

GROWTH CONSTRAINTS ON SMALL AND MEDIUM-SIZED FIRMS

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Abstract

The study investigates the nature of barriers to growth experienced by a sample of small and medium-sized enterprises (SMEs) operating in internationally tradeable manufacturing and business service sectors in Britain during the 1990s. Based on a 'real-time' survey methodology involving repeated indepth interviewing and monitoring of business performance and constraints in two sub-samples of 'sustained growth' and 'stalled growth' firms over a two-and-a-half year period, it reveals a virtuous growth cycle in sustained growth firms. This was not necessarily driven by buoyant external market conditions, while the effect of external supply conditions, especially of finance, was often narrowing and constraining. Rather, the sustained growers had achieved this by adopting a management and organisation structure which allowed growth to be pursued within a disciplined and transparent framework of information, reward, and marketing systems. The study suggests that a major objective of policy should be to raise awareness of the importance of internal human capital resources, and raise the general level and depth of management capability.

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GROWTH CONSTRAINTS ON SMALL AND MEDIUM SIZED FIRMS

EXECUTIVE SUMMARY

E1 Terms of reference

This study was commissioned by the Department of Trade and Industry (DTI) from the ESRC Centre for Business Research (CBR) of the University of Cambridge in association with Public and Corporate Economic Consultants (PACEC) to explore the barriers to growth in small and medium sized enterprises in internationally tradeable sectors. The specific terms of reference for the study were to develop:

"a clearer understanding of how companies on different growth trajectories identify and manage constraints and to assess whether there are features in terms of best practice for government and other public/private sector organisations that can be gleaned from growth companies".

The study was designed as a pilot study to explore a research methodology combining detailed 'real time' case studies with statistical analysis.

E2 Growth Trajectories and Growth Constraints

The distribution of growth trajectories across businesses demonstrates some distinct properties. In particular, and of specific relevance to this study, the distribution is highly skewed. A handful of sustained, strong growth small businesses pull away from the remaining pack. There is great turbulence amongst the pack and a substantial amount of "churning" with birth and death rates which are highest amongst the smallest and youngest firms.

This highly skewed pattern of growth trajectories could be caused by a highly skewed distribution of the personal growth ambitions of entrepreneurs. Alternatively it could be attributed to systematic constraints imposed by the demand and supply conditions confronting the businesses, and by the generic internal management attributes and capabilities they demonstrate in overcoming them. Controlling for the impact of differential

ambition is an essential part of a research project designed to examine the relationship between business growth, business capabilities and growth constraints.

E3 Research Method

The DTI was particularly interested in the insights into the relation between growth trajectories and constraints which could be provided by a longitudinal study of a group of companies with different growth experiences. The particular nature of the approach to be piloted in the study was to identify firms with differing growth trajectories in the immediate past and then conduct 'real time' case studies of the way in which constraints on growth were identified, and resolved, as they emerged over the study period. This was to be combined with a statistical analysis of quantifiable data, based on previous surveys of the sample companies, and new codable data obtained from the case studies.

Two features of this 'real time' approach were thought likely to offer valuable insights into the constraints on SMEs on different growth trajectories:

- it would enable comparison of ex ante perceptions and expectations on growth and constraints with how these were amended in the light of experience without relying on ex post justifications;
- it would generate close familiarity with the firms and their circumstances and engender a more open portrayal by the companies of their objectives and constraints than otherwise would be revealed (e.g. by a snapshot postal survey or single interview).

The case study fieldwork took place in two phases, October 1993 to October 1994 and April 1995 to July 1996.

E4 Sample Design

Twenty-four firms participated in the study which combined statistical analysis of quantitative and qualitative data on growth objectives and constraints over the period 1987-95 with interview and questionnaire based 'real time' case studies covering the period 1994-96. The firms were

selected in consultation with DTI from a wider group which indicated a willingness to take part in response to an invitation included in a standard questionnaire issued by CBR in 1993 to the 2,000 firms on its SME databank. All the selected firms had increased their employment over the period 1987-1990 but half had sustained this growth over 1990-1993 and half had experienced stalled growth. The firms were small (none exceeded employment of 100 in 1990), relatively mature (i.e. were more than three years' old in 1990), and in internationally tradeable sectors.

The extent of participation in the 'real time' study by the firms concerned was high. This was fostered by the familiarity with the consultants that the longitudinal approach engendered and 18 firms continued to participate throughout the whole study period.

E5 Growth Performance, Growth Objectives and Growth Constraints in Sustained and Stalled Growth Firms: An Overview

Sample Attrition

- Four of the twelve firms in the stalled group went into liquidation in the course of the study and one was acquired.
- Three of the sustained growers were acquired in the course of the study.
- Two firms withdrew from the study after the first phase of the study.
- Eighteen firms completed the two years of 'real time' case study analysis.

Performance Characteristics 1987-93

- The sustained growth group of firms grew faster than the stalled group over the period 1987-93 as a whole in terms of both turnover and employment. This reflected their superior performance in 1990-93 as the sample design intended it should.
- The sustained and stalled groups of firms did not show a significantly different profit margins over the period 1987-93.

- Sustained growers were more likely to export than stalled growers in the period 1987-93.
- The export intensity of sustained growers was significantly higher than that of the stalled group and rose between 1987-93.

Ownership and Competitive Advantage

- Sustained growers were more likely than stalled growers to have dispersed ownership. The median share holding of a Chief Executive Officer was 15% in the sustained group but 60% in the stalled group.
- Sustained growth group firms were more likely than stalled firms to regard their competitive advantage as relying on technological edge.
- Sustained growers were more likely than stalled growers to believe their competitive advantage lay in their *range* of expertise or products.
- Stalled growers were more likely than sustained growers to believe that their competitive advantage lay in terms of cost or price competitiveness.
- Over half of both sustained and stalled groups relied on 5 customers for over 25% of their sales placing a high premium on the successful management of those relationships in sustaining performance in both groups.

Growth Objectives and Strategies for Meeting Business Objectives

- The growth objectives of both the sustained and stalled groups were *never* expressed in terms of employment growth as a primary objective.
- Growth objectives were most often expressed in terms of turnover.
- Growth objectives in both the sustained and stalled groups varied over the period 1987-96 but there was no significant difference in the proportion in each group seeking moderate or rapid growth in any sub-period. Growth differences between the groups are therefore not a product of motivational differences.

- Sustained growers were more likely than stalled growers to emphasise overseas expansion as a strategy for meeting their objectives.
- Sustained growers were more likely than stalled growers to emphasise the development of management expertise and organisation as a strategy for meeting their objectives.

Significant Constraints on Meeting Business Objectives

- In both the 1990-93 and 1994-96 periods demand constraints dominated both the sustained and stalled groups followed by finance and management constraints.
- The sustained group were more likely to emphasise overseas market demand as a constraint, in line with their greater overseas exposure.
- There was no difference between stalled and sustained growers in the importance accorded to finance constraints although the sustained group increased their rating for this in 1994-96 when profit margins faltered in this group.
- Sustained growers were more likely to acknowledge management and labour as constraints than the stalled growers in both 1990-93 and 1994-96.
- In both sustained and stalled firms constraints which were anticipated to be significant were frequently, in retrospect, found not to be so, whilst in retrospect other constraints had become more severe. This reflects the uncertainty and unpredictability surrounding events affecting small business growth and development (e.g. the loss of a major customer or senior manager).

E6 Tackling the Constraints on Growth: Best Practice Experience Based on the Case Studies

The 'best practice' findings of this study necessarily rely on a limited number of detailed case-histories of firms. This executive summary cannot adequately capture the detailed experiences of the case-histories which are

used to inform and illustrate the conclusions presented here. These details are contained in Chapter 6 of the main report.

Growth Trajectories

The two samples of sustained and stalled growth firms were chosen on the basis that the former had grown consistently in the successive periods 1987-90 and 1990-93 whilst the latter had faltered in the second period. In the course of the real time study some of the sustained growers faltered and a few of the stalled growth firms recovered and others failed. This enabled us to isolate a group of *consistent sustained growers* over the whole period 1987-96 from the rest as examples of best practice in comparison to the other groups of firms.

Motivation

Most of the executives of the firms participating in our study wanted their businesses to grow. Variations in growth between the consistent sustained growers and the rest were not due to differences in motivation.

Market Conditions in Consistent Sustained Growers

- Market conditions were seen as challenges which required a systematic management response
- Access to overseas markets was seen to require the development of specific marketing and sales skills either internally, or through merger with an international player, and where necessary, the establishment of overseas offices
- Product development and marketing were developed alongside the management reorganisation necessary to put the overall strategy into effect.
- Management adopted a flexible approach to meeting demand constraints with a willingness to delegate and reorganise functions as required by the changing scale and complexity of the business.

Finance

- The predominant reaction to financial constraints in consistent sustained growers was internal. The actual or perceived inadequacies of the UK capital market had led these companies to match expansion to their internal cash flows and/or to seek to access cash flows via the internal capital market of a bigger multinational organisation after acquisition
- These 'internal' strategies have required the development of effective internal costing budgeting and invoicing procedures often involving the introduction of computer based IT systems
- In one case a determined response to financial constraints was associated with an effective approach to outside funding

Management and Labour

- The consistent sustained growth companies were willing to reorganise their management systems as required by their internal developments and the external demand and financial conditions they faced.
- An important external constraint facing some of these companies was the availability of technically qualified management with project management skills, and the ability to recruit and retain consultant/researchers.
- This constraint remained with the companies despite creative attempts via agencies and human resource development programmes.
- The identification of a management constraint itself arises however from the recognition by these companies of the need to develop appropriate management systems to match their growth objectives.
- The companies recognise the constraints and have developed strategies to continue to address them.

In contrast to the consistent sustained growers the experience of stalled and faltering firms suggests that constraints are not always correctly identified or addressed. These companies are characterised by:

- ill-defined strategic direction with regard to product and market development;
- poorly specified (or frequently changed) managerial responsibilities;
- inadequate devolution of managerial tasks and hence over-burdening of directors who may or may not hold the positions they do by design;
- inadequately supported or poorly implemented management training programmes and management information systems.
- these firms are not especially constrained by access to external finance compared to sustained growers but have adopted less well focused responses to obtaining finance or have been unable to generate sufficient internal cash flow to sustain growth.

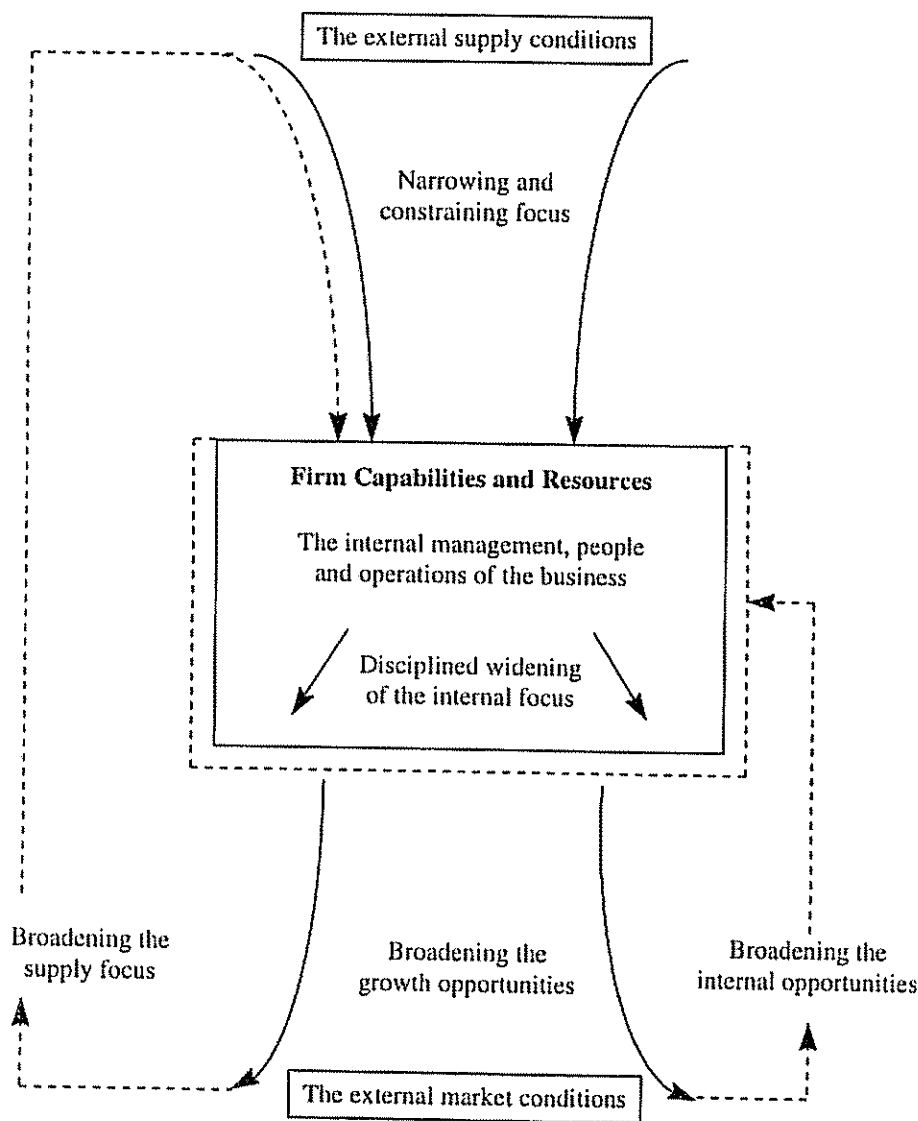
We may depict the conditions for sustained growth in the summary graphic at Figure E1. Its key features are as follows:

- external supply conditions, including the provision of finance, exercised a narrowing and constraining influence on stalled and sustained growers but the latter more frequently responded by developing their own internal resources and capabilities to achieve growth or sought access through selling onto bigger firms;
- the internal operations of the sustained growth businesses were directed at expanding the capabilities and ambitions of, and opportunities for, their people (through training, HRD programmes, and sometimes by recruitment of the skills which cannot be grown in-house); at the same time, the internal operations were monitored and managed closely, often by use of information systems;
- as a consequence of this release of personal capabilities and ambitions within the sustained growth businesses and/or as a deliberate external

strategy, the firms broadened and diversified their product and/or customer basis but again with a disciplined specification of the market parameters within which they operated;

- external market opportunities in consistent sustained growers were consequently broadened allowing for the spreading of risks;
- further growth was provided for by a broadening of the external supply conditions and a widening of the internal focus providing increased opportunities for personal and career development.

Figure E1 The conditions for sustained growth



If this depiction of the conditions for sustained growth is accepted, it follows that, given the generic external constraints facing small mature

firms in the finance market, the product market and the managerial labour market, it is internal capabilities which are central to success. Firms which are most likely to sustain growth are those most capable of managing internal resources, devolving responsibility and broadening their market, managerial and technological bases.

It follows from this that a major objective of policy should be to raise the awareness of the importance of internal resource development in smaller firms and to raise the general level and depth of management capability.

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1. Introduction and Terms of Reference

The Department of Trade and Industry (DTI) commissioned the ESRC Centre for Business Research (CBR) in association with Public and Corporate Economic Consultants (PACEC) to explore the barriers to the growth of small and medium sized enterprises (SMEs) in internationally tradable sectors.

The specific terms of reference for the study were to develop “a clearer understanding of how companies on different growth trajectories identify and manage constraints and to assess whether there are features in terms of best practice for government and other public/private sector organisations that can be gleaned from growth companies.”

The project developed in two phases and lasted from October 1993 to July 1996. In the first phase (October 1993 to October 1994) we were asked by the DTI to test a ‘real time’ case study method of exploring this question with a small number of participating firms over a limited period of time. In light of the results of this phase a second period of study from April 1995 to July 1996 extended the observation period for those firms able and willing to continue their participation. The material available from the case studies carried out in phases 1 and 2 were matched with data on the participating firms available from previous CBR surveys in 1991 and 1993 covering over 2,000 SMEs from which the case study firms were chosen. The study was, as a result, able to draw on data covering the growth and other characteristics of the case study firms for the nine year period 1987-1996.

The structure of our report addressing the terms of reference on the basis of this approach is set out below:

- Section 2: Growth Constraints: Some Theoretical and Empirical Reflections: discusses some of the alternative approaches to understanding the growth process in SMEs and some stylised facts relating to small business growth;
- Section 3: The Investigation Method and its Effectiveness: sets out what the investigation involved, presents the conclusions of phase 1 on the practicality of the method, the resources required and the outputs achieved, and the progression to Phase 2;
- Section 4: The Businesses Participating in the Study: describes the businesses who participated in each phase of the study in terms of their growth, export, and profit characteristics;
- Section 5: Ownership, Competitive Advantage, Growth Objectives and Constraints: presents an overview of these characteristics of our sample and compares sustained and stalled growth firms;
- Section 6: Tackling the Growth Constraints: summarises the nature of the growth constraints in those businesses participating in both phases of the project; and how they were identified and tackled utilising detailed case study material;
- Section 7: Conclusions: provides summary conclusions.

2. Growth Constraints; Some Theoretical and Empirical Reflections

2.1. Introduction

Our analysis of the characteristics of firms on different growth trajectories and the way in which they differ in their management of growth constraints begins with an overview of evidence on the patterns of growth rates across firms and over time. We then turn to the discussion of alternative theoretical approaches to the explanation of these patterns. The discussion emphasises the turbulence of small

business growth, and the tendency for younger smaller firms to have faster growth on average than larger firms but with a greater variability of growth experience and a greater propensity to fail. The skewness of growth rates amongst smaller firms is also highlighted with only a handful of firms sustaining high growth over successive periods. In considering theoretical explanations for variations in growth performance the chapter considers explanations based on the notion of adjustments towards minimum efficient scales of production and more dynamic models emphasising learning by management, and the management of transitions in organisational form and market scope which small firms make as they grow. Emphasis is placed on recent models which build in the work of Penrose (1959) in emphasising management capability and competence in explaining inter-firm variations in growth, and which highlight potential barriers to growth which are internal or external to the firm and which we seek to analyse in the remainder of this report.

2.2. Patterns of business growth: empirical evidence

The distribution of growth rates across businesses is known to have a number of distinctive properties (see for example Dunne and Hughes (1994), Schmalensee (1989), Cosh and Hughes (1994), Storey (1994), Cosh, Hughes, Lee and Pudney (1996), Oulton and Hart (1996), Cosh, Duncan and Hughes (1996)). First, the variance of growth rates is greater the smaller the size class and the younger the age category of businesses considered. Smaller, younger businesses experience wider variations in growth rates than do larger, more mature ones.

Second, the distribution of growth rates is very heavily skewed and the longer the time period over which growth is calculated the more skewed is the distribution. Thus, a handful of businesses will account for the bulk of employment, output or sales generated by a given cohort of firms. Relatively few businesses maintain persistently high growth rates and make the transition from start up to maturity as a large, typically stock market listed, public corporation.

Third, younger firms grow faster than other firms and the very smallest grow faster than the rest. Once a certain threshold size is passed it appears, however, that growth is not systematically related to size.

