion on the determinants of growth in this chapter.

Of particular importance, from the point of view of policy makers, is the extent to which financing or equity gaps bear on fast growth firms. As already pointed out in Chapter 3, the lack of equity financing is seen as a particular problem for fast growth firms in Ireland [Kinsella, 1992]. The issue of equity financing in small firms is examined in the light of recent research in Ireland and new developments in the theory of small firm finance. Differences in the current and start-up sources of finance used by fast growth and match firms identified in Storey et al. [1989] and Kinsella et al. [1994] are also examined.

Another method of examining the difference in the finance of fast growth and match firms is to examine their accounts. In a report, submitted to the Bolton Committee, Tamari [1972] found that fast growth firms, though highly profitable were less liquid and more dependent on borrowings than other firms. In their 1989 study, Storey et al. analysed the financial structure of

fast growth firms and match firms based on accounts submitted to the Companies' Office. The analysis provides the basis for the examination of the balance sheet of firms in Ireland reported in Chapter 7.

4.2 Identifying the characteristics of fast growth firms

The studies examined in Chapter 3 focus on growth as a purely quantitative phenomenon, in terms of changes in firm size, measured by increases in numbers employed. In contrast, the theory of the growth of the firm focuses on the firm as an organisational unit. To date, however, growth models have concentrated on the large organisation which are not applicable to the small firm. Large firm models are essentially concerned with identifying factors which might 'limit growth' or 'restrict the rate of growth' [Penrose, 1959]. In contrast, growth in small firms is rare. As demonstrated in Chapter 3, small firms are much more likely to remain small or to fail. This is because 'small firms by their size alone, are restricted by their environment to certain types of opportunities, where the prospects for continued expansion are extremely limited' [Penrose, 1959, op. cit., p. 215].

The lack of a theoretical framework has not hindered empirical research on the factors contributing to small firm growth. Until recently, however, researchers tended to focus on specific disciplines, concentrating on either the psychological make-up or the sociological characteristics of small firm owner-managers. Whilst this research has added to our knowledge of the small firm growth process, the focus on single disciplines underestimates the complexity of the growth process in the small firm [Gibb and Davies, 1991].

There have been few attempts at synthesis, but the study of growth in small firms in the North East of England by Storey et al. [1989] represents an important attempt to combine existing approaches into a general framework. In this study, key variables from different disciplines which have been observed to be relevant to the growth process have been tested on a group of 20 fast growth firms and a control group of 20 'match firms.' The questionnaire examined aspects of owner-manager's background,

management, marketing and finance of 20 fast growth and match firms. Storey et al. also examined the balance sheets of fast growth and match firms based on annual returns submitted to the Companies' Office.

In 1989 and 1990 a group of researchers from the University of Coleraine under Ray Kinsella and with the assistance of David Storey, conducted a similar study of fast growth and match firms in the Republic of Ireland and Northern Ireland. The results of the study were published by the Irish Management Institute, [IMI] in 1994. The number of firms covered, 80, is double the earlier study for the North East of England. The questionnaire is broadly similar to that used by Storey et al. [1989]. However, Kinsella et al. did not examine the accounts of fast growth and match firms. The results of these two studies are examined in the next four sections of this chapter.

The methodology used in these two studies is very different to that used in previous studies and is based on a survey design technique which is known as matched-pairs analysis. This survey technique is frequently used in medical research, 'where extraneous variables are controlled by matching respondents on these variables, and subjecting each member of a pair to different treatments' [Peck, 1985, p. 981]. In the analysis of growth the pairs of firms are matched for the extraneous variables of age, sector and ownership which have been found to influence the growth of small firms.

Unlike his earlier study [Storey et al., 1987], reported in Chapter 3, in which fast growth firms were identified from a random sample in the 1989 study Storey et al. [1989] constructed their own sampling frame of fast growth and match firms. No single criteria such as growth in employment, turnover or profits was used to identify fast growth firms or match firms. Fast growth firms were found to have grown at a much faster rate than the match group in terms of employment and total assets, however, there was no evidence to suggest that the fast growth group grew any faster than the match group, in financial terms, over the period 1980 to 1985, when allowances are made for differences in relative size. This questions the extent to which the match

group are representative of stable or non-growth firms. Storey et al. pointed out that the match firms 'were *not* [sic] selected on the basis of their performance...instead, the match firms may be thought to be broadly representative of surviving small firms in the chosen sectors where fast growth firms are present' [Storey et al., 1989, p.12]. However, this multi-disciplinary approach provides a useful starting point for the examination of determinants of growth in small firms.

4.3 The impact of the owner-manager's background on the growth of the firm

It is a widely held opinion that the performance of the firm reflects the background of the owner-manager/s responsible for starting the business. This section examines the impact of the owner-manager's background on the growth of their business in North East of England [Storey et al., 1989] and the Republic of Ireland and Northern Ireland [Kinsella et al., 1994]. The variables examined include previous work experience, age, education and motivations for foundation. A summary of the results are provided in Table 4.1. As already pointed out, the studies are based on matched-pairs analysis. In 'matched-pairs' studies a relationship between a given variable and growth is deemed to exist if fast growth firms recorded a noticeable higher score for that variable than match firms, and is denoted by a \checkmark in Table 4.1. If the difference in relative scores is not noticeable, then the variable is deemed to have no impact on growth and is denoted by an x.

Table 4.1: Background of owner-managers of fast growth and match firms

Variable	North-East of England	Northern Ireland	Republic of Ireland
1 Motivation for Foundation			
a. Push factors	X	√	√
b. Pull factors	√	√	√
2 Education			
a. Level of educational attainment	√	√	√
b. Graduates	X	√	√
c. Type of Degree	Not Tested	X	X
3 Age	X	√	√
4 Previous Work Experience			
Firm size, Previous Job	X	X	X
Firm size, Second Previous Job	√	√	√
Sector	X	Not Tested	Not Tested
Management	X	X	X
Ownership	X	X	√
Note			
√ denotes that the variable impacts on growth in that fast growth firms scored noticeably higher than match firms			
X variable does not differentiate between fast growth and match firm			

Source: Storey et al., 1989, Chapter 5, pp. 24-30. Kinsella et al., 1994, Chapter 3, pp. 27-50.

In analysing the owner-manager's motivation for foundation, research distinguishes between 'push' and 'pull' motives. During the nineteen eighties the number of new firms formed rose as unemployment increased. This suggests that unemployment may be an important motive for starting a new business which may also determine whether or not the business grows. The other main push factors include threat of redundancy and discontentment with previous employer or occupation. In contrast, pull factors emphasise the positive attributes of self employment, such as a long-

held desire to be an owner-manager or to exploit a market opportunity. Some researchers suggest that firms set up by individuals who were 'pushed' into self-employment through job loss are less likely to grow their business than individuals who are 'pulled into' self-employment by the lure of a market opportunity. Storey et al. [1989] found that pull factors were relatively more important motives for start-up than push factors amongst fast growth owner-managers in the North East of England. The study found that pull factors represented 46 per cent of motives for foundation cited by fast growth owner-managers compared with 29 per cent for match firm owner-managers [Storey et al., 1989, op. cit., Table 5.1, p. 24].

Push factors were not an important motive for start-up in Northern Ireland. However, push factors were more important for match firm owner-managers. In Northern Ireland none of the fast growth owner-managers cited push factors as the primary motive for starting a business, compared with four, or 20 per cent, of match owner-managers [Kinsella et al., 1994, Table 3.3, p. 41].

In the Republic of Ireland, 'push factors' were also a more important motivating factor for match firm owner-managers. Three, or 15 per cent, of fast growth owner-managers cited push factors as the primary motive for starting a business compared with eight, or 40 per cent, of match firm owner-managers. Hence, fast growth firms in the Republic of Ireland were more likely to be influenced by 'pull' factors. 85 per cent of fast growth firms in the Republic of Ireland cited pull factors as the primary motive for starting a business where 50 per cent of firms were set up by individuals who felt there was a market opportunity they could exploit [Kinsella et al., 1994, op. cit., Table 3.2, p. 40]. In contrast, 60 per cent of match firm owner-managers cited pull factors as their primary motive for foundation, and only 15 per cent were set up by individuals who felt there was a market opportunity they could exploit [Kinsella et al., 1994, op. cit., Table 3.2, p. 40].

In Northern Ireland, 20, or 100 per cent of owner-managers were motivated

by pull factors, with 60 per cent citing a market opportunity as the primary motivating factor. However, in Northern Ireland, 'pull' factors were also important for match firm owner-managers. 80 per cent of match firm owner-managers were motivated by pull factors, with 50 per cent citing the opportunity to exploit a gap in the market as the primary motivating factor [Kinsella et al., 1994, op. cit., Table 3.2, p. 40]. It would be misleading to suggest that 'pull' factors were the only motive for the foundation of fast growth firms. Kinsella asked owner-managers to give their primary motive for starting a business. In total, fast growth owner-managers in the Republic of Ireland cited ten different motives for starting a business, indicating that there are a combination of factors at work.

There are conflicting views on the impact of education on both foundation and growth. On the one hand, it is argued that higher levels of education will assist the entrepreneur to run a successful business. On the other hand, it is argued that individuals with higher levels of education will have better opportunities to succeed in established business and are therefore less motivated to start a business. This conflict is evident from the results of empirical studies. In a major study of male work histories, it was found that owner-managers were more highly educated than the general population [Evans and Leighton, 1989]. In a similar study O'Farrell and Pickles [1988] found that education beyond secondary level in Ireland reduced the probability of an individual starting a business, but that firm formation in manufacturing is more selective of those with higher levels of education than the construction industry. In an earlier study of founders in the manufacturing sector O'Farrell also found that firms established by graduates were more likely to grow than those established by non-graduates [O'Farrell, 1986]. In contrast, Brockhaus and Nord [1979] found that 'recently established entrepreneurs' received less formal training than 'recently moved' or 'recently promoted' managers.

This conflict concerning the role of education is also evident in fast growth studies. Storey et al. [1989] found that while a higher proportion of match

firm owner-managers had no qualifications, they were also more likely to hold a degree. Storey et al. did not examine the type of degree held by fast growth and match owner-managers. It may not be simply the level of educational attainment, but educational disciplines which differentiate between fast growth and match firms [Foley and Griffith, 1992]. As in the North East of England, Kinsella et al. [1994] found that a higher proportion of fast growth owner-managers in the Republic of Ireland and Northern Ireland had paper qualifications. However, there was no difference in the type of educational qualifications held by degree holders. The findings suggest that more detailed analysis on the impact of education on the performance of the firm is required, including the role of education in different sectors, the role of graduates and the types of degrees held by graduates.

The relationship between the age of the owner-manager at the time of foundation and the growth of the business is also unclear. While it is argued that the younger owner-manager is more likely to possess the energy and motivation to provide the substantial time input required to transform the business, it could also be claimed that younger owner-managers will lack the experience and know-how to grow their businesses. In the Republic of Ireland and Northern Ireland the majority of fast growth owner-managers were slightly younger than their match counterparts at the time of foundation. In both regions the majority of fast growth owner-managers were in the 35-44 age group and the majority of match firm founders were in the 45-54 age group [Kinsella et al., 1994, Table 3.7, p.44]. There was little difference in the age structure of owner-managers in the North East of England at the time of foundation, where 63 per cent of fast growth and 58 per cent of match firms founders were in the 39 - 45 age group [Storey et al., 1989, Table, 5.3, p.27].

There are several hypotheses relating the previous work experience of the owner-manager to the growth of the firm. Firstly, it is argued that the individual with prior work experience in a sector will have gained skills and

expertise which will help them manage a successful business in that field. In the North East of England, 65 per cent of fast growth founders and 45 per cent of match firm founders established businesses in the same sector in which they were formerly employed [Storey et al., 1989, Table 5.3, p.27]. Kinsella et al. did not test this hypothesis.

It is also suggested that individuals who have previously worked in small firms will have a greater knowledge of all aspects of running a business than individuals from larger organisations where roles are more functionally specialised. The majority of owner-managers in all regions were previously employed in small firms. In the Republic of Ireland and Northern Ireland, 70 per cent of owner-managers were employed in firms with less than 100 employees [Kinsella et al., 1994, p. 47]. Therefore, size of previous employer does not differentiate between fast growth and match firm owner-managers. However, it was found that the owner-managers of fast growth firms in all three regions were more likely to have had broader employment experience.

In all three regions a higher proportion of fast growth owner-managers had worked in larger firms in their second last job. Thus, 50 per cent of fast growth owner-managers in the Republic of Ireland, and 66.6 per cent in Northern Ireland had worked in firms with 100 plus employees in their second last job. The corresponding figures for match firms were 31.6 per cent and 38.5 per cent, respectively [Kinsella et al., 1994, op. cit., p. 47].

It is also suggested that owner-managers with previous management experience are more likely to establish a successful business. In the three regions, a high proportion of owner-managers in both groups had previous management experience. In the Republic of Ireland a higher proportion of founders of fast growth firms, than match firms had previous experience of starting a business, however, they represented a small proportion [35 per cent] of fast growth owner-managers.

In this section we have briefly examined four of the key characteristics of owner-managers which have been deemed to have an impact on the growth of the firm. There is no clear evidence to suggest that the owner-manager's background has a major effect on the growth of their businesses, with perhaps one exception, owner-managers of fast growth firms are more likely to be motivated by 'pull' rather than 'push' factors. In a recent review of literature in this field Storey concluded;

What the entrepreneur has done prior to establishing the business exerts only a modest influence upon the success of the business. Prior to start-up, the identikit picture of the entrepreneur whose business is likely to grow is extremely fuzzy [Storey, 1994, p.137].

In some areas, such as education, more detailed research is required on the impact of the owner-manager's educational background on business performance.

4.4 The impact of markets and marketing on the growth of the firm

The lack of marketing expertise has been cited as a major constraint on the development of small firms in Ireland [Telesis, 1982], [Department of Industry and Commerce, 1990], [NESC, 1993]. In the case of Ireland, the problem is compounded by the size of the domestic market, which makes exporting a necessary condition for growth for most businesses in the manufacturing sector. It has already been stated that in founding a business, fast growth owner-managers are more likely to be motivated by a market-opportunity. This would suggest that marketing is a key area where fast growth and match firms differ.

Table 4.2 shows the key variables for which fast growth and match firms were assessed for differences in this area. Given that fast growth owner-managers are more likely to set up a business where there is a gap in the market, it would be expected that they would be operating in a market with fewer competitors than match firms.

Table 4.2: The impact of marketing on the growth of the firm

Variable	North-East of England	Northern Ireland	Republic of Ireland
1 Competitor Awareness			
a. Domestic Competition	X	X	√
b. Foreign Competition	√	X	X
2 Exporting	√	√	√
3 Competitive Strengths	√	√	√
4 Market Information	√	√	√
5 Customer Relations	√	X	X
6 Product Development	√	X	X
<p>Note</p> <p>√ denotes that the variable impacts on growth in that fast growth firms scored noticeably higher than match firms</p> <p>X variable does not differentiate between fast growth and match firm</p>			

Source: Storey et al., 1989, op. cit., Chapter 8, pp. 47-52. Kinsella et al., 1994, op. cit., Chapter 6, pp. 111-150.

There is some supporting evidence for this in that 70 per cent of fast growth firms in the Republic of Ireland claimed they had fewer than ten competitors whilst 50 per cent of match firms claimed they had more than 20 competitors [Kinsella et al., 1994, Table 6.1, p. 119]. However, in Northern Ireland and the North East of England, a higher proportion of match firms claimed they had fewer than ten competitors. While firms in the Republic and Northern Ireland tend to identify domestic competitors, fast growth firms in the North East of England are more likely to be competing with non-UK firms. Hence, 28 per cent of fast growth firms in the North East of England believed that at least one of their three main competitors was foreign, compared with 12 per cent of match firms [Storey et al., 1989, op. cit., p.47].

While there were noticeable differences between fast growth and match firms in the North East of England in terms of customer relations and new product development, these factors did not differentiate between fast growth and match firms in the Republic of Ireland and Northern Ireland. In the case of new product development, for example, 17 fast growth firms in the Republic of Ireland and 18 match firms claimed to have introduced new products in the past two years and in Northern Ireland 14 firms in each group claimed to have introduced new products [Kinsella et al., 1994, Table 6.8, p.123].

There were noticeable differences between fast growth and match firms in the three regions in terms of market research and perceptions of competitive strengths. In all three regions firms claimed that their main competitive advantage lay in the quality of service which they provide. However, fast growth firms in the North East of England placed greater emphasis on overall quality, and fast growth firms in the Republic of Ireland and Northern Ireland placed greater emphasis on technological service, back-up and design, than their matched counterparts. It should be noted that only four, or 20 per cent, of fast growth firms in both the Republic and Northern Ireland regarded design as an important aspect of their competitive advantage [Kinsella et al., 1994, Table 6.5, p.121]. Since only a small proportion of fast growth firms considered design as important, it cannot be pinpointed as a key distinguishing feature of fast growth firms. In the North East of England, match firms placed greater emphasis on price and credit facilities in appraising their competitive strengths. These factors were not perceived to be important for match firms in the Republic of Ireland and Northern Ireland.

In all three regions fast growth firms placed greater emphasis on market research. 74 per cent of fast growth firms in the Republic of Ireland and 60 per cent in Northern Ireland had commissioned research in the past two years, the comparative figures for match firms were 55 and 31.6 per cent [Kinsella et al., op. cit, Table 6.34, p.145]. Once again, the high proportion of

match firms in the Republic of Ireland which had conducted market research in the previous two years would suggest that this is not a key distinguishing feature of fast growth firms, at least not in the Republic of Ireland.

One of the key findings of Storey's study in 1989 was the relative importance of exports to fast growth firms. 45 per cent of fast growth firms in the North East of England exported at least some of their products compared with 15 per cent of match firms [Storey et al., op.cit., 1989, p.50] Given that fast growth firms are more likely to export and to be competing with foreign firms, Storey et al. concluded that;

Fast growth firms can play a key role in influencing U.K. competitiveness in world markets. The growth of these firms is much more likely to be at the expense of overseas firms. Conversely, the match firms are much more likely to be competing with local firms. Their growth is therefore more likely to lead to much higher rates of local displacement [Storey et al., 1989, op. cit., p.52].

Given the small size of the domestic market, it is to be expected that exports would be important to a higher proportion of all firms in the Republic of Ireland and Northern Ireland. It is perhaps for this reason that Kinsella undertook a much more in depth examination of the role of exports in fast growth and match firms. In both Northern Ireland and the Republic of Ireland fast growth firms export a higher proportion of their output than match firms. The difference between fast growth and match firms in Northern Ireland is less conspicuous. In the Republic of Ireland, 95 per cent of match firms sold 90 per cent or more of their output on the domestic market, compared with 41.2 per cent of fast growth firms, the corresponding figures for Northern Ireland were 33.3 per cent and 11.8 per cent [Kinsella et al., 1994, Tables 6.11, & 6.13, pp. 125 & 127].

A higher proportion of fast growth firms in both regions export to Britain. Again, the difference between fast growth and match firms in the Republic of Ireland was more pronounced. Fast growth firms in both regions were also more likely to export to markets beyond the British Isles. Given the relative importance of foreign markets to fast growth firms, it is not surprising that a higher proportion of fast growth firms claimed that exports were 'very important' to their past and future development. However, more than 50 per cent of match firms in Northern Ireland believed that exports were important for their future development [Kinsella et al., 1994, p. 139].

The key factor differentiating fast growth and match firms is the markets they serve. Fast growth firms are much more likely to export and to be selling a higher proportion of their output to the UK and markets beyond the British Isles. While there were noticeable differences in the fast growth and match firms owner-managers' perceptions of their competitive strengths, these differences were perceived by a minority of fast growth owner-managers and therefore cannot be deemed to be key determinants of growth. While a higher proportion of fast growth firms undertook market research, a significant proportion of match firms did so also, which would suggest that this is not a major determinant of growth. However, one is unlikely to find a variable which would exclusively differentiate fast growth firms. Further research is required to test the 'weight of different factors in the growth process over time and to understand better the interactions of various key factors in this process in determining successful business development' [Gibb and Davies, 1991, p. 289].

4.5 The impact of management on growth on the growth of the firm

The impact of management on the growth of the business is two fold. Firstly, the skills and expertise of the management team will influence the development of the firm. Secondly, the system of planning and control implemented by the management team will also impact on the performance of the business. In Section 4.1, no conclusive evidence was found to suggest that the owner-manager's background influences the growth of the

business with the exception of motives for foundation. However, some researchers have argued that it is the subsequent additions to the management team that have a major impact on the growth of the firm [Penrose, 1959]. In this section, differences in the skills and expertise acquired by fast growth and match firms through additions to their management teams are examined.

Table 4.3: The impact of management on the growth of the firm

The Management Team	North-East of England	Northern Ireland	Republic of Ireland
1 Size at Start up	√	√	√
2 Current Size	√	√	√
3 Expertise at Start up			
a. Production	X	X	X
b. Marketing	√	X	√
c. Finance	X	X	X
d. Personnel	X	X	X
e. R & D	X	X	√
f. General Management	X	X	X
g. Previous Ownership	X	√	X
4 Current Expertise			
a. Production	X	X	X
b. Marketing	√	X	X
c. Finance	√	X	X
d. Personnel	√	X	X
e. R & D	√	√	√
f. General Management	X	X	√
g. Previous Ownership	√	X	X
5 Business Planning	X	X	X
6 Business Control	X	X	X
Note			
√ denotes that the variable impacts on growth in that fast growth firms scored noticeably higher than match firms			
X variable does not differentiate between fast growth and match firm			

Source: Storey et al., 1989, op. cit., Chapter 8, pp. 47-52. Kinsella et al., 1994, op. cit., Chapter 6, pp. 111-150.

Table 4.3 shows that fast growth firms in all regions had a larger management team than match firms at the time of start-up. Thus, in the North East of England, the average size of the management team at start-up was 2.6 for fast growth firms and two for match firms [Storey et al., 1989, op. cit., p. 53]. This difference in size was also evident in the current management teams of firms in the Republic of Ireland and Northern Ireland. In the Republic of Ireland the number of managers in fast growth firms rose from an average of 1.9 at start-up to three whilst in match firms the number of managers rose from 1.6 to two [Kinsella et al., 1994, p.31]. In Northern Ireland the average size of the management team at start-up was 2.2 individuals for fast growth firms and 1.5 for match firms. The number of managers rose to 4.7 in fast growth firms and to 3.4 in match firms [Kinsella et al., 1994, pp.30-31].

Given the difference in the size of the management teams of fast growth and match firms in all three regions, it is to be expected that the management teams of fast growth firms would have a wider variety of skills and expertise than match firms at start-up. In effect, the studies suggest that the experience brought to the firm at start-up is very similar with one exception. In both the North East of England and the Republic of Ireland, fast growth firms had a higher proportion of individuals with a marketing background. This is consistent with earlier findings reported in Section 4.3 which showed that the owner-managers of fast growth firms were more likely to be motivated by a market opportunity in starting their own businesses. While fast growth firms in Northern Ireland had a higher proportion of individuals with marketing experience than match firms, the difference was marginal. Table 4.3 also shows that fast growth firms in the Republic of Ireland were also more likely to have a manager with previous experience in research and development.

In terms of skills and expertise acquired after foundation, the fast growth firms in the North East of England had gained substantially on match firms in all areas with the exception of production and general management. In

the case of firms in the Republic of Ireland the main difference in the current expertise of management was once again in research and development, but also in general management. In Northern Ireland fast growth firms had also gained on match firms in terms of research and development. Although a higher proportion of fast growth firms than match firms in both regions had marketing expertise, the difference was marginal.

In an earlier study, Storey et al. [1987] found that fast growth companies were less likely to have a family member on the board of directors. 25 per cent of fast growth firms had a husband and wife team on the board and 16.7 per cent had a blood relative in terms of sons or daughters, the corresponding figures for other firms were 53 per cent and 69.3 per cent [Storey et al., op. cit., 1987, p. 166]. This would suggest that fast growth firms are more likely to draw on a wider pool of expertise than the other firms which tend to rely more on family and relatives. In the later studies, the participation of family members in the management of fast growth and match firms was not assessed.

It is a widely held assumption that the well managed firm performs better and therefore has greater potential to grow. This view permeates most business disciplines including economics, marketing, management and accounting, as well as financial and government institutions which favour the firm with the business plan. This has led to the investigation of how growth firms differ from other firms in terms of planning and control.

Kinsella et al. [1994] undertook a detailed analysis of the planning and control process in fast growth and match firms. The questionnaires focused on two particular functions, the use of formal business plans and management control/accounting systems. In total 25 questionnaires were administered. In the case of Northern Ireland, the outstanding feature is the extent to which the responses for fast growth firms concur with those of match firms. Hence, ten, or 50 per cent, of fast growth and match firms in Northern Ireland had a business plan at start-up and of the remaining ten,

nine, or 45 per cent, of firms in both groups subsequently introduced one [Kinsella et al., 1989, op. cit., Tables 5.1 & 5.7, pp. 95 & 98].

The difference between fast growth and match firms in the Republic of Ireland was more conspicuous. Ten, or 53 per cent of fast growth firms in the Republic of Ireland had a formal business plan at start-up and of the remaining nine, eight, or 89 per cent subsequently introduced one. While six, or 33 per cent, of match firms in the Republic of Ireland had a business plan at start-up, of the remaining 12, only three, or 23 per cent subsequently introduced one.¹ Kinsella concluded that:

In the Republic of Ireland the great majority of fast growth firms regard a formal business plan as important...*while*...in Northern Ireland both fast growth and match firms, equally, attach importance to business planning. [Kinsella et al., 1994, p.87].

In terms of management control systems there was little difference between fast growth and match firms. If anything, differences between the two regions are more in evidence. Thus, only one fast growth firm in the Republic of Ireland had implemented formal management information procedures, compared with four fast growth firms and three match firms in Northern Ireland [Kinsella et al., 1994, op cit., Table 5.19, p.10]. In the North East of England there was little difference in the financial reporting and internal control procedures adopted by fast growth and match firms. Apart from the start-up and current size of the management teams, there would appear to be little difference between fast growth and match firms in the structure of their management teams and their management control process.

4.6 The impact of finance on the growth of the firm

The traditional theory of business financing suggests that there comes a time when growth can no longer be financed from the internal resources of the

¹ In the Republic of Ireland there were 19 respondents for the fast growth group and 18 for match firms.

firm. At the early stages of development retained profits, trade credit, bank overdrafts and short term loans are important sources of finance for the new small firm. If the firm is growing or wishes to grow then it will consider other sources of finances such as leasing and hire purchase. This period of growth is usually accompanied by over trading which results in a deterioration in liquidity. If growth is to be sustained then the firm must consider raising longer term finance. At this stage in its life cycle the firm is most likely to experience a financing gap. Without external equity finance the firm will become highly geared and very vulnerable to changes in sales and profits. According to the traditional theory this gap is bridged by the attainment of a stock market quotation.

Equity is widely held to be preferable to debt financing in that the cost is linked to the performance of the firm. The return on loan financing from banks and other financial institutions is guaranteed under the loan contract but the investor in equity is not guaranteed a return. Thus, if the growing business suffers a downturn in sales and/or profitability, it does not have to issue a return to its investors, and even if the business fails the investor cannot reclaim the funds. Equity is a long term source of finance. The equity investor accepts this risk in return for the opportunity of higher long term gains. 'These features of equity finance make it particularly attractive to start-up and fast growth business, where the prospects of success or even survival are uncertain, cost tends to be front-loaded and payback periods may be lengthy' [TFSB , 1994, p.52].

However, it is widely accepted that small firms encounter difficulties in raising equity. One of the reasons cited for the poor performance of small firms in Ireland is 'the undersupply of equity capital at the small scale and for seed capital' [Culliton Report, 1992, p.72]. The lack of equity finance for small business not only reflects the risk involved but also the cost incurred in selecting, appraising and monitoring investments which are to a large extent indivisible. Thus, a recent review concluded that the main suppliers of venture capital in Ireland consider investment below one million pounds

too small to cover these costs and their risk [Walsh and Murray, 1993].

Recent research on the impact of business structure on financing suggest that the preference for debt financing in small firms reflects the wishes of entrepreneurs as much as the constraints placed upon them by the suppliers of finance [Cosh and Hughes, 1994]. Mainstream literature on company finance deals with the financing decisions of companies with large numbers of outside stockholders. Ownership and management are functionally separate. Thus, in large firms, transactions and agency cost are incurred in order to ensure the business is managed in the owner's interest. These costs are not incurred by the small firm which is primarily owned by its manager/s. Therefore, according to Cosh and Hughes the existence of sole traders, partnerships and closely held companies 'represents an optimal trade-off between the gains of low agency, monitoring and bonding costs and the losses of restricting investments, and the scale of activity, to the limits imposed by the human and financial capital of the owner-managers and self-financing through retentions' [Cosh and Hughes, 1994, p.25]. Hence, the desire to retain ownership determines that debt rather than equity financing will be the source of finance considered by most small firms. This is also the opinion expressed by recent reviews of the role of equity in small firms in the EU [ENSR, 1993] and Ireland [TFSB,1994].

However, Cosh and Hughes did not dismiss the fact that certain categories of small firms such as growth firms and innovative small firms may, through no fault of their own, face difficulties in raising finance.

The latter might be faced by a high risk profile in terms of their project area and lack a established track record both of which may affect the form, stability and cost of finance [Cosh and Hughes, 1994, op. cit., p. 28].