Finally, the higher mean growth rate amongst smaller firms does not appear to be due to sample attrition bias arising from the fact that smaller, slow growing, companies are more likely to fail, and go out of existence, than are large slow growing businesses (and hence be more likely to be excluded from calculations of growth rates based on surviving firms).

These stylised facts go hand in hand with the observation in all market economies of highly skewed size distributions of firms, as a handful of persistent growers pulls away from the pack. The remainder exhibit great turbulence of growth rates, and birth and death rates which are highest amongst the smallest and youngest firms.

It follows that sustained growers will be relatively few in number and that in carrying out case studies of individual firms we may encounter considerable variability in performance over time.

2.3. Patterns of business growth: theoretical approaches

A number of theoretical approaches have been adopted to explain these phenomena. To serve as a framework for the analysis of why growth rates differ in the way they do, and to identify which factors may distinguish fast growing firms from the rest, we briefly review these theoretical approaches in this section.

2.3.1. Economies of Scale, Learning and Patterns of Growth

Within models which hypothesise profit maximising behaviour on the part of businesses and postulate U-shaped cost curves and unique minimum efficient scales (m.e.s.) of production, growth represents an adjustment towards the m.e.s. Firms above m.e.s. will tend to decline

and firms below m.e.s. will tend to grow. This approach predicts a negative relationship between size and growth, and growth will not be sustained unless the m.e.s. itself shifts persistently upwards. If we allow for different managerial competence in owner managed firms then a range of small firms m.e.s. sizes is possible with each equally efficiently managed at the margin of their respective managerial competence. The better managers run bigger businesses (Lucas (1978), You (1995)).

This sort of model could in principle explain both the empirical observation in studies covering periods of one or two years that size is negatively related to employment growth, and why persistence in growth is weaker the longer the time period covered in empirical studies. It can also be used to suggest that in any sample of small firms considerable numbers may be at their m.e.s. and exhibiting no growth, whilst others may be temporarily disturbed from it, and exhibit transient growth or expansion as they adjust back towards it (Leonard (1989), OECD (1995)). It is also possible to augment this kind of model by postulating that, in an uncertain world, firms may not start up at m.e.s., but will learn over time what their 'true' m.e.s., cost conditions and market opportunities are. As they mature they will be better able to identify transient movements away from their m.e.s. and less likely to adjust their investment and output plans in the face of shocks. Older firms will thus exhibit less frequent and less extreme transient growth adjustments than younger firms (Jovanovic (1982)). Both of these predictions are consistent with the observation of higher mean and variance of growth rates amongst smaller, younger, firms. Neither of these approaches however suggest persistent sustained growth unless m.e.s. rises permanently.

Models based on adjustments to m.e.s. can however be augmented to deal with the empirical observation that above certain threshold sizes growth does not appear to be related to size or adjustments to m.e.s.. This may be done by an appeal to the empirical evidence on scale curves which suggests that they are not U-shaped, with a unique m.e.s., but L-shaped (Pratten (1971)). This evidence also highlights the

fact that there may be many sectors in which firms may achieve m.e.s. at relatively low levels of output relative to the industry and beyond which, with L-shaped scale curves, there will be no cost incentive to expand. Beyond m.e.s. growth must be explained by an appeal to factors beyond technical determinism alone (Davies and Lyons (1982), Simon and Bonini (1958)).

The m.e.s. based models we have discussed tell us very little by themselves about which factors, other than maturity, influence the extent to which firms depart from m.e.s.; which firms recognise the need to adjust to a shifting or given m.e.s.; which make the adjustment faster than others; and finally, given L-shaped scale curves, which firms seek to expand beyond m.e.s. and exhibit persistent growth. This emphasises the need to consider motivations beyond static cost minimisation/profit maximisation in analysing growth. It raises the question of whether small firms vary significantly in their medium term growth aspirations and in their capacity or competence to manage growth and overcome barriers to meeting growth objectives.

2.3.2. Motivational Issues, Management Competence and Patterns of Growth

Other things being equal an important determinant of which small firms sustain growth over the medium and longer term and make a transition to larger firm sizes is the motivation and competence of their owners/managers. There is a substantial body of survey evidence on motivation to suggest that amongst smaller businesses a relatively small proportion seek substantial or persistent growth. For socio-psychological as well as economic reasons many businesses do not seek long run growth but prefer to attain and then remain at scales of operation which permit continued family owner/management, or satisfy the desire for independence without resorting to outside equity (Hakim (1989), SBRC (1992), Storey (1994)). Competence too is clearly an important factor in meeting whatever growth objectives are set. Following recent 'resource based' theories of the firm

management competence is to be interpreted as the broad set of management capabilities which a firm has as a result of its past history experience and management development (Teece and Pisano (1994); Teece (1992); Garnsey (1995); Foss (1993)). Management competence is then a core resource for the firm which is central to the way in which financial, labour, and other resources are utilised to meet the market opportunities and growth objectives to which the firm is being directed (Penrose (1959); Garnsey (1996); Foss (1997)).

We may expect therefore that part of the skewness of growth rates amongst small firms reflects both motivational and competence issues and a study of growth constraints must address them.

2.4. Categories of constraints on the growth of businesses

In the light of our discussion so far the central question from the point of view of this study of growth patterns amongst mature small firms beyond the start up phase may be stated as follows; given a desire for sustained growth, which factors, including management competence, constrain, and which factors enhance persistent growth? This is clearly a complex problem but to help resolve it we may usefully follow the distinctions made in the recent ACOST study of barriers to growth in small firms (ACOST (1990)), and consider growth constraints arising from the market environment, and constraints arising from restricted access to the internal and external resources for growth.

2.4.1. The Market Environment

The market environment in which the firm operates will clearly condition its growth possibilities. A given growth objective will need to take account of market conditions and, obviously, will become increasingly difficult to meet the more 'competitive' is the market environment. Much here depends on the precise market positioning of the firms (McGee (1989)). It is now well established that smaller firms, on average, perceive themselves as having relatively few

competitors. Thus a recent national survey showed that 40% of firms employing less than 10 employees considered they had 4 or less competitors as did 38% of those employing between 10 and 99 workers (SBRC (1992)). Smaller firms are thus typically found to be operating in local markets and/or as “niche” producers (Bradburd and Ross (1989), Penrose (1959)). They are, moreover, frequently dependent upon a relatively narrow range of customers. Thus in the same survey reported above it was found that around one third of the sample relied on one customer for 25% or more of their sales (SBRC (1992)). The growth prospects of smaller firms may thus be typically tied to the market fortunes of particular market segments or customers. The development of a persistent growth trajectory, which reaches beyond the scale of output required by those sectors or customers, requires a transition in market scope and marketing strategy, which may in turn involve geographic, as well as, product diversification (Woo and Cooper (1979), Stasch and Ward (1985), Hammermesh, et al (1978)). What appears to emerge from the existing empirical work is that faster growing firms are more likely to have made conscious decisions on market positioning to exploit their particular quality or technical advantages, and show a greater willingness to spread their product market base via product and geographical (export) diversification (see e.g. Macrae (1991), Solem and Steiner (1989), Kinsella *et al.* (1993), Smallbone, North and Leigh (1992)). An analysis of the differential characteristics of persistent growers must therefore include an examination of market constraints and responses to them.

In doing this attention must be paid to the overall macroeconomic circumstances in which growth occurs. This not only influences which kinds of constraints may affect firms in general (e.g. high interest rates exacerbating financial constraints) but also may affect firms differentially (export oriented firms being less affected by domestic recession than those predominantly dependent on the home market). Work carried out in Cambridge as part of the regular CBR programme of SME surveys shows that the nature of reported constraints on SMEs meeting their business objectives changed substantially

between 1987-90 and 1991-93. Financial constraints rated lower in the latter period as interest rates fell and increasing competition as a constraint rose in significance in the face of recession (Keeble (1996)).

2.4.2. *Access to Internal and External Resources for Growth*

Given a desire for persistent growth, and the market opportunities to pursue it, the achievement of growth will be influenced by the firm's ability to obtain the resources to expand its activity including those necessary for a transition away from a growth path based on a particular market niche or customer base to a wider or more diversified structure. Attempts to grow and diversify require a careful strategy to develop the appropriate resource base (Slatter (1987)). Limitations on the supply of labour, including managerial labour, finance and premises may each constrain the abilities of firms to grow, as may limited ability to access developing products and process technologies. There is a very large literature on the extent to which access to these resources may act as generic constraints on the growth of small firms as a whole (see for example ACOST (1990) Storey (1994)). This is not the place to review it. Rather our objective must be to see if there are *firm specific* characteristics which enable these constraints to be more readily overcome and which characterise sustained fast growers. Are there generic characteristics of persistent fast growers which enable us to distinguish them from other firms either in terms of access to resources, or the management of that access and on which our study might focus?

Compared to the literature on resource constraints upon small firms as a whole, the literature on their impact upon growth differentials across small firms is less well developed.

On the finance side faster growing firms are more likely to have shared the equity in their business as part of funding growth and are less likely to report financial constraints on growth. They are also more willing to devolve management decision making to non-owner

management and to recruit externally, as the internal management organisation of the firm evolves alongside its growth, (Wynarczyk *et al.* (1993), Smallbone, North and Leigh (1992), Cosh and Hughes (1996)).

The CBR small business surveys also clearly reveal that fast growing firms are more likely than slower growers to report constraints arising from shortages of management and marketing skills and skilled labour (SBRC (1992), Keeble (1996)).

Much of the empirical literature in this area emphasises issues relating to management strategy and organisation and the development of management competences. This echoes the emphasis on this in the more normative management literature, (e.g. McGee (1989)). It is quite consistent with the emphasis on evolving management structures, in the Stage or Life Cycle models of business growth (Casson (1982), Scott and Bruce (1987), Greiner (1974), Kotter and Sathe (1978)).

The role of strategic management development has also been emphasised by Reid (1993 and 1995) building on the work of Richardson (1964), Slater (1980) and Williamson (1975). An important insight here is that the recruitment of new management, given a shortage of internal resources, poses particular problems for firms because hiring 'outsiders' is more risky and integration costs may be high (Penrose (1959)). Their talents and capacity are much more uncertain from the point of view of incumbent management than are those of insiders. Moreover management requires team work. Familiarity with, and confidence in members of a management team requires time to develop. Outsiders are inevitably at a disadvantage in this respect. In the case of small firms these generic problems of expanding management are exacerbated by the changed position of 'insiders'. Their sense of ownership and informal inter-personal links are threatened as companies move from closely held informally organised businesses to the more hierarchical and formal forms of organisation that increased organisational scale and outside equity

funding often requires. Differential ability to manage these tensions may therefore be central to differing abilities to sustain growth.

2.5. Analysing growth constraints: a new approach

Taken as a whole the evidence on growth constraints is fragmentary and lags behind the theoretical and normative literature. As Storey notes in relation to management issues: "... the ability of the small business to grow must be influenced by the willingness of the owners to devolve decisions to non-owning managers... The selection, motivation, and retention of these individuals in the creation of a strong managerial team is likely to be important, but our research based understanding of this issue remains weak" (Storey (1994) p. 154). Moreover a central problem with research in this area is, that many of the statistical studies, of which it consists, examine factors affecting firm growth on a univariate basis, or are concerned with one or two factors such as market positioning, or management skills. Whilst the theoretical models however suggest a complex of interacting factors are at work. Case studies, which have the potential to exploit qualitative data, and tease out inter relationships between constraints provide an obvious way of helping to tackle this problem (for a good example see Smallbone, North and Leigh (1992)). They offer the opportunity of examining directly the way in which constraints interact. They allow a more precise focus on process as opposed to outcome.

Both econometric and case study work are, however, usually based on historic data and on the exercise of hindsight by interviewees. This is a particularly important shortcoming when we are concerned with interactions between management capability and constraints on small firm growth, and it is the managers themselves who are providing the underlying data.

The way forward piloted in this study is to provide a complementary analysis of motivations and constraints based on hindsight with a more forward looking approach. In this approach firms are asked

about their future expected constraints and their growth objectives. They are then observed in that future period to see how and if such constraints emerge and how they are resolved. Finally they are asked to provide an analysis with hindsight of the way in which these objectives were modified by the actual constraints experienced and their resolution.

This methodological approach is piloted in the research on which this report is based. It uses a 'real time' approach specifically designed to limit the potential of post event rationalisation to obscure the underlying links between management competence, and the constraints on growth imposed by external and internal factors. This approach when combined with the statistical analysis of performance and other qualitative and quantitative variables derived from the case studies and previously generated postal survey data can provide a powerful tool for disentangling the factors characterising the management of constraints across firms on different growth trajectories.

3. The Investigation Method

3.1. Introduction

The method of investigation adopted involved a sequence of contacts between the study team members and the participating business executives in two contrasting groups of firms. One group had persistent employment growth 1987-93, the other had stalled growth in the period 1990-93 after experiencing growth from 1987-90. The investigation was conducted in 2 phases. The first phase piloted the method of real time case study. The second phase built on the pilot to extend the period of analysis. The timing, content and output of each phase stage are depicted in the left hand side of Figure 3.1. More detail is provided on each of these stages in the following sub-sections.

3.2. Stage 1: Initial contact with the businesses

In autumn 1993 the CBR was due to send out its periodic research questionnaire to all SMEs on its databank. The opportunity was taken to include an invitation to participate in this study. From the positive responses 24 were selected in consultation with DTI to make up the sample of sustained and stalled employment growth firms with a further 12 selected as reserves. Letters were sent to the 24 explaining what participation in the study would involve, confirming their continued willingness to participate, and requesting company information and the completion of a simple questionnaire designed to establish matters of fact prior to the first interview.

In the event only 17 of these were willing to participate once they had a fuller understanding of what was involved and a further seven firms were obtained by using the agreed list of reserves set up to meet this eventuality. Background information on the participating firms was derived from their responses to the CBR surveys in 1991 and 1993 and, from the information the businesses management provided (e.g. company accounts and brochures), as well as from the ICC databank of standardised company accounts information.

3.3. Stage 2: First interview

The first interviews with participating businesses took place in January and February 1994. They were based on an interview questionnaire which was standardised for all interviews. A codable pre-interview questionnaire was also completed by each firm to provide a background to the qualitative case study analysis.

The intention was to interview more than one senior executive in the firm. This was for two main reasons. First, by the very nature of the study, it was important to touch on each and every aspect of the firm's performance and this was thought likely to require contributions from the Chief Executive, the Finance Director, the Marketing Director and the Operations Director where these were different. Second, it was

anticipated that one of the issues needing particular investigation was the extent of communication between managers and of shared perceptions of objectives, constraints and solutions.

To address the question of shared managerial perceptions, we asked each manager interviewed to complete a "company log". Each was asked to record on the log how his/her confidence in the firm's ability to meet its objectives changed over subsequent months relative to the position in January 1994 and the reasons for any change. In addition to throwing light on the extent of shared managerial perceptions, the log was also designed as a physical reminder of the manager's participation in the study and to provide an aide-memoir for the second interview discussions to be held six months later.

The firms were encouraged to get in touch with the consultant allocated to them if circumstances changed dramatically in ways that might be relevant to the study's purpose or might affect their continued participation.

3.4. Stage 3: Review of progress

During April/May 1994 the businesses were contacted by telephone to enquire about the emergence of any new constraints and about the resolution of either new or old constraints. The opportunity was taken during this care and maintenance call to schedule the appointments for the second interview to be carried out in July 1994. Two stalled growth firms withdrew at this stage and did not complete the first year of study. One was acquired and the new parent declined to participate. In the other case internal disputes led to subsequent liquidation.

3.5. Stage 4: Second interview

The second interviews with the 22 remaining companies were designed to be less formal than the first. No standard questionnaire was set up, the dynamics of the interview being determined by the particular issues raised at the first and during the progress review.

The case-studies which had been written-up at the end of Stage 2 were supplemented or redrafted in the light of the information obtained during the care and maintenance review and the second interview. In the course of the latter the firms were asked if they were prepared to have their case-studies made available to the DTI and published, either in anonymous form or completely open. We also asked why they had agreed to participate in the study and whether they were prepared to continue to do so if it were extended.

3.6. Stage 5: Final report on Pilot Study Methodology

In the final stage our assessment was made of the effectiveness of the methodology and the feasibility and desirability of extending it.

3.7. Effectiveness of the method

We can summarise our assessment of the effectiveness of the methodology under two headings; participation by the businesses and quality of outputs.

3.7.1. Participation by the businesses

Table 3.1 presents summary data on the extent of participation by the businesses involved in the different elements of Phase 1. It is clear from this table that, as expected, the initial commitment to participate declined as the study unfolded. However, the extent of initial involvement was high. All 24 firms were interviewed on the first occasion over an average 3 hour session involving an average of 2 senior executives. These interviews were very much assisted by the completion of all but one pre-interview questionnaire.

The decline in involvement demonstrated in Table 3.1 is, in our view, remarkably slight. The “care and maintenance” calls provided the opportunity for substantive discussions in at least 14 cases but in others they were only used to remind the executives of their involvement in the study and to set up the next appointment. By the

time of the second interview the interviewers were familiar with the firm and its circumstances and could quickly get to grips with the key issues. The same was felt by the firms who invariably fielded fewer executives (often the main contact only).

Second interviews were carried out with 22 companies. Good coverage of the issues during the care and maintenance call was claimed by one firm to reduce the need for second interview for which no time was available anyway. In the other case, the key executive could not spare the time because of changed circumstances since the agreement to hold the second interview. One of the second interviews was held with executives of the companies who had been forced to resign from the company since the first interview.

The company logs met with a mixed reception. Some executives disliked them ("not my style"), found them hard to complete especially on a fortnightly basis, or just could not find the time to complete them at all. But others either found them to be a useful aide memoir for the study or thought they were a valuable aid to crystallising their changing perceptions of the business. The mixed response to the company logs suggested to us that the face-to-face interviews were an important component of the longitudinal study which could not have been adequately substituted with a postal survey, combined with self-completion of the company logs.

Eagerness to maintain participation in an extension to the study was expressed by 20 of the 22 companies who had had a second interview and 18 were happy to have their case-studies included in a report to the DTI (knowing it could to be published), subject to the final version being cleared by them, rendered anonymous and commercial confidentiality preserved.

Why had the executives been prepared to participate and in most cases to continue to do so? There were essentially three reasons:- contributing to government policy; learning about the practices and

experiences of other small firms; and having independent consultants hold up a mirror to their operations.

3.8. The resource intensity of the Phase 1 study

Longitudinal studies are known to be resource intensive. This study confirmed it. However, sample selection and questionnaire design are as important in other methods of study, if not more so in the case of postal surveys. The extra burden of our particular longitudinal approach was its total reliance on face-to-face interviewing at the outset (and often with more than one executive) and obviously the interviews at later stages. But the latter were very much less resource intensive as Table 3.1 demonstrates. The reporting stage of any longitudinal study is also likely to be more resource intensive. However much the responses to the sequence of interviews are recorded in a codable format, it is by their nature that such studies will generate a richer mix of evidence and the nuances of specific circumstances which then become more time consuming to distil into the core and generalisable findings.