This view was also expressed in relation to innovative small business in the hi-tech sector in the UK by [Hall, 1989], the Advisory Council on Science and

Technology, ACOST., [1990], and Oakey [1994]. In Ireland, Kinsella [1992] argued that the lack of equity capital was a particular problem for fast growth firms. Thus the willingness to accept outside equity may be an important factor in distinguishing fast growth from match firms. Table 4.4 shows the sources of finance mentioned by fast growth and match firms in the North East of England, Northern Ireland and the Republic of Ireland. The data is based on the number of mentions given to different sources of finance rather than actual figures.

Self-financing in the form of retained profits, personal savings, loans from family and house mortgages were the most important source of finance for firms in all regions with the exception of fast growth firms in the North East of England. Internal sources constituted 39.2 per cent of all sources mentioned by firms in the Republic of Ireland, 33.6 per cent of sources mentioned by firms in Northern Ireland and 36.2 per cent of sources cited by firms in the North East of England. However, loans from banks and other institutions were relatively more important sources of finance than internal sources for fast growth firms in the North East of England. Internal sources accounted for 29.7 per cent of mentions and bank loans accounted for 31.1 per cent of sources mentioned by fast growth firms in the North East of England. It is also worth noting that in Northern Ireland, short term sources of finance in the form of hire purchases, leasing and factoring were relatively more important than bank loans in fast growth firms.

Overall, the table verifies the well established pattern of the relative importance of internal financing and debt financing in small firms. As expected, external equity was the least prevalent source of finance amongst firms in all regions. Nevertheless, external equity was a relatively more important source of finance in fast growth firms than match firms in all three regions. None of the match firms in the North East of England cited external equity as a source of finance while external equity accounted for 8 per cent of all sources cited by fast growth firms.

Table 4.4: Current sources of finance mentioned by fast growth and match firms in the North East of England, Northern Ireland and the Republic of Ireland [%]

Source	North East of England			Republic of Ireland			Northern Ireland		
	Fast Match Total			Fast Match Total			Fast Match Total		
	%	%	%	%	%	%	%	%	%
1. Savings of the Chief Executive / Owner, Other Directors & Staff, Gift / loan from friends / Family	0.0%	7.8%	3.6%	13.9%	17.2%	15.4%	5.5%	7.8%	6.6%
2. House Mortgage	2.7%	4.7%	3.6%	2.5%	1.6%	2.1%	0.0%	4.7%	2.2%
3. Retained Profits	27.0%	31.2%	29.0%	21.5%	21.9%	21.7%	21.9%	28.1%	24.8%
Total of Internal Sources	29.7%	43.8%	36.2%	38.0%	40.6%	39.2%	27.4%	40.6%	33.6%
4. Loans from Bank / other Financial Institutions	31.1%	25.0%	28.3%	25.3%	26.6%	25.9%	20.5%	23.4%	21.9%
5. External Equity incl. BES, Venture Capitalists, Private Investors	8.1%	0.0%	4.3%	7.6%	4.7%	6.3%	4.1%	3.1%	3.6%
6. Hire Purchases, Factoring / Lease	20.3%	20.3%	20.3%	6.3%	21.9%	13.3%	24.7%	15.6%	20.4%
7. Grants	10.8%	7.8%	9.4%	22.8%	6.2%	15.4%	23.3%	17.2%	20.4%
8. Other	0.0%	3.1%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total No. of Mentions	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Storey et al., op. cit., 1989, Table 6.8, p.40. Kinsella et al., 1994, Table 4.11, pp. 75-76.

In the Republic of Ireland external equity constituted 7.6 per cent of mentions in the fast growth group and 4.7 per cent of mentions in the match group. The difference between the two groups in Northern Ireland is less significant where external equity accounted for 4 per cent of mentions in the fast growth group and 3 per cent of mentions in the match group.

The table also shows the relative importance of grants as a sources of finance in small firms, particularly in Northern Ireland and the Republic of Ireland. Fast growth firms were more dependent on grants than match firms in all regions. Fast growth firms in the Republic of Ireland were much more dependent on grants than match firms, where grants represented 22.8 per cent of all sources of finance mentioned by fast growth firms and only 6.2 per cent of mentions in the match group. In Northern Ireland grants represented 23.3 per cent of sources cited by the fast growth group and 17.2 per cent in the match group. The difference was less apparent in the North East of England where grants represented 10.8 per cent of sources cited by fast growth firms and 7.8 per cent of mentions in the match group.

In summary, the table shows that small firms rely on retained profits, bank loans and short-term loans, such as hire purchasing and leasing. Fast growth firms also rely on these sources but acquire a higher proportion of their finance from venture capitalists, private investors and government agencies. While the results suggest that fast growth firms are more likely to obtain external finance than match firms, it cannot be deduced that lack of equity is a particular problem for fast growth firms since the number of firms in each group seeking external equity is unknown. However, the results demonstrate the relatively insignificant role of external equity as a source of finance in small firms, and this in turn may present a greater problem for fast growth firms, who are more likely to be seeking funds for expansion. Perhaps more importantly it may indicate that fast growth owner-managers are more open to sharing ownership than their match counterparts.

Previous research demonstrated that the financing difficulties faced by fast growth firms is reflected in their balance sheets [Tamari, 1972]. In a study prepared for the Bolton Committee, Tamari [1972] found that in comparison with match firms, fast growth firms were less liquid and more dependent on borrowings. Fast growth firms were therefore, highly geared and very vulnerable to changes in sales and profits. Storey et al. [1989] examined the relative importance of different sources of finance in fast growth and match firms in the North East of England over a five year period based on accounts submitted to the Companies' Office. The results are presented in Table 4.5 below.

Table 4.5: The relative importance of balance sheet items in fast growth and match firms in the North East of England

Balance sheet items as percentage of total assets	N. E England 1985	
	Fast Growth	Match
Fixed Assets	48.7	30.9
Current Assets	51.3	69.1
Total Assets	100	100
Current liabilities	37.5	66.9
Net Assets	62.5	33.1
Financed By		
Long term Liabilities	14.7	9.4
Ordinary Shares	2.8	2.9
Reserves and Government Grants	44.2	20.8
Preference Shares and Minority Interest	0.7	0
Equity	47.8	23.7

Source : Storey et al., op. cit., 1989, Tables 6.3 & 6.4, pp. 33 & 34.

The table shows the relative importance, in terms of total assets, of fixed assets, current assets, current liabilities, long term liabilities and equity in fast growth and match firms in 1985. Storey et al. examined changes in the relative importance of the balance sheet items over the period 1980 to 1985. Where relevant the trend over time is also discussed. Storey et al. [1989] pointed out that the analysis suffered from a number of limitations, due primarily to the constraints of the data source. The data and methodology used in this study will be discussed in Chapter 7.

Match firms financed a much higher proportion of total assets from current liabilities or short term sources of finance such as trade creditor, bank overdrafts and other short term loans. Current liabilities represented 67 per cent of total assets in match firms compared with 37.5 per cent of total assets in fast growth firms. If anything, the results for the North East of England suggest that match firms are less liquid than fast growth firms. The ratio of current assets to current liabilities in match firms, 69 : 67, is much lower in the fast growth firms where the ratio of current assets to current liabilities is 51 : 38. Fast growth firms also financed a higher proportion of total assets from equity. Fast growth firms financed 48 per cent of total assets from equity while match firms financed 23.7 per cent of total assets from equity. Fast growth firms financed a higher proportion of total assets from long term liabilities, including long term loans. However, the overall proportion, at 4.7 per cent was relatively small.

The primary differences in the sources of equity finance used by fast growth and match firms relates to retained profits/reserves and government grants. Fast growth firms financed 44.2 per cent of total assets from retained profits and government grants compared with 20.8 per cent for match firms. The study also found that 'new share capital issue became an increasingly important source of new finance for a minority of fast growers' [Storey et al., 1989, p.39]. The table also demonstrates that fixed assets were relatively more important for fast growth than for match firms. Fixed assets represented 48.7 per cent of total assets in the fast growth group in 1985 and

30.9 per cent of total assets in match firms. Furthermore over the five year period the trend for fast growth firms was for fixed assets to gain in importance, whilst the the opposite appeared to be true in the case of match companies' [Storey et al., 1989]. It was also found that fast growth firms were much more likely than match firms to have control over one or more wholly or partly owned subsidiaries or an associated company.

4.7 Conclusion

This chapter examined factors deemed to impact on the growth of firms. Four key areas were identified which were deemed to influence the growth of the firm; the owner-manager's background, marketing, management and finance.

While it is a widely held opinion that the background of the owner-manager has a major impact on the growth of the firm, there is little evidence to substantiate this claim in the studies examined, with the exception perhaps of motives for foundation. Fast growth owner-managers were more likely to be motivated by pull factors, such as market opportunity, whilst match firm owner-managers tended to be motivated by push factors, such as unemployment or discontentment with their previous position. The lack of relationship between social and personal characteristics of owner-managers and the growth of the firm may also reflect difficulty in relating measures of personal and social competency, such as level of educational attainment, to measures of business performance. Furthermore, apart from the start-up and current size of the management teams, there would appear to be little difference in the structure of management teams of fast growth and match firms. In terms of management control procedures, regional variations were more apparent than difference between fast growth and match firms.

It is also a widely held opinion that small firms are likely to face difficulties in raising equity. Equity is deemed to be the preferred source of finance for small firms in that the return is long term and linked to the performance of

the firm. Recent research on the impact of the structure of the firm on financing suggests that the low level of equity financing in small firms is more likely to reflect the owner-manager desires to maintain control rather than any constraint placed on them by the suppliers of finance. But it is also claimed that fast growth firms are more likely to seek equity finance. The research suggest that fast growth firms are more likely to obtain outside equity, however, this is not proof of the lack of equity finance in fast growth firms. It may perhaps indicate that fast growth firms are more willing to share ownership than match firms. Fast growth firms were also found to be more dependent on government grants.

The most significant difference between fast growth and match firm owner-managers is to be found in the markets they serve. Fast growth firms are much more likely to export and to be selling a higher proportion of their output to the UK and markets beyond the British Isles. While there were noticeable differences in the fast growth and match firms owner-managers' perceptions of their competitive strengths, these differences were perceived by a minority of fast growth owner-managers and therefore cannot be deemed to be key determinants of growth. While a higher proportion of fast growth firms undertook market research, a significant proportion of match firms did so also, which would suggest that this is not a major determinant of growth. Nonetheless, one is unlikely to find a variable which would exclusively differentiate fast growth firms. As already pointed out further testing of the relative importance of different variables identified in the studies, on the growth process over time, using larger sample sizes, is required. In the of absence of unique determinant/s of growth, the studies reviewed in this section provide the basis for an extensive profiling system of potential growth firms, which will clearly be of use to industrial development agencies in selecting projects for support.

CHAPTER 5: DERIVING A SAMPLE OF FAST GROWTH FIRMS IN IRELAND

5.1 Introduction

The lack of a sample frame is a major restriction on small firm research in most countries. Ireland is no exception. To test Storey's hypothesis on the relative importance of fast growth firms to employment growth the following information is required. Firstly, all new non-branch start-ups, including those that subsequently fail, formed over a specified time period must be identified. Secondly, the number of jobs in each surviving firm, after a designated number of years, must be obtained. There is no directory of new firms in Ireland. In this study the sample frame is based on start-ups which were grant-assisted under the state administered Enterprise Development Programme, over the period 1978 and 1992. The EDP was specifically set up to encourage experienced professionals to establish firms with the 'potential to achieve significant employment and output in the long-run' [IDA, 1978, p. 22].

An set of criteria was adopted in assessing projects for support under the EDP. Some of the key variables which have been deemed to impact on growth, examined in Chapter 4 were used to select applicants for the programme. Hence, a sample frame based on EDP start-ups is not a random sample of indigenous start-ups or indeed grant-assisted start-ups, but rather represents 'growth potential' start-ups as selected by the IDA. Although not a random sample, the EDP sample frame of indigenous start-ups provides an opportunity to test the impact of a selective support policy on the emergence of fast growth firms.

The selection process of EDP projects is described in the next section. This is followed by a description of the EDP database including the geographical distribution and sectoral composition of EDP start-ups. The number of EDP firms surviving in 1994 is given in section 5.4. In the last section the employment distribution in surviving EDP firms in 1994 is examined and the fast growth firms identified.

5.2 The selection process of EDP projects

The EDP is the flagship of the government's support programme for indigenous start-ups. Some of the country's most successful new businesses were assisted under the EDP, including Green Isle Foods, Monaghan Mushrooms, Rye Valley Food, and Cornell Electronics.

In the late nineteen seventies an internal study by the former IDA highlighted the low participation of experienced professionals in new firm formation in Ireland [IDA, 1978]. The study identified two reasons for this low participation rate. Firstly, experienced managers usually had secure well paid jobs and strong family commitments which made them reluctant entrepreneurs. Furthermore, it was found that managers with good ideas often had difficulties raising the money required to start a business. The IDA's existing support programme, the Small Industries Programme [SIP], only catered for the needs of small scale indigenous start-ups. The Industrial Development Act 1977 allowed the IDA to address the 'financing gap' of large scale indigenous start-ups, and the EDP was set up.

The key objective of the programme is to encourage and assist experienced professionals within Irish Industry to start successful businesses. In Chapter 4 the impact of the owner-managers' backgrounds on the growth of their businesses was examined. Although the results proved inconclusive, it is still a widely held opinion that the owner-manager's background has an impact on the growth of the business. In keeping with the prime objective of the programme, particular emphasis was placed on the background of the applicants in selecting projects for assistance under the programme.

In assessing applications for assistance under the programme, the IDA places a more than usual reliance on the individual's "track record", his level of achievement and his commitment to the project being considered. . . Persons likely to qualify for assistance under the programme include engineers, accountants, scientists, and business school graduates, at present employed in industry, state sponsored bodies etc., as well as Irish people

working abroad in technological and business environments'

[IDA, 1978, op. cit., pp. 20 - 21].

An examination of the occupational background of the founders grant-assisted under the programme between 1978 and 1982 demonstrates that this selection process was enforced.

Table 5.1: Occupational background of EDP founders 1978-1982

Position *	%
Chief Executives	28
Marketing or Production	25
Directors	0
Senior Marketing Executives	16
Other (not specified)	31
Total number of founders	100

* Refers to jobs held by founders immediately prior to setting up their own businesses. Source: IDA, 1982. Annual Report, p. 27.

Table 5.1 shows that 70 per cent of EDP founders grant-assisted during the first four years of the programme held senior management positions immediately prior to setting up their own businesses. Of particular note is the proportion of EDP founders with marketing experience, which was found to be an important factor in differentiating between fast growth and match firms in the North East of England [Storey et al., 1989].

The EDP is also industry selective. Support is targeted to projects in the manufacturing and internationally traded services sectors with good potential to grow and export. Priority is given to 'high potential companies, especially in electronics, engineering, food and textiles' [IDA, 1989, p. 21]. Previous work experience in these sectors was also viewed as an important criteria in selecting applicants for support under the EDP.

Table 5.2 shows that 57 per cent of founders approved under the programme, between 1978 and 1982, had worked in the engineering, electronics, food and chemical sectors prior to starting a business.

Table 5.2: The industry background of EDP founders 1978-1982

Sector *	%
Engineering	25
Services/Distribution	25
Electronic/Electrical	18
Chemicals/Food	14
Academic/consulting	10
Other	8
Total number of founders	100

*Refers to jobs held by founders immediately prior to setting up their own businesses.

Source: IDA, 1982, Annual Report, op. cit., p. 27.

Given the focus on projects in hi-tech sectors, emphasis was also placed on the educational qualifications of applicants in assessing projects. A recent study shows that the level of educational attainment of EDP owner-managers 'substantially exceeds the population as a whole' [Foley and Griffith, 1992, p. 640]. Table 5.3 shows that of the 77 owner-managers for which educational details were available 54 had a degree, six had City and Guilds qualifications and six had third level diplomas. Eight owner-managers had a second level qualification only.

The majority of graduate owner-managers held degrees in a technological/scientific discipline: BSC's, B. Eng and B. Techs accounted for 37 or 68.5 per cent of the 54 graduates [Foley and Griffith, 1992, op. cit., p. 642].

Table 5.3: Educational background of EDP owner-managers

Level of Education	Number of Entrepreneurs	Percentage of Entrepreneurs
Second Level	8	10%
Third level - University	53	69%
Third level - Technical college including 1 degree	7	9%
Apprenticeship/City & guild	9	12%
Total	77	100%

Source: Foley, A., and B. Griffith, 1992, p. 6.

In Chapter 4 it was found that the fast growth firms had a larger number of original founders than match firms [Storey et al, 1989]. As far back as 1982 the EDP project managers emphasised the importance of entrepreneurial teams in the establishment of successful businesses [IDA,1982]. Foley and Griffith [1992] found that EDP projects with more than one founder were more prevalent than one man operations. Only 13 firms or 29 per cent had sole entrepreneurs [Foley and Griffith, 1992, p.639]. It is reasonable to conclude, from the evidence available that a clearly identifiable selection process based primarily on the owner-manager's background was adhered to in assessing projects for approval under the programme. Figure 5.4 provides a summary of the key selection criteria used to identify potential growth projects under the EDP.

Figure 5.1: Key criteria for selecting EDP projects

The Owner-manager	The Product
Previous Management Experience	Growth Potential
Previous Industry Experience	Export Potential
Education	
Number of Founders	

Given the selection process used to assess EDP projects it is clear that a sample frame based on EDP start-ups will not be representative of the total population of indigenous start-ups. Instead, the EDP sample frame represents the 'pick of the crop' of grant-assisted start-ups in Ireland over the period 1978 to 1992. It is to be expected that the sample frame would produce a higher proportion of fast growth firms than a sample based on indigenous start-ups or indeed indigenous grant-assisted start-ups.

5.3 The EDP sample frame

The sample frame of EDP start-ups is derived from information published in the IDA's Annual Report, Part 2, The Details of Capital Expenditure. The total grant payment approved, the allocation in the current year and the total payment to date for each EDP firm, by product type and county of origin, is given in the Details of Capital Expenditure.

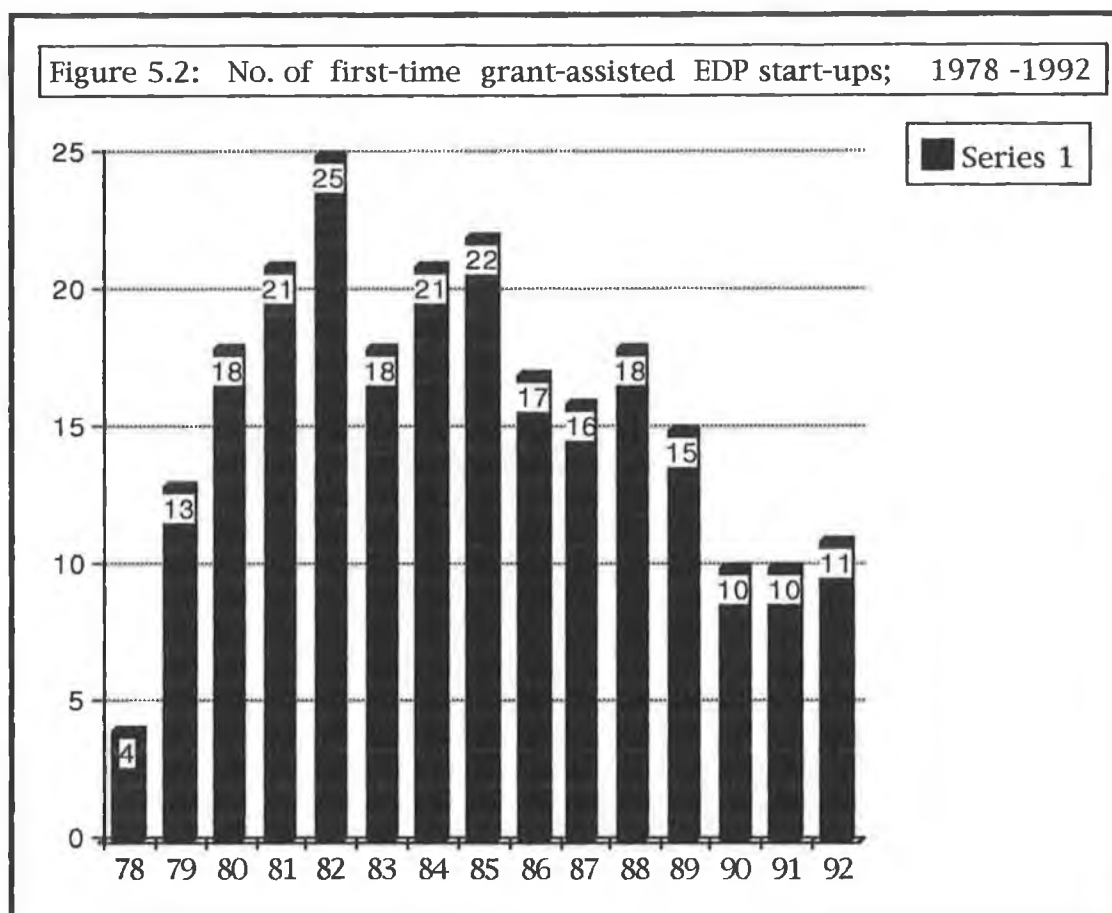
The average grant payment to projects under the EDP is significantly higher than to projects assisted under the SBP. In 1992, 40 firms received £1,107,192 in grant payments under the EDP while 618 companies received a total of £7,698,419 under the SBP [IDA, 1992, Part 2, p. 3]. The figure for grant payments listed in the capital expenditure account does not represent the total support package available to EDP start-ups. There is also a range of supplementary grants made available to EDP projects. These include loan guarantees towards the working capital requirements and grants towards the reduction of interest payments. EDP firms also had guaranteed loans outstanding which amounted to £1.2 million in 1992 [IDA, 1992, *op. cit.*, p. 3].

Equity participation by the IDA in firms assisted under the programme has become policy since 1988. The IDA also seeks third party equity funding for projects and the average equity funding rose from 12 per cent in 1978 to 29 per cent in 1985 [IDA, 1985, p. 24]. The Business Expansion Scheme is also used as a source of funds for EDP projects. IDA factories are provided for projects on a sale or rental basis. Furthermore, EDP firms may also apply for

assistance under other government support programmes. Green Isle Foods received a total of £5 million in government grants [Business and Finance, September 23rd, 1993, p. 2] of which £770 thousand was allocated under the EDP.

A total of 260 establishments received grants under the EDP over the 15 year period from 1978 to 1992. This figure was adjusted for double counting which occurred when the same firm received grant payments under a different name or in a different county. When the figures were adjusted for double counting the total number of establishments grant-aided was 243. Included in this figure were four grant-assisted innovation centres which were set up to cultivate entrepreneurship in universities and third level colleges. These centres have been excluded from the analysis which brings the total for first-time grant-assisted start-ups, over the period 1978 to 1992, to 239. Figure 5.2 shows the number of EDP firms grant-assisted for the first time each year between 1978 and 1992.

The number of grant-assisted EDP start-ups rose from four in 1978 to 25 in 1982 and declined slowly since then. In the four year period from 1989 to 1992, 46 start-ups were grant-assisted for the first time under the programme compared to 73 in the previous four year period, from 1985 to 1988. This would suggest that there has been a decline in the number of experienced professionals willing to start new businesses. This may also reflect changes in industrial support policy in the mid-nineteen eighties noted in Chapter 3, which resulted in an overall reduction in the industrial budget and a shift in the focus of support away from formation in favour of the promotion of growth.



Source: derived from the Details of Capital Expenditure, Part 2, IDA Annual Reports, 1978 to 1992.

The year of start-up is defined as the year in which a project was grant-assisted for the first time. If firms were established prior to receipt of their first grant payment then the definition will not be a close approximation of the actual start-up year. Table 5.4 shows the number of projects grant approved and assisted over the period 1978 to 1981 which were established or in the process of start-up in 1981.

The table shows that of the 100 projects approved in the first four years of the programme, 70 had already been established, 21 were in the process of starting up, three did not proceed and six started and closed. Only 56 of the approved projects had been grant paid. 35 approved projects proceeded prior to receipt of their first grant payment.

Table 5.4: The trading status of grant approved EDP projects, 1978-1981

No. of Projects established	70
No. of Projects in start up process	21
No. of Projects which did not proceed	3
No. of Project which started and closed	6
No. of Projects Grant Approved	100
No. of Firms Grant Paid	56

Source: IDA Annual Report 1981, Details of Capital Expenditure 1978-1981, p. 21.

The nine approved projects which either didn't proceed or started and closed will not be included in the sample frame based on first-time grant-assisted EDP projects. Therefore, a sample frame based on the number of first time grant-assisted projects will underestimate the failure rate of EDP projects. It also suggests, given the time lag between approval and payment of grants under the EDP, that the year in which a project is first approved under the programme is a closer approximation of the firm's start-up year.

The time lag between approval and payment of grants under the programme is more noticeable in the earlier years. Table 5.5 shows the number of firms approved and grant-aided each year under the programme from 1978 to 1986. The table only covers the period to 1986 as details of the number of firms grant approved under the EDP were not given in more recent editions of the Annual Report.

Table 5.5: EDP firms grant-aided and grant approved, 1978-1986

Year	No. of Firms Approved			No. of New Firms Aided
	Total	Expansions	Start-ups	
1978	22	0	22	4
1979	20	0	20	13
1980	29	0	29	17
1981	29	0	29	21
1982	22	0	22	25
1983	37	9	28	19
1984	43	13	30	21
1985	35	15	20	22
1986	35	9	26	17
Total	272	46	226	159

Source: IDA Annual Reports, 1978-1986 inclusive.

According to the 1978 Annual Report, for example, 22 projects had been approved during the year but only four had been assisted. By the end of 1986, 70 per cent of the 226 newly approved projects had received their first grant payment. This would suggest that the year in which a project is grant-assisted for the first time is a close approximation of the firm's start-up year. Table 5.5 also shows that after 1982, 46 or 30 per cent of project approvals were to firms previously assisted under the programme.

5.3.i EDP start-ups as a proportion of indigenous start-ups

As noted in Section 5.2, only projects with strong growth potential are grant-assisted under the EDP. Therefore EDP start-ups will not be representative of indigenous start-ups or indeed of indigenous grant-assisted start-ups. EDP start-ups represent a very small proportion of indigenous start-ups. Table 5.6 shows that over the period 1981 to 1990, 4,863 indigenous start-ups were established in Ireland.

Table 5.6: EDP start-ups as a percentage of indigenous start-ups 1981-1990

Type of Start up	Number of Start ups	% of Total
Grant-assisted Indigenous	3,419	70
EDP	183	3.4
All Indigenous	4,863	100

Source: McCluskey, 1992, Appendix 2, Table 2, p. 6.

70 percent of start-ups were grant-assisted. Over the same period only 183 start-ups were grant-assisted under the EDP. EDP start ups represent 3.7 per cent of all indigenous start-ups and 5.4 per cent of all indigenous grant-assisted start-ups, formed over the period 1981 to 1990.

5.3. ii The distribution of EDP start-ups by sector

In Section 5.2, the EDP was described as 'a source of high potential companies, especially in electronics, engineering, food and textiles' [IDA, Annual Report, Part 1, 1989, p 21]. Table 5.7 shows the distribution of EDP start-ups established between 1978 and 1992, by broad industrial sector, using 2-digit NACE classifications. The table was compiled from the Details of Capital Expenditure, which lists grant-aided EDP firms by main product type only. Under the 2-digit NACE classification system manufacturing firms are grouped into ten broad industrial sectors.

This is the classification system adopted by the IDA in its Annual Reports. As in the IDA reports internationally traded services are listed separately. EDP firms have been grouped into nine broad industrial sectors. There were no EDP firms in the drink and tobacco sector [NACE 23 -29].

Table 5.7: Comparison of EDP start-ups and indigenous manufacturing industry, by sector

Nace Code	Industry	EDP		Indigenous Industry	
		No. of Firms	% of Total	No. of Firms	% of Total
22, 31-37	Metals and Engineering	114	47.7%	1488	27%
411-422	Food	32	13.4%	784	14%
N/A	International Traded Services	30	12.6%	401	7%
25-26	Chemicals and Pharmaceuticals	21	8.8%	158	3%
44-45	Footwear and Clothing	14	5.9%	368	7%
14, 48-49	Miscellaneous Industries	10	4.2%	577	11%
47	Paper and Printing	8	3.3%	360	7%
66	Timber	5	2.1%	669	12%
43	Textiles	3	1.3%	204	4%
24	Non Metal Products	2	0.8%	358	7%
23 -29	Drink and Tobacco	0	0.0%	62	1%
	Total	239	100%	5429	100%

Source: Column 3: IDA Annual Report 1992, Part 1, p.8, Figures exclude the Mid-West Region and the Gaeltacht.

In total, 209 start-ups in the manufacturing sector and 30 start-ups in the internationally traded services sector were assisted under the programme between 1978 and 1992. The highest proportion of EDP start-ups were in the engineering and metals sector. 114 start-ups or 48 per cent of the total were in this sector. The food sector had the second highest proportion of EDP start-ups, accounting for 13 per cent of all EDP start-ups. It is followed by internationally traded services, which accounted for 12.6 per cent of start-ups and chemicals and pharmaceuticals which accounted for 9 per cent of start-ups. 6 per cent of firms were in the footwear and clothing sector. Miscellaneous industries accounted for 4 per cent of EDP start-ups. The proportion of EDP start-ups in the remaining four sectors is very low. Only 18 or 7 per cent of start-ups were in the four sectors incorporating timber, textiles, paper and printing, and non-metal products.

The proportion of EDP start-ups in traditional sector activities is very low. Start-ups in the traditional sectors of footwear and clothing, paper and printing, textiles, timber and non-metal products accounted for 13 per cent of all start-ups. Firms in the metals and engineering sector and the chemicals and pharmaceuticals sector are generally classified as modern sector activities. Firms in these sectors are generally expected to have a higher potential for growth than firms in more traditional sectors.

The 2-digit NACE classification system does not lend itself fully to the subdivision of sectors into modern or traditional. Not all firms in the metals and engineering sector are hi-tech modern operations, as this 2-digit NACE group [22, 31 to 33] incorporates both modern industrial activities such as electronics and traditional activities such as sheet metal fabrication. 58 per cent of EDP start-ups were in chemicals and metals and engineering. Internationally traded services are predominantly software houses which are classified as modern sector activities. The food sector is often classified as a traditional sector but certain activities such as food processing belong to the modern sector. If food firms in the EDP sample frame are classified as predominantly modern industries then the proportion of EDP firms in the modern growth potential sector is 82.5 per cent.

In terms of distribution by broad industrial sector, these findings confirm the IDA's claim that the majority of EDP start-ups are to be found in the engineering, electronics and food sectors. EDP start-ups are eight times as likely to be found in the metals and engineering sector than in the footwear and clothing sector, the traditional sector with the highest proportion of EDP start-ups. However, a more detailed breakdown of the activities of EDP firms is required in order to provide a more accurate division of firms into traditional and modern sectors.

Table 5.7 also shows the distribution of indigenous industry by sector excluding the Mid-West Region and the Gaeltacht. As already pointed out in section 5.3.i, EDP start-ups represent a very small proportion of indigenous

industry in Ireland. EDP start-ups grant-aided between 1978 and 1992 represent only 4.4 per cent of the total population of indigenous firms in 1992. The highest concentration of indigenous firms were in the metals and engineering sector which represented 27 per cent of all indigenous firms in 1992. The highest concentration of EDP firms was also in this sector. But the proportion of EDP start-ups in the metals and engineering sector, 48 per cent, is almost double the proportion of indigenous industry in this sector.

The second highest concentration of indigenous firms and EDP firms were in the food sector. The proportion of EDP start-ups in the food sector was similar to the overall share of indigenous industry in the sector. Food companies represented 13 per cent of all EDP start-ups and 14 per cent of all indigenous industries. The share of EDP start-ups in the chemicals and internationally traded services sectors was much higher than the overall share of indigenous industry in these sectors. The proportion of start-ups in the chemicals and pharmaceuticals sector, 9 per cent, was three times the overall share of indigenous industry in this sector. 7 per cent of indigenous industries were in the internationally traded services sector compared with the 12.5 per cent of all EDP start ups.

EDP start ups were under represented in the remaining sectors. 13 per cent of EDP firms were in the traditional sectors of timber, paper and printing, clothing and footwear, textiles and non-metal products compared to 37 per cent of all indigenous firms. Again the findings reconfirms the IDA's assertion concerning the relatively higher concentration of EDP start-ups in engineering, electronics and foods.

5.3.iii The distribution of the EDP start-ups by county

Forbairt, formerly the IDA, is responsible for the administration of the EDP nationwide through its network of area managers. The programme covers 24 counties and only two counties, Limerick and Clare, which come under the jurisdiction of a separate government support agency, the Shannon Free

Airport Development Co-operative [SFADCO], are excluded. Table 5.8 shows the distribution of EDP start ups by county.

Table 5.8: Distribution of EDP start-ups and indigenous manufacturing industry, by county

Rank	County	EDP Start-ups Per County		Total No. of Firms Per County	
		No.	%	No.	%
1	Dublin	126	52.7%	1342	27.9%
2	Cork	22	9.2%	557	11.6%
3	Wicklow	11	4.6%	141	2.9%
4	Galway	10	4.2%	215	4.6%
5	Wexford	9	3.8%	124	2.6%
6	Louth	8	3.3%	181	3.8%
7	Kildare	7	2.9%	143	2.9%
8	Waterford	6	2.5%	144	3.0%
9	Carlow	5	2.1%	69	1.4%
10	Monaghan	5	2.1%	108	2.2%
11	Roscommon	5	2.1%	49	0.1%
12	Mayo	4	1.7%	118	2.5%
13	Meath	4	1.7%	135	2.8%
14	Longford	3	1.3%	41	0.9%
15	Tipperary	3	1.3%	172	3.6%
16	Offaly	2	0.8%	80	1.7%
17	Sligo	2	0.8%	62	1.3%
18	Kerry	2	0.8%	119	2.5%
19	Cavan	1	0.4%	83	1.7%
20	Laois	1	0.4%	61	1.3%
21	Donegal	1	0.4%	161	3.4%
22	Kilkenny	1	0.4%	93	1.9%
23	West Meath	1	0.4%	71	2.0%
24	Leitrim	0	0.0%	37	0.8%
	Mid West	0	0.0%	345	7.2%
	Not Attributed	-		153	3.2%
	Total	239	100%	4804	98.8%

Source: Column 3: Census of Industrial Production 1990, Central Statistics Office Stationery Office, Dublin.

23 of the 24 counties covered under the programme are represented in the sample frame. There were no projects assisted in County Leitrim over the 15 year period. The majority of EDP start-ups were located in Dublin. There were 126 EDP firms grant-assisted in Dublin, which represents 53 per cent of all start-ups assisted under the programme. The next highest concentration was in Cork, where 22 firms, or 9 per cent of EDP start-ups were established. There were 11 EDP firms established in Wicklow and 10 in Galway. Start-ups in these four counties represented 71 per cent of all EDP start-ups grant-assisted over the period 1978 to 1992.

Three of these counties, Dublin, Cork and Galway have major population centres, and Wicklow is in the hinterland of Dublin. O' Farrell [1986] found a direct relationship between firm formation rates and town size in Ireland. Over the period 1973 and 1977 towns with between 25,001 and 100,000 inhabitants together with Dublin and Cork generated 25.7 per cent of all new indigenous firm survivors' [O'Farrell, 1986, op. cit., p. 112].

Outside of these four counties, the East Region was the next most popular location for EDP firms. Five counties in this region, Wexford, Louth, Kildare, Waterford and Carlow, together accounted for 35, or 15 per cent of all EDP firms. Counties Monaghan and Roscommon each had five EDP start-ups. The number of EDP firms in other counties is very small. The remaining 13 counties had a total of 25 EDP start-ups. Five counties had only one EDP firm.

The concentration of EDP firms in the Dublin region reflects the overall concentration of industry in this county. Table 5.8 also shows the distribution of manufacturing industry in Ireland, by county. 28 per cent of all manufacturing firms in Ireland in 1990 were located in Dublin. Dublin also has the highest proportion of EDP firms. But the proportion of EDP start-ups established in Dublin, 53 per cent, is almost double the proportion of all manufacturing firms in the county. Cork had the next highest concentration of manufacturing firms.

In contrast to Dublin, Cork had a lower proportion of EDP start-ups than its share of all manufacturing industry; 11.6 per cent of all manufacturing firms were located in Cork compared to 9 per cent of EDP start-ups. Galway also had a slightly lower proportion of EDP firms than its proportion of all manufacturing firms; 4.6 per cent of all manufacturing firms were located in Galway compared to 4.1 per cent of EDP firms. In fact, apart from Dublin, only 6 counties; Wicklow, Wexford, Carlow, Monaghan, Roscommon and Longford, had a higher proportion of EDP start-ups than their overall share of industry. In particular, the proportion of EDP start-ups in Wicklow, 4.6 per cent, and Roscommon, 2.1 per cent, was much higher than the proportion of all industry in these counties, which was 2.9 per cent and .1 per cent respectively.

The comparisons should be seen as indicative rather than representative given the differences in the data sources. The EDP sample is based on start-ups grant-assisted over the period 1978 to 1992 including firms which failed, whereas the national figures are based on the 1990 Census of Industrial Production [CIP].¹ It is clear that the area around the nation's capital is the most popular location for indigenous start-ups and potential growth start-ups. This suggests that the formation rate of potential growth firms reflects the overall level of economic activity in a region as found by O'Farrell [1986, op cit.,] and Gallagher and Miller [1991].

5.4 Identifying survivors

The sample frame includes all firms grant paid under the programme including those firms which failed. Information on the survival of EDP start-ups was sourced at the Companies' Registration Office. This was double checked using current and past editions of the telephone directory and Dun and Bradstreet credit checking services.

¹ It should be noted that the CIP underestimates the number of manufacturing firms in the country, as firms with less than three employees are excluded. According to CIP, there were 4,804 firms in total in Ireland in 1990. The IDA recorded over 6,000 manufacturing firms in the Annual Survey of Employment [IDA, part 1,1990]

The Companies' Office keeps an index of all registered companies and business names. Both are stored on microfilm and are available for public inspection, free of charge. In 1990 the records were fully computerised enabling the Companies' Office to keep a more up to date register of companies and business names.

Each company in the Index of Companies is assigned a designated indicator [initial] which denotes whether the company is dissolved, in liquidation or receivership. The codes used in the Index are given in Table 5.9. The Business Name Index gives the business address and date of cessation of the business where appropriate. Only one of the EDP firms was not registered at the Companies Office. Of the remaining 238 firms, 237 were listed in the Index of Companies and one in the Index of Business Names. Table 5.9 gives the status of the 238 EDP firms grant-aided between 1978 and 1992 as recorded by the Companies Office in February 1994.

Table 5.9: The trading status of EDP firms registered with the Companies' Office in February 1994

Designated Indicator	Trading Status	Number of Firms	
			%
D	Dissolved	59	24.8
L	Liquidation	34	14.3
R	Receivership	14	5.9
M	Liquidation & Receivership	1	0.4
N	Normal	130	54.6
	Total Registered	238	
	Total Sample Size	239	

Source: Derived from the register of companies at the Companies Office.
 * Designated indicator as per Companies Office index of Companies.

A total of 130 or 55 per cent of EDP start-ups formed over the period 1978 to 1992 were registered as 'normal', 59 or 25 per cent had been dissolved, 34 or 14 per cent were in liquidation, 14 or 6 per cent were in receivership, and both a receiver and a liquidator had been appointed to one company.

The 59 firms that had been dissolved can clearly be categorised as failures. A liquidator is appointed to wind up a company. Therefore, the 34 firms which were in liquidation will be dissolved at some future date. The process of winding up a company may take several years and the company is still regarded as a legal entity until it is dissolved but it is generally accepted that once a liquidator is appointed to a company it is no longer commercially viable.

It is not easy to determine the viability of companies to which a receiver has been appointed. Contrary to popular opinion, a receiver is not appointed to close down a company. A receiver is appointed, usually by the company's main creditor to reclaim a particular debt. A company may still trade while in receivership and may continue trading, once this debt is settled. The status of companies in receivership was double checked. None of the firms in receivership were trading according to Dun and Bradstreet. Based on information filed at the Companies' Office, the first estimate for the number of EDP start-ups surviving until 1994 was 130 out of 238. A total of 108 were no longer trading, giving a failure rate of 45 per cent, in 1994, for EDP start-ups assisted over the period 1978 to 1992.

The 1994/1995 telephone directory was used to check that all remaining survivors registered at the Companies' Office were still trading. A further 20 start-ups were not listed. Again the status of these were checked using the Dun and Bradstreet credit checking service. Fifteen of the companies were designated as out of business, of the remaining five, three were out of date on the system and two were not listed. These five were tracked using back issues of the telephone directory. Three of the five had gone out of business and two

were either not trading or trading on a limited basis.²

The final estimate for the number of EDP start-ups surviving in 1994 was 110 out of 239. A total of 129 were no longer trading, giving an average failure rate of 54 per cent in 1994, for the cohort of EDP start-ups grant-assisted between 1978 and 1992.

Table 5.10: Number of EDP start-ups surviving in 1994

Start-ups	239
Survivors	110
Average Survival Rate	46%
Average Failure Rate	54%

In general, start-ups assisted in more recent years had a higher survival rate with the exception of the 1990 cohort of start-ups. Figure 5.3 shows the number of grant-assisted EDP start-ups firms for each year between 1978 and 1992 which survived up until 1994. The first Column shows the number of start-ups grant-assisted each year as in Figure 5.2 and the second column shows the number of survivors in 1994. Only one of the four start-ups grant-assisted in the first year of the programme survived until 1994. Eleven of the 13 firms which were grant-aided for the first time in 1992 were still trading in 1994. However, only three of the ten EDP start-ups grant-assisted in 1990 survived until 1994.

² One was a non-trading campus based R&D company, the other had an answering machine but no contact could be made with the owner-manager.

Figure 5.3: No. of first-time grant-assisted EDP Start-ups surviving in 1994

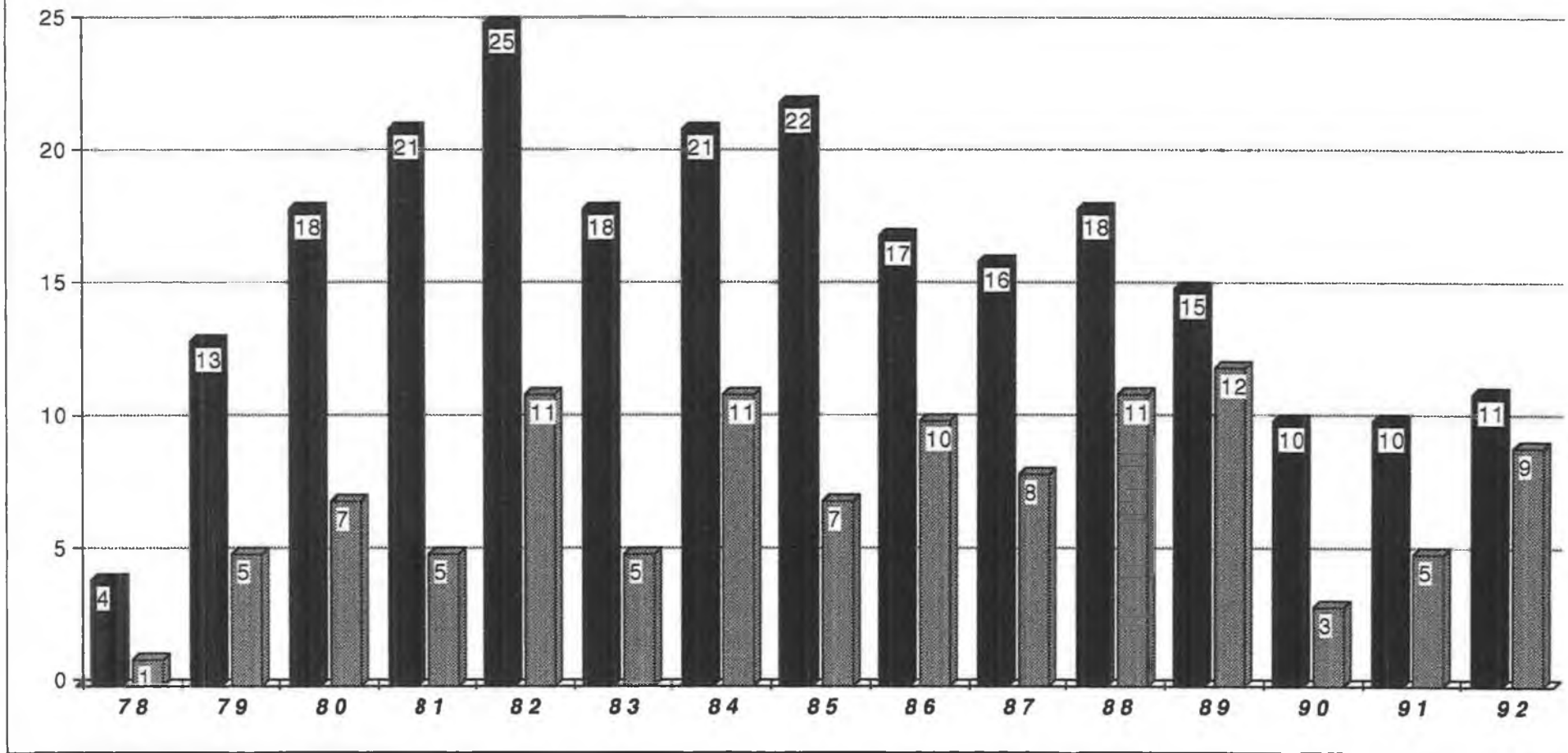


Table 5.11 shows the failure rate for EDP start-ups grant-assisted each year between 1978 and 1992. The failure rate has been aggregated over five years in column five, as the number of observation in any given year is small.

Table 5.11: The failure rate of EDP start-ups

Year	No. of Start-ups *	Age in 1994	No. of Closures	Closures as % of start-ups
78	4	16	3	75.0%
79	13	15	8	61.5%
80	18	14	11	61.1%
81	21	13	16	76.2%
82	25	12	14	56.0%
83	18	11	13	72.2%
84	21	10	10	47.6%
85	22	9	15	68.2%
86	17	8	7	41.2%
87	16	7	8	50.0%
88	18	6	7	38.9%
89	15	5	3	20.0%
90	10	4	7	70.0%
91	10	3	5	50.0%
92	11	2	2	18.2%
Total	239		129	46.0%

*Year of start up is defined as the year in which the firm received its first grant payment under the EDP.

Firms which were between two and less than seven years old in 1994 had an average failure rate of 39 per cent. The failure rate rises to 56 per cent for firms between seven and less than 12 years old. The rate rises to 67 per cent for firms between 12 and less than 17 years old in 1994. There is a decline in the rate of attrition over each five year period from 39 per cent for firms between two and less than seven years old, to 56 per cent for firms between seven and less than 12 years old, to 67 per cent for firms between 12 and less than 17 years old. This pattern of declining attrition rates was established in a study of all VAT registered businesses in the UK over the period 1973 to 1982 [Ganguly, 1985]. The results from the UK study are compared with those for EDP firms in Table 5.12.

5.4.i Comparison of EDP failure rates with other regions

Table 5.12 shows the average failure rate of new firms in the UK and Ireland.

Table 5.12: Comparison of new firm failure rate, UK and Ireland

Study	Average Failure Rate	Time Period
<u>Ganguly. (1985)</u>		
Region:	UK	
Time Period:	1973-1982	9 years
Sample Size:	2.65 million new businesses registered for VAT	
Sector:	All sectors	60%
	Production sector	38%
<u>Storey et al. (1987)</u>		
Region:	North East England	
Time Period:	1965-1978	13 years
Sample Size:	1,145 independent start-ups	
Sector:	Manufacturing	32.4%
<u>McCluskey. (1992)</u>		
Region:	Ireland	
Time Period:	1981-1990	9 years
Sample Size:	4,863 indigenous start-ups	
Sector:	All Manufacturing & Internationally traded services	34%
	Grant-assisted	30.8%
<u>EDP. (1994)</u>		
Region:	Ireland	
Time Period:	1978-1992	14 years
Sample Size:	239 indigenous start-ups	
Sector:	Grant-assisted	54%

Source: Ganguly, 1985, Figure 6, p. 144. Storey et al., 1987, op. cit., Table 5.11, p. 153. McCluskey, 1992, op. cit., Appendix., A, Table 13.

The average failure rate for indigenous manufacturing and internationally traded services in Ireland over the nine year period, 1981 to 1990, was lower than that recorded by new VAT registered businesses in the production sector in the UK, over a similar number of years. Indigenous manufacturing firms in Ireland recorded an average failure rate of 34 per cent over nine years, compared with 38 per cent for business in the production sector in the UK. However, the failure rate for indigenous manufacturing in Ireland is higher than that recorded by manufacturing firms in the North East of England, over the 13 year period 1965 to 1978. New manufacturing start-ups in the North East of England had an average failure rate of 32 per cent over 13 years.

The failure rate of EDP start-ups grant-assisted over the 15 year period 1978 to 1992 does not compare favourably with that of firms in the North East of England over a similar period of time. The average failure rate for EDP start-ups between two and less than 17 years old in 1994 was 54 per cent. As already pointed out in Chapter 3, start-ups have a much higher tendency to fail in the first three years of business [McCluskey, 1992]. Therefore the survival rate of EDP start-ups which excludes firms less than two years old is even less impressive, in relation to firms in the North East of England. Again, it should be stressed that these studies are not directly comparable. In particular, the sample frame of start-ups in the North East of England included a relatively high proportion of 'long life companies' [Storey et al., 1987].

Grant-assisted indigenous start-ups in Ireland in the manufacturing and internationally traded services sector recorded the lowest failure rate over a nine year period in table 5.13. These start-ups recorded an average failure rate of 30.8 per cent. This compares with 54 per cent for two year old EDP start-ups over a 14 year period³. Nevertheless no clear conclusion can be drawn given the differences in the studies. The results would suggest that the

³ The failure rate of approved EDP projects is higher. Table 5.4 showed that nine out of 100 projects approved in the first four years of the programme either did not proceed or started and closed prior to receipt of their first grant payment.

performance of EDP start-ups in terms of survival is not remarkably different from that of all grant-assisted indigenous start-ups in Ireland, despite the strict selection procedures applied and the higher level of support made available to EDP start-ups. Thus, a selective support policy was not particularly successful in terms of raising the survival rate of indigenous start-ups. The performance of the surviving EDP start-ups in terms of growth in employment is examined in section 5.5.

5.4.ii The survival rate of EDP start-ups, by sector

Table 5.13 presents the survival rates of EDP start-ups by sector. The average survival rate was 46 per cent.

Table 5.13: The survival rate of EDP firms by sector

Industry	Total No. of Firms	No. Survivors	Survivors % Total
Metals and Engineering	114	53	46.5%
Food Drink and Tobacco	32	15	47.0%
Chemicals and Pharmaceuticals	21	9	43.0%
Footwear and Clothing	14	5	36.0%
Internationally traded services	30	16	53.0%
Miscellaneous Industries	10	5	50.0%
Paper and Printing	8	2	25.0%
Timber	5	2	40.0%
Textiles	3	2	66.0%
Manufacture of Non Metal Products	2	1	50.0%
Total	239	110	

Firms in the metal and engineering sector which account for the greatest proportion of all EDP firms, 48 per cent, did not demonstrate a higher survival rate when compared with all other sectors. Start-ups in the metals and engineering sector had a 46.5 per cent survival rate which was the same as that for start-ups in all other sectors. Start-ups in the chemicals and

pharmaceuticals sector had a lower than average survival rate. Nine, or 43 per cent of start-ups in chemicals and pharmaceuticals were still operating in 1994. Firms in internationally traded services and foods had higher than average survival rates. 16, or 53 per cent of start-ups in the internationally traded services sector and 15 or 47 per cent of start-ups in the food sector survived until 1994.

Two traditional sectors, paper and printing and footwear and clothing recorded the lowest survival rates. Firms in the paper and printing sector recorded a survival rate of 25 per cent and firms in the textiles sector recorded a 36 per cent survival rate. Two other traditional sectors, textiles and non-metal products recorded above average survival rates of 66 per cent. Two of the three start-ups in textiles survived until 1994 and one of the two start-ups in non-metal products also survived. The number of start-ups in these two sectors are very small. In sum, while the programme specifically targeted high potential companies in engineering and electronics, start-ups in this sector did not outperform other sectors in terms of survival.

5.4.iii The survival rate of EDP start-ups, by county

Table 5.14 shows the number of survivors per county. Of the 126 start-ups grant-assisted in Dublin between 1978 and 1992 only 58, or 46 per cent, survived until 1994. While Dublin had a higher formation rate it did not have a higher survival rate when compared with all other counties.

Table 5.14: The distribution of survivors by county

Rank	County	Total	Survivors	
			No	% of Total
1	Dublin	126	58	46%
2	Cork	22	9	41%
3	Wicklow	11	6	55%
4	Galway	10	5	50%
5	Wexford	9	2	22%
6	Louth	8	4	50%
7	Kildare	7	6	86%
8	Waterford	6	1	17%
9	Carlow	5	3	60%
10	Monaghan	5	5	100%
11	Roscommon	5	2	40%
12	Mayo	4	0	0%
13	Meath	4	1	25%
14	Longford	3	1	33%
15	Tipperary	3	1	33%
16	Kerry	2	2	100%
17	Offaly	2	0	0%
18	Sligo	2	1	50%
19	Cavan	1	0	0%
20	Donegal	1	1	100%
21	Kilkenny	1	1	100%
22	Laois	1	0	0%
23	West Meath	1	1	100%
24	Leitrim	0		
	Total	239	110	46%

Start-ups in Galway and Wicklow had above average survival rates. In Wicklow, six out of eleven, or 54 per cent of EDP start-ups were still operating. In Galway, five out of ten EDP start-ups were still operating in 1994. All five of the EDP start-ups located in Monaghan survived until 1994.

Only nine, or 42 per cent, of EDP start-ups in Cork survived until 1994. In Wexford only two out of nine, or 22 per cent of EDP start-ups and in Waterford one out of six, or 17 per cent of EDP start-ups survived until 1994. Four counties had no surviving EDP firms in 1994, including Mayo where all four EDP firms failed.

5.5 Identifying Fast Growth Firms

Employment is a generally accepted index of firm size. It is also the index of size used in fast growth studies identified in Chapter 3 with the exception of Storey et al., [1989] which used profits as the measure of fast growth.

Chapter 3 demonstrated that the definition of fast growth is arbitrary and reflects variations in the sample frames covered in different studies. In Ireland a small firm is defined as having less than 50 employees. In previous studies identified in Chapter 3 the threshold for fast growth in Ireland was set at 50 employees [TFSB,1994], [McCluskey,1992]. In this study fast growth firms are defined as EDP start-ups grant-assisted over the period 1978 to 1992, which had less than 50 employees in the start-up year and achieved an employment level of 50 or more by 1994.

The number of jobs in the 110 EDP start-ups surviving in 1994 was sourced from Kompass Ireland. In total, 89 of the surviving EDP start-ups were listed in the 1994 edition of Kompass Ireland. The number of jobs in the remaining 21 were obtained through contacting the firms directly by telephone and by post. Table 5.15 shows the distribution of employment in surviving firms by firm size.

Table 5.15: The distribution of employment in surviving EDP start-ups in 1994

Firm Size 1994	Firms		Employment		
	Number	%	Number	%	%
< 5	10	9.1	32	0.7	
5 - 14	29	26.4	277	5.9	
15 - 24	22	20	401	8.6	
25 - 49	25	22.7	832	17.8	
50 - 74	7	6.4	410	8.8	67
75 - 99	4	3.6	320	6.9	
100 - 149	7	6.4	858	18.3	
150 - 199	2	1.8	300	6.4	
200+	4	3.6	1240	26.6	
Total	110	100	4670	100	

The vast majority of surviving EDP start-ups remained small. In 1994, 86, or 78 per cent of surviving EDP start-ups grant-assisted over the period 1978 to 1992, had less than 50 employees. 61, or 55 per cent, of surviving EDP start-ups had less than 25 employees in 1994. 24, or 21.8, of survivors had 50 or more employees, which represented 10 per cent of the total number of EDP start-ups.

Total employment in surviving EDP firms in 1994 was 4,670 and the average firm size was 42 employees. Survivors which has more than 50 employees in 1994, generated 3,128 jobs or 67 per cent of the total employment in surviving EDP start-ups. The remaining 86 surviving EDP start-ups generated 1,542 jobs or 23 per cent of the total employment in surviving EDP start-ups in 1994. Whilst average size of surviving firms was 42 employees the average size of firms with less than 50 employees was 18, compared with 130 for firms with 50 or more employees. Four EDP start-ups had 200 plus employees in 1994. These four firms generated 1,240 jobs or 26.5 per cent of jobs created in surviving EDP start-ups. One firm generated 600 jobs or 12.8 per cent of all jobs in surviving EDP start-ups.

Since the EDP was set up to promote fast growth start-ups, it is to be expected

that the 24 start-ups with 50 or more employees in 1994 would have started with very few employees. Original employment for these firms was supplied by Forbairt. Original employment is defined as the number employed in the year the firm was first included in the Annual Survey of Employment [ASE] and normally coincides with the year in which the firm was first grant-aided. It can be seen from Table 5.16 that most of the firms were very small at the time of foundation.

Table 5.16: Original employment in EDP start-ups with 50 or more employees in 1994

Fast Growth Start up Company	Employment 1994	Employment at start-up
1	50	10
2	50	3
3	60	10
4	60	15
5	60	2
6	65	1
7	70	25
8	70	25
9	75	2
10	80	8
11	90	80
12	110	3
13	130	5
14	110	5
15	118	2
16	120	42
17	130	25
18	140	3
19	150	88
20	150	10
21	200	8
22	210	4
23	230	10
24	600	24
Total Employment	3128	410
in the fast growth 22	2888	248
Mean of fast growth 22	131	11.2

Source : Original employment in EDP firms supplied by Forbairt from the Annual Survey of Employment, ASE, various years.

16 firms had ten employees or less in the first year employment was recorded by Forbairt. Two food firms were much larger from the onset, with 80 and 88 employees. These firms originated in the takeover of dissolved companies within the sector. Firm Number 11 had 80 employees at time of start but only created 10 extra jobs by 1994. This illustrates the importance of examining original employment in a study of fast growth firms. These two firms cannot be defined as fast growth firms under the definition used in this study. This reduces the number of fast growth firms to 22.