3.9. Quality of the Phase 1 pilot study outputs

Three features of this Phase 1 pilot study suggested that the outputs from the approach were likely to offer valuable insights into the constraints on SMEs in different growth categories:

- it generated close familiarity with the firms and their circumstances and engendered a more open portrayal by the companies of their objectives and constraints than otherwise would be revealed (e.g. by postal survey);
- the promise of the second interview and the provision of the company log induced a more positive and participative response amongst the companies than experienced in more conventional studies;

- the comparison of ex ante perceptions and expectations with how these are amended in the light of experience revealed important interactions between constraints;
- the study of the process of identification and the failure to resource, or the resolution of, constraints revealed that some constraints (e.g. finance) were symptomatic of deeper underlying constraints due to inadequate management strategy or resource.

3.10. Assessment of Phase 1

An assessment of the report on Phase 1 by the DTI led to the conclusion that the methodology could yield useful insights into the factors constraining growth and that the willingness of 20 of the participating firms to continue should be capitalised upon in a second phase. The second phase was to make more use of the codable pre-interview data to provide a statistical description of the survey firms, and to permit a longer 'window' of opportunity to observe the emergence and impact of barriers to growth, and capitalise upon the contrasts and insights generated in Phase 1.

3.11. Phase 2

The stages of investigation followed in Phase 2 matched those of Phase 1 and are set out in the bottom three panels of Figure 3.1. An initial approach confirmed participation with the 20 companies who had expressed a willingness to continue at the end of Phase 1. The same pattern of an initial pre-interview questionnaire followed by an in-depth interview in the late spring/early summer of 1995 was followed six months later by a care and maintenance call. Six months year later a second interview took place followed by the production of a final case study covering Phases 1 and 2. On average one executive was interviewed in each firm, with each of the interviews lasting on average 2½ hours. The mixed reception given to the use of the company log meant that they were not used systematically in the second phase unless the executive concerned wished to fill one in.

Of the 20 companies expressing a willingness to continue two went into liquidation in the course of Phase 2 and withdrew before the study was completed. A further 4 were acquired but continued to operate and completed all the interview and questionnaire components of the study. Thus 18 case studies covering Phases 1 and 2 were completed. The information derived in the pre-interview questionnaires in both Phases 1 and 2 were coded into a common format and used both in constructing the individual case reports and the statistical description of the sample in this report along with data on all 24 original companies derived from the 1991 CBR survey of the SME sector from which the case study firms had been chosen.

4. The Businesses Participating in the Study

4.1. Introduction

This section of our report describes the selection of the sample of businesses to be studied, their participation in phases 1 and 2 of the study, their industry, age and performance characteristics, and the growth categories to which they were classified. It provides a detailed picture of the businesses in the period before the commencement of the detailed case studies. This enables us to show the extent to which the firms met the requirements of the sample design and the background against which the case study analysis of constraints must be read. It also, however, extends the analysis to cover the period of the case studies themselves. This allows to see the extent to which the relative performance of the two groups changed during the study period. This is important since as we have seen the literature suggests that there is considerable turbulence in small firm growth rates.

4.2. Selection of the businesses

As already noted the businesses to be approached for inclusion in the study were selected from a large group who responded positively to an invitation to participate. This invitation was included in a short questionnaire sent out as part of broader research by the CBR to the

2028 firms on its SME data bank in the autumn of 1993. The firms to be approached for this study were selected in consultation with the DTI from the wider group which indicated a willingness to take part.

The businesses had to be small (i.e. 100 or fewer employees in 1990), and were to be in internationally tradable sectors, so that they were likely to be exporting or capable of doing so. They had to have experienced different growth patterns over the recent past. More precisely, the sample of firms was to be in two parts - those experiencing sustained growth in employment in 1987-1990 and in 1990-1993, and those whose growth in employment 1987-1990 was stalled in the later period. The first group was described as sustained growth and the second as stalled growth.

There were to be 12 firms in each group. So, 12 core companies were selected with 6 reserves (in the event that core firms declined to participate because of a change in circumstances and/or heart). As we have seen a number did decline to take part. Table 4.1 therefore shows how many of the participating firms were core and reserve, how many were manufacturing and services, and the total employment levels and growth represented by the sample.

Table 4.1 shows that sustained growth firms were more likely to refuse to participate than those in the stalled group once they had been contacted and the project discussed in detail with them. Of the final group of 24 agreeing to participate, 15 were manufacturing firms and 9 were from the business services sector. The sampling procedure produced two groups with the required employment growth characteristics. Whereas employment in both groups roughly doubled between 1987 and 1990 the sustained growth group massively outperformed the stalled growth group in the period 1990-93.

4.3. Growth and other characteristics of the businesses

Table 4.2 presents the full list of the businesses agreeing to take part with information on their employment levels and growth, age and

primary activity over the period 1987-93. The table reveals some characteristics that are in large part due to the sample design. These are not very young or very small micro companies (e.g. less than six years old, or with very few employees) because the sample was designed to cover companies with a track record over the period 1987-90, which were beyond the start up stage by 1993, and had grown beyond start up employment levels. Only in one case in the sample did employment fall below 10 and this is one of two businesses where employment size in the table is substantially underestimated because substantial use was made of subcontract labour (adding back subcontract labour leaves their growth rate categories unchanged for the years for which this comparison is possible).

The table also reveals other features worth noting that are *not* the product of sample design. There is considerable skewness in absolute growth. The largest 3 growers in absolute employment in each group accounted for almost 50% of the total employment growth in their respective groups over the period 1987-93. This is quite in keeping with results from much larger samples of firms (Cosh and Hughes (1996)). Secondly, several of the stalled growth group had grown so substantially from 1987-90 that over the period 1987-93 as a whole their performance overlaps with the lowest performers in the sustained growth group. Finally the median ages of the two groups are very close with the stalled firms marginally older.

It might be argued that the weaker growth performance of the stalled growth firms was a deliberate strategy and reflected the successful achievement of a business objective to grow smaller or consolidate activity levels. It was possible to check this against answers given by these firms to the much wider national survey carried out by the CBR in 1991. One question in that survey asked our sample firms to describe their growth objectives in the next 3 years (i.e. 1991-94). The question deliberately did not specify a measure of size to be used, but left it open to the respondents.

Table 4.3 summarises the responses for the stalled and sustained growers in our sample. The sustained growers were more likely to be aiming for rapid growth in 1991-94, whilst the preponderant objective for the stalled group was for moderate growth. Only one member of the stalled group was not aiming to grow at all, whereas we have seen in Table 4.2 that in the event 10 experienced a decline, at least in terms of employment. Motivational differences cannot therefore account for the different growth performance characteristics of the two groups.

4.4. Firms leaving the sample

Table 4.4 summarises attrition due to firms leaving the sample during phases 1 and 2 of the study. Of the original sample of 24 firms, two, (Management Consultancy and Aluminium Metal Works), went into liquidation before the completion of the first year of the project. Both of these were from the stalled group. Both were experiencing financial difficulties. One was subsequently dissolved and the other reconstructed following an acquisition. Two firms which completed the first year of the study declined to take part in the second year. One (On Line) was from the sustained growth group, the other (Footwear) was from the stalled group. Of the remaining 20 firms a further two (Steelwork and Software Products) had liquidators appointed before the completion of phase two of the study. These were both from the stalled group. Thus of the original 12 stalled companies, 4 failed and one withdrew, whilst of the 12 sustained growers, 1 withdrew.

The table also shows that a further 4 companies were acquired during the study. Of these, 3 (Medical Research, Plant and Ceramics) were acquired by foreign multinationals whilst the other (Signals) was acquired by a major customer. Each of these firms nevertheless completed their participation in the study. They provide an interesting insight into the role and impact of acquisition in relation to growth objectives and constraints.

This pattern of sample attrition means that there are two sets of companies which have case study information arising from the study. One is a set of 22 companies completing Phase 1 and the other is a set of 18 completing Phase 2. The core of this report deals with the 18 company sample completing both phases. It is for these companies that an overall case study report is available covering their performance and growth characteristics, their objectives and their constraint history for the whole period 1987-96. It is useful however to report on the full sample of 22, making use of codable data on their growth performance and characteristics available from phase 1. This is for two reasons. First, it allows us to capitalise on information gained in the first phase of the study. Second, it allows us to check on possible biases arising from particular companies falling by the wayside through liquidation or withdrawal as our study proceeded.

4.5. Sustained and Stalled Growth: Companies completing Phase I

Charts 1(a)-(d) summarise the variety of growth rate experiences, in terms of both employment and turnover, for the 22 Phase 1 firms in the period 1987-93. These charts plot indices of both measures of size for the fastest and slowest growers in the sustained and stalled groups, and for the median growth firm in each, where growth is measured over the period 1987 -93 as a whole.

In terms of employment a comparison of Charts 1(a) and 1(b) confirms the clear break in growth patterns for the stalled group produced by the sample design. It also confirms that the worst performing sustained grower is worse in overall performance over the period 1987-93 than the best stalled growth firm, although it is better than the median performer in that group.

The comparison of turnover growth is shown in charts 1(c) and 1(d). The turnover data are not adjusted for inflation so some upward bias may be expected. The charts confirm the superior performance of the sustained growers over the period as a whole. This is true whether we

compare the fastest, median or slowest turnover growers in each group. Chart 1(b) also shows that turnover growth faltered for firms in the stalled group just as employment growth did. It also shows that some firms with stalled employment growth nevertheless managed to sustain positive turnover growth over both sub-periods. Both turnover and employment growth are therefore considered together when we assess the case study evidence on growth and constraint characteristics.

Table 4.5 provides a broader statistical summary of growth patterns using employment and turnover growth for each individual firm in the 1987-93 period. The table reveals that for both sustained and stalled firms turnover and employment growth was lower in 1990-3 than in 1987-90, no doubt in part reflecting the weaker macroeconomic environment in the latter period. These differences between time periods are statistically significant for turnover growth for both groups of firms. In the case of employment growth it is only for the stalled group that the difference is statistically significant.

The comparison of growth between the groups in Table 4.5 shows that the mean and median growth of the sustained and stalled groups in terms of both turnover and employment are not statistically different in the 1987-90 period. They are however statistically significantly different in the sub period 1990-3 as required by the sample design. Moreover, the performance differences in the latter sub-period are substantial enough to ensure that the sustained group are statistically significantly superior performers on both growth measures for the period 1987-93 as a whole.

4.6. Profit Margins and Export Performance

So far we have concentrated on performance in terms of growth. As an additional exercise in performance comparison Table 4.6 considers patterns of pre-tax profit margins across our time periods and groups of firms, while Table 4.7 performs a similar role for exports. The profit margin is measured as the ratio of pre-tax profits to turnover

and is measured in 1987, 1990 and 1993. Similarly exports are measured relative to turnover.

4.6.1. Profit Margins

Table 4.6 shows that in 1987 the mean profit margin of the sustained growth firms was below that of the stalled group. Because of the wide variation in the profit margin across firms in both groups this difference was not, however, statistically significant. The table also shows that for the sample as a whole profit margins were higher in 1990 than they were in 1987 and this difference was statistically significant. The mean profitability of the sustained group was significantly higher in 1993 and in 1990 than in 1987. The stalled employment and turnover growth of the stalled group did not lead to a relative worsening of their profit performance on average compared to the sustained growers.

4.6.2. Exports

Table 4.7 reports on export activity in the period 1987-93. The sample design required that firms were to be drawn from the exportable manufacturing and business service sectors of the CBR databank, and should include a variety of export intensity. Table 4.7 reflects this design and shows that the number of firms exporting in the sample rose substantially over the years 1987-93. Thus by 1990, after the period in which both the sustained and stalled group had expanded their employment, three quarters of the sustained group were exporting as were 60% of the stalled group. Those proportions were higher still by 1993.

The differences in mean and median values in the table show the presence of substantial skewness in the export intensity in both groups. It is clear however, that on either measure the export intensity of the sustained growers was higher than for stalled growers, and rose between 1987 and 1993. The stalled group were both less likely to export and to have lower levels of export intensity. Clearly the nature

of export markets and the constraints and opportunities they offer are important issues in studying the variations in overall growth performance in our sample firms. So too is the extent to which relative reliance on domestic markets opens firms to the impact of domestic downturns in economic activity.

4.7. Growth Profitability and Survival: From Phase 1 to Phase 2

Chart 2 provides a visual summary of the turnover and growth performance of the phase 1 sample of 22 firms and extends the comparison to cover the period to 1995. Except for Medical Research which was unable to provide the necessary data for 1995, the absence of observations for that year reflects withdrawal from the study prior to phase 2, or liquidation and withdrawal during it.

The companies in each group are listed in the same order as in Table 4.2 (i.e. in terms of absolute employment growth over the period 1987-93). It is immediately apparent that several of the sustained growers experienced a deceleration in either employment or turnover growth or both in the period 1993-5 notwithstanding the somewhat improved macroeconomic conditions of those years compared to the early 1990s. Equally in one or two cases (most notably Plastics) growth was resumed in the stalled group.

A similar analysis for profit margins is shown in Chart 3. There we find that for 5 of the sustained growth group profit margins fell in the period 1993-95, with 3 firms recording losses in the latter year. In the stalled group poor financial performance led to 2 failures (Software Products, Steelwork) and only one firm (Waste Management and Recovery) experienced a profit gain.

These developments highlight the variability in SME performance over time and the extent to which relatively few firms maintain persistent *steady* growth. In presenting our case study material we therefore refine our groupings of firms into four classes; sustained

growers 1987-1995; sustained growers faltering 1994-95; stalled firms recovering after 1993; and persistent stalled firms.

4.8. Sustained and Stalled Growth 1987-95: Companies completing Phase 2

4.8.1. Growth in Employment and Turnover

We can now turn to an analysis of those 18 companies who completed both phases of the study and whose detailed case study material is the basis for the qualitative analysis of growth constraints contained in this report. One of these companies (Medical Research) was unable to supply complete data for 1995 due to changes in accounting arrangements following acquisition by a Japanese multinational. It is therefore excluded from the statistical analysis. Its case study, however, is included in the qualitative analysis of constraints.

Charts 4, 5 and 6 summarise the growth experience of the Phase 2 sample of firms. Chart 4 ranks them by employment growth over the whole period 1987-95 and Chart 5 by turnover growth over the same period. Chart 6 focuses on the period 1990-95 and plots turnover and employment growth simultaneously to see to what extent focusing on one measure or the other might change growth performance characteristics.

Chart 4 shows that with the exception of Plastics, the sustained group outperformed the stalled group over the period 1987-95, which matches our conclusions for the Phase 1 set over the period 1987-93. The performance of Plastics over the period as a whole reflects its exceptional fivefold expansion between 1987 and 1990, and its recovery in the period 1993-1995. Chart 5 reveals that there is more overlap between the groups in terms of turnover growth than is the case with employment growth. Plastics is once again a good performer in the stalled group with rapid turnover growth in both 1987-90 and 1993-95. Computer Consultancy too performs well in turnover terms, although in this case, as Charts 2 and 3 show, the

good performance predates 1993. In the period 1993-5 this company was on a downward trajectory, and by 1995 was recording profits substantially below those of earlier periods. Chart 6 confirms the broad consistency between turnover and employment growth after 1990 in these firms.

Charts 7 (a-d) elaborate on Charts 4 and 5 by comparing the highest, lowest and median growers in our sample of 17 firms, split into sustained and stalled group. The charts tell essentially the same story as those shown earlier for the Phase 1 sample over the period 1987-93. With the exception of the fastest proportionate stalled grower (Computer Consultancy) the sustained growers outperform the stalled group in terms of turnover and employment growth at each level of comparison (fastest, median slowest). It is apparent however that this is frequently associated with faltering performance after 1993 compared with the stalled group. The latter have however as we have seen lost several poor performers through liquidation.

The performance of the phase 2 sustained and stalled groups over time, and compared to each other, is summarised statistically in Table 4.8. It shows that for the Phase 1 sample, just as for the Phase 2 sample, the sustained growers had a superior employment and turnover growth performance in the period 1990-93. For the sustained growers there was a significant decline in employment growth between 1990-93 and 1993-95. For the stalled group there was a statistically insignificant improvement. The result was that no significant differences remained in their average growth performance in the period 1993-5.

A rank correlation analysis for all 17 firms shows an insignificant but negative correlation between employment growth in 1993-95 and in 1987-90 and 1990-93 and a statistically significant negative correlation between turnover growth in 1993-95 and in 1990-93 (Kendalls coefficient of rank correlation -0.3088 significant at 5%). The superior performance of the sustained growers in the period 1990-93 ensured, nevertheless, that over the periods 1990-95 and

1987-95 they outperformed the stalled firms especially in terms of employment.

Turnover growth declined for both groups in 1993-5 compared with 1990-95 but in neither case was the change statistically significant because of the wide variation around average growth in each group. Once again the exclusion of failing firms from the stalled group leads to some overstatement of that group's performance as a whole.

4.8.2. Profit Margins and Exports

Tables 4.9 and 4.10 complete our performance summary of the Phase 2 firms by looking at profit margins and export intensity in the period 1987-95. The most striking feature in Table 4.9 is the poor profit performance of the sustained group in 1995 compared to both the stalled group in that year, and to the sustained group's previous experience. After recording statistically significantly higher profit margins in 1990 than in 1987, the sustained groups average performance slumped between 1993 and 1995, primarily because the figures for that year reflect losses for Test Equipment, Labels and Software. However the performance of the stalled group excludes the firms which were liquidated prior to 1995 and therefore overstates the groups performance. The wide variation in individual profit margins over time and within groups prevents the profit margin differences for the sustained groups between 1993 and 1995 from being significant. Similarly the differences between the stalled and sustained groups profit margins in 1995 are not statistically significant.

Table 4.10 confirms the relative export intensity of the sustained group shown by our analysis of the Phase 1 sample. By 1995 their superiority in this respect was statistically significant. The importance of overseas compared to domestic markets for this group is therefore an important feature in analysing the impact of overall demand on their growth constraints and prospects.

5. Ownership, Competitive Advantage, Growth Objectives and Constraints: An Overview

This chapter provides a background statistical analysis of the competitive position, and growth constraints of the phase 2 sustained and stalled firms. It allows us to provide a detailed quantitative comparison of the characteristics of these two groups as a backdrop to the more qualitative assessment of the case material.

It must be emphasised that the data described here were not constructed for the purposes of a large scale econometric or statistical analysis. The deliberately restricted number of firms reflects the emphasis on a case study approach and the pilot nature of the Phase 1 project. Nevertheless the investigation method involved the collection of information in a codable form. This along with the existence of broader CBR survey information on these firms permits a quantitative description of patterns of ownership; customer dependence; growth objectives and constraints; competitive advantages; and factors perceived to be relevant to meeting business objectives. We describe the sample as a whole, and the stalled and sustained growth subgroups separately. The analysis extends over the period 1994-95 covered by the Phase 1 and Phase 2 interviews, and also the earlier periods 1987-93.

In providing our background analysis we provide tests of statistical significance of differences over time and across the sustained and stalled groups. Use is made of both parametric and non-parametric methods in view of the small sample sizes and the skewed distribution of many of the variables.

5.1. Share Ownership

Table 5.1 reports on the ownership characteristics of the firms. As we might expect they are typically closely held. The median board owns 70% of the shares. These holdings are however less concentrated in

the hands of the CEO in the sustained growers. The median stalled growth firm had 60% of its shares owned by the CEO compared with 15% for the sustained group, although the variance around this average and the small sample size prevents the difference from being statistically significant. The extent to which growth is constrained by a willingness on the part of founder owners to give up equity, either to incoming board members, or outside investors, is an important issue in discussing financial constraints and we turn to it in detail in discussing the lessons to be drawn from our case studies.

5.2. Competitive Advantage

Table 5.2 reports on the competitive advantages which our participants felt especially characterised their business. They were asked this question in 1994 and 1995 and we report results for both years here. Two pieces of information are provided. First, the median score given by firms for each competitive advantage of their firm (0 = completely insignificant, 9 = highly significant). Second, the table reports the number of firms scoring a particular advantage in the range 7-9.

The table shows that both sustained and stalled growers rate personal attention to client needs, product speciality or quality, and reputation as their most important competitive strengths. This is in keeping with results of the CBR analysis of its SME database as a whole (SBRC (1992)).

With the exception of the 1994 responses of the sustained group, marketing and promotion skills received a lower rating. It is interesting that the sustained groups views changed over the study period. The importance of marketing as a constraint is an issue to which we return in analysing the case material.

Two other aspects of the table are worth remarking upon. The first is that the sustained group were more likely to regard themselves as having a technological edge, and consistently less likely than the

stalled group to believe that they competed in terms of price or cost. Moreover by 1995 they believed more strongly than the stalled group that their product range was an advantage. The extent to which sustained growth reflects diversification away from niche markets and reflects technological rather than cost or price advantages is also developed more fully in our discussion of the case material.

5.3. Customers

Table 5.3 provides information on the degree to which participating firms relied heavily on their business with one or two larger customers. In two thirds of the firms the largest single customer accounted for over 10% of sales, and the largest 5 customers accounted for over 25%. In seven cases the largest five customers accounted for over 50% of sales. Two firms relied upon one customer for over 50% sales. There is no clear difference in key customer dependence between stalled and sustained growers, but the extent to which both groups include businesses with a highly concentrated customer base makes the nature of that customer relationship, and the strength and strategy of that customer of potentially critical importance in growth patterns. We might therefore expect widening the customer base to be an important aspect of meeting growth objectives.

Some indication of this can be gained from Table 5.4 which examines the importance of market increasing strategies, alongside others, as firms seek to meet their overall business objectives. Each strategic factor was scored in the range 0-9 and the table reports the number of firms recording the highest scores (7-9) for each factor. The table includes results for the period 1994-5 and for the period 1995-6.

In both periods both groups show a preponderance of firms recording market increasing strategies as their most significant expected factor in meeting their business objectives. In both periods however it is important to note that the stalled growers are much more highly focused on *domestic* markets. The sustained growers are much more

likely to emphasise *overseas* markets. This is in keeping with our earlier finding of the extent to which this group is involved in export activity, and of the level of export intensity of its members, compared with the stalled group.

The table also reveals that in 1995/6 the sustained group were exhibiting a wider range of strategic factors which they expected to assist them in meeting their objectives, with a stronger representation for technological improvement and managerial expertise and organisation factors than was true for the stalled group. The role of exposure to overseas markets and management/ organisational factors in meeting objectives are, therefore again, issues to which we return in our case study analysis.

5.4. Growth Objectives

A potentially important factor in explaining growth performance differences between firms is their growth objectives. It is well known that large numbers of smaller businesses do not have substantial growth ambition. Our sample was however chosen on the basis of having substantial growth over at least one of the two time periods 1987-90 and 1990-93. A relevant issue for this sample is therefore whether their divergent growth performance in the second and subsequent periods reflects different growth objectives.

Our investigation method allowed for growth objectives to be assessed at several points in time, over different time horizons, and with both a prospective and retrospective viewpoint.

The results are summarised in Table 5.5. The participating firms were asked in the interviews and in separate pre interview questionnaires in both Phases 1 and 2 to indicate their growth objectives. They had also, as part of their responses to the CBR National Survey in 1991, categorised their growth objectives for the period 1991-94 into one of four groups: stay same size; grow smaller; grow moderately and grow rapidly. In that survey no dimension of growth was specified. In the

interviews and pre interview questionnaires firms were asked which dimension they had in mind (sales, profits, employment, etc.). Each firms Phase 1 and Phase 2 responses have been coded to match the 1991 survey response growth groupings. It is worth emphasising that employment growth was never a primary growth objective in any of our case study firms, although it sometimes played a secondary role as a perceived consequence of turnover growth. The table can be interpreted most readily as growth in terms of turnover.

Perhaps unsurprisingly no firm was prepared to declare that growing smaller was a medium term objective. However, over a one year time horizon, 3 sustained growers reported this to be the case (one looking forward to 1995/6 and two looking backward over the period 1994/5). A number of sustained growers also reported their prospective objective in both 1994/5 and 1995/6 and longer periods as being to stay the same size or consolidate following their previous periods of growth.

As we saw in the previous chapter for the sample of 24 firms as a whole, the 17 sustained and stalled firms in Phase 1 did not differ significantly in their growth objectives in the period 1990-3 (when their actual growth diverged). When these 17 firms were asked what their growth objectives, with hindsight, had been in that period the results are similar. Both groups containing a small number of firms reporting more moderate objectives than they had professed at the beginning of the period.

The surviving stalled growers all have moderate or substantial growth targets in the short and medium run in each sub-period, and both in prospect and retrospect. Their earlier stalled growth is therefore difficult to interpret as motivationally based. However the down grading of the growth objectives of the sustained group during the study period 1993-95 compared to the early 1990s may be related to their faltering growth performance as a group in the mid-90s. The causes and effects behind this are probed further in the case studies.

5.5. Growth Constraints

In analysing the constraints on meeting their growth objectives our background investigation once again draws upon the interviews in Phase 1 and Phase 2, the respective pre interview questionnaires and the wider data contained on our sample firms in the CBR databank. The constraints following our conceptual and empirical review in Chapter 2 are grouped into five broad categories: market demand; finance; management and labour; and technology and premises.

We can first look at the constraints which the participating firms reported (with hindsight) had affected their growth in the period 1990-93 before the beginning of Phase 1 of this study. This is shown in Table 5.6. There and in the following tables, covering the Phase 1 and Phase 2 study periods respectively, two pieces of information are provided. The first reports the median score for a particular constraint (on the scale 0-9) whilst the number in brackets indicates the number of firms scoring that constraint as very significant (i.e. scores 7-9).

Table 5.6 shows that the sustained and stalled growers show very similar patterns of constraints. Sustained growers report somewhat higher scores for management and labour constraints, and somewhat lower scores for overdraft finance. In general both groups report market demand as the most substantial constraint with the sustained growers emphasising overseas markets more highly than the stalled group. More firms cited demand constraints than any other set of constraints. Finance, and management and labour were roughly equally cited after market demand.

Table 5.7 summarises the experience of the firms over Phase 1 of the study, from 1994-5. It contains a prospective and retrospective assessment of constraints. The retrospective analysis was obtained at the beginning of Phase 2. Once again overall market demand ranks highly in both groups, and demand constraints are cited more frequently than any other. The overseas component of demand constraint is once again more marked amongst the sustained growers,

both in prospect (where the difference is statistically significant), and in retrospect.

Management and labour constraints are once again rated more highly by the sustained growers. The labour skill constraint difference is statistically significant. The experience of both the sustained and stalled growth firms over the period 1994-5 led them to raise the significance of management constraints. The sustained group also uprated constraints arising from the availability and cost of overdraft finance. These changes reflect in part the faltering of growth and profit performance in the period 1994-95 which we have already observed for some members of this group. A final feature of note is the retrospective emphasis in the stalled group upon skilled labour, which in prospect no members of the group had rated 7-9. The occurrence of differences such as this in prospective and retrospective analysis is an indication of the degree to which small businesses face unanticipated changes in the constraints they face, and the dangers of relying on single cross section snapshots in assessing growth constraints.

Table 5.8 repeats the analysis of constraints for the Phase 2 period 1995/6. Here we only have data on prospective constraints. A qualitative analysis of retrospective outcomes is contained in the case studies in the next chapter. The significance of skilled labour for the sustained group is even more marked than before and management skills are again emphasised. More firms cited constraints in the management and labour area than any other, thus replacing concerns with demand, finance constraints ranked third. For the sustained group a notable change was the increasing significance of technology based constraints both relative to stalled firms and to the past experience of the sustained group.

A notable feature of all three analyses (re 1990-3, 1994-5 and 1995-6) is the extent to which financial factors do not dominate. This is in contrast to the period 1987-90 when availability and cost of finance was the most highly scored constraint in this group of firms. This may

in part reflect less pressure for funds in the stalled group as their growth faltered 1990-3 and amongst sustained growers as they were affected by the downturn in demand in the early 1990s. This too is an issue taken up in the analysis of the case study material.

5.6. Constraints: Internal and External

Before turning to our case based analysis it is worth considering the constraints we have analysed in terms of the extent to which they represent internal and external pressures upon the firm. In analysing the major constraints that we have identified, it is usual to regard market demand, finance and access to technology as external constraints, and to regard labour, management, and marketing skills as internal. Seen in these terms it is clear that firms in our study are constrained both internally and externally and that the balance changes over time. What is perhaps more worthy of emphasis is the interplay between external and internal constraints. Management skills as an internal constraint may be eased by access to an external market in managers, or by an appropriate human resource development programme. Equally a constraint described as one caused by external finance market conditions may reflect an internal management failure to generate internal cash flow, or develop either a financial plan or access appropriate market providers to meet that plan. The way in which these interconnections work out in the firms in our sample are the subject of the next chapter.

6. Tackling the Constraints: The Case Studies

6.1. Introduction

In this section we draw on our qualitative and quantitative material to discuss the nature and resolution of the constraints facing our sample firms. We present our analysis for four groups. The sustained growers who maintained their dynamism over the period 1987-95. The sustained growers who faltered 1994-96. The members of the group

who stalled 1991-93 but then recovered and finally those who stalled in 1991-93 and had not turned around during the case study period.

6.2. Sustained Growth Group

6.2.1. *Consistent Growth 1987-95*

In the sustained growth group four companies performed consistently over the whole period 1987-95. These were Communications which sustained dynamic growth and employment performance and steady profit margins in each subperiod of the study; Pharmaceutical Studies which although marking time to some extent in the period 1993-5 both improved its profitability and export intensity whilst doing so; Plant which went through a major acquisition programme in 1990-93 and experienced a step change in employment as a result. It sustained moderate turnover growth over each subperiod and improved its sales margins in 1993-5 following a dip in the aftermath of acquisition. Finally Medical Research showed spectacular growth to 1993 and expanded into substantial new premises in 1993-5. Plant was itself acquired by a Swedish multinational in the run up to Phase 1 of this study. Medical Research was acquired by a Japanese multinational in 1995.

All of these firms were export intensive with an export turnover ratio of over 50% throughout the period 1987-95. Two of them (Communications and Pharmaceutical Studies) had rapid growth as their medium term objective, for all or most of this period. Plant had rapid growth as its objective in the period 1990-93, whilst Medical Research maintained moderate growth objectives throughout.

Plant is a mature business founded over 50 years ago and operating in a mature market, designing, manufacturing and servicing pumps, process equipment, and plant, for the minerals, water and chemical industries. It already had 42 employees in 1987 and a turnover of £4.5 million. Its employment expansion after that was by acquisition not organic growth.

The other three firms in this group were all founded in 1985 and are in information and science intensive expanding sectors. Each of them experienced organic employment growth which took them across the 25-50 employee threshold at which, it is often argued, important internal organisational changes are required (ACOST (1990)). Thus Pharmaceutical Studies employment rose from 19 to 90, Medical Research from 10 to 100 and Communication from 21 to 56..

The constraints experienced by these four firms can be summarised in terms of our main standard headings of Market Demands, Finance, and Management and Labour.

6.2.1.1. Market Demand Constraints

Of these four firms Pharmaceutical Studies has never felt constrained by demand factors. Plant reported consistent significant concerns about its market demand. Medical Research and Communications reported this area as a major constraint only in the period after their start up in 1987-90, the former citing increasing competition and access to overseas markets as major issues, and the latter emphasising overall market demand.

The market demand constraint experienced by Plant reflects the nature of its market, in particular problems of access to world markets in a mature industry with major international competitors. The company had achieved its rapid growth objectives in the period 1990-3 by an acquisition which produced a step change in its employment levels. A particular problem following this was access to Eastern European and former Soviet markets in the face of 'nightmarish' political and economic changes. Turnover failed to grow in line with the added capacity, and sales margins suffered. The strategic response to this was to sell out to a Swedish multinational. This both eased problems of access to export markets, widened the company's customer base and eased competition pressures. It also led to the rationalisation of plant capacity in the UK with a switch of customised production to Sweden, and an expansion of more

standardised scale-economy generating activity to the UK. The successful transition from independence to subsidiary has been achieved by the MD of Plant who has maintained his original management team, and overseen the restructuring following the merger.

The market demand constraints faced by Communications and Medical Research in the late 1980's are in large part a reflection of their relative youth at the time. In the case of Communications the company's management has pursued an active and effective sales and marketing policy in response to demand constraints. It has found access to multilingual sales skills relatively easy in London and has significantly expanded its sales force. It has also systematically accessed foreign markets by establishing overseas offices in the US and Australia. For the future it intends to acquire a company serving the end users of telecom services where it currently has no presence, and is developing more bespoke packages for customers. It has also generally developed its product range within an overall strategic plan.

Medical Research offers its clinical research management services to the pharmaceutical industry, which has been a growth market in the period 1987-95. In the late 1980's the company was not very proactive in potentially dynamic overseas markets and tended to react in an opportunistic way. It did not face an overall demand constraint, but considered access to overseas markets and increasing competition in its specialised markets as constraints. Its response was to scale down the companies overall growth objectives and develop a focused approach to marketing and contract management. This involved developing a management system centred on "functionally driven" project management with a clear accounting, cost, and monitoring and invoicing system. In addition the CEO (with a background as a clinical researcher) delegated marketing functions down through the management hierarchy. The introduction of these changes meant that the company was able to market itself more effectively in the EU and US, and in the event, continue its spectacular turnover growth into the 1990s.

In summary there appear to be a number of characteristics associated with these responses of these firms to perceived constraints on market demand.

- Market conditions were seen as challenges which required a systematic management response
- Access to overseas markets was seen to require the development of specific marketing and sales skills either internally, or through merger with an international player, and where necessary, the establishment of overseas offices
- Product development and marketing were developed alongside the management reorganisation necessary to put the overall strategy into effect.
- Management adopted a flexible approach to meeting demand constraints with a willingness to delegate and reorganise functions as required by the changing scale and complexity of the business.

6.2.1.2. Finance

Financial constraints either in terms of overdraft facilities or finance for expansion have rarely been the most important of the perceived constraints facing these companies. However this has partly been due as we shall see, to a reluctance to expand faster than internal cash flow permits because of a belief in the inadequacy of UK capital markets.

In the case of Plant financial factors have been insignificant throughout partly through the maintenance of reasonable sales margins and a reliance on internal funding, and latterly as a result of being part of a larger multinational enterprise.

Medical Research experienced persistent but moderate constraints on finance for expansion in the 1990s. Its response to this was to

introduce the management system already described in the market demand section. Maintaining cash flow is a major issue for a contract research organisation like Medical Research and its new system was specifically aimed at producing both accurate costing and timely invoicing on its contracts. This, combined with moderate growth objectives, a policy of funding largely internally, and, after acquisition, access to its multinational parents cash flow have prevented the finance constraints being dominant.

Communications reported significant financial constraints in 1987-93 and again in 1995/6. Its Managing Director was scathing about the UK venture capital industry and access to external funds generally. It is company policy not to use external funding but to rely on internal cash flows and match growth accordingly.

Pharmaceutical Studies experienced financial constraints in terms of both funding for expansion and overdraft availability in the late 1980s. Their response to this was to change banks, zero their overdraft, and effectively access venture capital through 3i (with a consequent 7% dilution of equity). They also computerised their financial system in agreement with their new banker and 3i.

A number of conclusions may be drawn for the experiences of these companies.

- The predominant reaction to financial constraints in sustained consistent growers has been internal. The actual or perceived inadequacies of the UK capital market had led these companies to match expansion to their internal cash flows and/or to seek to access cash flows via the internal capital market of a bigger multinational organisation after acquisition
- These 'internal' strategies have required the development of effective internal costing budgeting and invoicing procedures often involving the introduction of computer based IT systems

- In one case a determined response to financial constraints was associated with an effective approach to outside funding

6.2.1.3. Management and Labour

Communications, Medical Research and Pharmaceutical Studies each reported significant constraints under this heading, but for Plant this was not a major problem. Communications identified access to skilled labour as its most significant external constraint throughout the 1990s. Whilst it has largely been able to recruit multilingual sales personnel, its requirement for skilled consultants and researchers has remained a perennial unresolved issue. A recruitment drive in the early 1990s helped but it expects to remain constrained despite active use of agencies to identify potential recruits with the right mix of skills and personal characteristics.

Pharmaceutical Studies has experienced both skilled labour and management skill constraints in the period 1994-6. These in large part reflect the organisational changes the company put into effect to manage its rapid growth and overseas expansion in the mid 1990s. This requires a marriage of technical competence with project management skills and remains the central future constraint facing the company. In meeting this constraint Pharmaceutical Studies will build on the human resource development component of its strategic business plan. This helped overcome the skilled labour and management constraints it experienced in its early phase of rapid growth to 1993 when it first introduced new management information systems.

Medical Research identified marketing and sales skills as its most significant internal constraint in all periods as well as rating general management skills as a critical issue in the 1990s. In many ways the problem is the same as that facing Pharmaceutical Studies; to find the right combination of technical skill and project management acumen to match their management systems requirements. Help has been forthcoming from both consultants and the firm's new Japanese

parent in tackling the problem, and its resolution will be important in securing future sustained growth. The company may also be helped in its recruitment strategy by its move to a single grade A office site from a set of scattered premises.

In summary it appears that

- the consistent sustained growth companies have been willing to reorganise their management systems as required by their internal developments and the external demand and financial conditions they faced.
- an important external constraint facing some of these companies has been the availability of technically qualified management with project management skills, and in the case of Communications the ability to recruit and retain consultant/researchers.
- this constraint remains with the companies despite creative attempts via agencies and human resource development programmes.
- the management constraint itself arises from the recognition by these companies of the need to develop appropriate management systems to match their growth objectives.
- the companies recognise the constraints and have developed strategies to address them.

6.2.2. Sustained Growers with faltering performance after 1993

Seven companies fall into this category (Signals, Clothing, Engineers, Stickers, Test Equipment, Labels and Software). Each of these experienced a slackening off in expansion after 1993 and 6 experienced declining profit margins on sales over the period 1993-5 or losses in one or both of those years.