Three companies recorded original employment of 25 or more in the first year in which they were included in the ASE. Two clothing companies recorded original employment of 25. Employment in these firms rose rapidly in the first year of business, according to the directors of these companies which may reflect the labour intensive nature of the clothing trade. The employment level in Firm Number 16 was first recorded three years after start-up, more than likely the original employment was lower than 42 employees in this firm. Thus all fast growth firms had 25 or less employees at start-up and grew to employ 50 or more employees by 1994.

The final number of fast growth firms identified from the 239 EDP start-ups grant-assisted over the period 1978 to 1992 is 22, or 9.2 per cent. Table 5.16 shows that the fast growth firms were on average 12 times larger in 1994 than at start-up. Therefore these firms must have grown at a faster rate than other firms at some stage of their development.

These firms created 2,888 jobs or 61 per cent of all jobs in EDP start-ups. The contribution of fast growth and other EDP start-ups is given in Table 5.17.

Table 5.17: Fast growth firms as % of EDP survivors and EDP start-ups

Fast Growth Firms	Firms		Employment	
	No.	% of Total	No.	% of Total
Sample Size	239		4,670	
Survivors	110	46%	4,670	
Firms with 50 plus employees	24	10%	3,128	67%
Fast Growth Firms	22	9%	2,888	62%
Firms with less than 50 employees	86	36%	1,542	33%

As expected the EDP sample frame produced a higher proportion of fast growth firms than the total population of indigenous grant-assisted start-ups. Table 5.18 compares the results of the EDP study with other Irish studies and UK studies identified in Chapter 3.

Table 5.18: Comparison of fast growth firms, Ireland and UK

Study	Fast growth firms as % of start-ups	% of net job creation in fast growth fir
Dept. of Industry and Commerce 1990	1.0%	N/a
McCluskey, 1992	2.7%	N/a
TFSB, 1994	1.0%	15.0%
Storey et al, 1987	4.0%	34.0%
EDP 1995	9.2%	61.0%

Source: Department of Industry and Commerce, 1990, p 81. Storey et al, 1987, op cit., 1987, Table 5.11, p. 153. McCluskey, 1992, op cit., Appendix 2 Table 16. TFSB , 1994, p. 42.

Only 1 per cent of the 1973 [Department of Industry and Commerce, 1990] and 1983 [SBRT, 1994] cohorts of grant-assisted industries grew to employ more than 50 workers. This rose to 2.7 per cent for the total population of indigenous start-ups established over the nine year period from 1981 to 1990 [McCluskey, 1992]. This compares with 9.2 per cent of EDP start-ups grant-assisted over the 15 period from 1978 to 1992. Fast growth EDP start-ups also made a greater contribution to overall employment growth.

The studies by McCluskey [1992] and The Department of Industry and Commerce [1990] do not report the relative contribution of fast growth firms to overall employment growth. In the TFSB [1994] study, fast growth firms were responsible for 15 per cent of total employment created in the 1983 cohort of grant-assisted indigenous start-ups after nine years. This compares with 61 per cent for fast growth EDP start-ups.

In comparison with independent start-ups in the North East of England, the cohort of EDP start-ups produced a higher proportion of fast growth firms and their contribution to employment creation was higher. Fast growth firms in the North East of England represented 4 per cent of start-ups and generated 34 per cent of net net jobs. While the proportion of fast growth EDP firms is higher than Storey's estimate, the findings confirm his original hypothesis on the relative importance of a small number of new firms to overall employment growth.

Clearly, the EDP sample frame produce a higher proportion of fast growth firms than the total population of indigenous start-ups and grant-assisted start-ups. However, overall employment creation in EDP firms was modest, when compared with government expectations. In total 4670 jobs were created in EDP start-ups over the 17 year period 1978 to 1994, this figure is only slightly lower than the projected employment potential, of 4628 jobs, for the 122 EDP projects approved in the first four years of the programme alone [IDA, Annual Report, 1982, p. 27]. However, in comparison with the net job

losses experience in indigenous industry, over the same period, the net job creating activities of EDP start-ups is by no means modest.

5.6 Conclusion

This Chapter describes the derivation of a sample of fast growth firms in Ireland. The sample frame is derived from the list of first-time grant-assisted EDP start-ups in each year from 1978 to 1992, published in the Details of Capital Expenditure.

Start-ups assisted under the EDP are selected on the basis of their potential to grow. The owner-manager's work history and educational background were used as key factors in determining the growth potential of EDP projects over the 15 year period. In total, 239 start-ups were grant-assisted for the first time under the programme between 1978 to 1992. The EDP sample frame is not a representative sample of indigenous start-ups or grant-assisted indigenous start-ups, rather it represents the 'pick of the crop' of grant-assisted indigenous start-ups over the period 1978 to 1992. EDP start-ups grant-assisted over the period 1981 to 1990 represented 3.4 percent of grant-assisted indigenous start-ups over that period.

Of the total number of start-ups grant-assisted over the period 1978 to 1992, 110, or 46 per cent, survived until 1994. This represents a failure rate of 54 per cent for EDP start-ups aged between two and 17 years in 1994. The time period covered is longer than other studies of new firm failure, nevertheless, it was concluded tentatively that the survival rate of EDP start-ups was not exceptional in comparison with indigenous grant-assisted industry and independent start-ups in the UK.

The Companies' Office provide information on 94 or 73 per cent of EDP closures, however, the status of the firms in receivership had to be double checked using Dun and Bradstreet's credit checking service. A further 20 firms were not listed in the telephone directory, of which 15 were listed as

not trading in the Dun and Bradstreet database. The remaining five were tracked using back issues of the telephone directory and were found to be no longer trading or trading on a limited basis.

The EDP is industry selective. The vast majority of projects assisted under the programme were in metals and engineering, food, internationally traded services and chemical and pharmaceuticals. The vast majority of EDP start-ups were in the metals and engineering sectors, but firms in this sector did demonstrate a higher potential for survival when compared with all other sectors. The survival rate of firms in the metals and engineering sectors was 46.5 per cent compared with 46 per cent for all other sectors. Although Dublin had a much higher formation rate than the rest of the country, the survival rate of Dublin based firms was not significantly higher than firms in the rest of the country.

The vast majority of surviving EDP start-ups remained small. Fast growth firms were defined as EDP firms with less than 50 employees in the year of start-up which grew to employ 50 or more employees by 1994. 22, or 9.2 per cent of start-ups qualified as fast growth firms under this definition. Two firms which had 50 plus employees in 1994 and at start-up were excluded. Fast growth firms generated 2,888 jobs or 61 per cent of the total employment in EDP start-ups in 1994.

The average size of fast growth firms was 130 employees compared with 18 employees in other surviving EDP start-ups. As expected, the EDP sample frame produced a higher proportion of fast growth firms than the total population of grant-assisted indigenous start-ups, over the period 1981 to 1990. The fast growth EDP firms also produced the majority of net new jobs. These results confirm Storey's hypothesis on the relative importance of a small number of firms to overall employment creation.

Overall, it can be concluded that the EDP sample frame produced a higher proportion of fast growth firms than the population of grant-assisted start-

ups, however, the survival rate of EDP projects was not exceptional especially when compared with independent start-ups in the UK. Nonetheless, the contribution of 4670 net new jobs by EDP start-ups, during a period when overall manufacturing employment declined, is in an important achievement for indigenous industry in Ireland.

Chapter 6: FAST GROWTH FIRMS

6.1 Introduction

In Chapter 5 the EDP sample frame was described, and the sectoral and geographical distribution of start-ups and survivors was reported. The sectoral and geographical distribution of the fast growth firms is reported in this chapter, and compared with that of start-ups and survivors. A total of 22 EDP start-ups, with less than 50 employees at foundation grew to employ 50 or more employees by 1994, giving a transformation rate of 9.2 per cent for the group. The transformation rate of EDP firms by sector and region is described in this chapter. The level of grant assistance to, and cost per job in, fast growth firms is compared with that of other EDP start-ups. Employment creation in fast growth firms at sectoral level and by grant size is also reported.

6.2 The transformation rate of EDP start-ups by sector

The analysis of EDP start-ups by sector in Chapter 5 demonstrated that the majority of start-ups were to be found in metals and engineering and foods. Therefore it is to be expected that the majority of fast growth firms would also be in these two sectors. Table 6.1 shows the distribution of fast growth firms by sector.

Table 6.1: The sectoral distribution of fast growth firms

Industry	Fast Growth Firms	
	No. of Firms	% of Total
Metals and Engineering	10	45.5%
Food	5	22.7%
Footwear and Clothing	3	13.6%
Internationally Traded Services	1	4.5%
Non Metal Products	1	4.5%
Miscellaneous Industries	1	4.5%
Paper and Printing	1	4.5%
Timber	0	0.0%
Textiles	0	0.0%
Chemicals and Pharmaceuticals	0	0.0%
Total	22	100%

As expected, the majority of fast growth firms were in metals and engineering and foods. 15, out of 22, or 68 per cent of fast growth firms were in these two sectors. The highest proportion of fast growth firms were in metals and engineering; ten out of 22, or 45.5 per cent of fast growth firms were in this sector. Five, or 22.7 per cent of fast growth firms were in the food sector. Three, or 13.6 per cent of fast growth firms were in footwear and clothing. Together, these three sectors accounted for 18, or 82 per cent, of all fast growth firms. Four other sectors, internationally traded services, miscellaneous industries, paper and printing and non-metal products, each had one fast growth firm. There were no fast growth firms in chemicals and pharmaceuticals, timber or textiles.

A total of 22 out of 239 EDP start-ups grew to employ 50 or more workers giving a transformation rate of 9.2 per cent. Table 6.2 gives the transformation rate of EDP start-ups by sector.

6.2: The transformation rate of EDP start-ups by sector

Industry	Transformation Rate	
	EDP Start-ups	Fast Growth Firms as % of Total
Metals and Engineering	114	8.8%
Food	32	15.6%
Footwear and Clothing	14	21.4%
Internationally Traded Services	30	3.3%
Miscellaneous Industries	10	10.0%
Paper and Printing	8	12.5%
Non Metal Products	2	50.0%
Timber	5	0.0%
Textiles	3	0.0%
Chemicals and Pharmaceuticals	21	0.0%
Total	239	9.2%

Firms in the metals and engineering sector accounted for 45.5 per cent of fast growth firms, Nevertheless, firms in this sector had a slightly lower transformation rate than the group average. Ten of the 114 start-ups in the metals and engineering sector grew to employ 50 or more employees by 1994 giving a transformation rate of 8.8 per cent for the sector. Five sectors had a higher than average transformation rate; non-metal products, footwear and clothing, food, miscellaneous industries, and paper and printing.

One of the two start-ups in non-metal products grew to employ 50 or more employees by 1994, giving a transformation rate of 50 per cent for this sector. 21.4 per cent of start-ups in the footwear and clothing sector, and five, or 15.6 per cent of start-ups in the food sector generated 50 or more jobs. Paper and printing and miscellaneous industries each generated one

fast growth firm, with a transformation rate of 12.5 per cent and 10 per cent respectively. Only one, or 3.3 per cent of start-ups in internationally traded services grew to employ 50 or more workers. As already stated, three sectors, including chemicals and pharmaceuticals, timber and textiles had no fast growth firms, or a zero transformation rate. The number of start-ups in the last two sectors was small; only eight, or 3.4 per cent of start-ups were established in timber and textiles. There were almost three times as many start-ups in chemicals and pharmaceuticals as in timber and textiles, however, no fast growth firm emerged from this sector.

Overall, the performance of start-ups in the chemicals and pharmaceuticals sector was less than impressive when compared with other sectors. Table 6.3 shows the formation rate, survival rate and transformation rate of EDP start-ups by sector.

Table 6.3: The formation, survival and transformation rates of EDP start-ups by sector

Sector	Formation Rate		Survival Rate		Transformation Rate	
	No.	%	No.	%	No.	%
Metals and Engineering	114	47.7%	53	46.5%	10	8.8%
Food	32	13.4%	15	46.9%	5	15.6%
Internationally Traded Services	30	12.6%	16	53.3%	1	3.3%
Chemicals and Pharmaceuticals	21	8.8%	9	42.9%	0	0.0%
Footwear and Clothing	14	5.9%	5	35.7%	3	21.4%
Miscellaneous Industries	10	4.2%	5	50.0%	1	10.0%
Paper and Printing	8	3.3%	2	25.0%	1	12.5%
Timber	5	2.1%	2	40.0%	0	0.0%
Textiles	3	1.3%	2	66.7%	0	0.0%
Non Metal Products	2	0.8%	1	50.0%	1	50.0%
Total	239	100%	110	46.0%	22	9.2%

The survival rate of start-ups in the chemicals and pharmaceuticals sector was also lower than the group average. Nine, or 42.9 per cent of start-ups in this sector survived up until 1994 compared with 46 per cent for the whole group. The transformation rate of start-ups in the internationally traded services sector was also disappointing, given the high rate of formation and survival in this sector.

Internationally traded services had the third highest formation rate, accounting for 12.6 per cent of start-ups. 16, or 53 per cent of start-ups in this sector survived which was higher than the group average, and that of both food and metals and engineering. Nevertheless, only one of the 16 survivors in this sector grew to employ 50 or more employees. In contrast, five out of 15 survivors in the food sector and three out of five survivors in the footwear and clothing sector grew to employ 50 or more workers.

The transformation rate of start-ups in the footwear and clothing sector was impressive, given the low rate of formation and poor survival rate of start-ups in this sector. 14, or 5.6 per cent of start-ups were established in the footwear and clothing sector but only five, or 35.7 per cent survived, three of which grew to employ 50 or more employees by 1994. As a result, the rate of transformation in the footwear and clothing sector was the second highest in the sample, superseded only by non-metal products, which had one fast growth firm but a transformation rate of 50 per cent. This may reflect the labour intensive nature of the clothing industry.

The second highest number of EDP start-ups were formed in the food sector which accounted for 13.4 per cent of start-ups. The survival rate of start-ups in this sector [46.9 per cent] was slightly above the group average of 46 per cent. Five of the 32 start-ups in the food sector grew to employ 50 or more employees, giving a transformation rate of 15.6 per cent for the sector.

The miscellaneous industries sector accounted for 4.2 per cent of start-ups, but firms in this sector displayed an above average survival and

transformation rates. Start-ups in this sector had a 50 per cent survival rate and a 10 per cent transformation rate. Start-ups in paper and printing had an above average transformation rate, but a below average survival rate. Only two, or 25 per cent of start-ups in this sector survived, one of which grew to employ 50 or more employees.

As already pointed out, firms in the metals and engineering sector did not demonstrate a higher than average survival or transformation rate, despite accounting for 45.5 per cent of all formations. The majority of fast growth firms were in metals and engineering and foods. Therefore it is to be expected that the vast majority of jobs would be created in these sectors. Table 6.4 shows the distribution of employment in fast growth firms by sector.

Table 6.4: The distribution of employment in fast growth firms by sector

Industry	Fast Growth Firms	Employment			
		% of Total	No of Jobs	% of Fast Growth Total	% of Total EDP
Metals and Engineering	10	45.5%	1,078	37.3%	23.1%
Food	5	22.7%	1,220	42.2%	26.1%
Footwear and Clothing	3	13.6%	260	9.0%	5.6%
Internationally Traded Services	1	4.5%	50	1.7%	1.1%
Miscellaneous Industries	1	4.5%	150	5.2%	3.2%
Paper and Printing	1	4.5%	60	2.1%	1.3%
Non Metal Products	1	4.5%	70	2.4%	1.5%
Fast Growth Total	22	100%	2,888	100%	61.8%
Other Surviving EDPs	88		1,782		38.2%
EDP Total	110		4,670		100%

As expected, food and metals and engineering accounted for 68 per cent of fast growth firms and created 2,298, or 79.6 per cent of jobs in fast growth firms and 49 per cent of net employment in EDP start-ups. Fast growth firms in the food sector out-performed the metals and engineering sector in terms of employment creation. Fast growth food companies created 1,220 jobs, or 42.2 per cent of total employment in fast growth firms. Hence, food companies represented 22.7 per cent of fast growth firms but generated 42.2 per cent of jobs in the fast growth group and 26 per cent of net jobs created in EDP start-ups.

Metals and engineering represented 45.5 per cent of fast growth firms and generated 1,078, or 37.3 per cent of total employment in the fast growth group. Fast growth food companies were much larger than fast growth firms in the metals and engineering sector. Average firm size was 244 in the food sector compared with 107 for metals and engineering.

Fast growth firms in the footwear and clothing sector created a lower proportion of jobs than their share of fast growth firms. The three footwear and clothing companies created 260, or 9 per cent of jobs in fast growth firms. The average firm size was lower than that of firms in metals and engineering and food. The average firm size in clothing and footwear was 87 employees. The internationally traded services company created 50, or 1.7 per cent of jobs in fast growth firms. 150, or 5.2 per cent of fast growth jobs were created by the fast growth firm in miscellaneous industries. The paper and printing company created 60 jobs and the fast growth firm in non-metal products created 70 jobs.

Fast growth food companies made the greatest contribution to employment growth. Firms in the food sector grew much faster than all other firms, and created on average 244 jobs. The strong performance of start-ups in the food sector is an important finding, and may reflect Ireland's comparative advantage in this sector. The food sector, Ireland's strongest indigenous industry accounts for almost one third of the gross output of all

manufacturing industry in Ireland, 20 per cent of Irish exports and over 20 per cent of total manufacturing employment [Culliton Report 1992, p. 87]. The Culliton Report [1992] went on to stress the need to promote industries in sectors which possess a comparative advantage, and identified the food sector as a prime candidate for such focused support.

6.3 Grant assistance to fast growth firms

Over the 15 year period, 1978 to 1992, a total of £34.9 million in grant assistance was allocated to EDP start-ups. Table 6.5 shows the total and average grant payment to failed, surviving and fast growth EDP firms.

Table 6.5: Grant assistance to failed, surviving and fast growth EDP firms

	No. of Firms	Total Payment (000's)	% of Total	Average Payment
EDP Start-ups	239	34,919,024		146,105
EDP Failures	129	14,687,469	42.1%	113,856
EDP Survivors	110	20,231,555	57.9%	183,923
Fast Growth EDP's	22	8,150,289	23.3%	370,468
Other survivors	88	12,081,266	34.6%	137,287

The figures are based on grants allocated to firms under the EDP as listed in Capital Expenditure Accounts over the period 1978 to 1992. As already noted in Chapter 5, EDP start-ups also received grant assistance under different support programmes. In particular, the figure for fast growth firms is likely to be under estimated as these firms are more likely to qualify for additional support given their contribution to employment. One fast growth firm, Green Isle Foods, received a total of £5 million in grant assistance, of which £770 thousand was allocated under the EDP.

Table 6.5 shows that of the £34.9 million allocated to EDP start-ups, £20.2

million, or 57.9 per cent was received by start-ups which survived until 1994. The 22 fast growth firms were allocated £8.1 million, or 23 per cent of total grant payments to EDP start-ups.

Column four shows that the average grant payment to fast growth firms was £370,468 which was two and a half times higher than the average grant payment to EDP start-ups and twice as high as the average grant payment to all surviving EDP start-ups. This would suggest that the former IDA was successful in allocating grants to EDP start-ups with the greatest potential for growth. However, it cannot be forgotten that £14.7 million, or 42.1 per cent of total grant payments was allocated to start-ups which had closed by 1994.

Table 6.6 shows the cost per job in fast growth firms compared with all EDP start-ups and survivors. The cost per job in fast growth firms was lower than the average for all survivors and non-fast-growth survivors.

Table 6.6: The cost per job in fast growth firms compared with other EDP survivors

	Total Employment	Grant Payment (000's)	Cost per Job
EDP Start-ups	4,670	34,919	7,477
EDP Survivors	4,670	20,231	4,332
Fast Growth Firms	2,888	8,150	2,822
Other Survivors	1,782	12,081	6,779

The average cost per job in surviving EDP firms was £4,332. The cost per job in fast growth firms was £2,822 compared with £6,779 for other survivors. Again, it should be noted that the data relates only to grants allocated under the EDP, therefore the figures in Table 6.6 can be seen as a crude estimate of the cost per job in EDP firms. The cost per job, particularly in fast growth

firms, is likely to be much higher than indicated in Table 6.6. Table 6.7 shows employment in fast growth firms by grant size. As expected the firms which received the highest grants created the highest proportion of jobs.

Table 6.7: Employment in fast growth firms by grant size

Size of grant	No. of Firms	Total Amount Paid	% of Total	No. of Jobs in 1994	% of Total
>50,000	3	89,811	1%	200	7%
50,000 - 99,999	2	163,257	2%	228	8%
100,000 - 149,999	2	266,759	3%	130	5%
150,000 - 249,999	3	631,368	8%	220	8%
250,000 - 499,999	6	2,027,469	25%	680	24%
500,000 - 799,999	4	2,572,628	32%	990	34%
800,000 - 1,300,000	2	2,398,997	29%	440	15%
TOTAL	22	8,150,289	100%	2888	100%

Fast growth firms which received grants of £250 thousand or more made the greatest contribution to employment creation. 2,110, or 73 per cent, of jobs in fast growth firms were created by the 12 fast growth firms which had been allocated grants of £250 thousand or more. These firms received £6.99 million, or 85 per cent, of grant payments. The six firms which had been allocated £500 thousand or more created 1,430, or 49.5 per cent, of jobs in fast growth firms.

6.3.i Grant payment and employment in fast growth firms by sector

Section 6.2 showed that food companies created a higher proportion of jobs than firms in metals and engineering, although they represented a much lower proportion of start-ups. Fast growth food companies represented 13.4 per cent of start-ups and created 42 per cent of jobs in fast growth firms. The corresponding figures for metals and engineering companies were 45.5 and 37 per cent respectively. Therefore, it is to be expected that the food sectors would have received the highest proportion of grants of grants. Table 6.8 shows grant payment and employment in fast growth sectors.

Table 6.8: Grant payment and employment in the fast growth firms by sector

Industry	Grant Aided		Employment		
	Total	%	Total	%	Cost per Job
Metals and Engineering	£ 2,236,804	27%	1,078	37%	£ 2075
Food	£ 3,863,104	47%	1,220	42%	£ 3166
Footwear and Clothing	£ 1,058,100	13%	260	9%	£ 4070
Internationally Traded Services	£ 386,041	5%	50	2%	£ 7721
Miscellaneous Industries	£ 294,846	4%	150	5%	£ 1966
Paper and Printing	£ 165,144	2%	60	2%	£ 2752
Non Metal Products	£ 146,250	2%	70	2%	£ 2089
Fast Growth Total	£ 8,150,289	100%	2,888	100%	£ 2822

Fast growth companies in metals and engineering and food received £6 million, or 74 per cent of all grant assistance to fast growth EDP firms. The food sector received the highest proportion of grant assistance. A total of £3.8 million, or 47 per cent of grants were allocated to food companies. Food companies created 1,220, or 42 per cent of total employment in fast growth firms which was lower than their share of grants [47 per cent]. In contrast, fast growth companies in the metals and engineering sector were allocated 27 per cent of grants but created 37 per cent of total employment in fast growth firms. As a result, the crude estimate of cost per job in the food sector [£3,166] was higher than the group average and metals and engineering [£2075].

Fast growth companies in footwear and clothing received the third highest share of grant payments and created the third highest number of jobs. Fast growth companies in footwear and clothing received £1 million, or 13 per cent of the total grant payments to fast growth firms. However, the share of total employment in footwear and clothing companies [9 per cent] was lower

than their share of grants. The remaining five sectors received £991 thousand, or 11 percent of grants and created in turn 11 per cent of total employment in fast growth firms. The cost per job in internationally traded services [£7,721] was the highest in the group, and the cost per job in miscellaneous industries [£1,966] was the lowest.

6.4 The transformation of EDP start-ups by county

The geographical distribution of EDP start-ups was examined in Chapter 5. It showed that the majority of EDP start-ups, 126, or 52.7 per cent were located in Dublin. Three other counties, Cork, Galway and Wicklow had 43, or 18 per cent of start-ups. Therefore, it is to be expected that the majority of fast growth firms would be located in these four counties. Table 6.9 reports the distribution of EDP start-ups and fast growth firms by county.

Table 6.9: The distribution of fast growth firms and EDP start-ups by county

County	EDP Start-ups		Fast Growth Firms	
	No.	%	No.	%
Dublin	126	52.7%	10	45.5%
Cork	22	9.2%	1	4.5%
Wicklow	11	4.6%	1	4.5%
Galway	10	4.2%	2	9.1%
Kildare	7	2.9%	2	9.1%
Carlow	5	2.1%	2	9.1%
Monaghan	5	2.1%	3	13.6%
Kilkenny	1	0.4%	1	4.5%
Fast Growth Total	187	78.2%	22	100.0%
Rest	52	21.8%	0	0.0%
Total	239	100%	22	100.0%

Only eight, or 35 per cent of the 23 counties with an EDP start-up, had a fast growth firm. These eight counties, however, accounted for the majority of

EDP start-ups. 187, or 78 per cent of all EDP start-ups were located in counties which had at least one fast growth firm. The remaining 15 counties accounted for 52, or 21.8 per cent of EDP start-ups. As expected, Dublin had the highest proportion of fast growth firms where ten, or 45.5 per cent of all fast growth firms were established. The proportion of fast growth firms in Dublin was lower than its 53 per cent share of all EDP start-ups. Monaghan had the second highest concentration of fast growth firms. Three, or 13.6 per cent of fast growth firms were located in Monaghan. The proportion of fast growth firms in Monaghan was over six times greater than the share of EDP start-ups in the county. Only five, or 2.1 per cent of EDP start-ups were established in this county.

Three counties, Galway, Kildare and Carlow each had two fast growth firms. The proportion of fast growth firms in these three counties was higher than their share of start-ups. 9.1 per cent of fast growth firms were located in Galway compared with 4.2 per cent of EDP start-ups. Kildare had 9.1 per cent of fast growth firms compared with 2.9 per cent of start-ups. 9.1 per cent of fast growth firms were located in Carlow compared with 2.1 per cent of start-ups. Three counties, Cork, Wicklow and Kilkenny each had one fast growth firm. The proportion of fast growth firms in Cork was lower than the share of start-ups in the county; 4.5 per cent of fast growth firms were located in Cork compared with 9.2 per cent of all EDP start-ups. The proportion of fast growth firms in Kilkenny [4.5 per cent] was much higher than its 0.4 per cent share of EDP start-ups. 4.5 per cent of fast growth firms and 4.6 per cent of start-ups were in Wicklow. Thus of the four counties, Dublin, Cork, Wicklow and Galway which accounted for 78 per cent of start-ups, only Galway had a higher proportion of fast growth firms than its share of formations.

Table 6.10 shows the transformation rate for the eight counties with fast growth firms. The transformation rate by county is the number of firms which grew to employ 50 or more employees as a percentage of start-ups in that county.

Table 6.10: The transformation rate of EDP start-ups by county

County	Fast Growth Firms		Transformation	
	No.	%	Rate	
Dublin	10	45.5%	10	7.9%
Cork	1	4.5%	1	4.5%
Wicklow	1	4.5%	1	9.1%
Galway	2	9.1%	2	20.0%
Kildare	2	9.1%	2	28.6%
Carlow	2	9.1%	2	40.0%
Monaghan	3	13.6%	3	60.0%
Kilkenny	1	4.5%	1	100.0%
Rest	0	0%	0	0%
Total	22	100%	22	9.2%

Dublin had the highest proportion of EDP start-ups, yet it demonstrated a below average transformation rate. Ten, or 7.9 per cent of start-ups in Dublin grew to employ 50 or more employees. Cork had the lowest transformation rate. One, or 4.5 per cent of start-ups in Cork grew to employ 50 or more employees compared with the group average of 9.2 per cent. In Wicklow one, or 9.1 per cent of start-ups grew to employ 50 or more employees which was just below the group average. These three counties, Dublin, Cork and Wicklow had the three highest rates of formation, but the lowest rates of transformation. The transformation rate was much higher in the remaining five counties; Galway 20 per cent, Kildare 28.6 per cent, Carlow 40 per cent, Monaghan 60 per cent and Kilkenny 100 per cent.

Table 6.11: The formation, survival and transformation rates of EDP start-ups by county

County	Formation		Survival		Transformation	
	Rate	Rate	Rate	Rate	Rate	Rate
Dublin	126	52.7%	58	46%	10	7.9%
Cork	22	9.2%	9	41%	1	4.5%
Wicklow	11	4.6%	6	54%	1	9.1%
Galway	10	4.2%	5	50%	2	20.0%
Kildare	7	2.9%	6	86%	2	28.6%
Carlow	5	2.1%	3	60%	2	40.0%
Monaghan	5	2.1%	5	100%	3	60.0%
Kilkenny	1	0.4%	1	100%	1	100.0%
Rest	52	21.8%	15	28.8%	0	0.0%
Total	239	100%	110	46%	22	9.2%

Eight, or 35 per cent of counties had a fast growth firm. These eight counties accounted for 187, or 78 per cent of EDP start-ups which might suggest that high formation rates lead to high transformation rates. Table 6.7 shows the formation, survival and transformation rates of start-ups by county. Dublin followed by Cork were the most popular locations for EDP start-ups. The highest proportion of start-ups and fast growth firms were in Dublin. 52.7 per cent of start-ups and 45.5 per cent of fast growth firms were located around the capital, but start-ups in Dublin had only a 7.9 per cent transformation rate compared with 9.2 per cent for all EDP start-ups.