Signals was incorporated in 1983. It specialises in signalling and microprocessor applications for communications products especially mobile radio. Its growth objectives from 1991 onwards have been for moderate growth. It quadrupled sales and doubled employment in the late 1980's and increased them by 56% and 35% respectively in the early 1990s. By 1993 it employed 135 people compared with 45 in 1987 and had sales of £5m. In the early 1990's it relied on a limited UK customer base. Its top 5 customers accounted for 75% of sales, and exports for only 5-10% of sales. By 1995 employment and turnover had fallen to just above 1990 levels and profit on sales margins had fallen to 2%. The company was sold to a major customer in 1995.

Clothing was incorporated in 1981 having been a partnership since 1971. Its core business is in the manufacture of safety products for road users. Its growth objectives were for moderate expansion except for 1991-4 where with hindsight rapid growth was cited. Between 1987 and 1993 it expanded sales and employment threefold. The latter rose from 14 to 72 employees. This expansion was primarily in the UK which accounted for approximately 95% of its output. In 1995 over 50% of its sales were accounted for by its largest 5 customers. Turnover and employment fell by 21% and 40% respectively between 1993 and 1995 and the company recorded losses on sales in the latter year. The company went into liquidation and a new entity was created to carry on its business with its creditors support.

Engineers is a consulting engineering company which grew out of a partnership formed in the early 1970s. The company is heavily dependent on the domestic market with over 97% of sales going to the UK. Its top 5 customers in 1995 accounted for between 10% and 25% of sales. Turnover grew by 350% and employment by 270% (from 30 to 84), in the late 1980's. Its growth objectives for 1991-4 and 1995-6 were for rapid expansion. Growth performance however reached a plateau in 1990 with only minor expansion to 1993 and then to 1995. The company made losses in 1994 and 1995.

Stickers produces stick-on labels primarily for customers in the food industry. It depends almost exclusively on the UK market in which it faces a large number of competitors (around 100 in 1994 of whom 70 it estimates to be larger than itself). Its primary customers are suppliers to large supermarket chains. Its growth objectives for 1991-4 were moderate and from 1994 onward for consolidation/survival. It showed impressive expansion from 1987-93 with employment trebling from 12 to 36 employees and turnover rising almost four fold to £3 million. Its performance plateaued in 1994-6 and the profit to sales margin declined towards losses by 1995.

Test Equipment was founded in 1980 to serve a niche market in electronic test equipment supplying a fairly widespread customer base. In 1994 the largest 5 customers accounted for less than 25% of sales. Its medium term objectives were always for rapid growth. Employment rose from 11 to 29 and turnover trebled between 1987 and 1993, with exports rising even faster to reach 40% of sales by 1993. Most of the turnover growth occurred by 1990 however, and exports fell between 1990 and 1993. Its overall performance plateaued after 1993 and the company was making losses by 1995.

Labels, like Stickers, produces self adhesive labels for the food drink and household goods sectors. Its export activity is negligible and its principal UK customers supply a market dominated by UK supermarkets. Its employment doubled from 12 to 28 between 1987 and 1993 whilst turnover quadrupled. Growth was much more modest after 1993 and by 1995 the company was reporting losses. Its growth objectives were moderate from 1991 onwards.

Software was set up in 1978. It develops, sells, and markets computer programmes and related consultancy services to the engineering and castings industries. Its growth objectives were moderate throughout, with survival its main preoccupation in 1995/6. Employment rose from 20 to 33 between 1987 and 1993. Exports rose from zero in 1987 to 30% of sales in 1993 as sales themselves doubled to £1.1 million. It considers that it has only two competitors in its market

niche and sells to a diversified range of blue chip customers. By 1993 it was however heavily dependent for research contract funding on a major US customer. The termination of that relationship in 1994/5 plunged the business into a financial crisis.

6.2.2.1. Market Demand

Five of this group of companies relied almost exclusively on UK market demand (Signals, Clothing, Engineers, Labels and Stickers). All except Stickers identified overall market demand as a major constraint after 1991, and Labels cited it throughout. Stickers in the same industrial sector as Labels was concerned throughout by increasing competition but not by the growth of overall market demand. Test Equipment and Software which both had substantial overseas sales activity by 1990 never cited demand or competition as a serious constraint.

Signals was particularly vulnerable to the downturn in overall market demand it experienced in 1994-96 because of its heavy reliance on a single customer. Its reliance on tied bespoke orders made it vulnerable to the purchasing decisions of its small number of clients. This constraint was recognised by the company before 1994 and efforts were made to strengthen the sales team and expand overseas with the help of DTI promotion services. A central problem here however was the lack of independent product innovation again linked to the dominance of a few large clients and the difficulty of developing proprietary IPR on bespoke products. A similar story may be told in relation to Clothing which combined a narrow customer base with an emphasis on the UK market. A market downturn in 1994/95 led to losses in 1995, an inability to fund new product development and a subsequent company reconstruction. The formation of the new entity is supported by the former company's creditors, and with the help of the DTI export advice services is seeking to develop an export based marketing strategy.

As a small to medium sized firm in the constructional engineering sector Engineers has been operating in difficult market circumstances in the 1990s. The company recognised its vulnerability to the UK market prior to 1993 but an attempt to develop overseas (Germany, Romania and Singapore) failed because of inadequate management resources to mount an effective overseas sales and marketing team. In the UK market Engineers' reputation for quality has meant it has picked up with the upturn in demand in 1995/96 but a long term strategic problem of dependence on the UK remains. It has considered merger as a way of resolving this.

Labels has a relatively diversified customer base but operates in a competitive market with end users dominated by the purchasing power of large supermarket chains. Their purchasing power along with rising raw material prices and weakening market demand have squeezed margins both for this company and for Stickers. Labels response to these demands and competitive pressures has been to introduce new machinery designed to refocus the company on higher volume lower margin work. Problems of implementation have however prevented any significant impact on worsening cash flow and the company's short term objective is survival.

A number of implications may be drawn from this analysis:

- reliance on a concentrated customer base raises serious potential problems in both vulnerability to downturns in the fortunes of a few customers and if the relationship is for bespoke products, weakness in the development of more widely marketable products.
- where products are internationally tradeable reliance on the home market raises vulnerability to UK market instability.
- in certain sectors cost and competitive situations may make long term survival difficult without substantial increases in scale of operations.

6.2.2.2. *Finance*

All seven companies reported financial constraints. Software, Test Equipment, Stickers, Engineers, Signals and Clothing all cited the availability and/or cost of overdraft finance as a constraint in the period 1994-95 when their financial position worsened. In addition Signals was concerned throughout with access to overdraft finance and in the period 1987-90 experienced constraints on finance for expansion as did Software, Test Equipment, Stickers and Labels. Only Clothing registered finance for expansion and overdraft as a significant constraint throughout.

In view of the range of experiences in this group it is helpful to be illustrative rather than exhaustive in describing how constraints were dealt with.

Software experienced problems of finance for expansion in the period 1987-90 which it sought to overcome by a strategic research contract alliance with a major US end user. After an original approach from the US firm to buy Software (at a price its owner considered to be unreasonable) an arrangement was made whereby a long term research contract was established and the US company made substantial loans to Software. On this basis Software sustained moderate growth until 1994 when the US partner acquired Software's main US competitor, and withdrew from its research contract. Although the loans were 'forgiven' as part of the settlement the cash flow crises meant substantial losses. Despite previously good relations with its bank, Software found the collateral and guarantees required to advance the required overdraft oppressive. It was felt to be ironic that after several attempts in good times to have its IPR valued as security for expansion funding it was only in a crisis that the bank agreed to this in order to take a charge on it for an overdraft. In the long term therefore the finance constraint was not resolved by the strategy adopted.

Test Equipment experienced severe constraints in finance for expansion in 1987-90 and again in 1994. Its early growth was financed out of cash flow and it had been advised that it was a highly risky proposition by advisers and financial institutions. It had no history of a relationship with a funding source, was by the late eighties/early nineties encountering cash flow difficulties, had a high technology niche market position with a narrow customer base, and was operationally split between three different national locations. Despite Enterprise Initiative advice on developing a more coherent UK and overseas customer development strategy tentative approaches to venture capitalists met with no success partly because of a lack of management resource to commit to the endeavour. A first experiment with factoring tied up management resources for over a year and proved unsatisfactory. That first contract was charged and a clearer non flexible if costly arrangement made with another firm. The company also changed banks and now has in place a programme of objective reviews of company progress intentions and mutual exchanges of information. With a more solid cash flow system in place the firm has had little difficulty in obtaining two 'business angel' inputs totally £500,000 which involve an equity stake of 40%. It is important to note that these changes followed important director and managerial changes in 1994 involving much more delegated responsibility. The concomitant establishment of a clearer internal strategic plan meant an appropriate commitment of resources to follow through financial plans.

Clothing's consistent cash flow problems reflected its persistent concern with demand constraint factors. As the 1990s progressed its position was however compounded by a lack agreement amongst its 3 principal directors as to the nature of the problem and its resolution. A change of bank and the departure of a senior director with finance responsibilities led to an enlarged overdraft facility in 1995 as the firm made efforts to cut both labour and premises costs, and the board began to look for a potential purchaser. It is difficult to avoid the conclusion that Clothing's financing problems arose from a failure to

address its core market barriers rather than because of external capital market failures.

Signals financing constraints arose from shrinking margins in its markets and its heavily concentrated customer dependence. Bank funding left the directors with a heavy burden of personal guarantees and inhibited them from taking a longer term strategic view of their business. Their solution was to sell out to a major customer. This resolved financing problems but created management adjustment problems in the aftermath of acquisition.

Stickers financial problems in the mid-nineties, following a decade of steady performance, arose from declining margins and the costs of buying out the founder as he handed over management succession to his son. This coupled with machinery upgrades and the growth of sales and stocks raised financing requirements. These were compounded by the new MD's decision to buy several new company cars. Resort to invoice discounting as a funding strategy met with mixed success. The invoice discounting firm was a subsidiary of the bank with whom the company was trying to negotiate a term loan. The latter was declined on the basis of the implied overall risk exposure of the bank given the deal signed with its invoice discounting arm. Furthermore despite the support of the local branch manager a requested increased overdraft limit was also refused by the bank, on instructions from regional office, on the same grounds. As the founder put it, these actions towards his son as the new MD 'cut his legs off'.

It is difficult to make a case for faltering growth arising from external financial constraints for this particular group of firms. However, once financial problems arose experiences with the financial markets were not always very satisfactory as the experience of Software and Stickers suggest. On the other hand as the experience of Test Equipment shows an effective management strategy with sufficient commitment of resource to financial planning and implementation, and a willingness to cede equity can secure funding for expansion.

6.2.2.3. *Management and Labour*

All seven companies in this group employed between 10 and 50 employees in 1987, and all employed over 28 in 1993. The largest, Signals, expanded from 45 to 135 employees. Transitions in management structure and organisation and an emphasis therefore on management skills might have been expected to emerge as central constraint for them. In fact only Signals identified this itself as a major issue and did so throughout the study period. Clothing on the other hand never rated it as significant despite the evident discordance between its senior management, the lack of resource for adequate financial planning and its contribution to the companies liquidation and need for reconstruction.

The case studies however provide substantial evidence of management skill constraints. For Stickers a management skills crises arose with the retirement of the founder and the resignation of his daughter as a director (to have a baby). An essentially family owned and run business, it was by this stage employing around 40 people and required a more professional management rather than production skill based approach. The founder's son has the latter but has not delegated sufficiently to achieve the appropriate managerial balance. The appointment of a non-family member as Sales Director did not work out and he left within a year. These managerial difficulties and the associated financial crises described above have left the future of a formerly successful family run business in the balance.

Test Equipment began to resolve its financial constraints in the mid 1990s by the introduction of substantial management changes in response to its faltering growth in 1994 and 1995. The departure of one senior director and a restructuring of management with clearer lines of delegated responsibility permitted close attention to analysis strategy and planning. Prior to this financial problems were threatening to permanently derail the company's sustained growth performance in 1993.

Clothing was handicapped by a failure of management after the early 1990s to address the core problems of financial controls, management information systems, product development and stagnant demand. Engineers dependence on the UK market was not resolved because of an inability to commit sufficient sales and market managerial resource to overseas expansion. In the case of Signals its management difficulties only began to be resolved after its acquisition by a major customer. The attitude of the acquirer has empowered the MD to act in a more forceful way and has led both to a flattened management structure. There is more delegated responsibilities and a strategic business plan has been developed aimed at widening the customer base, and promoting volume production, rather than the bespoke contracts dominating the existing client base.

This management picture contrasts with that of those companies in the sustained group which did not falter in the mid nineties, and which exhibited a sustained commitment to managerial development and reorganisation as circumstances required.

6.3. Stalled Growth Group

The seven companies in this group may be divided into two sets. The first of these sets consisted of 4 companies which followed their period of stalled growth in the early 1990s with stable, or improved, growth and profits performance during the study period 1994-96. These were Ceramics, Health and Childcare, and Waste Management. The remaining 4 companies (Computer Consultancy, Plastics, Textiles and Pipes) exhibited more mixed fortunes and did not exhibit a profitable growth recovery during the study period.

6.3.1. *Stalled and Recovering*

Ceramics was founded in 1959 and is involved in the manufacturing of sintered and electrically fused grains and powders and high priority bonds for the refractory and castings industry. It was purchased by the existing MD in 1983 when it had large debts with the intention of

turning it around and selling it on. This strategy was accomplished in 1995 when the business was sold to another UK firm. Ceramics had increased sales and labour force between 1987 and 1990, with the latter rising by 50% from 40 to approximately 60 employees. Employment fell to 47 in 1993 as turnover faltered. The business was throughout highly export intensive, with over 70% of sales made abroad in 1987 and 67% in 1993. Its customer base was moderately concentrated with the largest purchaser accounting for between 10% and 24% of sales in 1994, and somewhat more in 1995. Profit margins rose steadily from low levels in 1987 to around 10% at the time the business was sold.

Health and Childcare began trading in 1980. Its original core business was in the production of specialised seating for the disabled. Until 1989/90 it expanded on this basis with employment increasing from 52 to 72 between 1987 and 1990 and turnover nearly doubling. Exports however fell from 28% to 7% of sales. Employment fell from 1990-1993 whilst turnover growth continued, more modestly than in the period 1987-90 and exports grew in line with turnover. The improved productivity brought about by employment growing faster than turnover was associated with a major expansion of the companies product range to include crèche and nursery equipment. This was based on the development of a small company acquired by Health and Childcare in 1988. Health and Childcare has maintained a diversified customer base with the largest 5 customers accounting for less than 10% of sales in 1995.

Waste Management and Recovery was founded in 1975 and is involved in the waste chemical disposal and recycling business. It has modest but rising export intensity which stood at 10% in 1993 and fell to 5% in 1995. In 1995 its largest 5 customers accounted for less than 20% of sales. Employment rose from 60 to 85 between 1987 and 1990 but, along with turnover, fell back slightly by 1993. Employment fell to 74 by 1995 but with turnover rising and focused on the UK market., An investment programme begun in 1993 came on stream in

1995, and profit margins were substantially higher in 1994 and 1995 than in 1987, 1990 and 1993.

6.3.1.1. Market Demand

Ceramics experienced increasing competition and constraints arising from overall demand in its mature international market from 1987-94. These pressures stemmed from two sources, an unprofitable expansion in the Far East and in the early 1990s a global decline in demand, including the West German market which accounted for 40% of Ceramics turnover. Debts of £1m were accumulated. The owner replaced the MD whom he had hired as a professional manager in the late 1980s and returned to the MD role himself. A strategy of refocusing on the European market and in the Far East and Japan was adopted. A market segmented, discriminatory pricing policy was adopted. This was based on good market intelligence and long term, agency backed, product promotion. It restored margins and diversified Ceramics exports across more national markets. Ceramics now sells in 26 overseas markets with Germany, Japan, France and the USA accounting for 50%. Ceramics was also strengthened by the appointment of a specialist production manager in 1995.

Health and Childcare's principal demand constraints were domestic. They centred around the changed marketing and sales arrangements for its medical seating, required by fragmentation of the NHS. It also needed to develop its acquired crèche and nursery facility business.

In a medical market, where personal links and customised production and delivery are central to success, managing the NHS transition caused most problems. Attempts to export (25% of sales in 1987) were wound down as the markets proved both difficult to customise and sell to in an effective and cost efficient manner. By the early 1990s losses were being made and a concentrated effort to resolve the constraint took two forms. The MD sought and obtained an injection of local venture capital and associated, experienced, non-executive directors. He replaced the Chief Executive and recruited new

production and design managers. He also took on a Teaching Company Scheme graduate on a two year assignment; and negotiated the departure of the Health Care production manager. In addition to a company wide human resource development programme to focus on staff motivation and skills was introduced. Finally, the crèche and nursery business was relocated in new premises close to the medical seating business. Its development played a significant part in diversifying Health and Childcare's recovery in turnover employment and profitability, and its relocation assisted in the effective management of that development within the group strategy.

Waste Management and Recovery has experienced constraints in its essentially domestic market. This was largely because of increasing competition compounded by stagnation in its market. Its response to stalled growth in the early 1990s was to enhance its competitive position by a major investment programme. It secured a joint venture arrangement with a major cement manufacturer to provide an incineration outlet for its furnace burn material. It also systematically monitored and addressed, the changing environmental standards required for its operations. Whilst this strategy has yet to produce a major expansion it has stabilised employment and turnover and produced a major turnaround in the profit performance of the business.

6.3.1.2. *Finance*

Health and Childcare's financial problems in the early 1990s were ameliorated by an injection of locally based venture capital funding. This followed a period of growth funded from internal cash flow. A strategic problem of finance for expansion remains and the company has been unable to attract new venture funding to replace the existing venture investor who requires to exit within the next two years. The company has established good relations with a new bank after uncomfortable relations with its former banker in the early 1990s. Neither Ceramics nor Waste Management experienced stalled growth in the period 1991-94 because of financial constraints and neither

considered them an issue in the early 1990s. In the former careful cost control and raised sustained margins have ameliorated financial problems. In the case of Ceramics the company was able to obtain the short term finance necessary to see through its financial aims in the late 1980s and to generate sufficient margins to enable its successful planned sale to a larger company.

6.3.1.3. Management and Labour

Given Waste Management's good strategic management performance it is perhaps unsurprising that it has not identified management constraints in the 1990s, nor has it experienced problems of recruiting skilled labour. Central to its management performance has been the introduction of a computerised information and management control system. It also moved quickly to identify and install new technology when this was identified as a constraint in the 1991-94 stalled period.

Neither Ceramics nor Health and Childcare have experienced skilled labour constraints. In both cases the respective owner/founder moved strategically to reorganise senior management and change company direction in the face of difficulties in the early 1990s. Ceramic's MD continues in a central role in the new parent of his company, whilst the founder of Health and Childcare has brought in a new MD to allow him to concentrate as Chairman on longer term strategic issues. His characterisation of the problems faced before 1995-96 and which had to be resolved were that senior managers possessed defensive, cautious mind sets, were unwilling to change or innovate, lacked vision and did not work together as a team.

6.3.2. Continued Stalled

Computer Consultancy was founded in 1987. It has two activities IT consultancy (c 80% of turnover), and systems development and implementation services. It supplies only the UK market and is heavily dependent on key customers with the largest accounting for over 50% of sales in 1994, and 75% of sales in 1995. It expanded

rapidly after start up but plateaued in the early 1990's and experienced sustained falls in profit margins.