Cork had the second highest formation rate but the lowest survival and transformation rate of counties with fast growth firms. Thus, start-ups in these counties did not demonstrate a higher propensity to survive or to grow. This would suggest that centres of high population density have higher rates of formation, but not necessarily higher rates of transformation.

The transformation rates for the five remaining counties, Galway, Kildare, Carlow, Monaghan and Kilkenny, were much higher than the group average. These five counties had transformation rates of 20 per cent or more. They also achieved a higher than average survival rate. Galway was the only county with a major population centre which had a higher than average transformation rate. The performance of EDP start-ups in Monaghan is noteworthy. All five EDP start-ups in this county survived, three of which grew to employ 50 or more employees.

6.5 Conclusion

Whilst metals and engineering had the highest rate of formation, start-ups in this sector did not demonstrate a higher survival or transformation rate. 114, or 47.7 per cent, of all start-ups were in this sector, of which 46.5 per cent survived, and ten, or 8.8 per cent, grew to employ 50 or more employees. In comparison, start-ups in the food and footwear and clothing sectors had a much lower formation rate but a much higher transformation rate. The food sector demonstrated a 15.6 per cent transformation rate compared with the group average of 9.2 per cent. Clothing and footwear had a 21.4 per cent transformation rate, despite having only a 25 per cent survival rate.

A total of 2,888 jobs were created in fast growth firms. The vast majority of jobs were created in two sectors, metals and engineering and foods. These two sectors created 2,298 jobs, or 80 per cent of employment in fast growth firms. Food companies out performed the metals and engineering companies in terms of employment creation, although they represented a lower proportion of fast growth firms. Food companies created 1,220 jobs, or 42 per cent of total employment in fast growth firms whilst firms in metals and engineering created 1,078 jobs, or 37 per cent of jobs in fast growth firms. Average firm size in the food sector was also much larger than the fast growth group average. Fast growth food companies employed on average 244 employees, compared with the fast growth group average of 113 employees. This suggests that food companies are a more important source of employment than metals and engineering. An examination of grants to

different sectors revealed that although food companies generated a higher proportion of jobs than firms in metals and engineering, they also received the highest proportion of grants. The crude estimate of cost per job in the food sector was also higher than the equivalent figure for metals and engineering.

The figures reported in this chapter are only a crude estimate of grant payment to EDP firms in that they only include grants allocated under the EDP. EDP start-ups also qualify for grant assistance under different support programmes. In particular, the figure for fast growth firms is likely to be underestimated as these firms are more likely to qualify for additional support given their contribution to employment.

Fast growth firms received a higher proportion of grants than all EDP survivors. Fast growth firms received 8.3 million or 23.3 per cent of the total grant payment to EDP start-ups, an average of £370 thousand per firm compared with £184 thousand per firm for all survivors. Fast growth food companies received 3.8 million, or 47 per cent of the total grant payments to fast growth firms. Thus, while fast growth food companies accounted for 22.6 per cent of fast growth firms and 42 per cent of employment, they received 47 per cent of total grant payment.

A total of 34.9 million in grants was allocated to start-ups under the EDP over the 15 year period 1978 to 1992. £14.7million, or 42.1 per cent of grants were allocated to firms which had failed prior to 1994.

The poor performance of start-ups in chemical and pharmaceuticals also stands out. This sector had an 8.8 per cent formation rate, yet start-ups in chemical and pharmaceuticals displayed a below average survival rate and a zero transformation rate. The growth performance of start-ups in the internationally traded services section was also unimpressive. Only one, or 3.3 per cent of start-ups grew to employ 50 or more workers, and the cost per job [£7,921] was much higher than the group average of £2,822. Although

three sectors, miscellaneous industries, paper and printing and non-metal products had only 20, or 8.3 per cent of start-ups, however, 3 or 13.6 per cent of fast growth firms emerged from this group.

Only eight, or 35 per cent of the 23 counties with an EDP start-ups had a fast growth firm. Dublin had the highest rate of formation. However, Dublin based firms did not demonstrate a higher rate of transformation than other counties, with the exception of Cork. Dublin had a 45.5 per cent formation rate but an 8.8 per cent transformation rate. Only one of the 22 start-ups in Cork grew to employ 50 or more employees, giving a transformation rate of 4.5 per cent, the lowest in the fast growth group. The transformation rate of start-ups in Monaghan was impressive. Monaghan had five, or 2.1 per cent of EDP start-ups, all of which survived and three grew to employ 50 or more employees.

CHAPTER 7: THE FINANCIAL STRUCTURE OF FAST GROWTH FIRMS

7.1 Introduction

The analysis of the balance sheets of 17 fast growth firms and 17 match firms, based on annual returns filed with the Companies' Office in 1991 is presented in this chapter. The analysis is similar to that undertaken by Storey et al. [1989] for fast growth and match firms in the North of England discussed in Chapter 4. The aim of the analysis is to determine whether or not there are fundamental differences in the asset structure and source of finance utilised by fast growth and match firms.

Several researchers have argued that lack of finance is a more pressing problem for the growth firm than for the non-growth firm. In particular, the lack of equity finance is seen as a major barrier to the growth of fast growth firms in Ireland [Culliton, 1992] and [Kinsella, 1992]. In the studies examined in Chapter 4, it was found that whilst external equity was an insignificant source of finance in small firms, fast growth firms were more likely than match firms to mention external equity as source of finance [Storey et al., 1989] and [Kinsella et al., 1994]. This finding was confirmed from an examination of the relative importance of sources of equity financing in the balance sheet of fast growth and match firms [Storey et al. op. cit., 1989]. This suggests that unlike the majority of small firms, fast growth firms are less adverse to sharing ownership and are therefore more likely to seek outside finance. Fast growth firms were also found to be more dependent on government grants than their match counterparts. These findings are compared with the results from the current analysis

The chapter is structured as follows. The first section describes the matching process of fast growth firms with surviving firms from the EDP sample that demonstrated slower growth patterns than the fast growth group. This is followed by a discussion of the limitations of data source and resulting methodological problems. The comparison of the balance sheet of fast growth and match firms begins with an examination of the actual balance sheets of both types of firms in section 7.3. This is followed by an examination of the

relative importance of balance sheet items, in terms of total assets, in fast growth and matched firms. In section 7.5 the balance sheets of firms in Ireland are compared with those of firms in the North East of England reported in Storey et al. [1989]. This is followed by a comparison of the capital structure of fast growth and match firms with that of indigenous firms reported in the Review of Industrial Performance [Department of Industry and Commerce, 1990]. The final section summarises the findings of the chapter.

7.2 Matching process

The analysis of the financial structure of fast growth and match firms presented in this chapter is based on the study by Storey et al. [1989] discussed in Chapter 4. A total of 17 fast growth firms were matched with firms from the sample frame of EDP survivors with 25 or less employees. The matching process is described in this section. The financial data is based on annual returns submitted to the Companies' Office in 1991. Storey et al. examined the balance sheet of fast growth and match firms over a five year period. However, due to the lack of observations this was impossible in the current study. Furthermore, the analysis is limited to the examination of abridged accounts since the majority of companies are exempted under the Companies Act [1986] from submitting complete accounts. The constraints of the data source and the resulting methodological implications are discussed.

A total of 22 EDP start-ups with less than 50 employees at foundation grew to employ 50 or more employees by 1994. These firms were found to have grown much faster than other surviving firms in terms of employment. Average employment in the fast growth group was 11 times greater in 1994 than at start-up. The aim of this section is to match the fast growth firms with surviving firms from the sample frame of EDP start-ups which had slower growth patterns than the fast growth firms. This raises the important question as to what constitutes a slow growth or non-growth firm. In the study by Storey et al. [1989], the match firms were not selected on their performance but were picked on the basis that they were 'broadly

representative of surviving small firms, in the chosen sectors where fast growth firms are present' [Storey et al., 1989, op. cit., p.12]. In this study the match firms are drawn from the sample frame of EDP survivors which had 25 or less employees in 1994,

The aim of the analysis is to take pairs of firms matched for extraneous variables which might mask 'true' relationships or create spurious ones [Peck, 1985, p. 982]. As in previous examinations of growth the firms have been matched for the extraneous variables of sector, age and ownership.

The EDP was set-up to assist indigenous entrepreneurs in starting their own businesses. Multinational branch plants and established firms are not assisted under the programme, therefore, EDP start-ups can broadly be viewed as a homogeneous group in terms of ownership.

It was intended to match the 22 fast growth firms with firms from the EDP sample frame that had 10 or less employees in 1994. But the number of match firms with 10 or less employees [28 firms] was too small. When the size limit is increased to include firms with 25 or less employees the pool of firms to draw from for matching purposes rises to 67.

Even with this larger pool of firms not all the fast growth firms could be matched for sector. Only one of the three fast growth firms in the clothing sector could be matched, as there were only two non-fast growth survivors in this sector, one of which had more than 25 employees. Counterparts could not be found for a toy manufacturing and a glass manufacturing company in the fast growth group. Only four of the five fast growth firms could be matched from the pool of ten non-fast growth survivors in the food sector. Two of these firms had 50 or more employees at start-up. Of the remaining seven, two were too large and two had never filed annual returns with the Companies' Office. Given the large number of survivors in the engineering sector there was little problem in matching the ten fast growth firms in this sector. The total number of match pairs was 17. Table 7.1 shows the sectoral

distribution of the two groups. As expected the highest proportion of matched-pairs were in the engineering sector which accounted for ten of the 17 matched-pairs.

Table 7.1: Sectoral composition of the matched-pairs

Sector	Fast Growth Firms	Match Firms
	No.	No.
Industrial engineering	4	4
Electronic engineering	2	2
Microelectronics	4	4
Food Processing	4	4
Clothing	1	1
Paper and Printing	1	1
Computer Translation services	1	1
Total	17	17

Firms in the engineering sector were classified into three sub sectors; there were four matched pairs in industrial engineering, two in electronics and four in microelectronics/computing. Of the remaining seven pairs, four were in the food sector and there was one each in paper and printing, clothing and computer translation services.

Table 7.2 shows the employment in fast growth and match firms by sector. The fast growth group employed a total of 2,478 employees in 1994 compared with a total of 248 employees for the match group. The start-up employment in the fast growth group is also given.

Table 7.2: Sectoral composition of employment in the matched-pairs

Sector	Fast Growth Firms			Match Firms	
	No.	Employment		No.	1994
		1994	start-up		
Industrial engineering	4	305	17	4	66
Electronic engineering	2	215	5	2	28
Microelectronics	4	558	18	4	40
Food Processing	4	1160	97	4	53
Clothing	1	130	25	1	15
Printing	1	60	10	1	25
Computer Translation services	1	50	15	1	21
Total	17	2478	187	17	248
Average		146	11		15

As pointed out in Chapter 5, the start-up year is defined as the year in which employment was first recorded by Forbairt in the Annual Survey of Employment and in the case of some firms the figure does not correspond with the start-up year. Overall, the figures show that the fast growth firms were 13 times larger in 1994 than at start-up. Average employment in the fast growth group, at start-up was 11 and grew to an average of 146 by 1994. The rate of employment growth varies across sectors. Total employment in the four food companies was 11 times larger in 1994 than at start-up. In comparison total employment in the computer translation company was only 3.3 times greater than at start-up.

The fast growth firms were on average 9.7 times larger than match firms. The average size of the fast growth firms was 146 employees compared with an average of 15 employees for match firms. Column 6 shows the ratio of employment in fast growth firms to employment in match firms by sector. The group average is influenced by four fast growth food firms. The four fast growth food companies were on average 22 times larger than their match counterparts. In Chapter 6, it was found that one food firm had 600

employees. This food firm was 11 times larger than the four match firms in the food sector. Therefore, it is clear that the analysis will be affected by this very large firm. In contrast, the fast growth firms in printing and computer translation were only 2.4 times larger than their matched counterparts.

Age is closely associated with growth particularly in small firms. Therefore it is important that the age structure of the matched-pairs is similar. Table 7.3 shows the age structure of fast growth and match firms. Storey et al. [1989] matched firms formed in the same decade. In table 7.3 an attempt was made to match the firms over more tightly defined periods.

Table 7.3: The age structure of the matched-pairs

Year of Incorporation	Fast Growers	Match Firms
1977 - 1979	4	0
1980 - 1983	7	6
1984 - 1987	5	10
1988 - 1989	1	1
	17	17

The fast growth group were on average slightly older than the match firms. Four of the fast growth firms and none of the match firms were incorporated between 1977 and 1979. Seven of the fast growth and six of the match firms were incorporated between 1980 and 1983. Most significantly, only one firm in each group was less than five years old in 1991, the year for which the balance sheet information is available. Thus the analysis is unlikely to be unduly affected by the start-up characteristics of these two firms. Overall, the matching process appears to be successful in that the age structure of the growth firms and match firms is broadly similar.

7.1.i The financial data

The financial analysis is based on accounts filed at the Companies, Office in

1991. This was the first year in which annual returns were available for all firms in the sample. In particular, there is a lack of data available for firms in earlier years which prohibits a comparison of the start-up finance of fast growth and match firms. Table 7.4 shows the number of firms for which accounts were available following their year of incorporation.

Table 7.4: The financial reporting procedures of the matched-pairs

Returns Lodged in	Fast Growers	Match Firms
year 1	3	0
year 2	2	10
year 3	1	1
year 4	5	1
year 5	2	4
Total	17	16

There were only 15 out of a possible 85 annual returns filed for the 17 fast growth firms and 16 annual returns filed for the match groups within five years of their incorporation. After 1990, annual returns were filed more frequently by both groups of firms reflecting the introduction of new measures to enforce the Companies Act of 1986 on the filing of annual returns. As in the UK, small and medium size companies are not required to file a complete set of accounts with the Companies' Office. Firms are allowed file abridged accounts under the Companies Act [1986] if they satisfy two of the three criteria listed in Table 7.5.

Table 7.5: Criteria for the submission of abridged statutory returns under the Companies Act [1986]

	Small Companies	Medium-sized Companies
Balance sheet total not exceeding	£1.25m	£5m
Turnover not exceeding	£2.5m	£10m
Employees not exceeding	50	250

Source. The Companies' Registration Office, Information Manual, June 1992, p. 35.

All 17 match firms and 11 of the fast growth firms filed abridged accounts in 1991. Most significantly, these firms are not required to file a profit and loss account. Therefore, the profitability of fast growth and match firms cannot be assessed. Furthermore, as found in the examination of the accounts of small firms in the North East of England;

the level of detail available in respect of various profit and loss account items and balance sheet categories for assets and sources of finance will be poor for companies that file modified accounts (particularly in respect of detailed composition of fixed assets and current liabilities) [Storey et al., 1985, p. 15].

Seven of the match firms and 16 of fast growth firms gave full details of fixed assets. Therefore, the analysis in section 7.3 and 7.4 is limited to an examination of broad balance sheet items. However, 16 match firms and 17 fast growth firms gave details of short term and long term borrowings which facilitates a comparison of the capital structure of fast growth and match firms in section 7.5.

7.3 Group balance sheets of the fast growth and match firms

In this section the actual value of broad balance sheets items in 17 fast growth and 17 match firms are compared. Section 7.2, demonstrated that the 17 fast growth firms grew much faster than the match firms from the time of start-up. The main aim of the analysis of the absolute balance sheet of the two groups is to determine whether or not the fast growth firms also grew as fast in financial terms. The absolute size of fast growth and match firms are compared in terms of the four financial indicators of size; total assets, net assets, equity and retained profits. Employment has been correlated with the four financial indicators of size.

Previous studies, identified in Chapter 4, found that fast growth firms were more dependent on grants than match firms [Kinsella et al., 1994] [Storey et al., 1989]. The absolute value of grants in fast growth and match firms is compared.

Tables 7.1 and 7.2 present the absolute mean and median values of broad balance sheet items for both fast growth and match firms for the year 1991. The minimum and maximum values are given in columns 3 and 4 and the standard deviation is given in column 5 in each Table. The results of the test for difference in the means at the 95 per cent confidence level is given in the last column. A P-value of .05 or less indicates that the difference in the means is significant. Whilst the mean value in both groups is influenced by extreme scores, this is particularly true of the fast growth group which had two very large firms. The impact of these firms on the group scores is assessed in section 7.2 i.

The structure of the tables reflect the standard format of the balance sheet. Current liabilities are subtracted from total assets to give net assets or the capital employed in the business which is financed by long term liabilities, grants and equity. Equity is the ordinary share capital plus share premiums, retained profits, interest and reserves.

Table 7.6: Group balance sheet for fast growth firms

Balance Sheet Item in £1000's	Mean	Median	Min Value	Max Value	Standard Deviation	P Value
Fixed Assets	2,714	1,448	179	12,963	3,542	0.006
Current Assets	3,009	2,446	389	8,227	2,521	0.000
Total Assets	5,723	3,552	1,081	20,831	5,786	0.001
- Current Liabilities	2,367	1,520	337	8,374	547	0.000
Net Assets	3,355	1,615	611	12,457	3,619	0.002
Financed by:						
Long Term Liabilities	708	236	0	6,184	1,497	0.092
Government Grants	527	190	0	4,365	1,109	0.073
Share Capital	495	280	4	2,225	563	0.010
Share Premium	509	307	0	1,748	522	0.001
Retained Profits	1,096	941	(1,153)	4,557	1,491	0.009
Other reserves	14	0	(295)	215	106	0.830
Minority Interest	7	0	0	53	16	0.086
Equity	2,121	1,091	(700)	7,979	2,241	0.002
Number of observations = 17 The results of the t test for difference in the means is reported in Column 6. P value of less than 0.05 indicates that difference in the means is significant at the 95% confidence level.						

Table 7.7: Group balance sheet for match firms

Balance Sheet Item in £1,000's	Mean	Median	Min Value	Max Value	Standard Deviation	P Value
Fixed Assets	159	137	15	356	128	0.006
Current Assets	360	204	80	1,574	380	0.000
Total Assets	519	384	95	1,693	395	0.001
- Current Liabilities	189	143	39	669	165	0.000
Net Assets	329	263	40	1,024	251	0.002
Financed by:						
Long Term Liabilities	74	33	0	486	124	0.092
Government Grants	27	20	0	138	36	0.073
Share Capital	112	53	0	479	132	0.010
Share Premium	21	0	0	180	45	0.001
Retained Profits	88	61	(165)	647	200	0.009
Reserves	8	0	0	121	29	0.830
Minority Interest	0	0	0	0	0	0.086
Equity	229	174	1	677	180	0.002
Number of observations = 17 The results of the t test for difference in the means is reported in Column 6. P value of less than 0.05 indicates that difference in the means is significant at the 95% confidence level.						

Table 7.8 compares the group mean value of employment and the four financial indicators of size, total assets, net assets, equity and retained profits, in the fast growth and match groups. As already pointed out in the section 7.1, the fast growth group were on average 9.7 times larger than the match firms in terms of numbers employed in 1994.

Table 7.8 Comparison of firm size in fast growth and match firms in terms of employment and financial indicators: Group means

	Fast Growth Firms (000's)		Match Firms (000's)
Employment			
Group Mean	145		15
Ratio of FGF's to MF's	7.6	:	1
Total Assets			
Group Mean	5,723		519
Ratio of FGF's to MF's	11	:	1
Net Assets			
Group Mean	3,355		329
Ratio of FGF's to MF's	10	:	1
Equity			
Group Mean	2,121		229
Ratio of FGF's to MF's	9.2	:	1
Retained Profits			
Group Mean	1,096		88
Ratio of FGF's to MF's	12.5	:	1

The average employment in the fast growth group in 1994 was 146 employees which represented a thirteen fold increase on their original employment figures. In comparison the average size of the match firms in 1994 was 15 employees. Therefore, it is to be expected that the fast growth firms would also be much larger in financial terms. The financial data is based on annual returns for both groups in 1991. The table demonstrates that the fast growth firms were at least 9 times larger than match firms in financial terms as indicated by the mean value of total asset, net assets, equity and retained

profits in both groups in 1991. Mean total assets was 11 times greater for the fast growth firms than for match firms. The mean value of total assets for the fast growth firms was £5,723 thousand compared with £591 thousand for match firms. The t-test for difference in means is significant at the 95 per cent confidence level as indicated by the P-value of .0 in column 6 [table 7.1].

The mean value of net assets for the fast growth group [£3,555 thousand] was 12 times larger than that of the match group. The mean value of net assets in the match firms group was £329 thousand. The t-test for difference in means is significant at the 95 per cent confidence level as indicated by the P-value of .0 in column 6 in table 7.6.

Equity is defined as the owner's stake in the business and is the ordinary share capital plus share premiums, retained profits, minority interest and other reserves. The equity base of fast growth firms was 9 times larger than that of match firms. Fast growth firms had mean equity of £2,121 thousand compared with £229 thousand for match firms. Retained profits were the most important source of equity for the fast growth group. The mean value of retained profits for the fast growth group was £1,096 thousand. The mean value of retained profits for match firms [£88 thousand] was 12 times lower. The t-tests for difference in means is significant at the 95 per cent confidence level for both equity and retained profits.

Unlike the median value the mean does not take into account the effect of extreme scores within the groups. Table 7.9 compares the median value of the five size indicators for fast growth and match firms. Overall, the table confirms that the fast growth firms were much larger than match firms. However, the median values of all size indicators for both groups is considerably lower than the mean, with the exception of employment for the match group. The difference in values is more apparent in the fast growth group. The median value of total assets, net assets and equity for the fast growth firms is between 40 and 50 per cent lower than the mean values, which would indicate large variability in the scores for these items within

the group. As a result the difference in size in the two groups is less remarkable for these indicators when measured in terms of the median. The fast growth firms were ten times larger than match firms in terms of mean net assets but only six times larger than match firms in terms of median net assets. However, the fast growth firms were still considerably larger than match firms in absolute terms.

Table 7.9: Comparison of firm size in fast growth and match firms in terms of employment and financial indicators: Group medians

	Fast Growth Firms (000's)		Match Firms (000's)
Employment			
Group Median	118		15
Ratio of FGF's to MF's	7.8	:	1
Minimum Value	50		3
Maximum Value	600		25
Total Assets			
Group Median	3,552		384
Ratio of FGF's to MF's	9	:	1
Minimum Value	1,081		95
Maximum Value	20,831		1,693
Net Assets			
Group Median	1,615		263
Ratio of FGF's to MF's	6	:	1
Minimum Value	611		40
Maximum Value	12,457		1,024
Equity			
Group Median	1,091		174
Ratio of FGF's to MF's	6.3	:	1
Minimum Value	(700)		1
Maximum Value	7,979		677
Retained Profits			
Group Median	941		61
Ratio of FGF's to MF's	15.4	:	1
Minimum Value	(1,153)		(165)
Maximum Value	4,557		467

There are also noticeable differences in the mean and median scores of match firms, particularly in relation to retained profits and total assets. The median value of total assets for match firms was 37 per cent lower than the

mean. The mean value of retained profits for the match group was 30 per cent lower than the mean. Thus the fast growth group was 12 times larger than match firms in terms of mean retained profits and 15 times larger in terms of median retained profits.

Table 7.9 also gives the minimum and maximum value of the five different size indicators. Whilst, none of the match firms were larger than the fast growth firms in terms of numbers employed, not all fast growth firms were larger than match firms in financial terms. The largest employer in the match group had 25 employees which was 50 per cent lower than the smallest employer in the fast growth group. However, the minimum value of the four financial indicators for the fast growth group is lower than the maximum value for the match group indicating that not all fast growth firms were larger than match firms in terms of total assets, net assets, equity and retained profits.

The individual balance sheets for fast growth and match firms are given in Appendix B.¹ One match firm had a higher value of net total assets than the minimum for the fast growth group. In particular, not all fast growth firms were larger than match firms in terms of retained profits since some fast growth firms had retained losses. The maximum value of retained profits in the fast growth group was £4.4 million and the minimum was minus £1.1 million. The corresponding figures for the match group were £675 thousand and minus £165 thousand.

Table 7.10 shows that five match firms and three fast growth firms had retained losses. However, the vast majority of fast growth firms, recorded retained profits of £200 thousand or more. 12 fast growth firms had retained profits of £200 thousand or more and only two or 11.5 per cent of match firms had retained profits of £200 thousand or more.

¹ Codes have been used to protect the privacy of companies which supplied employment figures and other information in confidence. The initial indicates the company's sector and the number is the firm's size in terms of employment. Therefore, Fg F600 denotes a fast growth food company with 600 employees and Mf F13 denotes a match food company with 13 employees.

Table 7.10: Retained profits in fast growth and match firms.

Retained Profits (000's)	Fast Growth Group	Match Group
Negative	3	5
Zero	0	1
1 - 99	2	5
100 - 199	0	4
200 - 499	3	1
500 -899	0	1
900 +	9	1
Total	17	17

Nine fast growth firms had retained profits of £500 thousand or more compared with one match firm. No match firm had retained profits greater than £900 thousand. Whilst on average the fast growth firms were larger than the match firms in terms of retained profits, only nine fast growth firms recorded a higher level of retained profits than the maximum value of retained profits in the match group.

Previous research has also indicated that the relation between employment and profitability in small firms is not a straightforward one. Whilst fast growth firms in the North East of England grew at a faster rate than match firms in terms of total assets, net assets, turnover and equity, over a five year period, there was no significant difference found in the growth rates of retained profits and trading profits for fast growth and match firms [Storey et al., 1989, p. 21].

The four financial indicators are correlated with employment in table 7.11. The Pearson's correlation co-efficient test shows that the relationship between employment and the four financial size indicators is highly significant. As expected, the relationship between employment and retained profits is lower than that for the other size indicators.

Table 7.11: Correlation co-efficient for employment and financial indicators of size

Size Index	Employment
Total Assets	0.8965
Net Assets	0.877
Equity	0.8552
Retained Profits	0.7629
Pearson's correlation co-efficient test	

Overall, it can be concluded that the fast growth firms were much larger than the match firms in absolute terms and that the fast growth firms grew at a faster rate than match firms in terms of employment, total assets, net assets and equity, but less so in terms of retained profits.

As already pointed out, the mean size of fast growth firms is influenced by the extreme scores. In particular, the mean value of almost all balance sheet items for the fast growth group is highly influenced by the scores of the two largest firms in this group, firms Fg F600 and Fg F230 in Table 1 of Appendix B.

Table 7.12 shows the impact of these two firms on the group scores for fast growth firms. These two food companies had combined total assets of £38.8 million, which represented 40 per cent of the fast growth group total assets of £97.2 million. These two firms also accounted for 40 per cent or more of the fast growth group total for fixed assets, net assets and retained profits. These firms also influenced the mean value of other balance sheet items. Firm Fg F600 reported grants of £4.4 million which constituted 50 per cent of the fast growth group total of £8.9 million. Fg F230, had long term liabilities of £4.4 million which represented 49 per cent of the fast growth group total of £8.95 million.

Table 7.12: The impact of the two largest firms on the group balance sheet of fast growth firms

Balance Sheet Item	Fg. F600		Fg. F230		Fg. F600 & Fg. F230 as Group Total	
	(000's)	% of Total	(000's)	% of Total	Total	% of Group Total
Net Assets	12,457	22%	11,425	20%	57,039	42%
Total Assets	20,831	21%	18,055	19%	97,283	40%
Equity	7,979	22%	5,241	15%	36,059	37%
Retained Profits	4,557	24%	3,118	17%	18,633	41%
Grants	4,365	49%	0	0%	8,951	49%
Employment	600	27%	230	10%	2,248	37%

Firm Fg F600 was the largest fast growth firm in terms of employment, total assets, net assets, equity and retained profits. Firm Fg F230 ranked second in terms of employment, total assets, net assets and equity and third in terms of retained profits. The total assets, net assets and equity of Fg F600 were more than double the value of the group total for match firms. Fg F600 had retained profits of £4,557 thousand which was three times larger than the match firm group total of £1,492 thousand.

In Chapter 6, it was shown that fast growth firms in the foods sector made the greatest contribution to employment in EDP survivors. Section 7.2 showed that the fast growth food companies were 22 times larger than their match counterparts, in terms of employment. The relative importance of these four food firms is examined in table 7.13. Table 7.13 shows that the four food companies accounted for 53 per cent of total assets, 55 per cent of net assets, 61 per cent of equity, 50 per cent of retained profits and 47 per cent of employment, in the fast growth group. This would suggest, as indicated in Chapter 6, that firms in the food sector have a higher potential to grow than other sectors.

Table 7.13: The relative importance of fast growth food companies

	Fast Growth Firms	Food Firms	Food Firms as % of all Fast Growth Firms
Total Assets	97,283	52,105	53.6%
Net Assets	57,039	31,541	55.3%
Equity	36,059	18,184	50.4%
Profits	18,633	11,465	61.5%
Employment	2,478	1,160	46.8%
Grants	8,951	6,963	77.8%

Table 7. 13 also shows that fast growth food companies were more dependent on grants than any other sector. Fast growth food companies accounted for 77.6 per cent of all grants reported in the group balance sheets of fast growth firms.

The mean value of balance sheet items for the match firm are less influenced by the performance of one or two firms as is the case with fast growth firms. The scores of one match firm influenced the mean value of total assets, net assets, long term liabilities and retained profits in the group. Mf M12, accounted for 19 per cent of total assets, 18 per cent of net assets and 40 per cent of long term liabilities of the match firm group total.