Plastics was established in 1985 and is primarily involved in the manufacture of plastic water tanks, a standard product with low entry barriers. Its employment grew rapidly from 10 to 50 between 1987-90 but fell back to 40 in 1993 as turnover growth stalled. Its export to sales ratio was only 2.5% in 1990 but it raised this to 20% by 1993. Thereafter exports fell substantially. By 1995 the company was making losses, and its customer base had become quite concentrated with the largest customer accounting for over 50% of sales.

Textiles began trading in 1984 and operates in a mature market manufacturing sports accessories and clothing. After a brief overseas foray in the early 90's it sells entirely to the UK market. By 1990 it was employing 20 people of whom 17 were however part time subcontract labour. Between 1990 and 1993 total employment fell to 15 although within that total subcontracting fell to 7. Turnover fell from 1993 onwards and its customer base shrank. By 1995 its largest customer accounted for over 50% of turnover.

Pipes was formed in 1971 as a partnership and was incorporated in 1983. It has two lines of business, industrial pipework, and the shop-floor manufacture of high specification heat exchange coils. It relies entirely on the UK market. In 1994 its customer base was fairly diversified with the largest customer accounting for less than 10% of sales. By 1995 however declining turnover had led to a concentration on core customers with the largest accounting for over 50%. The company was making losses in 1995 but was forecasting profits for 1996 as turnover and economic activity recovered.

6.3.2.1. Market Demand

Of the four companies in this group Computer Consultancy, Textiles and Pipes were all operating exclusively in the UK. Computer Consultancy operates in a relatively dynamic market niche and has

not felt seriously constrained by market demand factors in the 1990s. Both Textiles and Pipes were affected by demand constraints from 1994 onwards. In the case of Textiles this reflected an over-concentration on product lines where rising raw material costs and stagnating demand meant both falling margins and stagnant turnover. It has also been affected by a longer run trend for retailers to operate 'just in time' stockholding methods, which place stockholding and production management costs on the shoulders of suppliers and requires a larger scale of operation than that at which Textiles operates. Although factoring has improved cash flow the overwhelming pressure of changed demand conditions, and Textiles' narrow product range, in low margin markets, makes its independent survival difficult.

Pipes' problems stem from the cyclical nature of its business, and the growth of undercutting by redundant pipe fitters in one of its markets. The MD has not reacted positively to address this issue but has rather focused on survival and waited for conditions to improve. A related need to move to new premises to develop the shop floor side of the business, has similarly remained in suspension.

Plastics' position is also vulnerable to the cycle as well as to increased competition in an easy entry market. The sector is undergoing a structural transition with substantial acquisition activity. Plastics' experience with exports faltered after rising to 20% of sales in 1993. A strategic decision to concentrate on the domestic market followed and in 1995 the export director left and was not replaced. This strategy has involved a vigorous marketing campaign emphasising Plastics technical leadership and has been backed by investment in plant and premises. Although turnover and employment has picked up this has yet to produce a turnaround in margins and losses were made in 1995.

6.3.2.2. *Finance*

Computer Consultancy has sought to fund growth internally. This is in part a reflection of the managing director's ambivalence to outside funding, and a desire to maintain control. It also reflects risk aversion after the experience of recessionary periods in the past. He has not therefore regarded finance as a serious constraint.

Pipes also has an MD who has the objective of moderate growth based on internal funding and the maintenance of control over a comparatively small business. At various times overdraft finance has loomed as a constraint. The company was only saved from insolvency, in the face of their bank's refusal to extend their overdraft limit in the mid 1990s, by a loan from a personal friend. This has led the MD to have a jaundiced view of the less personalised operations of banks now compared with the more personal discretion-based lending of the past.

Textiles' cash flow problems have meant intermittent financial constraints. It has tackled these effectively through factoring, though the underlying margin pressures mean this has had to be supported by ever tighter internal cost controls and overhead reductions.

Plastics experienced financial constraints on expansion in the period 1991-93 which it sought to resolve by successfully accessing the Small Firms Loans Guarantee Scheme. This helped fund both a move into new premises and investment in a new management information system. Turnover has not picked up sufficiently to generate adequate returns on these investments however and a short-run funding problem in the face of losses remains.

6.3.2.3. *Management and Labour*

Although access to skilled labour has been an intermittent constraint for some of these firms, a central feature of their experience has been the way in which management has responded to the stalled growth of

the early 1990s. This may be illustrated by Plastics and Computer Consultancy. In the case of Plastics management skills were persistently identified as a central constraint alongside skilled labour and market demand. An active recruitment strategy and an in-house training programme were only partly successful. Greater resources are being committed to the former to strengthen the operations and works management side. A central issue however, which has not yet been addressed, is the centralised management structure for all strategic decision and plans, and a top down system of implementation. The split location of the company also hinders effective communication. The hoped for gains from the investment in a new management information system have yet to materialise.

In the case of Computer Consultancy marketing and sales skills have consistently been regarded as a serious constraint since 1991. This partly reflects a loss of confidence following an unsuccessful acquisition of an IT consultancy in 1992. It also reflects a recognition, based on an outside consultancy exercise, that the company's strategic marketing focus for its consultancy business should be shifted. It will move towards local medium sized companies and existing clients, and shift away from larger companies and government departments. The company has yet to resolve its strategic objectives partly as a result of a major short run financial problem in the study period. This was caused by difficulties with two major fixed price contracts the resolution of which have diverted senior management resources from longer term strategic issues.

There are a number of elements of managerial weakness in this group which mirror those in the group whose sustained growth faltered in the study period. Taken together these elements can be reinforcing. They can lead to inadequate attempts to deal with the other demand and finance problems identified, in part because of the inevitable pressure of day-to-day business. These elements are as follows:

- ill-defined strategic direction with regard to product and market development;

- poorly specified (or frequently changed) managerial responsibilities;
- inadequate devolution of managerial tasks and hence over-burdening of directors who may or may not hold the positions they do by design;
- inadequately supported or poorly implemented management training programmes and management information systems.

7. Barriers to Growth: Overall Conclusions

Most of the executives of the firms participating in our study wanted their businesses to grow. Some, but relatively few, had achieved remarkable success in this, with sustained growth over a medium-term period from 1987-95. Others had maintained sales growth over this period, albeit sometimes of a faltering kind; and others had experienced stalled growth or absolute decline after a three year period of growth at the end of the 1980s, yet others stalled 1991-93 and recovered thereafter.

General market conditions in the first half of the 1990s had not been conducive to growth. This was reflected in the number of times a market-related constraint was identified by the businesses participating in the study. But, for those businesses with strong sustained growth, the market constraints were far less important. To some extent this was a function of the particular markets they were in - e.g. medical research and consultancy, and communications, global markets providing the opportunity for the businesses to spread their risks.

But this was by no means the whole story - some firms in potential growth sectors had declined and some in apparently poor growth markets had achieved sustained growth. On the evidence of our case-studies, there did appear to be a virtuous growth cycle at work in the

sustained growth firms, but it was not necessarily driven by buoyant external market conditions.

It was certainly not driven by the external supply conditions. The supply of external resources, particularly the provision of external funds for expansion, when they had an effect were in the main narrowing and constraining in their influence on growth firms rather than liberating. Some firms which had escaped this restrictive influence had literally done exactly that. They had, for example, either sought to by-pass the UK financial system altogether or had sought less conventional sources of finance (e.g. the use of factoring houses rather than bank overdraft facilities which had generally become more restrictive over the study period). Others had however successfully accessed venture capital funding.

Businesses which sustained growth did not appear to do so because of the personal growth ambitions of the entrepreneurs. Most of the entrepreneurs in our case-studies were ambitious for growth, albeit some more than others. But only a few had been successful in managing to sustain strong growth over a long period by adopting an organisation and management structure which encouraged and allowed growth to be pursued within a disciplined and transparent framework of information, reward, and marketing systems. The words used to describe this in the case-studies included “devolution”, “profit centres”, “HRD”, “training”, “financial and management information systems”.

We may depict the conditions for sustained growth in the summary graphic at Figure 7.1. Its key features are as follows:

- external supply conditions, including the provision of finance, exercised a narrowing and constraining influence on stalled and sustained growers but the latter more frequently responded by developing their own internal resources and capabilities to achieve growth or sought access through selling onto bigger firms;

- the internal operations of the sustained growth businesses were directed at expanding the capabilities and ambitions of, and opportunities for, their people (through training, HRD programmes, and sometimes by recruitment of the skills which cannot be grown in-house); at the same time, the internal operations were monitored and managed closely and often by use of information systems;
- as a consequence of this release of personal ambitions within the sustained growth businesses and/or as a deliberate external strategy, the firms broadened and diversified their product and/or customer basis but again with a disciplined specification of the market parameters within which they operated;
- external market opportunities in sustained growers were consequently broadened allowing for the spreading of risks;
- further growth was provided for by a broadening of the external supply conditions and a widening of the internal focus providing staff with increased opportunities for personal and career development.

TABLES AND FIGURES

Table 3.1 Phase 1: Extent of Participation by the Businesses Involved

Elements in the study	Measure on participation
Pre-interview questionnaire	
• number completed & received	23 questionnaires
First interview	
• number of interviews	24 interviews
• number of executives attending (av.)	2 executives
• length of interview (av.)	3 hours
Care and maintenance call	
• number of substantive discussions	14 discussions
Second interview	
• number of interviews	22
• number of executives (av.)	1 executive
• length of interview (av.)	1½ hours
• number of companies	
- completing company logs	16 companies
- agreeing to use of case-study, subject to clearance & anonymity	19 companies
- agreeing to participate in any study extension	18 companies

Note: Number of companies participating was 24

Table 4.1 The Selection of Businesses Agreeing to Participate in the Study

	Sustained growth	Stalled growth
Core companies	7	10
First reserve companies	2	2
Second reserve companies	3	-
Manufacturing firms	7	8
Service firms	5	4
Total firms	12	12
Employment in 1987	255	316
Employment Change		
1987-90	114%	93%
1990-93	180%	-21%
Employment in 1993	987	480

Table 4.2 Employment Growth and Age of Participating Businesses

Growth Class	Employment			Employment Gain 1987-93	Main activity m = Manufacturing s = Services	Age (Years) 1994
	1987	1990	1993			
Sustained						
Plant	42	62	270	+228	(m) Process equipment	54
Medical Research	10	60	100	+90	(s) Medical research	9
Signals	45	100	135	+90	(m) Engineering/Software	11
Pharmaceutical Studies	19	45	90	+71	(s) Medical services	8
Clothing	14	25	72	+58	(m) Road safety products	23
Engineers	30	82	84	+54	(s) Consultancy Engineer	16
On-Line	19	36	65	+46	(m) Publishing products	10
Stickers	12	22	36	+24	(m) Printed labels	12
Communications	21	36	45	+24	(s) IT consultancy	9
Test Equipment	11	21	29	+18	(m) Electronic test eqpt	14
Labels	12	23	28	+16	(m) Printed labels	12
Software	20	30	33	+13	(s) Computer software	16
Total	255	546	987	+732	Median	12
Stalled						
Plastics	10	50	40	+30	(m) Plastic products	19
Footwear	44	83	73	+29	(m) Leather mfg	14
Waste Management	60	85	80	+20	(s) Waste recycling	19
Steelwork	20	45	40	+20	(m) Mfg steel structures	15
Aluminium Products	15	70	35	+20	(m) Aluminium products	9
Health and Childcare	52	72	67	+15	(m) Healthcare products	14
Computer Consultancy*	14	19	23	+9	(s) IT consultancy	7
Mgt Consultancy	10	45	18	+8	(s) Mgt consultancy	8
Ceramics	40	60	47	+7	(m) Refractory materials	35
Textiles*	3	8	8	+5	(m) Sportswear products	10
Pipes	18	28	19	+1	(m) Process equipment	23
Software Products	30	45	30	0	(s) Software house	10
Total	316	610	480	+164	Median	14

* Employment data excludes subcontract labour

Note: The firms are code-named to preserve commercial confidentiality

Table 4.3 Growth Objectives 1991-94

	Sustained	Stalled	All
Stay Same Size/Grow Smaller	0	1	1
Moderate growth	6	8	14
Rapid Growth	6	3	9
All	12	12	24

Table 4.4 Withdrawal Failure and Acquisition in the sample 1994-6

	Sustained	Stalled	All
Original Sample	12	12	24
Did not complete phase 1	0	2	2
Total completing Phase 1	12	10	22
Declined to take part in phase 2	1	1	2
Going into Liquidation during phase 2	0	2	2
Acquired and completing phase 2	3	1	4
Independent in 1996 and completing Phase 2	8	6	14
Total completing Phase 2	11	7	18

**Table 4.5 Differences in Employment and Turnover Growth Rates 1987-93
(22 Phase 1 Firms)**

<i>Employment Growth %</i>							
	N	1987-90		1990-93 ^a		1987-93	
		Mean	Median	Mean	Median	Mean	Median
Sustained	12	42.7	30.1	26.9**	17.6**	48.9**	32.0**
Stalled	10	35.8	19.0	-4.2**	-4.5**	13.4**	7.7**
All	22	39.5	28.7	12.7	5.2	32.8	27.5

<i>Turnover Growth %</i>							
	N	1987-90		1990-93 ^b		1987-93	
		Mean	Median	Mean	Median	Mean	Median
Sustained	12	57.2	57.9	22.8*	18.6**	58.6*	50.2**
Stalled	10	44.1	27.4	5.5**	5.7**	31.1*	24.4**
All	22	51.2	44.8	14.9	12.9	46.1	40.8

* Significant difference between stalled and sustained at 10% level

** Significant difference between stalled and sustained at 5% level

Test for means is the 't' test, corrected for unequal variances

Test for medians is the Mann Whitney 'U' test

Note: (a) The differences in growth rates of employment between 1987-90 and 1990-93 are not significant for the sustained group but are significant for the stalled group at the 5% level using a 't' test and the non-parametric Wilcoxon Matched-Pairs Signed-Ranks Test

(b) The differences in turnover growth rates between 1987-90 and 1990-93 are significant at the 5% level for both the sustained and stalled group using a 't' test and the non-parametric Wilcoxon Matched-Pairs Signed-Ranks Test

**Table 4.6 Pre-Tax Profit to Turnover Margin 1987-93
(22 Phase 1 Firms)**

	N	1987		1990			1993		
		Mean	Median	N	Mean	Median	N	Mean	Median
Sustained	11	2.4	6.0	12	7.2	6.2	12	5.4	5.4
Stalled	7	7.8	6.4	10	4.9	5.1	9	7.5	6.9
All	18	4.5	6.1	22	6.2	5.5	21	6.3	5.9

Significant Differences between Subperiods (Wilcoxon Matched-Pairs Signed-Ranks Test)

Sustained 1987 < Sustained 1990**

All 1987 < All 1990**

Significant Differences between Growth Groups ('t' test for means, Mann Whitney 'U' test for Medians)

None of the differences are significant.

Note: The number of firms is less than 22 in 1987 and 1993 due to unavailability of profit data.

**Table 4.7 Exporting and Export Intensity 1987-93
(22 Phase 1 Firms)**

	N	Export/Turnover Ratio (%)												
		Number Exporting			1987						1990		1993	
		1987	1990	1993	Mean	Median	Mean	Median	Mean	Median	Mean	Median		
Sustained	12	6	9	11	25.6	5.0	31.1*	21.8*	30.1	34.1				
Stalled	10	4	6	7	10.8	0.0	9.2*	2.0*	13.0	6.7				
All	22	10	15	18	18.9	0.0	21.1	4.7	23.2	7.4				

*Significant difference at 10% level between sustained and stalled groups ('t' test for means corrected for unequal variances, Mann Whitney 'U' test for medians)

None of the differences between time periods are statistically significant ('t' test for means corrected for unequal variances, and Wilcoxon Matched-Pairs Signed-Ranks Test)

**Table 4.8 Differences in Employment and Turnover Growth 1990-95
(17 Phase 2 firms)**

<i>Employment Growth %</i>									
		1990-93		1993-95 ^a		1990-95		1987-95	
	N	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Sustained	10	28.3**	15.6**	0.1	-0.6	16.2**	10.3**	29.2	22.4
Stalled	7	-3.1**	-2.3**	5.3	5.3	-0.6**	0.7**	15.4	6.9**
All	17	15.3	7.0	2.2	0.0	9.2	2.7	23.5	17.7

<i>Turnover Growth %</i>									
		1990-93		1993-95 ^b		1990-95		1987-95	
	N	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Sustained	10	18.5*	16.7	5.0	2.3	13.7*	7.2	43.4*	39.8*
Stalled	7	5.9*	11.3	2.1	3.2	3.0*	2.1	24.5*	26.8*
All	17	13.3	12.2	3.8	2.4	9.3	3.0	35.6	34.7

Test for means is 't' test corrected for unequal variances between groups

Test for median is Mann Whitney 'U' test

* Significant differences between stalled and sustained at 10% level

** Significant differences between stalled and sustained at 5% level

Notes: (a) The difference in employment growth rates between 1990-93 and 1993-95 for the sustained group are significant at the 5% level using the Wilcoxon Matched-Pairs Signed-Ranks Test. The differences in employment growth rate between these periods for the stalled group are not significant.