In Chapter 6 it was pointed out that the figure for grant payments to start-ups allocated under the EDP underestimated the total grant payment to EDP firms and in particular the total grant payment to fast growth EDP firms. Thus the figure for grants in the balance sheet of the 17 fast growth firms included in Table 7.14 is higher than the total grant payment to all 22 fast growth firms over the 15 year period, 1978 to 1992, reported in Chapter 6. Table 6.8 reported a total of £8.1 million in grant payments to all fast growth firms over the period 1978 to 1992, whilst the 17 fast growth firms reported profits of £8.9 million in 1991 alone.

Grants were a more important source of finance for fast growth firms than for match firms. 15, or 88 per cent of fast growth firms reported grants in their balance sheet for 1991 compared with 11, or 66 per cent of match firms. Match firms reported a total of £457 thousand in grants and the mean value of grants was £27 thousand. The mean value for grants in the fast growth group, £527 thousand, was almost 20 times greater than the mean for match firms.

Table 7.14: The absolute value of grants for fast growth and match firms

Grants	Fast Growth Firms (000's)	Match Firms (000's)
Total Grant Payment	8,951	457
Group Mean	527	: 27
Ratio of FGF's to MF's	19.5	1
Group Median	190	20
Ratio of FGF's to MF's	9.5	: 1
Minimum Value	0	0
Maximum Value	4,365	138
Number of firms receiving grants	15	11

The median value of grants for the fast growth group [£190 thousand] was almost 3 times lower than the mean. The difference between mean and median value of grants for the match firms is not as large. The median value for the match group [£20 thousand] was 25 per cent lower than the mean. There was large variability in the scores recorded within the two groups, particularly in the fast growth group. As already pointed out, one fast growth food firm Fg F600, represented 50 per cent of all grant payments reported by fast growth group in 1991. As a result, the t-test for difference in the means was not significant at the 95 per cent confidence level, as reflected in the P-value of .07 in table 7.6. The higher level of grant dependency in fast growth firms is consistent with the finding for fast

growth firms in the North East of England [Storey et al. 1989], Northern Ireland and the Republic of Ireland [Kinsella et al. 1994].

The analysis of the actual value of broad balance sheet items reveals that fast growth firms were much larger than match firms in absolute terms. The mean and median values of total assets, net assets, equity and retained profits were greater for fast growth than match firms. The difference in the means of these indicators of size was significant at the 95 per cent confidence level. Whilst, all fast growth firms were larger than match firms in terms of employment, not all were larger than match firms in terms of total assets, net assets, equity and retained profits. In particular only 9 fast growth firms had higher levels of retained profits than the firm with the highest level of retained profits in the match group.

The group balance sheet for fast growth firms is highly influenced by the scores of the two largest firms in the group. These two food companies, Fg F600 and Fg F 230 accounted for 40 per cent or more of the total assets, net assets and retained profits of the fast growth group.

The mean value of grants for the fast growth group was 19.5 times larger than mean value for match firms. One food firm accounted for 50 per cent of the fast growth group total. One firm accounted for 30 per cent of the total of the match group. Grants did not feature in the balance sheet of six match firms and two fast growth firms. As a result of these extreme scores the difference in means was not found to be significant at 95 per cent confidence level.

Overall, the examination reveals that the absolute value of balance sheet items of fast growth was much larger than that of match firms but also highlights the large variability within the groups. In the next section, the relative importance of these items in the balance of fast growth and match firms is examined.

7.4. Percentage analysis of the balance sheet of fast growth and match firms

In the last section it was found that the fast growth firms were much larger than the match firms in absolute terms. This is to be expected since fast growth firms were defined in terms of growth in size, as measured by growth in employment. In order to allow for difference in size, in this section the balance sheet items are presented as a percentage of total assets. The objective of the analysis is to determine whether or not there are any differences in the relative importance of the sources of finance and the asset structure of fast growth and match firms. The firms have been matched for age, ownership and sector, therefore, differences in the relative importance of balance sheet items of the fast growth and match firms should be identifiable.

In an earlier study, Tamari[1972] found that fast growth firms in the UK were less liquid and more dependent on borrowings than match firms. Working capital as a percentage of total assets for both types of firm is reported. This is followed by an examination of the relative importance of long term sources of finance in fast growth and match firms.

In the last section, it was found that the absolute level of grants reported by fast growth firms was much higher than for the match group. The relative importance of grants in both groups is examined.

In Chapter 4, the issue of equity finance in small firms was discussed. The studies examined indicated that although equity finance was not an important source of finance in small firms, a higher proportion of fast growth firms than match firms cited equity as a source of finance. The relative importance of the different sources of equity finance in both groups is assessed. In the North East of England, Storey et al. [1989] found that for a minority of fast growth firms new issues of share capital were an important source of finance. New share capital issues for both groups are examined. This is followed by examination of the share holdings of the owner-

managers for both groups. The relative importance of balance sheet items for fast growth and match firms in Ireland are compared with the findings reported by Storey et al. [1989] for firms in the North East of England. The percentage balance sheet of fast growth and match firms are presented in tables 7.15 and 7.16.

Table 7.15: Percentage balance sheet for fast growth firms

Balance Sheet Item As % of Total Assets	Mean	Median	Standard Deviation	P Value
Fixed Assets	0.41	0.42	0.15	0.23
Current Assets	0.58	0.58	0.15	0.58
Total Assets	1.00	1.00		
- Current Liabilities	0.42	0.40	0.14	0.38
Net Assets	0.58	0.60	0.14	0.38
Financed by:				
Long Term Liabilities	0.11	0.06	0.11	0.73
Government Grants	0.09	0.07	0.09	0.20
Share Capital	0.11	0.07	0.09	0.04
Share Premium	0.10	0.06	0.09	0.11
Retained Profits	0.17	0.18	0.22	0.88
Other reserves	0.00	0.00	0.04	0.59
Minority Interest	0.00	0.00	0.00	0.12
Equity	0.38	0.40	0.22	0.40
Number of observations = 17				
The results of the t test for difference in the means is reported in Column 4. P value of less than 0.05 indicates that difference in the means is significant at the 95% confidence level.				

Table 7.16: Percentage balance sheet for match firms

Balance Sheet Item As % of Total Assets	Mean	Median	Standard Deviation	t Test 95%
Fixed Assets	0.34	0.27	0.05	0.23
Current Assets	0.66	0.73	0.22	0.58
Total Assets	1.00	1.00		
- Current Liabilities	0.37	0.38	0.16	0.38
Net Assets	0.62	0.61	0.16	0.38
Financed by:				
Long Term Liabilities	0.12	0.05	0.16	0.73
Government Grants	0.05	0.03	0.06	0.20
Share Capital	0.21	0.18	0.17	0.04
Share Premium	0.05	0.00	0.11	0.11
Retained Profits	0.18	0.15	0.30	0.88
Other reserves	0.01	0.00	0.03	0.59
Minority Interest	0.00	0.00	0.00	0.12
Equity	0.45	0.39	0.22	0.40
Number of observations = 17				
The results of the t test for difference in the means is reported in Column 4.				
P value of less than 0.05 indicates that difference in the means is significant at the 95% confidence level.				

The format is the same as used in the presentation of the absolute balance sheets in table 7.1 and 7.2. The mean and median values have been calculated and the standard deviation is given in column 4. The t-tests for difference in the means, at the 95 per cent confidence level have also been computed and the P-value is given in column 5. The format is the same as used in the presentation of the absolute balance sheets in table 7.1 and 7.2.

7.4.i The relative importance of fixed and current assets in fast growth and match firms.

The balance sheet can be divided into two sections. The top section shows the relative importance of the different types of assets and the short term liabilities of the firm. Current liabilities are deducted from total assets to give net assets or the capital employed in the business. The sources of finance used to finance the capital employed in the business are disclosed in the lower half of the balance sheet.

There was a discernible difference in the relative importance of fixed assets in the balance sheet of fast growth and match firms. Fixed assets represented a higher proportion of total assets in fast growth firms than for match firms. Table 7.17 shows the relative importance of fixed and current assets in fast growth and match firms.

Mean fixed assets represented 42 per cent of total assets in the fast growth group and the median was also 42 per cent. Mean fixed assets for the match group were 34 per cent of total assets and the median was 27 per cent. This would suggest that fast growth firms tend to place greater value on long term investments in plant and machinery. The difference in means was not significant at the 95 per cent confidence level. This reflects the large variability in the scores. The standard deviation was 22 per cent for the match group and 15 per cent for the fast growth group.

Table 7.17: The relative importance of fixed and current assets for fast growth and match firms

Balance Sheet Item as % of Total Assets	Fast Growth Firms	Match Firms
Fixed Assets		
Mean	0.41	0.34
Median	0.42	0.27
Standard Deviation	0.15	0.05
P Value	0.23	0.23
Current Assets		
Mean	0.58	0.66
Median	0.58	0.73
Standard Deviation	0.15	0.22
P Value	0.58	0.58
Number of observations = 17		

Current liabilities were the third largest item in the balance sheet of fast growth firms and the second largest item in the balance sheet of match firms in absolute terms. There was a marginal difference in the relative importance of current liabilities in the balance sheet of fast growth and match firms. Current liabilities constituted 42 per cent of total assets in fast growth firms and 37 per cent of total asset for match firms. The median value of current liabilities was 40 per cent for the fast growth group and 38 per cent for the match group.

The working capital ratio measures the firm's ability to pay its short term liabilities out of short term assets. It is the standard measure of a firm's liquidity. Current assets accounted for 58 per cent of the total assets and current liabilities accounted for 42 per cent of the total assets in fast growth firms. The corresponding figures for match firms were 66 per cent for current assets and 37 per cent for current liabilities. The working capital; current assets less current liabilities as a percentage of total assets, for fast growth and match firms is given in table 7. 18.

Table 7.18: The relative importance of working capital for fast growth and match firms

Balance Sheet Item as % of Total Assets	Fast Growth Firms	Match Firms
Working Capital		
Mean	0.17	0.29
Median	0.18	0.35
Standard Deviation	0.24	0.28
P Value	0.17	0.17
Number of observations = 17		

Working capital in the match group was 29 per cent of total assets and the median was 35 per cent. The corresponding figures for the fast growth group were 17 per cent and 18 per cent. This would suggest that fast growth firms are relatively less liquid than match firms. The t-test for differences in the means was not significant. The standard deviation was 28 per cent for the match group and 24 per cent for the fast growth group. The results are consistent with those found for fast growth from the U.K. [Tamari, 1972]. Fast growth firms in the manufacturing sector financed 48 per cent of capital and liabilities from current liabilities compared with 30 per cent for slow growers [Tamari, 1972, Table 30, p. 38].

7.4.ii The relative importance of different sources of long term finance in fast growth and match firms

In this section the financing of net assets/ capital employed in the business is examined. Net assets are financed from long term sources of finance including long term liabilities, grants and equity. Table 7. 19 shows that there was little difference in the relative importance of net assets in the fast growth and match group. Mean net assets in the fast growth group was 58 per cent of total assets and the median was 60 per cent of total assets. The corresponding figures for match firms were 62 per cent for the mean and 61 per cent for the median.

Table 7.19: The financing of net assets in fast growth and match firms

Balance Sheet Item As % of Total Assets	Mean	Median	Standard Deviation	P Value
Fast Growth Firms				
Net Assets	0.58	0.60	0.14	0.38
Equity	0.38	0.40	0.22	0.40
Long term liabilities	0.11	0.06	0.11	0.73
Grants	0.09	0.07	0.09	0.20
Match Firms				
Net Assets	0.62	0.61	0.16	0.38
Equity	0.45	0.39	0.22	0.40
Long term liabilities	0.12	0.05	0.16	0.73
Grants	0.05	0.03	0.06	0.20
Number of observations = 17 The results of the t test for difference in the means is reported in Column 4. P value of less than 0.05 indicates that difference in the means is significant at the 95% confidence level.				

The table shows that equity was the most important source of net asset financing in both groups, followed by long term liabilities and grants. The mean scores indicate that match firms financed a relatively higher proportion of total assets from equity sources. However, this difference is not reflected in the median scores. Mean equity for the match group represented 45 per cent of total assets compared with 38 per cent for the fast growth group. Median equity in the fast growth group, however, was 40 per cent of total assets for the match group the figure was 39 per cent of total assets. The standard deviation was 22 per cent for both types of firms which indicates large variability in the scores. The relative importance of different sources of equity finance will be examined later.

After equity sources, long term liabilities were the most important source of long term financing in table 7.19. The main components of long term liabilities are bank loans, leases and hire purchase agreements payable after

12 months, directors loans and deferred tax provisions. Whilst, there was large variability in the mean and median values of long term liabilities within the two groups, there was little difference in the relative importance of long term liabilities for fast growth and match firms. Long term liabilities represented 11 per cent of total assets in the fast growth group and 12 per cent in the match group. The median value for long term liabilities was much lower for both groups. The median value of long term liabilities for the fast growth group was 6 per cent and 5 per cent for the match group. An examination of the individual balance sheets reveals that one match firm accounted for 50 per cent of the total long term liabilities of the group and that six match firms recorded no long term liabilities [see appendix B, tables 1 & 2]. In the fast growth group one food firm accounted for 50 per cent of total long term liabilities. Overall the findings indicate that neither group was highly dependent on long term debt financing.

The main difference in long term financing in fast growth and match firms in table 7.19 is the relatively higher proportion of total assets financed from grants in the fast growth group. Grants represented 9 per cent of total assets in the fast growth group but only 5 per cent of total assets in the match group. This pattern is also reflected in the median value of grants. The median value was 7 per cent of total assets for the fast growth group and 3 per cent of total assets for the match group. In section 7.3, the absolute value for grants in the fast growth group was 19 times larger than for the match group, however, the difference in the absolute means was not significant due to the large variability in the size of grants reported in fast growth firms. As expected, the difference in the relative means was also not significant at the 95 per cent confidence level.

As already pointed out, the relative importance of equity sources of finance in the two groups is difficult to discern given the large difference in the mean and median value of equity for the match group. Thus, although mean equity for the fast growth group was 9 times larger than for the match group, there was little difference in the importance of equity financing for

the two groups once allowances are made for differences in relative size. Table 7. 20 shows the relative importance of different equity sources of finance for the fast growth and match firms.

Table 7.20: The relative importance of equity items for fast growth and match firms

Balance Sheet Item As % of Total Assets	Mean	Median	Standard Deviation	P Value
Fast Growth Firms				
Share Capital	0.11	0.07	0.09	0.049
Share Premium	0.10	0.06	0.09	0.110
Retained Profits	0.17	0.18	0.22	0.880
Reserves	0.00	0.00	0.04	0.590
Minority Interest	0.00	0.00	0.00	0.120
Equity	0.38	0.40	0.22	0.400
Match Firms				
Share Capital	0.21	0.18	0.17	0.049
Share Premium	0.05	0.00	0.11	0.110
Retained Profits	0.18	0.15	0.30	0.880
Reserves	0.01	0.00	0.03	0.590
Minority Interest	0.00	0.00	0.00	0.120
Equity	0.45	0.39	0.22	0.400
Number of observations = 17				
The results of the t test for difference in the means is reported in Column 4.				
P value of less than 0.05 indicates that difference in the means is significant at the 95% confidence level.				

Whilst mean retained profits were 12 times larger and median retained profits were 15 times larger for the fast growers, there was little difference in the relative importance of retained profits as a source of equity finance for fast growth and match firms. Retained profits represent 17 per cent of total assets in the fast growth group and 18 per cent in the match group. As already noted in the last section, there was larger differences in the scores for retained profits within the two groups, with five match firms and three fast growth firms recording retained losses. The standard deviation was 30 per cent for the match group and 22 per cent for the fast growth group.

Match firms financed a higher proportion of total assets from the share

account than fast growth firms. Ordinary shares and share premiums accounted for 26 per cent of total assets in match firms and 21 per cent of total assets in fast growth firms. In particular, match firms financed a higher proportion of total assets than fast growth firms from ordinary share capital, however fast growth firms financed a higher proportion of total assets from share premiums.

Mean ordinary shares represented 21 per cent of total assets in the match growth group and the median was 18 per cent. The corresponding figures for fast growth firms were 11 per cent and 7 per cent. The difference in the means was marginally significant at 95 per cent confidence level as indicated by the P-value of .049. Share premiums were 10 per cent of total assets in fast growth firms and 5 per cent of total assets in match firms. The difference in the means did not prove to be significant at conventional levels of confidence.

Again, there is considerable variability in the relative importance of share premiums within the two groups. The standard deviation was 11 per cent for match firms and 9 per cent for fast growth firms. An examination of the individual balance sheets of fast growth and match firms reveal that share premiums featured as a source of finance in six, or 35 per cent of match firms compared to 14, or 82 per cent of fast growth firms [see Appendix B, tables 1 and 2]

The share capital account represents finance obtained from the issue of shares at nominal value, whilst the share premium account represents finance generated from the sale of shares above their nominal value. The relatively greater importance of ordinary shares for the fast growth group reflects the higher return per share obtained by these firms from share issues. It also suggest that fast growth firms are more likely than match firms to issue shares to outside parties, since, it would be impractical for the owners to issue shares to themselves at a premium. Table 7.21 confirms that fast growth firms are more likely to issue shares to third parties. The table

shows the number of firms in both groups that registered increases in shares capital with the Companies' Registration Offices from the date of incorporation to 1994. Six match firms and 14 fast growth firms registered increases in share capital.

Table 7. 21: Issues of new share capital in fast growth and match firms

	No. of Firms	Total
Match firms	6	17
Fast growth Firms	14	17

Since fast growth firms finance a relatively higher proportion of finance from share premiums and are more likely to issue shares than their match counterparts this would suggest that fast growth firms are less likely to be wholly owned by the directors and their families. Table 7. 22 shows that fast growth firms were less likely to be the wholly owned by directors and their families. The data is based on information supplied in the annual returns of 16 match firms and 15 fast growth firms.

Table 7.22: The Share holdings of directors and their relatives in fast growth and match firms

	100% %	85-99 %	70-84 %	50-69 %	< than 50 %	Total
Match	4	4	4	2	2	16
Fast	1	0	2	9	3	15

Six of the fast growth firms were group companies, two of which were publicly quoted. Details of the share holdings of two of these group companies were not given in their annual returns. But it is unlikely that these firms were wholly owned by the directors and their families. Four

match firms were wholly owned by directors and their relatives. Only one fast growth firm was wholly owned by directors and their relatives. The majority of match firms were predominantly owned by directors and their relatives. Directors and their relatives owned 70 per cent or more of the shares in 12 out of 16, or 75 per cent of match firms. The comparative figure for fast growth firms was three out of 15, or 20 per cent.

7.4.iii Comparison of the financial structure of fast growth firms in the Republic of Ireland and North East of England

In this section the financial structure of fast growth and match firms in Ireland is compared with that of firms in the North East of England reported by Storey et al. [1989]. The sample is similar in size to the current study. The comparison in Table 7.23 is based on data for 10 match and 13 fast growth firms in, the last year of the study, 1985. The derivation of the sample of fast growth firms in the study by Storey et al. differs from the current study in that fast growth firms were not defined specifically in terms of growth in employment or any other indicator of size.

Fixed assets were relatively more important for fast growth than for match firms in both the Republic of Ireland and the North East of England. Mean fixed assets constituted 48.7 per cent of total assets for the fast growth group in the North East of England and 30.9 per cent for the match group. The corresponding figures for fast growth and match firms in Ireland were 42 per cent and 34 per cent. The median value of fixed assets for match firms in Ireland was only 27 per cent. Storey et al. [1989] examined changes in the relative importance of balance sheet items in fast growth and match firms over time and found that fixed assets became less important for the match group and relatively more important for fast growth firms over the five year period covered in the study.

Match firms in the North East of England were much more dependent on short term sources of finance, in particular, trade credit, bank overdrafts and other short term loans.

Table 7. 23: Percentage balance sheets for fast growth firms in the North East of England and Ireland

	N. E England 1985		Ireland 1991	
	Fast Growth	Match	Fast Growth	Match
Fixed Assets	48.7	30.9	41	34
Current Assets	51.3	69.1	58	66
Total Assets	100	100	100	100
Current liabilities	37.5	66.9	42	37
Net Assets	62.5	33.1	58	62
Financed By				
Long term Liabilities	14.7	9.4	11	12
Ordinary Shares	2.8	2.9	11	21
Reserves and Government Grants	44.2	20.8	36	28
Preference Shares and Minority Interest	0.7	0	0	0
Equity	47.8	23.7	47	49

Source: Storey et al., 1989, Tables 6.3 & 6.4, pp. 35-36.

Current liabilities represented 69 per cent of total assets in match firms compared with 37.5 per cent of total assets in fast growth firms in the North East of England. The reverse was true of firms in Ireland. Current liabilities were relatively more important for fast growth firms than for match firms in the Republic of Ireland, although the difference in relative values is not as conspicuous as is the case with firms in the North East of England. Current

liabilities represented 42 per cent of total assets in the fast growth group and 37.5 per cent of total assets in the match group in the Republic of Ireland.

There are also important differences in the relative importance of equity sources of finance in the two regions. The classification of equity items in the current study is different from that used in the study of firms in the North East of England. In order to facilitate a comparison between the two groups grants and other reserves have been added to retained profits for Irish firms in Table 7.23. Equity was a relatively more important source of finance in fast growth firms than in match firms in the North East of England. There was little difference in the relative importance of equity financing for fast growth and match firms in the Republic of Ireland.

Reserves and government grants were relatively more important sources of finance for fast growth firms than for match firms in both regions, however, the difference in relative importance of reserves and government grants in the North East of England is more apparent. Reserves and government grants represented 44.2 per cent of total assets in fast growth firms and 20.8 per cent of total assets in match firms in the North East of England. The corresponding figures for firms in Ireland were 26 per cent and 23 per cent.

Reserves and government grants were a relatively more important source of finance in fast growth firms in the North East of England than in fast growth firms in Ireland. In contrast ordinary shares and share premiums were a much more important source of finance for firms in Ireland. Ordinary shares represented 11 per cent of total assets in fast growth firms and 21 per cent of total assets in match firms in Ireland. The corresponding figures for firms in the North East of England were 2.8 per cent and 2.9 per cent.

In an examination of new share issues in both groups, Storey et al [1989] also

found that no match firm and a considerable minority of fast growth firms issued new shares during the five year period [Storey et al., op. cit., 1989]. New share issues were also found to be a more important source of finance for fast growth firms than for match firms in Ireland. In the survey of current and start-up sources of finance in both groups, Storey et al. [1989] also found that fast growth firms appeared to make greater use of equity injections as a start-up source of finance. This would suggest that differences in the role of equity injections may not only be a consequence but a determinant of growth in small firms.

7.5 The capital structure of fast growth firms, match firms and indigenous Irish industry

In this section the capital structure of fast growth and match firms is presented and differences in the role of short and long term borrowings in fast growth and match firms examined. This facilitates a comparison of the capital structure of both types of firms with other Irish firms, reported in the Review of Industrial Performance of 1990, by the Department of Industry and Commerce. The capital structure is given for different size classes, include small firms with 20-49 employees, medium sized firms, with 50-249 employees and large firms with 250 plus employees. Firms in the smallest size category, with less than 20 employees, were not included in the study.

The following limitations should be noted. Firstly, the data in Table 7.24 is based on a very limited number of observations, 16 fast growth and 14 match firms provided information on short term and long term borrowings. Secondly, as already noted in section 7.3 there is large variability in the absolute value of balance sheet items recorded by firms in both groups which is not reflected in the mean value in Table 7.24.

Table 7.24: Capital structure of fast growth and match firms compared with indigenous industry

Firm Size	Fast Growth firms	Match firms	Indigenous small	Industry medium	Industry large
	Emp > 50	Emp < 25	20- 49	50- 249	250+
Share Capital and Reserves	58.0%	69.8%	62.7%	65.0%	64.9%
Borrowings with in 1 year	11.6%	6.5%	8.6%	12.6%	10.1%
Borrowings over 1 year	10.7%	17.5%	20.4%	12.7%	14.4%
Total borrowings	22.3%	24.0%	29.0%	25.3%	24.5%
Grants	14.1%	4.6%	6.8%	7.4%	5.7%
Other	5.6%	1.6%	1.5%	2.3%	4.5%
	100.0%	100.0%	100.0%	100.0%	100.0%
No. of Observations	16	14			

Source: Department of Industry and Commerce, 1990, p. 119.

Fast growth firms financed a lower proportion of capital from equity sources than match firms and all other firms. Equity represented 58 per cent of capital in fast growth firms compared to 69.8 per cent for match firms and 65 per cent for similar size indigenous firms.

Fast growth firms financed a higher proportion of capital from short term borrowings and a lower proportion from long term borrowings than match firms. Short term borrowing represented 11.6 per cent of capital in fast growth firms and 6.6 per cent of capital in match firms. Long term borrowing represented 10.7 per cent of capital in fast growth firms and 17.5 per cent of capital in match firms. Fast growth firms were the only firms in the sample to finance a higher proportion of capital from short term borrowings than long term borrowings. This pattern of borrowings in fast growth firms is closest to that found in Irish firms in the same size category. The majority of fast growth firms were medium sized. Only one firm had

more than 249 employees. Medium sized firms had the highest proportion of short term borrowing to capital in the sample. The difference in short term and long term borrowing in this size category was .1 per cent. Medium sized Irish firms financed 12.6 per cent of capital from short term borrowings and 12.7 per cent from long term borrowings.

The pattern of finance in match firms reflects the pattern found in smaller Irish firms. In smaller Irish owned firms, with 20 to 49 employees, short term borrowing was 8.6 per cent and long term borrowings were 20.4 per cent of capital. The majority of match firms were smaller in terms of employment than firms in this size category.

Overall borrowing was lower in the fast growth group than in all other firms. Total borrowings in the fast growth group were 22.3 per cent of capital compared with 24 per cent for match firms, 25.3 per cent for medium sized firms and 24.5 per cent for large firms.

Fast growth firms financed a higher proportion of capital from other sources than match firms and indigenous firms in the same size category. Group loans and loans from directors are classified under other sources of finance. In the fast growth firms, group loans are the only 'other' source of finance. Group loans did not feature in the financing of match firms. Other sources in this group represent directors' loans. Group loans represented 5.6 per cent of capital in fast growth firms and directors loans represented 1.6 per cent of capital in match firms. Other source represented 2.3 per cent of capital in medium sized indigenous firms and 4.5 per cent of capital in large indigenous firms.

Grants accounted for a higher proportion of capital in the fast growth group than in any other group. Grants constituted 14 per cent of capital in the fast growth group compared with 4.6 per cent for match firms and 7.4 per cent for medium sized indigenous firms and 5.7 per cent for large firms. The pattern of higher grant dependency in fast growth firms is consistent with

the findings of a recent study of fast growth and match firms in the Republic of Ireland and Northern Ireland [Kinsella et al, 1994]. The researchers concluded that there was 'little difference in the current structure of finance in both groups except that the fast growth firms were more dependent on grants than match firms'[Kinsella et al., 1994, p. 77]. This difference in the relative importance of grants was also found to be apparent at start-up.

The results indicate that grants are a much more important source of capital financing in fast growth firms than in match firms and all other firms. Fast growth firms financed a lower proportion of capital from equity and borrowings and higher proportion from grants and other sources than match firms and all other firms.

7.5 Conclusion

A total of 17 of the 22 fast growth firms were successfully matched for age, sector and ownership with surviving EDP firms, which had 25 or less employees in 1994. The fast growth firms were much larger than their match counterparts and had grown at a much faster rate from the time of foundation. The fast growth firms employed a total of 2,478 employees in 1994 compared with a total of 248 for the match group. The fast growth firms were on average 9.7 times larger than the match firms, in term of employment and they were on average 13 times larger in 1994 than at foundation.

Fast growth firms were also much larger than match firms in financial terms in 1991. Mean total assets, net assets, equity and retained profits were at least nine times higher for fast growth firms than for match firms. The difference in the means of these financial size indicators was significant at the 95 per cent confidence level. Whilst, none of the match firms were larger than the the fast growth firms in terms of numbers employed, not all fast growth firms were larger than match firms in financial terms. The

largest employer in the match group had 25 employees which was 50 per cent lower than the smallest employer in the fast growth group. However, only nine of the fast growth firms had a higher level of retained profits than the firm with the maximum level of retained profits in the match group. Three fast growth firms and five match firms had recorded retained losses. Nine fast growth firms had retained profits of £500 thousand plus compared with one match firm. The correlation test demonstrates that the relationship between employment and the four financial indicators of size is highly significant.

As found in Chapter 6, fast growth firms in the food sector were on average much larger than the average fast growth firm. Whilst, on average fast growth firms were 9.7 times larger than match firms, the four fast growth food companies were on average 22 times larger than their match counterparts in 1994. These four firms employed 1,160 workers which represented 47 per cent, of total employment in the fast growth group. Fast growth food companies were also much larger in financial terms. The four firms accounted for 53.6 per cent of total assets, 55.3 per cent of net assets, 50.4 per cent of equity and 61.5 per cent of retained profits in the fast growth group. These four firms also accounted for 77.6 per cent of all grants reported in the balance sheet of fast growth firms in 1991.

Two food companies out performed all other firms in the fast growth group and the group balance sheet for fast growth firms is highly influenced by the scores of these two firms. Firms Fg F600 and Fg F 230 accounted for 40 per cent or more of the total assets, 37 per cent of equity and 41 per cent of retained profits of the fast growth group. Firm Fg F600 accounted for 49 per cent of all grants in the fast growth group. One well established match firm, Mf EL 12 accounted for 18 per cent of the total assets, 19 per cent of net assets and 40 per cent of long term liabilities in the match group.

The aim of the percentage analysis balance sheet of fast growth and match firms was to determine whether or not there were fundamental differences

in the asset structure and sources of finance used by fast growth and match firms. There were observable but not significant differences in the relative importance of fixed assets in fast growth firms and match firms. This finding is confirmed in the study of fast growth and match firms in the North East of England [Storey et al., op. cit., 1989].

Fast growth firms were relative less liquid than match firms. Working capital represented 29 per cent of total assets in the match group and 17 per cent of total assets in the fast growth group. This finding is reinforced in the comparison of the relative importance of short term and long term borrowings for fast growth firms, match firms and all other firms in Ireland. Fast growth firms were the only group to finance a higher proportion of capital from short term borrowings than long term borrowings. However the level of short term borrowings in fast growth firms is very similar to that of large and medium sized industries in Ireland. Fast growth firms financed 11.6 per cent of capital, medium size firms financed 12.6 per cent and large firms financed 10.1 per cent of capital from short term borrowings.

Equity, followed by long term liabilities and grants were the most important sources of long term finance in both groups. Whilst there was little difference in the relative importance of long term liabilities in fast growth and match firms, long term borrowings were lower in the fast growth group than in all indigenous firms. Long term borrowings represented 10.7 per cent of capital in fast growth firms, 12.7 per cent in medium sized firms, 14.4 per cent in large firms and 17.5 per cent in match firms.

The fast growth firms reported a total of £8.9 million in grants in 1991 which was higher than the total grant payment to all 22 fast growth firms under the EDP between 1978 and 1992. Fast growth firms were more dependent on grants than their match counterparts. The mean value of grants in the fast growth group was 19 times larger than for match firms. The mean value of grants for the fast growth group was 9 per cent of total assets compared with

5 per cent of total assets for match firms. However, due to the high variability in the scores for fast growth firms, the difference in the means was not significant at the 95 per cent confidence level. The greater importance of grants in the financing of fast growth firms was also observed from an examination of the individual balance sheets of firms in both groups. Grants featured in the balance sheet of 15, or 88 per cent of fast growth firms compared with 11, or 65 per cent of match firms. This pattern of higher grant dependency in fast growth firms was confirmed in two other studies [Kinsella et al., op. cit., 1994,] and [Storey et al., op. cit., 1989]. Grants were also a more important source of capital financing in fast growth firms than in all other indigenous firms.

Whilst the fast growth firms were much larger than match firms in absolute financial terms, once allowances are made for difference in size, there was little difference found in the relative importance of equity in the fast growth and match groups. Hence, the mean value of equity was 9.2 times larger for fast growers than for their match counterparts, but mean equity represented 38 per cent of total assets in the fast growth group and 45 per cent of total assets in the match group. The median value of equity for the fast growth group was higher than for the match group. However, in comparison with medium and large size indigenous firms, fast growth firms financed a lower proportion from equity. Fast growth firms financed 58 per cent of capital from equity compared with 65 per cent from medium and large sized industries.

In terms of the relative importance of the various sources of equity finance, there was little difference in the relative importance of retained profits in fast growth and match firms. Hence, the mean value of retained profits was 12 times larger for the fast growth group than for the match group, but the mean value of retained profits for the match firms was 17 per cent of total assets and 18 per cent of total assets for the fast growth firms.

There were, however, fundamental differences in the relative importance of other equity sources of finance for the fast growth and for the match firms. Ordinary shares were a significantly more important source of equity finance for match firms than for fast growth firms. The t-test for difference in the means was significant. Ordinary shares represented 21 per cent of total assets in match firms and 11 per cent of total assets in fast growth firms. The difference in equity financing is made up by the relative higher proportion of total assets financed from share premiums in fast growth firms. Share premiums represented 11 per cent of total assets in fast growth firms and 5 per cent of total assets in match firms. Share premiums featured in the balance sheet of 35 per cent of match firms compared with 80 per cent of fast growth firms.

In comparison with firms in the North East of England, Irish firms financed a much higher proportion of total assets from ordinary shares, share premiums and minority interest. In the North East of England fast growth firms financed 3.5 per cent of total assets and match firms financed 2.9 per cent of total assets from ordinary shares, share premiums and minority interest. The comparative figures for fast growth firms in Ireland were 21 per cent for fast growth firms and 26 per cent for match firms. In contrast, fast growth firms, in the North East of England financed a higher proportion of total assets from grants and reserves than their counterparts in Ireland. Fast growth firms financed 44 per cent of total assets from reserves and government grants compared with 26 per cent for fast growth firms in Ireland.

Fast growth firms financed a higher proportion of capital from 'other sources' of finance than match firms and indigenous firms in the same size category. Group loans did not feature as a source of financing for match firms, but were substituted by directors' loans. Group loans represented 5.6 per cent of capital in fast growth firm and directors' loans represented 1.6 per cent of capital in match firms. Other sources represented 2.3 per cent of

capital in medium sized indigenous firms and 4.5 per cent of capital in large indigenous firms.

The difference in the ownership structure of fast growth and match firms and the difference in new share issues are key findings. Fast growers were more likely to issue shares at a premium which indicates that the shares have most likely been issued externally. Consequently fast growth firms are also more likely than match firms to issue new share capital and less likely to be predominantly owned by directors and their families. Directors and their relatives owned 70 per cent or more of the shares in 12 match firms and six match firms registered increases in share capital. In comparison, directors and their relatives owned 70 per cent or more of the shares in three fast growth firms and 14 fast growth firms registered increases in share capital.

This would suggest that fast growth firms are more willing to share equity than fast growth firms. However, it must be remembered that statistical association does not enable causes or effects to be established. It may be that fast growth firms were more successful in attracting outside investors as a result of their strong growth performance rather than through any great difference in the willingness on the part of fast growth owner-managers to share equity.

The results are in line with current thinking on the role of equity in small firms discussed in Chapter 4. Cosh and Hughes [1994] argued that the preference for debt rather than equity financing in small firms reflects the owners wishes to maintain control rather than any constraint placed on them by the suppliers of finance. The results are also consistent with findings for fast growth firms in the North East of England [Storey et al., 1989] and the Republic of Ireland [Kinsella et al., 1994] reported in Chapter 4. However, further research on the role of equity finance in both groups is required before any conclusion on the impact of equity finance on growth can be drawn. In an examination of the current and start-up sources of finance in fast growth and match firms in the North East of England, Storey

et al. [1989] found that fast growth firms made greater use of outside equity finance, and that this difference in financing was evident from start-up. This would suggest that differences in financing may not just be a consequence but also a determinant of growth.

An examination of the accounts of fast growth and match firms from the time of foundation would provide further evidence on the role of equity finance in the development of fast growth firms in Ireland. However, there were too few annual returns available for firms in both groups prior to 1990 to allow for an examination of the financing of both types of firms from start-up. Recent efforts to enforce the Companies Act [1986] on the filing of annual returns will allow for a more comprehensive study of the financial structure of fast growth firms in the future.

CHAPTER 8: THE MANAGEMENT STRUCTURE OF FAST GROWTH FIRMS

8.1 Introduction

This chapter examines the structure of the board of directors of fast growth and match firms. The analysis is based on details of company directors submitted with the annual returns to the Companies' Office in 1991.

In filing annual returns, the company is required to give details of the board of directors including their home address and their date of birth. This information facilitates the comparison of the size structure of the board of directors, of fast growth and match firms. It also allows for the examination of the role of family relatives on the board of directors in both groups. The age of the directors at the time of foundation can also be estimated. The foundation year is defined as the year in which the firm was incorporated. Finally, directors are required to list any other company directorships which they hold. The role of portfolio ownership in fast growth and match firms can therefore be assessed.

As in Chapter 7, the main objective of the analysis is to determine whether or not there are systematic differences in the management structure of fast growth and match firms. The results are compared with the findings of previous research discussed in Chapter 4. It should be noted that the current study is based on the structure of the board of directors and is not directly comparable with those discussed in Chapter 4. The studies examined in Chapter 4 were based on the managers of fast growth and match firms, with the exception of the earlier study by Storey et al. [1987] which was based on company directors. Whilst, in small firms the functions of ownership, directorship and management are less likely to be separated, not all managers are by necessity owners or directors.

8.2 The management structure of fast growth and match firms

In Chapter 4, the key difference found in the management structure of fast growth and match firms was in the size of their management teams. Fast

growth firms had a larger management team than match firms in the North East of England [Storey et al., 1989], the Republic of Ireland and Northern Ireland [Kinsella et al., 1994]. Tables 8.1 shows the number of directors for fast growth and match firms in 1991.

Table 8.1: The number of directors in fast growth and match firms

Size No. of Directors	Fast Growth Group		Match Group	
	No. of Firms	No. of Directors	No. of Firms	No. of Directors
Less than 2	0	0	0	0
2	1	2	9	18
3	5	15	4	12
4	3	12	4	16
5	2	10	0	0
6	3	18	0	0
7	2	14	0	0
8 plus	1	10	0	0
Total	17	81	17	46
Mean		4.8		2.7

The boards of directors of fast growth firms were larger than those of match firms. The fast growth firms had a total of 81 directors and the match firms had 46 directors. Fast growth firms had on average 4.8 directors compared with 2.7 for match firms. None of the firms had a sole director. This is consistent with the finding of Foley and Griffith [1992] reported in Chapter 5 which found that the majority of EDP start-ups had more than one entrepreneur. The majority of match firms had two directors. Nine, or 52.7 per cent of match firms had two directors compared with one, or 5.8 per cent of fast growth firms. 17, or 100 per cent of match firms had a board of directors with less than five members compared with nine, or 52 per cent of the fast growth firms.

These findings are consistent with those found in the North East of England [Storey et al., 1989] and the Republic of Ireland and Northern Ireland

[Kinsella et al., 1994]. Kinsella et al. [1994] found that the difference in the size of management teams in fast growth and match firms was also discernible at start-up. Thus, in the Republic of Ireland, the average size of the management team at start-up was 1.6 individuals for fast growth firms and 1.4 individuals for match firms and the number of managers rose to three in the fast growth group and to two in match group [Kinsella et al., p. 30]. This would suggest that there may be a relationship between the size of the management team and the growth of the firm.

The number of directors for individual fast growth and match firms are given in tables 1 and 2 of Appendix C. In Chapter 7, it was found that four fast growth food companies had grown much faster and were on average much larger than other fast growth firms. However, these firms had a smaller boards of directors than the fast growth group average. The fast growth food companies had on average 3.25 directors compared with a fast growth group average of 4.8. This would suggest that the relationship between the size of the board of directors and the performance of the firm may not be a straight forward one. As already pointed out the analysis is based on the number of directors and not the number of managers. It may well be that the fast growth food firms had a higher proportion of non-owner managers.

In an earlier study Storey et al. [1987] found that a higher proportion of the directors of fast growth firms owned more than one business. In the North East of England, 79 per cent of fast growth firms and 38 per cent of other firms had at least one director with one or more directorships [Storey et al., 1987, op. cit., p. 165]. Table 8.2 shows the number of other directorships held by fast growth and match firm directors in 1991. The majority of directors in Ireland were directors of at least one or more other businesses. 52, or 64.2 per cent of fast growth firm directors and 30, or 65.2 per cent of match firm directors were directors of more than one business. However, a higher proportion of fast growth firm directors were directors of five or more businesses.

Table 8.2: Number of other directorships held by the directors of fast growth and match firm

Other Directorships	Fast Growth Group		Match Group	
	No. of Firms	No. of Directorships	No. of Firms	No. of Directorships
zero	2	0	2	0
> 5	2	3	7	20
5 - 9	5	31	6	35
10 - 19	3	47	1	16
20 - 29	2	49	0	0
30 plus	3	120	1	44
Total	17	250	17	115
Mean per firm		15		7
Mean per Director		3		2.5

17, or 20.9 per cent of fast growth firm directors had five or more directorships compared with five, or 10 per cent of match firm directors. Thus unlike the North East of England, the majority of both fast growth and match firm directors in Ireland were 'portfolio owners', but a higher proportion of the directors of fast growth firms than match firms managed portfolios of five businesses or more. This finding is consistent with that found for firms in the Republic of Ireland, where some 40 per cent of owner managers in both fast growth and match firms were owners of one or more businesses [Kinsella et al., 1994, op. cit., p.157]. Overall, the results demonstrate the high level of business involvement of the directors of fast growth and match firms. It also indicates that since many owner managers are 'portfolio owners' the concentration upon single businesses, underestimates their contribution to the economy [Storey, 1994, p. 112].

Previous research cited in Chapter 4, suggests that the ownership structure of match firms is more family centred than that of fast growth firms [Storey et al., 1987]. Table 8.3 shows the number of fast growth and match firms which had family members on the board.

Table 8.3: The number of directors with family members on the board of directors in fast growth and match firms

Company Type	Directors with relatives		Husband and Wife Team	Other Relative*
	No	% of Total		
Fast Growth	13	16%	3	7
Matched Firms	24	52%	6	12

* son, daughter, brother or sister

Ten, or 59 per cent of match firms had one or more family member on the board compared with five, or 29 per cent of fast growth firms. In total 24, or 52 per cent of the directors of match firms were related compared with 13, or 16 per cent of fast growth directors. Two fast growth firms had a husband and wife team on the board of directors, one of which had two husband and wife teams. Six match firms had a husband and wife team on the board of directors. Seven fast growth directors had one or more relatives such as a son, daughter or brother on the board, compared with 12 match firms.

These findings are consistent with those found for the directors of fast growth and match firms in the North East of England [Storey et al., 1987]. 25 per cent of fast growth companies had a husband and wife team on the board of directors and that a further 16 per cent had a blood relative on the board of directors [Storey et al., op. cit., 1987, p. 166]. The corresponding figure for other companies were 53 per cent for husband and wife teams and 69.3 per cent for blood relatives [Storey et al., op. cit., 1987, p. 166]. This finding is also consistent with the findings on the ownership structure of fast growth and match firms reported in Chapter 7. The majority of match firms were predominantly owned by directors and their relatives. Directors and their relatives owned 70 per cent or more of the shares, in 70.6 per cent of match firms compared with 17.6 per cent of fast growth firms. This suggests that match firms are more likely than fast growth firms to rely on a narrow field of expertise centred on family and relatives. The directors of both fast

growth and match firms are predominantly male. There were only three female directors in the fast growth group and eight female directors in the match group.

The average age of the board of directors at the time of incorporation, in both groups, was similar. Table 8.5 shows that the average age of the majority of the boards of directors in both groups was between 30 and 39 years of age at time of foundation.

Table 8.4 Average age of the board of directors in fast growth and match firms at start-up

Average age of the board of directors at foundation	Fast Growth Group no. of firms	Match Group no. of firms
30 - 35	3	5
36 -39	7	4
40 - 44	5	5
45 - 49	2	1
50 plus	0	1
Total	17	16

In chapter 4, Kinsella et al. [1994] found that the founders of fast growth firms were slightly younger than match firms founders.

8.3 Conclusion

This chapter has examined some of the characteristic of the management structure of fast growth and match firms from information supplied to the Companies' Office on the directors of these firms. It was found that fast growth firms had on average 4.8 directors compared with 2.7 for match firms. These findings are consistent with the findings for directors in the

North East of England [Storey et al., 1989] and the Republic and Northern Ireland [Kinsella et al., 1994].

Whilst the fast growth food firms were much larger than the average fast growth firms these firms had smaller boards of directors than the fast growth group average. The fast growth food companies, had on average 3.25 directors compared with a fast growth group average of 4.27. This would suggest that the relationship between the size of the board of directors and the performance of the firm may not be a straight forward one. As already pointed out the current study is based on the number of directors in fast growth and match firms and not the number of managers. It may well be that the fast growth food firms had a higher proportion of managers who were not also directors.

The majority of directors were owners of one or more businesses, however, a higher proportion of fast growth firms had five or more directorships.

52 per cent of the directors of match firms were blood relatives compared with 16 per cent of the directors of fast growth firms. These findings are consistent with those found for the directors of fast growth and match firms in the North East of England [Storey et al., op. cit., 1987]. It is also consistent with the findings on the ownership structure of fast growth and match firms reported in Chapter 7, which showed that the majority of match firms were predominantly owned by directors and their relatives. It indicates that match firms are more likely than fast growth firms to rely on a narrow range of expertise centred on family and relatives. The directors of both match and fast growth companies are predominantly male and the average age of the board of directors at the time of foundation was estimated at between 30 and 39 years.

CHAPTER 9: CONCLUSIONS

9.1 Introduction

The main findings of the study are presented in this chapter. One of the two key research objectives set out in Chapter 1 was to evaluate the performance of the EDP. The study proved successful in estimating the survival rate, in 1994, of EDP start-ups grant-assisted from the year of commencement of the programme in 1978 to 1992. These findings are presented in section 9.6. In sum, 239 start-ups were grant-assisted under the programme over the 15 year period and 110 or 46 per cent were still operating in 1994. The study also proved effective in identifying the number of jobs created in surviving EDP firms. Significantly, a small proportion of fast growth start-ups were responsible for 62 per cent of total employment in surviving EDP firms. Fast growth firms represented 9.2 per cent of EDP start-ups.

The second objective of the empirical research was to determine whether or not there were differences in the financial structure of the fast growth EDP firms and a group of surviving start-ups with slower growth patterns. These findings are presented in the last section. In sum, fast growth firms were less likely than match firms to be predominantly owned by the owners and their families. Consistent with this finding new share issues were found to be a relatively more important source of finance for fast growth than for match firms. Fast growth firms also financed a relatively higher proportion of total assets from share premiums whilst, match firms financed a relatively higher proportion of total assets from ordinary shares. As found in previous studies, fast growth firms were also more dependent on government grants than their match counterparts. The above represent the principal findings of this thesis.

In addition differences in the management structure of both types of firm based on information provided on directors in the annual returns are given in section 9.4. This is followed by an evaluation of the sources of information used in the empirical research. In the first two sections a summary of the

background research on role of small firms in employment creation and the concept and role of fast growth firms is provided.

9.2 The role of small firms in employment creation

The role of small firms in employment creation over the past three decades was discussed in chapter 2. The examination revealed that since the nineteen seventies average firm size has been declining. The analysis of employment shares in different sized firms in OECD countries showed that the share of employment in small firms rose during the nineteen seventies and nineteen eighties. The first set of harmonised data on employment change in the EU indicated that this process continued in most countries during the late nineteen eighties, with the exception of Ireland [ENSR, 1993 and 1994].

Over the period 1988 to 1990, the share of non-primary private sector employment in enterprises, with less than 100 employees, in the EU, rose by 1.6 per cent, whilst the share of medium and large sized enterprises declined. The share of private sector employment in enterprises, with less than 20 employees in the US rose by 3.7 per cent and the share of employment in all other size classes declined over the same time period. In contrast, the share of private sector employment in medium and large sized firms, in Ireland, rose by 9 per cent over the period 1988 to 1990.

The reversal of the process of deconcentration in Ireland occurred at a slower rate in the manufacturing sector and at an even slower rate in the indigenous manufacturing sector. According to data supplied by the Department of Enterprise and Employment [1995], the share of employment in small manufacturing establishments peaked at 32.2 per cent in 1988 and has declined slowly but consistently to 28.1 per cent in 1994. The share of employment in small indigenous manufacturing establishments rose slightly over the period 1987 to 1990, however, there was a marked deceleration in the rate of decline of large establishments [ESRI, 1992]. Whilst, the overall trend has been towards smaller firm size, it is also clear that the process of

deconcentration has not occurred in all regions and sectors, at the same rate, or at the same time.

The analysis of employment shares, however, does not necessarily indicate that small firms are creating jobs. If, for example, medium sized firms are contracting then the share of employment in small firms will rise even though no new jobs have been created. Job generation studies provide a disaggregate analysis of job creation, by firm size, in terms of openings, closures, contractions and expansions. Evidence from national job generation studies in the US, UK, Ireland and Denmark indicate that small firms were the most important source of employment growth.

The majority of jobs generated in small firms are created through openings rather than expansion. However, the high failure rate experienced by new small firms implies that many of the jobs created are subsequently lost. The high failure rate of new small firms questions the impact of rising formation rates on long term employment growth. It is now generally agreed that increases in the rate of transformation are essential for long term employment growth.

9.3 The importance of fast growth firms

Research on the contribution of new small firms to employment growth discussed in chapter 3, indicated that the majority of jobs are created in a handful of fast growth firms [Storey et al, 1987], [Gallagher and Miller, 1991] and [Turok,1991]. 4 per cent of start-ups were responsible for 46 per cent of net jobs created in the cohort of start-ups formed, in the North East of England, over the period 1965 to 1978 [Storey et al., 1987, op. cit., p. 153]. There were large variations in the results reported in the studies but overall the findings confirmed Storey's hypothesis on the relative importance of a few new firms to employment creation. Variation in the results reflected differences in the data sources, definitions of fast growth, reporting units, size classes, regions and time periods covered in the studies. In particular, the inclusion of new branch plants raised the proportion of fast growth

firms and their contribution to employment growth.

Once branch plants are excluded, fast growth firms were less in evidence in Ireland. Three studies showed that the transformation rate of indigenous firms in Ireland was much lower than that found in the other studies [Department of Industry and Commerce, 1990], [McCluskey, 1992] and [TFSB, 1994]. Both the Department of Industry and Commerce [1990] and TFSB [1994] reported a transformation rate of 1 per cent for indigenous grant-assisted start-ups. McCluskey [1992] reported a slightly higher rate of 2.7 per cent. Raising the proportion of fast growth firms has become a key objective of industrial policy in Ireland in the nineteen nineties [Culliton, 1992].

9.4 The management structure of fast growth and match firms

The analysis of the management structure of fast growth firms was limited to details supplied on directors in the annual returns submitted to the Companies' Office in 1991. It was pointed out that while the functions of ownership, directorship and management are less likely to be separated in small firms, not all managers are by necessity owners or directors. The aim of the analysis was to determine whether or not there were fundamental differences in the management structure of fast growth and match firms.

Fast growth firms had on average 4.7 directors compared with 2.7 for match firms. These findings are consistent with those found in the North East of England [Storey et al., 1989] and the Republic of Ireland and Northern Ireland [Kinsella et al., 1994]. Whilst, the fast growth food firms grew much faster than the average fast growth firms, these firms had smaller boards of directors than the fast growth group average. This would suggest that the relationship between the size of the board of directors and the performance of the firm may not be a straight forward one. However, it may be that the fast growth food firms have a higher proportion of non-owner managers.

The majority of directors were owners of one or more businesses but a higher proportion of fast growth firms had five or more directorships. 52

per cent of the directors of match firms were blood relatives compared with 16 per cent of the directors of fast growth firms. The directors of fast growth firms in the North East of England were also less likely to be related than their match counterparts [Storey et al. [1987]. The findings suggests that match firms are more likely than fast growth firms to rely on a narrow field of expertise based on their family and relatives.

The directors of both match and fast growth companies are predominantly male and the average age of the board of directors at time of foundation was estimated at between 30 and 39 years.

9.5 Sources of information on small firms

This study relied on the Companies' Offices database of companies and business names to identify EDP failures. Relying on Companies' Office information alone would have underestimated the total failure rate of EDP firms by 10 per cent. Dun and Bradstreet proved a more comprehensive source of information on EDP failures. This may reflect the sample which only included companies rather than sole traders or partnerships. Current and back issues of the telephone directory are also useful in determining whether or not a firm is still trading, but should be cross checked with Dun and Bradstreet in case the firm has simply changed its name. It should be noted that the Companies' Office information systems are continuously being up-graded. This should improve the accuracy of the information available on the failure rate of Irish firms for future studies.

The analysis of the financial structure of fast growth and match firms is also based on information supplied by the Companies' Office. The main problem identified with the information available in the annual returns relates to the filing of abridged accounts. This limits the analysis to examination of balance sheet items, thus details of sales and profits are not available. Furthermore, the analysis is limited to the examination of broad balance sheet items, particularly, in the case of smaller firms. It was also found that up until the late nineteen eighties and early nineteen nineties, companies

did not file accounts on a regular basis, thus preventing the analysis of the financial structure of firms at start-up. Recent efforts to enforce the Companies Act [1986] would appear to be effective, as was reflected in the the number of annual returns available after 1990. Despite these limitations, annual returns filed at the Companies' Office are an important source of financial data on small firms in Ireland, yet, there is little evidence to suggest that the full research potential of this information is being maximised.

9.6 The performance of EDP

The analysis of job creation in new firms in this study was based on firms grant-assisted under the EDP. The EDP was set up in 1978 to promote high calibre indigenous start-ups in the manufacturing and internationally traded services sectors. It was expected, therefore, that these firms would demonstrate a higher survival rate and make a significant contribution to employment growth.

In total, 239 start-ups were grant-assisted for the first time under the programme between 1978 and 1992. 110, or 46 per cent of start-ups, survived until 1994. This represents a failure rate of 54 per cent for EDP start-ups aged between two and 17 years in 1994. The time period covered is longer than other studies of new firm failure rates, nevertheless, the survival rate of EDP start-ups was not exceptional in comparison with indigenous grant-assisted industry in Ireland and independent start-ups in the UK.

The majority of EDP start-ups were in the metals and engineering sectors, however firms in this sector did not demonstrate a higher potential to survive when compared with all other sectors. Firms in the chemicals and pharmaceuticals sector had a lower than average survival rate, whilst firms in the food sector had a slightly higher than average survival rate. Dublin had a much higher formation rate than the rest of the country but the survival rate of Dublin-based firms was not significantly higher than firms in the rest of the country.

4670 jobs were created by EDP start-ups which survived until 1994. This figure is lower than the projected job creation for EDP start-ups but, considering that overall manufacturing employment declined during the eighties this represents an important achievement for indigenous industry.

It must however, be remembered that EDP start-ups received a much higher level of grant-assistance than other indigenous start-ups. £34.9 million was allocated to start-ups under the EDP over the 15 year period from 1978 to 1992 of which £14.6 million, or 42.1 per cent was allocated to firms which had failed prior to 1994. The figure for grant-assistance reported in the study represents grants paid under the EDP only, firms may also have obtained additional grants under other government support schemes.

9.6.i The contribution of fast growth firms to employment growth

The vast majority of surviving EDP start-ups remained small. Fast growth firms were defined as EDP firms with less than 50 employees in the year of start-up which grew to employ 50 or more employees by 1994. 22, or 9.2 per cent of start-ups qualified as fast growth firms under this definition. Fast growth firms generated 2,888 jobs or 62 per cent of the total employment, in 1994, in surviving EDP firms. These results confirm Storey's hypothesis on the relative importance of a small number of firms to overall employment creation.

The average size of fast growth firms was 131 employees compared with 18 employees for other surviving EDP start-ups. Fast growth firms were on average 11 time larger in 1994 than at the time of foundation. The average number of employees at start-up was 12. As expected, the EDP sample frame produced a higher proportion of fast growth firms than the total population of grant-assisted indigenous start-ups.

Fast growth food companies out-performed the metals and engineering companies in terms of employment creation although they represented a lower proportion of fast growth firms. Food companies created 1,220, or 42

per cent, of total employment in fast growth firms, whilst firms in metals and engineering created 1,078 or 38 per cent of jobs in fast growth firms. The average firm size in the food sector was also much larger than fast growth group average. The average employment in fast growth food companies was 244, compared with the fast growth group average of 113. Fast growth food firms, however, received a higher proportion of grants than their share of employment growth.

Only eight counties had a fast growth firm. Dublin had the highest rate of formation. However, Dublin-based firms did not demonstrate a higher rate of transformation than other counties, with the exception of Cork. The performance of start-ups in Monaghan is noteworthy. All five EDP start-ups in Monaghan survived, three of which were fast growers.

9.7 The financial structure of fast growth and match firms

The second objective of this study was to determine whether or not there were fundamental differences in the financial structure of fast growth and a control group of surviving or slow growth firms. The survey design technique used was matched-pairs analysis. A total of 17 of the 22 fast growth firms identified in the study were successfully matched for age, sector and ownership with surviving EDP firms, which had 25 or less employees in 1994.

The analysis of the balance sheets was based on a study of fast growth and match firms in the North East of England by Storey et al. [1989]. The fast growth firms were much larger than their match counterparts and had grown at a much faster rate from the time of foundation. Fast growth firms employed a total of 2,478 employees in 1994 compared with a total of 248 for the match group. The fast growth firms were on average 9.7 times larger than the match firms, in term of employment, and they were on average 13 times larger in 1994 than at foundation.

As expected, the fast growth firms were also much larger than match firms

in financial terms, in 1991. The absolute values of mean total assets, net assets, equity and retained profits were at least nine times higher for fast growth firms than for match firms. Whilst, none of the match firms were larger than the fast growth firms in terms of numbers employed, not all fast growth firms were larger than match firms in financial terms. Only nine of the fast growth firms recorded a higher value for retained profits than the firm with the maximum value of retained profits in the match group.

Fast growth firms in the food sector were on average much larger than the average fast growth firm, in terms of employment. They were also much larger in financial terms. The four fast growth food firms also accounted for 77.6 per cent of all grants reported in the balance sheet of fast growth firms in 1991.

There were observable but not significant differences in the relative importance of fixed assets in fast growth firms and match firms. Fixed assets were also found to be relatively more important for fast growth firms in the North East of England [Storey et al., 1989].