(b) The difference in turnover growth rates between 1990-93 and 1993-95 are not significant for either the sustained or the stalled groups using the Wilcoxon Matched-Pairs Signed-Ranks test

**Table 4.9 Pre-Tax Profit to Turnover Margin 1987-95
(17 Phase 2 Firms)**

		1987		1990		1993		1995	
	N	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Sustained	10	5.8	6.0	6.8	5.2	6.0	6.2	0.2	1.9
Stalled	7	8.5	6.8	6.5	5.6	7.9	6.9	6.8	9.6
All	17	6.8	6.1	6.7	5.7	6.8	6.4	3.0	3.6

Significant Differences between Subperiods (Wilcoxon Matched-Pairs Signed-Test)

Sustained 1990>1987**

All 1990>1987**

Significant Differences between growth Groups ('t' test for means Mann-Whitney 'U' test for Medians)

None of the Differences are significant

**Table 4.10 Exporting and Export Intensity: 1987-95
(17 Phase 2 firms)**

(a) Numbers Exporting

	N	1987	1990	1993	1995
Sustained		4	7	9	8
Stalled		3	4	5	4
All		7	11	13	12

(b) Export/Turnover Ratio%

		1987		1990		1993		1995	
	N	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Sustained	10	24.7	0.0	29.7	7.4	28.0	15.8	42.4*	52.6*
Stalled	7	15.1	0.0	12.2	2.5	16.0	7.4	12.6*	4.8*
All	17	20.7	0.0	22.5	4.7	23.0	7.4	28.4	8.0

*Significant difference at 10% level between sustained and stalled groups ('t' test for means corrected for unequal variances. Mann Whitney 'U' test for medians)

Note: The differences in export intensity between 1993 and 1995 is statistically significant at the 10% level ('t' test for mean corrected for unequal variances, and Wilcoxon Matched-Pairs Signed-Ranks Test)

Table 5.1 Phase 2 Firms: Ownership Characteristics 1995

	All	Sustained	Stalled
Median % Shares Held by :	%	%	%
Chief Executive	47.0	15.0	60.0
Board of Directors	70.0	70.0	57.5
Largest Shareholder	51.0	43.5	60.0
Modal Type of Largest Shareholder	Individual	Individual	Individual

Table 5.2 Phase 2 Firms: Areas of Competitive Advantage 1994 and 1995

Median Scores (0 = insignificant 9 = highly significant)
 Number Reporting Scores in Ranges 7-9 shown in brackets

	1994				1995			
	Sustained	Stalled	Sustained	Stalled	Sustained	Stalled	Sustained	Stalled
Specialised Expertise or Product	7.5 (8)	8.0 (4)	8.0 (8)	7.0 (4)	8.0 (8)	7.0 (8)	8.0 (4)	7.0 (4)
Personal Attention to Clients	7.5 (7)	8.0 (6)	8.0 (6)	8.0 (5)	8.0 (8)	8.0 (8)	8.0 (5)	8.0 (5)
Quality of Product or Service	7.5 (6)	8.0 (6)	8.0 (6)	7.0 (6)	8.0 (7)	7.0 (7)	7.0 (6)	7.0 (6)
Established Reputation	7.0 (7)	8.0 (6)	7.0 (6)	8.0 (6)	7.0 (7)	8.0 (7)	8.0 (6)	8.0 (6)
Marketing and Promotion	7.0 ** (5)	4.0 ** (2)	5.0 (4)	5.0 (2)	5.0 (4)	5.0 (4)	5.0 (2)	5.0 (2)
Flair and Creativity	6.0 (4)	6.0 (3)	7.0 (7)	7.0 (3)	7.0 (7)	7.0 (7)	7.0 (3)	7.0 (3)
Speed of Service	6.0 (4)	7.0 (4)	7.0 (5)	6.0 (3)	7.0 (5)	6.0 (5)	6.0 (3)	6.0 (3)
Technological Edge	6.0 (5)	4.0 (1)	6.0 (4)	4.0 (1)	6.0 (4)	4.0 (4)	4.0 (1)	4.0 (1)
Range of Expertise or Product	5.5 (4)	5.0 (3)	8.0 ** (7)	5.0 ** (3)	8.0 ** (7)	5.0 ** (7)	5.0 ** (3)	5.0 ** (3)
Design of Product or Service	5.5 (3)	5.0 (2)	7.0 (6)	6.0 (2)	7.0 (6)	6.0 (6)	6.0 (2)	6.0 (2)
Cost Advantages	5.0 (2)	7.0 (5)	5.0 (1)	6.0 (2)	5.0 (1)	6.0 (1)	6.0 (2)	6.0 (2)
Price	4.5 (2)	7.0 (4)	4.0 ** (2)	7.0 ** (4)	4.0 ** (2)	7.0 ** (2)	7.0 ** (4)	7.0 ** (4)

** Significant difference between sustained and stalled at 5% level (Mann Whitney 'U' test)

Table 5.3 Phase 2 Firms: Dependence on Key Customers 1995

(a) Sales to Largest Customer

	All	<10%	10<25%	25<50%	50<75%	>75%	N/A.
Sustained	10	3	4	1	1	-	1
Stalled	7	3	3	-	1	-	-
All	17	6	7	2	2	-	1

(b) Sales to Largest 5 Customers

	All	<10%	10<25%	25<50%	50<75%	>75%	N/A.
Sustained	10	-	2	4	1	2	1
Stalled	7	1	1	1	3	1	-
All	17	1	3	5	4	3	1

Table 5.4 Phase 2 Firms: Expected Factors Helping to Meet Business Objectives 1994-6

Numbers of Firms Scoring a Factor 7-9 (0=insignificant 9=highly significant)

	1994-1996		1995-1996	
	Sustained	Stalled	Sustained	Stalled
<i>Increase UK market</i>				
Existing Customers	4	6	5	5
New customers/Markets	6	6	5	4
<i>Increase Overseas Markets</i>				
Existing Customers	5	1	4	1
New Customers/Markets	4	1	4	1
<i>Product Expansion</i>				
Entirely New Products/Services	1	1	4	3
<i>Technology</i>				
Introduce New Technology	0	1	4	1
Increase technological quality of products	2	2	5	2
<i>Management Organisation</i>				
Develop Managerial expertise and organisation	2	3	6	2

Table 5.5 Phase 2 Firms: Growth Objectives 1991-8

	Number of Firms					
	1991-4		1994-5	1994-7	1995-8	1995-6
	Prospect	Retrospect	Retrospect	Prospect	Prospect	Prospect
<i>All Firms</i>						
Stay Same Size	-	2	3	2	1	3
Grow Smaller	-	-	2	-	-	1
Grow Moderately	10	11	10	10	13	9
Grow Rapidly	7	4	2	5	3	4
Total	17	17	17	17	17	17
<i>Sustained Group</i>						
Stay Same Size	-	2	3	2	1	3
Grow Smaller	-	-	2	-	-	1
Grow Moderately	5	4	4	5	7	3
Grow Rapidly	5	1	1	3	2	3
Total	10	10	10	10	10	10
<i>Stalled Group</i>						
Stay Same Size	-	2	-	-	-	-
Grow Smaller	-	-	-	-	-	-
Grow Moderately	5	4	6	5	6	6
Grow Rapidly	2	1	1	2	1	1
Total	7	7	7	7	7	7

Table 5.6 Phase 2 Firms: Significant Constraints on Meeting Business Objectives 1990-3

	Sustained		Stalled	
	Median Score	No of Firms Constrained	Median Score	No of Firms Constrained
<i>Market Demand</i>				
Overall	5.6	(5)	6.6	(4)
Overseas	4.3	(2)	3.3	(1)
Increasing Competition	5.4	(4)	4.3	(2)
Total rating constraint 7-9		(11)		(7)
<i>Finance: Cost and availability</i>				
Expansion	5.2	(4)	5.4	(3)
Overdraft	3.9	(2)	4.9	(2)
Total rating constraint 7-9		(6)		(5)
<i>Management and labour</i>				
Labour Skills	4.3	(2)	3.6	(2)
Management Skills	4.6	(2)	3.1	(2)
Marketing and Sales Skills	4.1	(1)	3.4	(2)
Total rating constraint 7-9		(5)		(5)
<i>Technology</i>				
Acquisition	2.9	(0)	2.4	(1)
Implementation	3.0	(1)	2.9	(0)
Total rating constraint 7-9		(1)		(1)
<i>Premises or Site</i>				
Total rating constraint 7-9	1.1	(0)	1.4	(0)
Total no. of all constraints 7-9		(23)		(17)
Number of Firms		(10)		(7)

Table 5.7 Phase 2 Firms: Constraints on Meeting Business Objectives 1994-5 Prospect and Retrospect

Median Scores (0 = insignificant 9 = highly significant)
Number Reporting Scores in Ranges 7-9 shown in brackets

	Sustained				Stalled			
	Prospect		Retrospect		Prospect		Retrospect	
<i>Market Demand</i>								
Overall	5.7	(5)	4.9	(4)	6.1	(3)	7.0	(5)
Overseas	4.4*	(2)	3.9	(1)	2.2*	(0)	2.9	(1)
Increasing Competition	6.1	(4)	5.2	(3)	4.1	(2)	4.4	(3)
Total rating constraint 7-9		(11)		(8)		(5)		(9)
<i>Finance: Cost and Availability</i>								
Expansion	4.2	(4)	4.2	(2)	4.0	(1)	3.0	(1)
Overdraft	3.1	(2)	5.3	(5)	4.0	(1)	3.6	(1)
Total rating constraint 7-9		(6)		(7)		(2)		(2)
<i>Management and labour</i>								
Labour Skills	4.8*	(3)	4.3	(3)	2.4*	(0)	5.1	(3)
Management Skills	4.1	(1)	5.7	(4)	3.0	(1)	4.7	(3)
Marketing and Sales Skills	3.8	(1)	4.3	(0)	3.4	(2)	3.7	(2)
Total rating constraint 7-9		(5)		(7)		(3)		(8)
<i>Technology</i>								
Acquisition	3.2	(0)	3.3	(0)	2.4	(0)	2.7	(1)
Implementation	3.9	(1)	4.1*	(0)	2.4	(0)	2.9*	(1)
Total rating constraint 7-9		(1)		(7)		(0)		(0)
<i>Premises or Site</i>								
Total rating constraint 7-9	1.0	(0)	2.6	(2)	2.0	(1)	1.3	(0)
Total no. of all constraints rated 7-9		(0)		(2)		(1)		(0)
Total no. of all constraints rated 7-9				(26)				(19)
Number of Firms		10		10		7		7

* Significant differences between the sustained and stalled groups at the 10% level (Mann-Whitney 'U' test)

Table 5.8 Phase 2 Firms: Prospective Constraints 1995/6

	Sustained		Stalled	
	Median Score	No of Firms Constrained	Median Score	No of Firms Constrained
<i>Market Demand</i>				
Overall	5.3	(4)	6.4	(3)
Overseas	3.7	(1)	2.9	(1)
Increasing Competition	5.4	(4)	5.3	(3)
Total expected significant constraints		(9)		(7)
<i>Finances: Cost and availability</i>				
Expansion	4.7	(3)	4.1	(2)
Overdraft	4.9	(4)	4.4	(3)
Total expected significant constraints		(7)		(5)
<i>Management and labour</i>				
Labour Skills	6.0	(4)	4.4	(2)
Management Skills	5.3	(3)	4.4	(4)
Marketing and Sales Skills	4.8	(1)	4.4	(3)
Total expected significant constraints		(8)		(9)
<i>Technology</i>				
Acquisition	4.3	(2)	2.7	(1)
Implementation	5.0	(2)	2.7	(1)
Total expected significant constraints		(4)		(2)
<i>Premises or Site</i>				
Total expected significant constraints	3.2*	(2)	1.1*	(0)

* Significant difference between sustained and stalled groups at the 10% level (Mann-Whitney 'U' test)

Chart 1 Employment and Turnover of the Fastest, Slowest and Median Growth Firms in the Sustained and Stalled Growth Groups 1987-1993 (22 Phase 1 Firms) (1987=100)

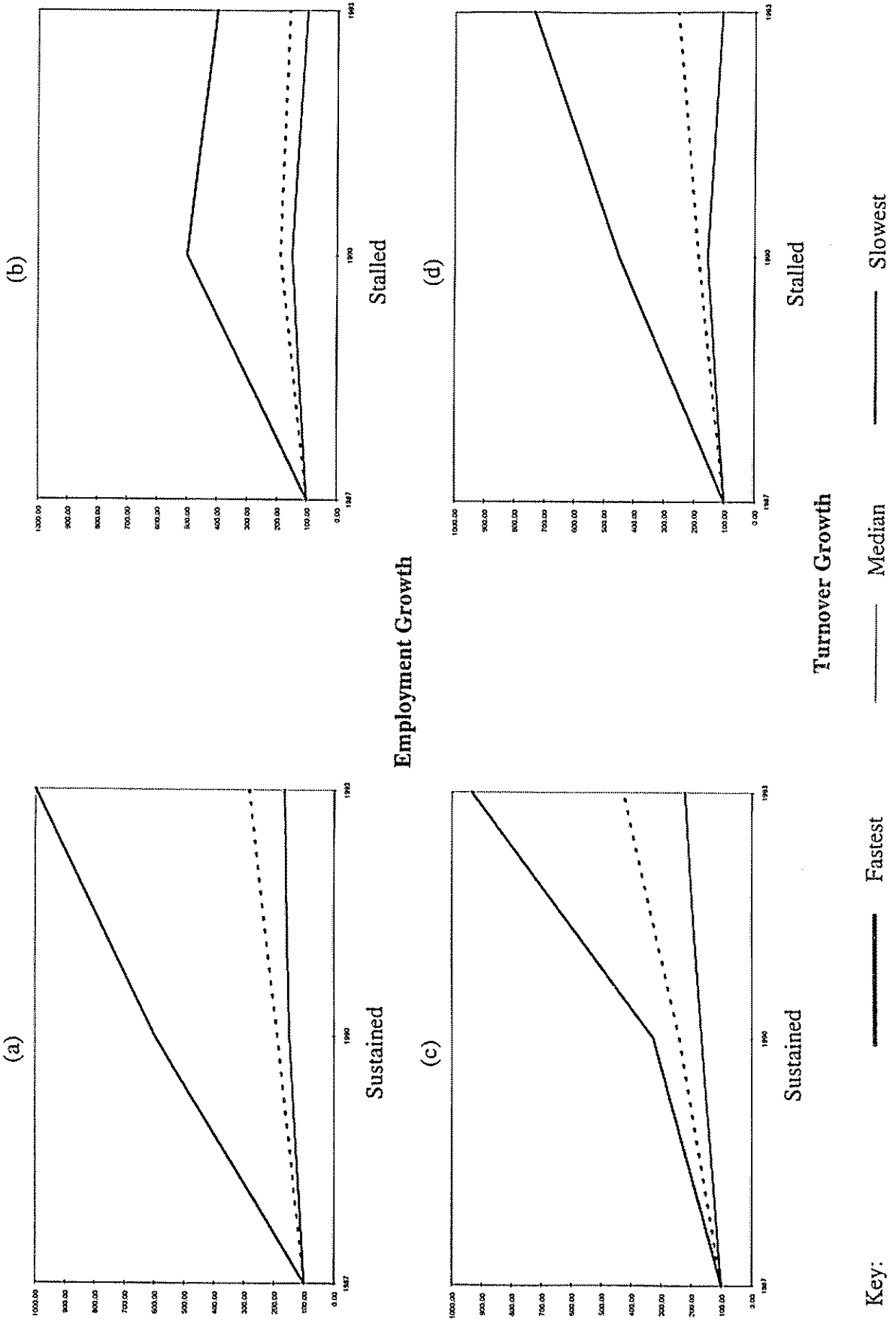


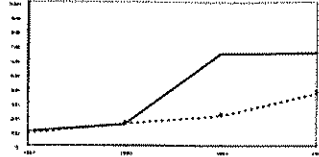
Chart 2

Employment and Turnover 1987-95 for Sustained and Stalled Groups

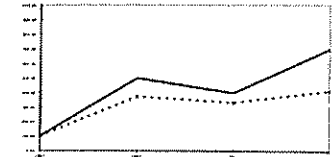
Sustained Group

Stalled Group

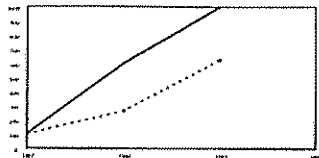
Plant Ltd



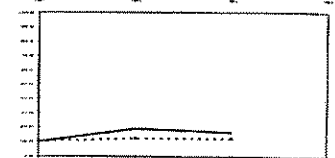
Plastics Ltd



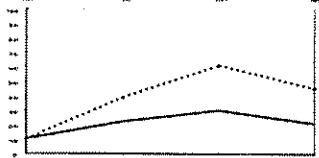
Medical Research Ltd



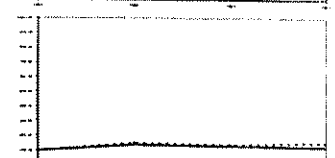
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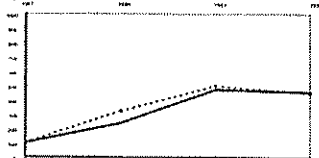
Signals Ltd



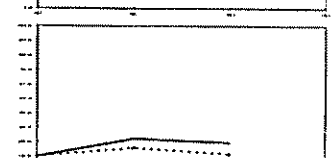
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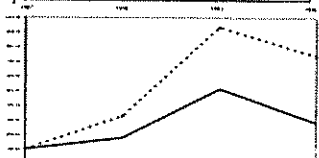
Pharmaceutical Studies Ltd



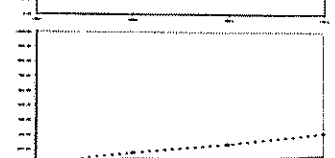
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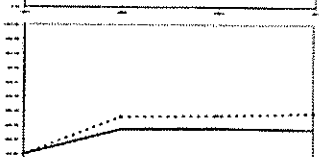
Clothing Ltd