Fast growth firms were relatively less liquid than match firms. Working capital represented 29 per cent of total assets in the match group and 17 per cent of total assets in the fast growth group. Consequently, fast growth firms were found to have financed a higher proportion of capital from short term borrowings than match firms and all other indigenous firms. The level of short term borrowings in fast growth firms is very similar to that of large and medium sized industries in Ireland. However, overall borrowings in the fast growth group were lower than in match firms and all other indigenous firms.

Equity, followed by long term liabilities and grants, was the most important source of long term finance in both groups. Whilst, the fast growth firms were much larger than match firms in absolute financial terms, once allowances are made for difference in size, there was little difference found

in the relative importance of equity in fast growth and match group. However, in comparison with medium and large size indigenous firms, fast growth firms financed a lower proportion of capital from equity. Fast growth firms financed 58 per cent of capital from equity compared with 65 per cent from medium and large sized indigenous industries [Department of Industry and Commerce, 1990].

Fast growth firms were more dependent on grants than their match counterparts. The fast growth firms reported a total of £8.9 million in grants in 1991 which was higher than the total grant payment to all 22 fast growth firms under the EDP between 1978 and 1992. The mean value of grants for the fast growth was 19 times larger than for match firms. The mean value of grants for the fast growth group was 9 per cent of total assets compared with 5 per cent for match firms. However, due to the high intra group variability the difference in the means was not found to be significant at the 95 per cent confidence level.

The greater importance of grants as a source of finance for fast growth firms is also observed from an examination of the individual balance sheets of firms in both groups. Grants featured in the balance sheet of 15, or 88 per cent, of fast growth firms compared with 11 or 65 per cent of match firms. This pattern of higher grant dependency in fast growth firms was also found in two other studies [Kinsella et al., op. cit., 1994,] and [Storey et al., op. cit., 1989]. Fast growth firms were also found to be more dependent on grants than large and medium sized indigenous industries.

There were fundamental differences in the relative importance of equity sources of finance in fast growth and match firms. Ordinary shares were a significantly more important source of equity finance in match firms than in fast growth firms. Ordinary shares represented 21 per cent of total assets in match firms and 11 per cent of total assets in fast growth firms. The difference in equity financing is made up by the relative higher proportion

of total assets financed from share premiums in fast growth firms. Share premiums represented 11 per cent of total assets in fast growth firms and 5 per cent of total assets in match firms. Share premiums featured in the balance sheet of 35 per cent of match firms compared to 80 per cent of fast growth firms. The t-test for difference in the means did not prove significant.

There was little difference in the relative importance of retained profits in fast growth and match firms. The mean value of retained profits for the match firms was 17 per cent of total assets and 18 per cent of total assets for the fast growth firms.

In comparison with firms in the North East of England [Storey et al., 1989], Irish firms financed a much higher proportion of total assets from ordinary shares, share premiums and minority interest. Fast growth firms, in the North East of England financed a higher proportion of total assets from grants and reserves than their counterparts in Ireland. In the North East of England, fast growth firms financed 44 per cent of total assets from reserves and government grants compared with 26 per cent for fast growth firms in Ireland.

Fast growth firms are also more likely than match firms to issue new share capital and less likely to be predominantly owned by directors and their families. Directors and their relatives owned 70 per cent or more of the shares in 12 match firms and only six match firms registered increases in share capital. In comparison, directors and their relatives owned 70 per cent or more of the shares in three fast growth firms and 14 fast growth firms registered increases in share capital. This is consistent with the finding on the relative greater importance of share premiums as a source of finance for fast growth than for match firms. It indicates that fast growth firms are more likely to issue shares externally. Storey et al. [1989] found that new share issues were also a more important source of finance for a minority of

fast growth firms in the North East of England.

The fact that a higher proportion of fast growth firms than match firms issued new share capital and that they were less likely to be predominantly owned by their directors and their families would suggest that fast growth firms are more willing to share equity than match firms.

The finding is also in line with current views on the role of equity financing in small firms which suggest that preference for debt rather than equity financing in small firms reflects the owners wishes to maintain control rather than the constraints placed on them by the suppliers of finance [Cosh and Hughes, 1994], [TFSB, 1994] and [ENSR, 1993]. However, further research on the role of equity finance in both groups is required before any conclusion on the impact of equity finance on growth can be drawn. An examination of the accounts of fast growth and match firms from the time of foundation would provide further evidence on the role of equity finance in the development of fast growth firms. Data restrictions did not allow for an examination of the financing of both types of firms from start-up. Furthermore, a larger sample frame would not be effected by the extreme scores of one or two extreme outliers.

Overall, the study highlights the important contribution of fast growth start-ups to employment creation in Ireland. Fast growth start-ups represented 9.2 per cent of EDP start-ups, yet they created 62 per cent of total employment in surviving EDP firms. In terms of financial structure, the study indicates that outside equity injections were a relatively more important source of finance for fast growth than for match firms. Fast growth firms were also found to be more dependent on government grants than match firms and other indigenous firms.

APPENDIX A

APPENDIX A

Table 1: Actual employment change in Irish manufacturing sector, by establishment size, 1980 - 1994

Year	Size Classes (OOO's)					Total
	<50	50-99	100-199	200-499	500+	
1980	61.6	35.1	41.9	51.0	44.8	234.4
1981	64.7	33.5	40.8	48.8	42.7	230.5
1982	64.4	34.4	38.6	47.4	39.7	224.5
1983	63.1	33.4	36.9	42.8	36.7	212.9
1984	64.9	31.8	38.6	40.5	32.7	208.5
1985	65.0	31.1	39.0	40.5	27.0	202.6
1986	62.6	29.4	39.9	38.5	28.1	198.5
1987	61.4	29.3	36.7	40.6	24.4	192.4
1988	63.3	30.0	35.9	42.1	25.1	196.4
1989	62.0	30.4	38.3	42.2	26.5	199.4
1990	62.6	30.9	39.4	42.8	27.0	202.7
1990	62.6	39.0	39.4	42.8	27.0	210.8
1991	59.9	31.6	39.5	44.1	25.9	201.0
1992	58.8	32.7	40.3	40.7	28.8	201.3
1993	57.5	32.7	38.1	44.2	27.8	200.3
1994	57.6	34.5	38.4	46.9	27.7	205.1
Net Change	-4.0	-0.6	-3.5	-4.1	-17.1	-29.3

APPENDIX A

Table 2: Percentage employment change in Irish manufacturing sector, by establishment size, 1980 - 1994

Year	Size Classes (OOO's)					Total
	<50	50-99	100-199	200-499	500+	
1980	26.3%	15.0%	17.9%	21.8%	19.1%	100%
1981	28.1%	14.5%	17.7%	21.2%	18.5%	100%
1982	28.7%	15.3%	17.2%	21.1%	17.7%	100%
1983	29.6%	15.7%	17.3%	20.1%	17.2%	100%
1984	31.1%	15.3%	18.5%	19.4%	15.7%	100%
1985	32.1%	15.4%	19.2%	20.0%	13.3%	100%
1986	31.5%	14.8%	20.1%	19.4%	14.2%	100%
1987	31.9%	15.2%	19.1%	21.1%	12.7%	100%
1988	32.2%	15.3%	18.3%	21.4%	12.8%	100%
1989	31.1%	15.2%	19.2%	21.2%	13.3%	100%
1990	30.9%	15.2%	19.4%	21.1%	13.3%	100%
1990	29.7%	18.5%	18.7%	20.3%	12.8%	100%
1991	29.8%	15.7%	19.7%	21.9%	12.9%	100%
1992	29.2%	16.2%	20.0%	20.2%	14.3%	100%
1993	28.7%	16.3%	19.0%	22.1%	13.9%	100%
1994	28.1%	16.8%	18.7%	22.9%	13.5%	100%
Net Change	1.8%	1.8%	0.8%	1.1%	-5.6%	

Table 3 : Components of manufacturing employment change in Ireland by establishment size 1973-1981

Establishment Size (3)	Total Closures		Losses Contractions		Total Openings		Increases Expansions (4)		Net Change in Employment
	Firms	Employment	Firms	Employment	Firms	Employment	Firms	Employment	
0 - 50	851	12,365	1,417	6,432	8,242	22,044	1,238	16,980	+ 20,244(2)
51 - 100	77	5,491	203	4,020	129	9,209	131	5,802	+ 5,500
101 - 200	45	6,404	126	5,488	63	8,519	96	4,529	+ 1,156
201 - 300	19	4,776	45	3,428	22	5,388	29	3,369	+ 553
301 - 500	12	4,865	45	5,676	13	5,037	17	1,842	- 3,662
> 500	4	2,576	39	11,268	10	7,380	15	15	- 4,399
Dublin Closures (1)									
> 50	-8,303	-8,303							- 8,303
Total	1,008	44,780	1,875	36,312	2,047	57,954	1,526	34,587	+ 11,089

Source: O Farrell, 1986, Entrepreneurs and Industrial Change, Dublin, IMI. Table 3.4, pp. 32-33.

1. Prior to 1979, only a sample of firms with less than 50 employees in the Dublin area were included in the IDA Annual Survey of Employment. It was estimated that 8,303 jobs were lost in these firms over the period of the study.

2. Net change in the 0-50 group when allowance is made for 8,303 closure losses in Dublin is +11,941.

3. Establishment size expressed as number of employees in 1981 (new openings) and 1973 (closures, expansions and contractions.

4. Expansions include those plants of equal size in 1973 and 1981.

APPENDIX B

Appendix B Table 1: Individual Balance sheets for fast growth firms (1)

Company	Fixed Assets	Current Assets	Total Assets	Current Liabilities	Net Assets	Long Term Liabilities	Government Grants	Share Capital	Share Premium	Retained Profits	Reserves	Minority Interest	Equity
Fg IE50	£ 488	£ 1087	£ 1575	£ 341	1234	£ 0	£ 143	£ 150	£ 0	£ 941	£ 0	£ 0	£ 1091
Fg S50	£ 692	£ 389	£ 1081	£ 470	611	£ 64	£ 223	£ 261	£ 0	£ 64	£ 0	£ 0	£ 325
Fg P60	£ 2803	£ 2971	£ 5774	£ 3015	2759	£ 357	£ 82	£ 185	£ 827	£ 1247	£ 60	£ 0	£ 2319
Fg IE65	£ 1387	£ 1361	£ 2748	£ 1366	1382	£ 518	£ 190	£ 815	£ 417	-£ 300	-£ 295	£ 38	£ 675
Fg EL75	£ 552	£ 995	£ 1547	£ 404	1143	£ 259	£ 191	£ 197	£ 200	£ 297	£ 0	£ 0	£ 694
Fg IE 80	£ 1724	£ 1545	£ 3269	£ 2633	636	£ 900	£ 437	£ 230	£ 156	-£ 1153	£ 67	£ 0	-£ 700
Fg IE110	£ 1785	£ 2466	£ 4251	£ 1520	2731	£ 275	£ 10	£ 280	£ 1108	£ 1005	£ 0	£ 53	£ 2446
FgME110	£ 362	£ 941	£ 1303	£ 337	966	£ 236	£ 103	£ 372	£ 219	-£ 11	£ 45	£ 0	£ 625
FgMe118	£ 179	£ 1608	£ 1787	£ 845	942	£ 5	£ 12	£ 108	£ 307	£ 325	£ 185	£ 0	£ 925

Note:

ME = Mechanical Engineering, F = Food, EL = Electronic Engineering, IE = Industrial Engineering, P = Printing, S = Service, C = Clothing

1 Code: The number indicates the number of employees in a firm, thus FG F 600 denotes a fast growth food company with 600 employees

Appendix B Table 1: Individual Balance sheets for fast growth firms (1)

Company	Fixed Assets	Current Assets	Total Assets	Current Liabilities	Net Assets	Long Term Liabilities	Government Grants	Share Capital	Share Premium	Retained Profits	Reserves	Minority Interest	Equity
Fg C130	£ 1235	£ 1705	£ 2940	£ 1472	1468	£ 602	£ 301	£ 506	£ 0	£ 60	£ 0	£ 0	£ 566
FgME130	£ 1448	£ 2668	£ 4116	£ 1081	3035	£ 130	£ 111	£ 77	£ 1190	£ 1528	£ 0	£ 0	£ 2795
Fg E140	£ 982	£ 2570	£ 3552	£ 1937	1615	£ 200	£ 201	£ 4	£ 99	£ 1112	£ 0	£ 0	£ 1215
FgME200	£ 3228	£ 8007	£ 11235	£ 4259	6976	£ 2076		£ 1048	£ 1748	£ 2053	£ 23	£ 27	£ 4899
Fg F210	£ 3794	£ 2619	£ 6413	£ 3259	3154	£ 0	£ 2170	£ 348	£ 395	£ 240	£ 0	£ 0	£ 983
Fg F230	£ 10320	£ 7735	£ 18055	£ 6630	11425	£ 6184	£ 0	£ 1258	£ 930	£ 3118	-£ 65	£ 0	£ 5241
Fg F 600	£ 12963	£ 7868	£ 20831	£ 8374	12457	£ 113	£ 4365	£ 2225	£ 982	£ 4557	£ 215	£ 0	£ 7979
	£ 46131	£ 51152	£ 97283	£ 40244	£ 57039	£ 12033	£ 8951	£ 8420	£ 8653	£ 18633	£ 235	118	£ 36059

Note:

ME = Mechanical Engineering, F = Food, EL = Electronic Engineering, IE = Industrial Engineering, P = Printing, S = Service, C = Clothing

1 Code: The number indicates the number of employees in a firm, thus FG F 600 denotes a fast growth food company with 600 employees

Appendix B Table 2: Individual balance sheets for match firms (1)

Company	Fixed Assets	Current Assets	Total Assets	Current Liabilities	Net Assets	Long Term Liabilities	Government Grants	Share Capital	Share Premium	Retained Profits	Reserves	Equity
Mf ME 3	£ 15	£ 80	£ 95	£ 44	£ 51	£ 51	£ 0	£ 0	£ 0	£ 0	£ 0	£ 1
Mf F 3	£ 165	£ 107	£ 272	£ 160	£ 112	£ 6	£ 20	£ 30	£ 10	£ 45	£ 0	£ 85
Mf EL10	£ 28	£ 126	£ 154	£ 114	£ 40	£ 0	£ 0	£ 53	£ 0	-£ 26	£ 13	£ 40
Mf ME10	£ 28	£ 136	£ 164	£ 50	£ 114	£ 0	£ 5	£ 30	£ 0	£ 76	£ 3	£ 108
Mf ME12	£ 121	£ 1572	£ 1693	£ 669	£ 1024	£ 486	£ 30	£ 479	£ 73	-£ 165	£ 121	£ 508
Mf IE 12	£ 128	£ 129	£ 257	£ 39	£ 218	£ 86	£ 31	£ 38	£ 32	£ 31	£ 0	£ 101
Mf F 13	£ 317	£ 302	£ 619	£ 202	£ 417	£ 125	£ 138	£ 184	£ 0	-£ 31	£ 0	£ 153
Mf F 14	£ 75	£ 204	£ 279	£ 107	£ 172	£ 0	£ 0	£ 40	£ 0	£ 132	£ 0	£ 172
Mf IE15	£ 141	£ 274	£ 415	£ 103	£ 312	£ 0	£ 38	£ 33	£ 180	£ 61	£ 0	£ 274
Mf ME15	£ 31	£ 221	£ 252	£ 78	£ 174	£ 0	£ 0	£ 70	£ 22	£ 82	£ 0	£ 174

Note:

ME = Mechanical Engineering, F = Food, EL = Electronic Engineering, IE = Industrial Engineering, P = Printing, S = Service, C = Clothing

(1) Code: The number indicates the number of employees in a firm, thus Mf F23 designates a match firm in the food sector with 23 employees

Appendix B Table 2: Individual balance sheets for match firms (1)

Company	Fixed Assets	Current Assets	Total Assets	Current Liabilities	Net Assets	Long Term Liabilities	Government Grants	Share Capital	Share Premium	Retained Profits	Reserves	Equity
Mf C15	£ 137	£ 185	£ 323	£ 59	£ 264	£ 33	£ 25	£ 80	£ 0	£ 126	£ 0	£ 206
Mf IE18	£ 196	£ 707	£ 903	£ 449	£ 454	£ 199	£ 27	£ 86	£ 0	£ 144	£ 0	£ 230
Mf EL18	£ 42	£ 835	£ 877	£ 192	£ 685	£ 8	£ 0	£ 1	£ 29	£ 647	£ 0	£ 677
Mf IE21	£ 277	£ 444	£ 721	£ 314	£ 407	£ 40	£ 57	£ 200	£ 0	£ 110	£ 0	£ 310
Mf S21	£ 455	£ 185	£ 640	£ 278	£ 362	£ 188	£ 14	£ 195	£ 0	-£ 34	£ 0	£ 161
Mf F23	£ 356	£ 121	£ 477	£ 219	£ 258	£ 0	£ 72	£ 350	£ 0	-£ 164	£ 0	£ 186
Mf P25	£ 185	£ 495	£ 680	£ 143	£ 537	£ 34	£ 0	£ 34	£ 11	£ 458	£ 0	£ 503
	£ 2697	£ 6123	£ 8821	£ 3220	£ 5601	£ 1256	£ 457	£ 1903	£ 357	£ 1492	£ 137	£ 3889

Note:

ME = Mechanical Engineering, F = Food, EL = Electronic Engineering, IE = Industrial Engineering, P = Printing, S = Service, C = Clothing

(1) Code: The number indicates the number of employees in a firm, thus Mf F23 designates a match firm in the food sector with 23 employees

APPENDIX C

APPENDIX C

Table 1: The number of directors of fast growth firms

Company Code	No. of Directors	No. of other Directorships
Fg S50	3	1
Fg IE50	3	6
Fg P60	5	5
Fg IE65	10	26
Fg EL75	5	23
Fg IE 80	3	19
Fg IE110	6	8
Fg ME110	6	40
Fg ME118	4	47
Fg F120	3	0
Fg C130	3	6
Fg EL130	6	11
Fg E1140	7	33
Fg ME200	7	17
Fg F210	4	0
Fg F230	4	2
Fg F600	2	6
Total	81	250
Mean	5	15

Code : F = Food, EL= Electronic Engineering, ME= Microelectronic Engineering, IE = Industrial Engineering, C=Clothing, S= Computer Translation Service P= Paper and Printing

The number indicates the size of the firm in terms of employees, thus Fg F600 designates a fast growth food company with 600 employees

APPENDIX C

Table 2: The number of directors of match firms

Company Code	No. of Directors	No. of other Directorships
Mf ME 3	2	0
Mf F 3	3	6
Mf EL10	4	5
Mf ME 10	2	5
Mf EL12	3	16
Mf IE 12	2	5
Mf F 13	4	9
Mf F 14	3	3
Mf C 15	2	2
Mf ME15	2	2
Mf IE15	4	44
Mf IE18	2	5
Mf EL18	4	2
Mf IE21	2	4
Mf S21	3	3
Mf F23	2	4
Mf P25	2	0
Total	46	115
Mean	3	7

Code : F = Food, EL= Electronic Engineering, ME= Microelectronic Engineering, IE = Industrial Engineering, C=Clothing, S= Computer Translation Service P= Paper and Printing

The number indicates the size of the firm in terms of employees, thus Mf F23 designates a match firm in the food sector with 23 employees

BIBLIOGRAPHY

- Acs, Z. and D. Audretsch, 1993: 'Has the role of small firms changed in the United States?' in Acs, Z. and D. Audretsch, [eds.], Small firms and entrepreneurship, an east-west perspective. Cambridge: Cambridge University Press, pp. 55 - 77.
- Advisory Council on Science and Technology (ACOST), 1990. The enterprise challenge: overcoming barriers to growth in small firms. London: HMSO.
- Armington C. and Odle M., 1982: 'Small businesses- how many jobs?' in Brookings Review, Winter, pp. 14-17.
- Armington, C., 1983: 'Further examination of sources of recent employment growth: analysis of USEEM data for 1976 to 1980', business microdata project, Brookings Institute, March.
- Bannock Graham, 1980: The economics of small firms. Basil Blackwell: Oxford.
- Barkam Richard, Eric Hanvey and Mark Hart, 1994: 'The determinants of growth in small manufacturing firms in the UK', Belfast: Northern Ireland Economic Research Centre.
- Birch, David L., 1987: Job creation in America: how our smallest companies put the most people to work. London: Collier MacMillan.
- Birch, D. and S. McCracken, 1983: 'The small business share of job creation: lessons learned from the use of a longitudinal file', MIT Program on neighbourhood and regional change, March.
- Birch, D., 1979: The job generation process. MIT Program on neighborhood and regional change, Cambridge, Massachusetts: MIT Press.
- Bolton: J.E., 1971: Report of the committee of inquiry on small firms. London: HMSO Cmnd. 4811.
- Brockhaus, R. and W.R. Nord, 1979: 'An exploration of the factors affecting the entrepreneurial decision : personal characteristics vs. environmental conditions'. Proceedings of the Academy of Management meeting, 1979.
- Business and Finance, 1993: September 23rd, p.2.
- Central Statistics Office, 1992: 'Census of Industrial Production 1990'. Dublin: Stationery Office.
- Companies' Registration Office, 1992: 'Information Manual'. Dublin: Companies' Registration Office.
- Cosh, A. and Hughes A., 1994: 'Size, financial structure and profitability: UK companies in the 1980s' in A.Hughes and D.J. Storey [eds.], Finance and the Small Firm. London: Routledge.
- Cross, M., 1981: New firm formation and regional development. Farnborough: Gower.
- Culliton, J., 1992: 'A time for change: industrial policy for the 1990'; Report of the industrial policy review group', Dublin: Stationery Office.

- Curran, J., 1986: Bolton 15 Years on: A review and analysis of small business research in Britain, 1971-1986. London: Small Business Research Trust.
- Daly, M., M. Campbell, G. Robson and C. Gallagher, 1991: 'Job creation 1987-1989: The contribution of small and large firms' in Employment Gazette, November, pp. 589-596.
- Department of Employment, 1993: Small firms in Britain. London: HMSO.
- Department of Industry and Commerce, 1990: Review of industrial performance 1990. Dublin: Stationery Office.
- Department of Industry and Commerce, 1987: Review of industrial performance 1987. Dublin: Stationery Office.
- Economic and Social Research Institute, 1992: 'The impact of the industrial development agencies;' a report prepared by the Economic and Social Research Institute to the Industrial Policy Review Group, Dublin: Stationery Office.
- European Economy, 1994: Annual Economic Report, European Commission Directorate General for Economic and Financial Affairs. No. 56.
- European Network for SME Research, 1994: The European Observatory for SME's: second annual report, Zoetermeer, Netherlands: EIM.
- European Network for SME Research, 1993: The European Observatory for SME's: first annual report, Zoetermeer, Netherlands: EIM.
- Eurostat, 1992: Enterprise in the European Community. Commission of the European Communities, Vol. 2. Luxembourg: Office of Official Publications of the European Communities.
- Evans, D.S. and L.S. Leighton, 1989: 'Some empirical aspects of entrepreneurship'. The American Economic Review, June, pp. 519-535.
- Foley, Anthony and Breda Griffith, 1992: 'Developing entrepreneurs from managers: business or technology education, the experience of the Enterprise Development Programme in the Republic of Ireland'. Paper presented at 22nd European small business seminar, September, Amsterdam.
- Gallagher, Daly C., M. and J. Thomason, 1990: 'The Growth of UK companies 1985-1987 and their contribution to job generation; in Employment Gazette', February, pp. 92-98.
- Gallagher, C.C. and H. Stewart, 1986: 'Jobs and the business life cycle in the UK' in Applied Economics, Volume 18, pp. 875-900.
- Gallagher, C.C. and P. Miller, 1991: 'New fast growing companies create jobs', in Long Range Planning, Vol. 24, No. 1, pp. 96-101.
- Ganguly, Pom, 1985: UK small business statistics and international comparisons. London: Harper & Row.
- Gudgin, G. and S. Fothergill, 1979: Job generation process in Britain. Centre for Environmental Studies: London.

- Gudgin, G., 1989: Job generation in manufacturing industry, 1973 - 1986: A comparison of Northern Ireland, The Republic of Ireland and The English Midlands, Northern Ireland Economic and Research Council.
- Hakim: Catherine, 1989: 'Identifying fast growth firms', Employment Gazette, January pp. 29-46.
- Hall, G., 1989: 'Lack of finance as a constraint on the expansion of innovatory small firms'; in Barber, J., J.S. Metcalfe and M. Porteous [eds.], Barrier to growth in small firms. London: Routledge.
- Harris, C.S., 1983: 'The magnitude of job loss from plant closings and the generation of replacement jobs: some recent evidence', Brookings Institute, December.
- Hull, C., 1987: 'Job creation in federal Republic of Germany: a review' in job generation in small and medium sized enterprises, programme of research and action on the development of the labour market, DGV., Brussels: Commission of the European Communities.
- Industrial Development Authority [IDA], 1979 - 1994: inclusive IDA, Dublin.
- Keating W. and T. Keane, 1989: 'Irish industrial structure, 1979-1985: A longitudinal analysis' in Journal of Statistical and Social Inquiry Society of Ireland, Volume XXV, Part 1, pp. 181 - 233.
- Kennedy, K. and T. Healy, 1985: Small scale manufacturing industry in Ireland, The Economic and Social Research Institute, November 1985 Paper no. 125.
- Kinsella, R., N. Clarke, D.I., Storey, D. Mulvenna and D. Coyne 1994: Fast-Growth Small Firms - an Irish perspective Dublin: IMI.
- Kinsella, Ray, 1992: 'The medium term development of indigenous industry: the role of the financial sector', a report to the Industrial Policy Review Group, Dublin: Stationery Office.
- Korte, Werner B., 1986: 'Overview of trends and distribution of employment by size of establishment 1972-1978' in Keeble, D. and E. Weber [eds.], New firms and regional development in Europe. London: Croom Helm, pp 5 -47.
- McCluskey, 1992: 'Employment, grants and industrial policy; analysis of the performance of manufacturing industry 1980-1990', Dublin economic workshop, Economic policy conference economic issues, arising from the Culliton Report, 16th-18th. October, Kenmare.
- National Economic and Social Council, NESC, 1993: 'a strategy for competitiveness, growth, and employment', Dublin: NESC.
- O' Farrell, P. N., 1986: Entrepreneurs and industrial change. Dublin: IMI.
- O'Farrell, P.N. and A. R. Pickles, 1988: 'Entrepreneurial behaviour within male work histories, A sector specific analysis, Edinburgh College of Art,' Dept. of Town Planning, Research Paper No. 20.

- Oakey, R.P., 1994: 'High technology small firms: a more realistic evaluation of their growth potential', in Karlsson, C., B. Johannisson and D.J. Storey, [Eds], Small business dynamics. London: Routledge, pp. 224-242.
- OECD., 1985: 'Employment in Small and Large Firms': Where have the Jobs come from? in Employment Outlook, pp. 64 - 82.
- Peck, F.W., 1986: 'The use of matched pair research design in industrial surveys', in Environment and Planning, Vol. 17, pp.981-989.
- Penrose, Edith, 1959: The theory of the growth of the firm. New York: John Wiley and Son.
- Scase, R. and R. Goffee, 1980: The real world of the small business owner London: Croom Helm.
- Schwalbach, Joachim, 1990: 'Small business in German manufacturing', in Acs, Zoltan J., David B. and Audretsch, [eds.] The economics of small firms: A European challenge, pp. 1-25. Dordrecht: Kluwer Academic Press, pp. 63-73.
- Stanworth, M.J.K. and J. Curran, 1976: 'Growth in the small firm; An alternative view.' Journal of Management Studies, Vol. 13. No.2.
- Storey, D. J. and K. Keasey, and P. Wynarczyk, 1987: The performance of small firms: profits, jobs and failures. London: Croom Helm.
- Storey, D. J. and S. Johnson, 1987: Job creation in small and medium sized enterprises. Programme of research and action on the development of the labour market. DGV, Brussels: Commission of the European Communities.
- Storey, D. J. and S. Johnson, 1987a: Job generation and labour market change. Basingstoke: Macmillan,
- Storey, D. J. and P. Wynarczyk, 1989: 'Fast growing small businesses: case study of 40 firms in the North East of England'. Dept. of Employment Research Paper No. 67, London. Dept. of Employment.
- Storey, D. J., 1982: The small entrepreneurial firm. London: Croom Helm.
- Storey, D. J., 1994: Understanding the small business sector. London: Routledge
- Tamari, M., 1972: 'Committee of inquiry on small firms: research report no. 17: a postal survey of small firms: non-financial data' London: HMSO.
- The Department of Industry and Commerce, 1990 'Review of industrial performance', 1990. Dublin: Stationery Office.
- The Small Business Administration, 1992: 'The state of small business: A report to the President', Washington, D.C.: US Government Printing Office.
- The Small Business Administration, 1982: 'The state of small business': A report to the President. Washington, D.C.: US Government Printing Office.

The Telesis Report, 1982: 'A review of industrial policy': A report prepared by the telesis consultancy group, Dublin: National Economic and Social Council.

Turok, I., 1991: 'Which small firms grow'. in Gibb, A.A. and L.G., Davies, [eds.], Recent research in entrepreneurship. Aldershot: Gower, pp. 29-44.

Task Force on Small Business, TFSB, 1994: Task Force on Small Business, Dublin: Stationery Office.