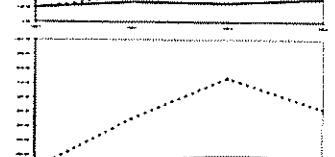
Health & Childcare Ltd



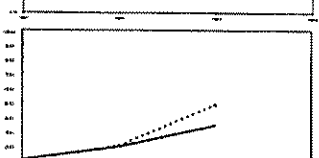
Engineers Ltd



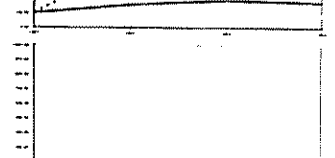
Computer Consultancy Ltd



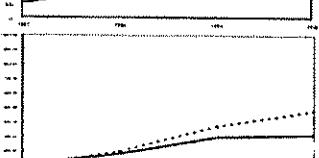
On-Line Ltd



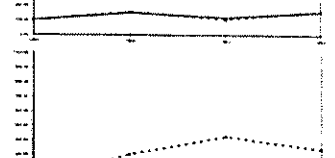
Ceramics Ltd



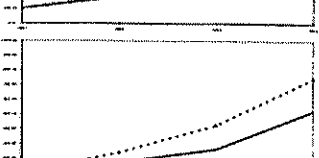
Stickers Ltd



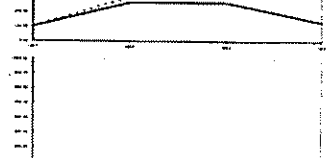
Textiles Ltd



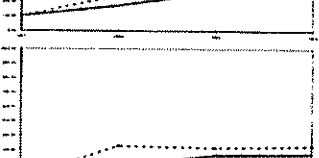
Communications Ltd



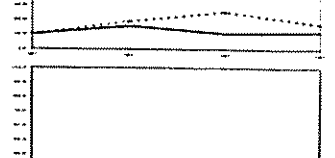
Pipes Ltd



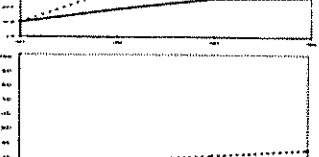
Test Equipment Ltd



Software Products Ltd



Labels Ltd



Key: — Employment

—■—■—■ Turnover

Software Ltd

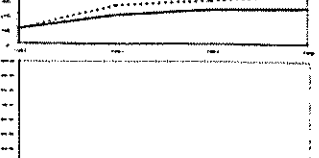


Chart 3

PreTax Profit to Turnover Margins 1987-95 for Sustained and Stalled Groups

Sustained Group

Stalled Group

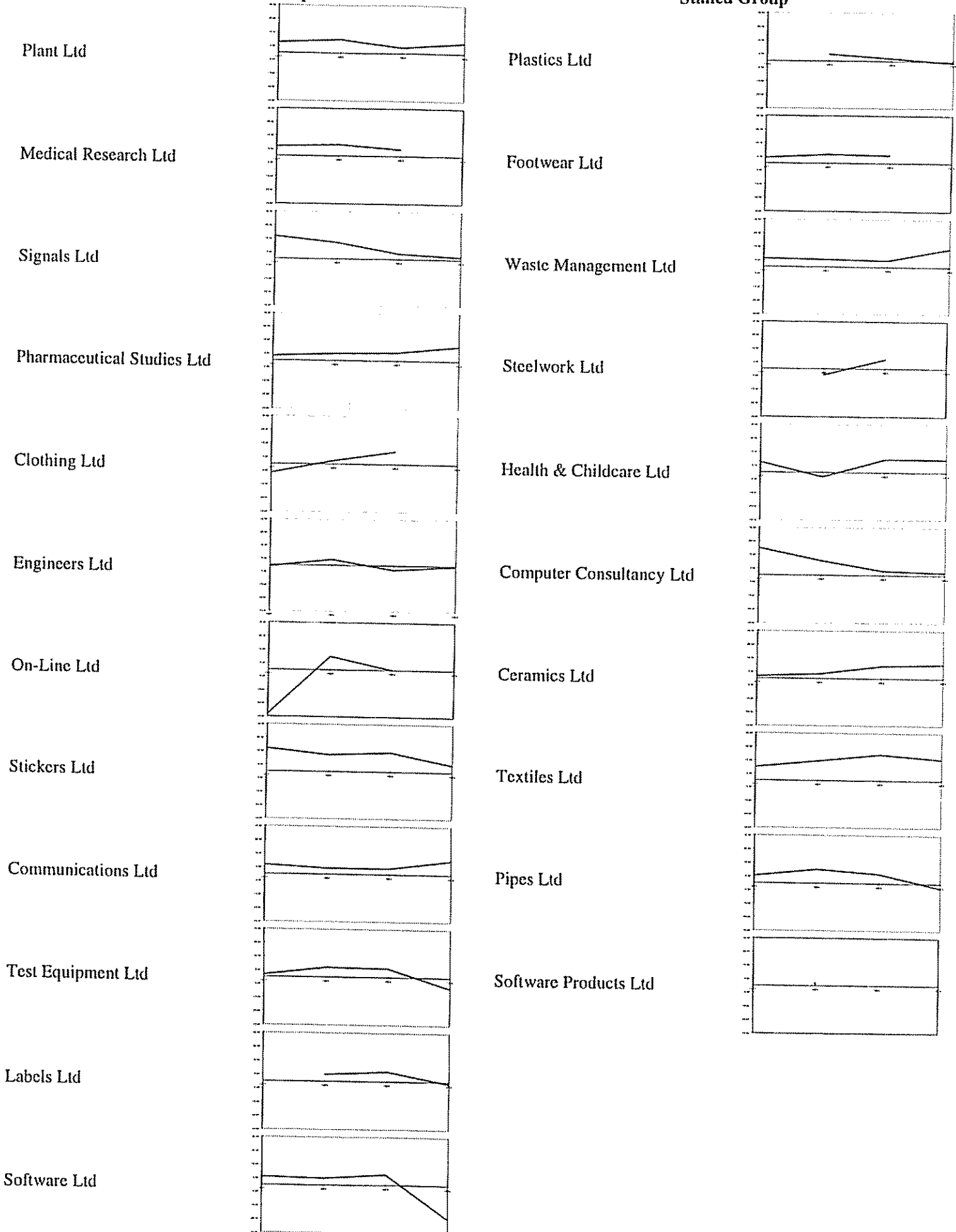


Chart 4 Employment Indices for 1995 (17 Phase 2 Firms)
(1987 = 100)

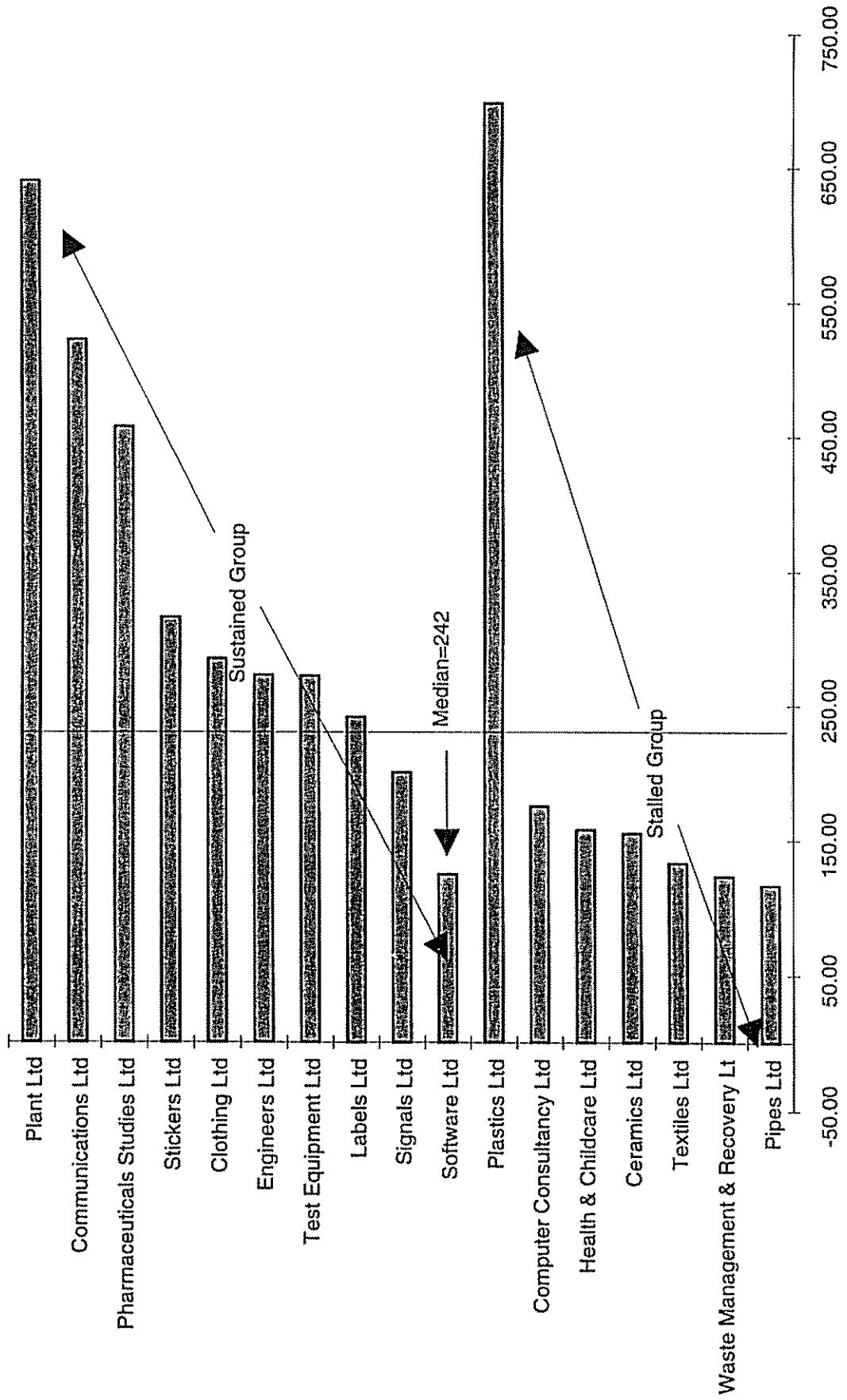


Chart 5 Turnover Indices for 1995 (17 Phase 2 Firms)
(1987 = 100)

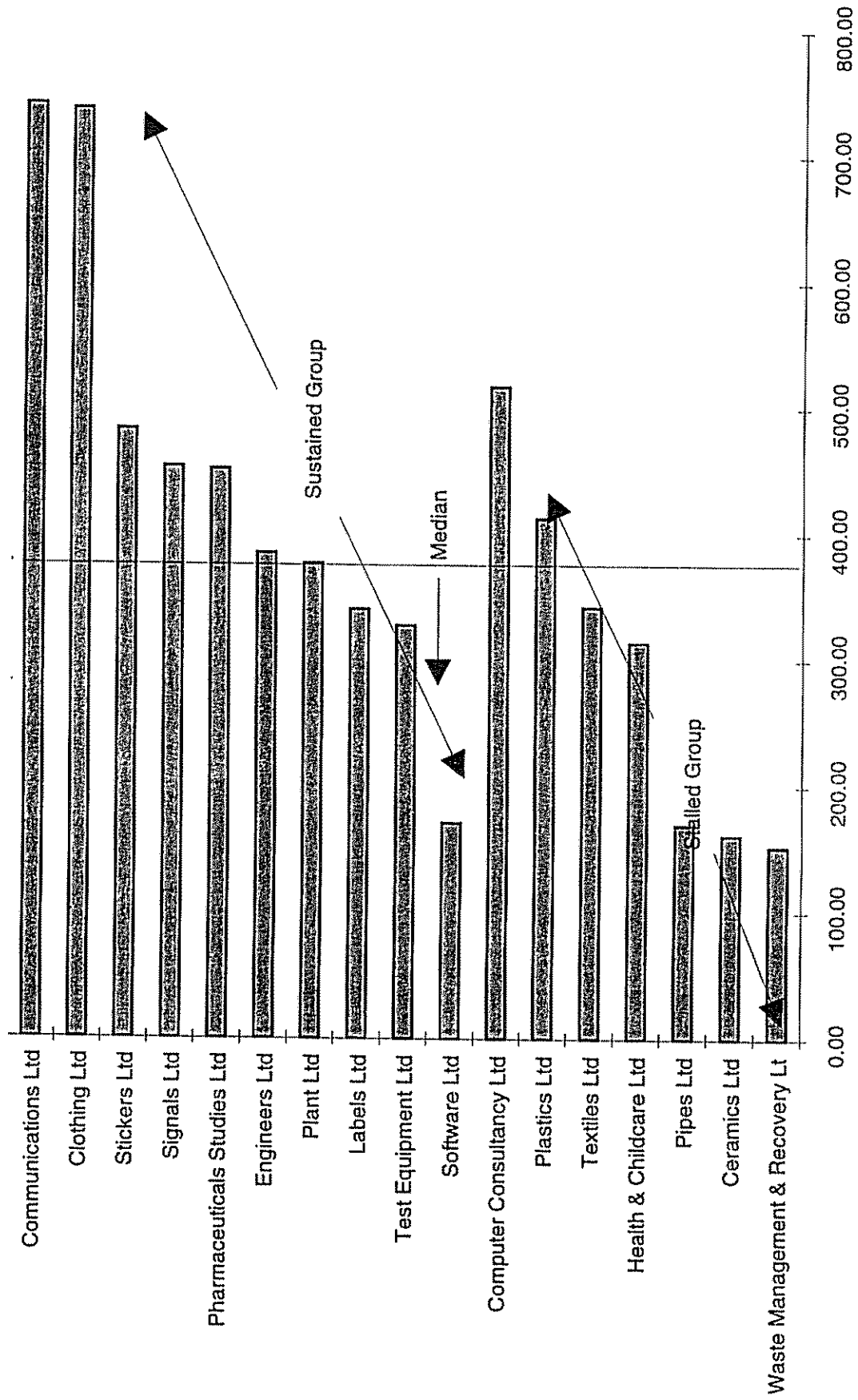


Chart 6 Employment and Turnover Growth 1990-95: Firms Ranked by Employment Growth (1990 = 100)

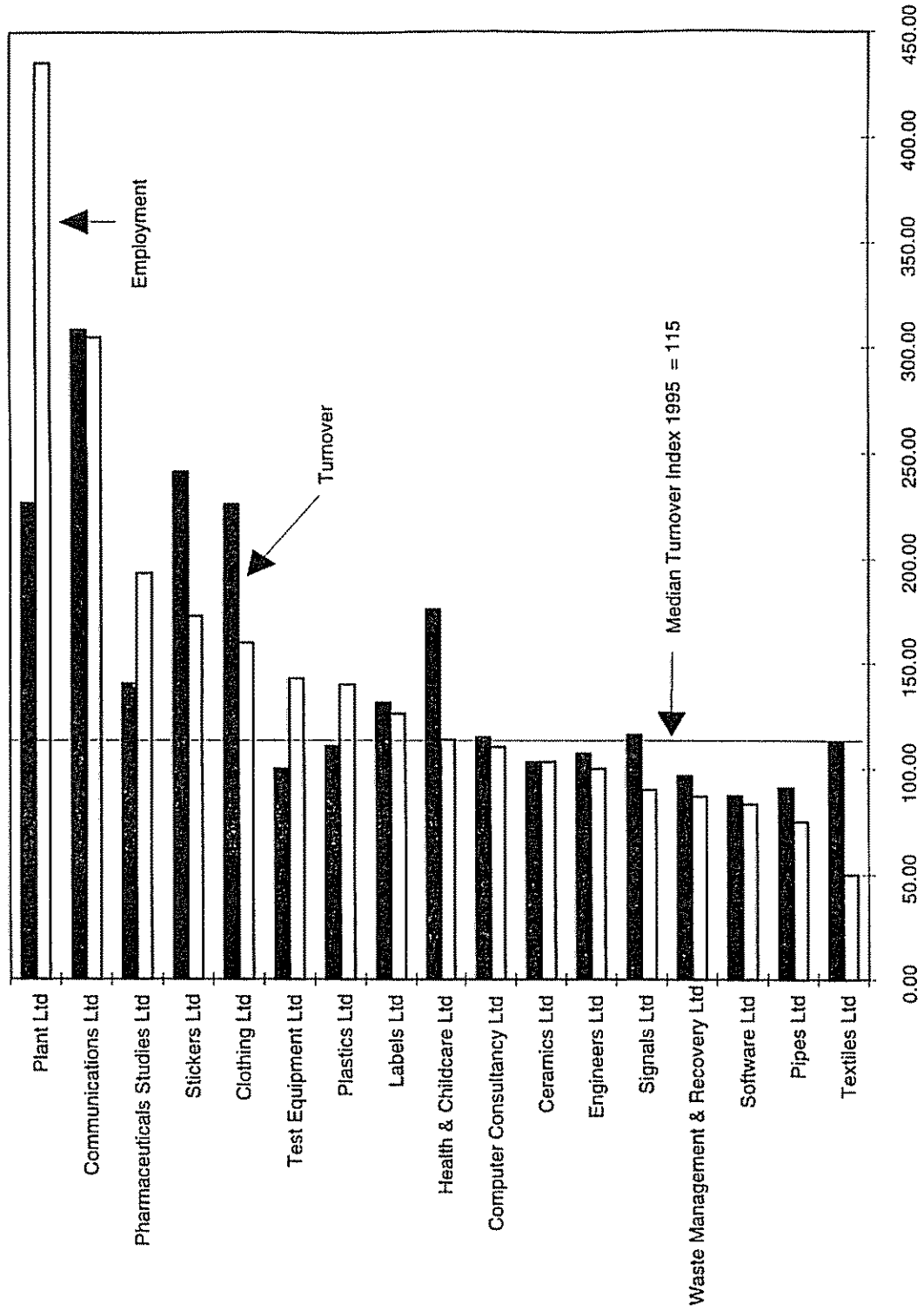


Chart 7 Indices of Turnover and Employment for the Fastest, Median and Slowest Growing Firms 1987-95 in the Sustained and Stalled Group (17 Phase 2 Firms) (1987=100)

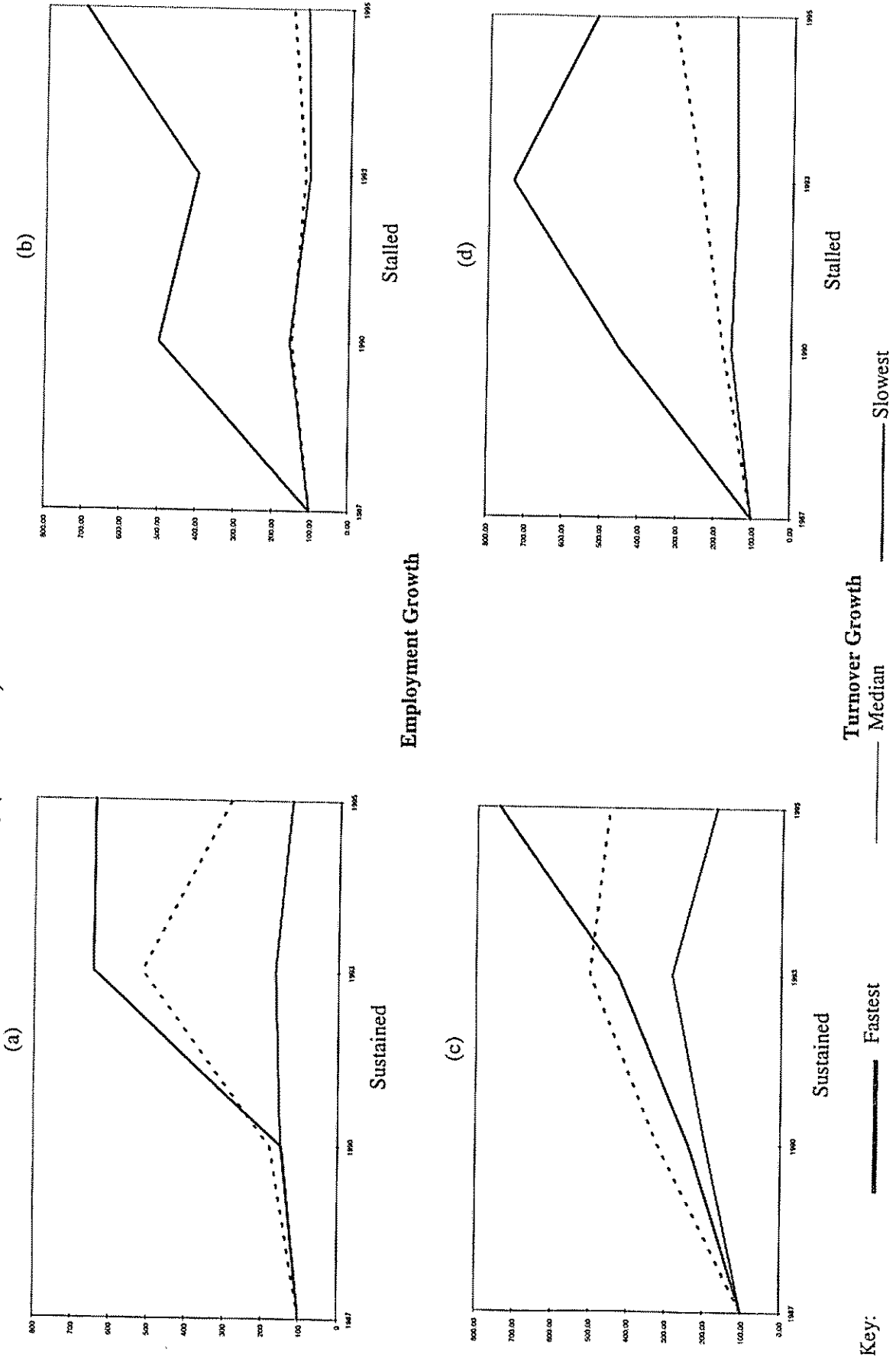


Figure 3.1 The investigation method: schedule, tasks and outputs

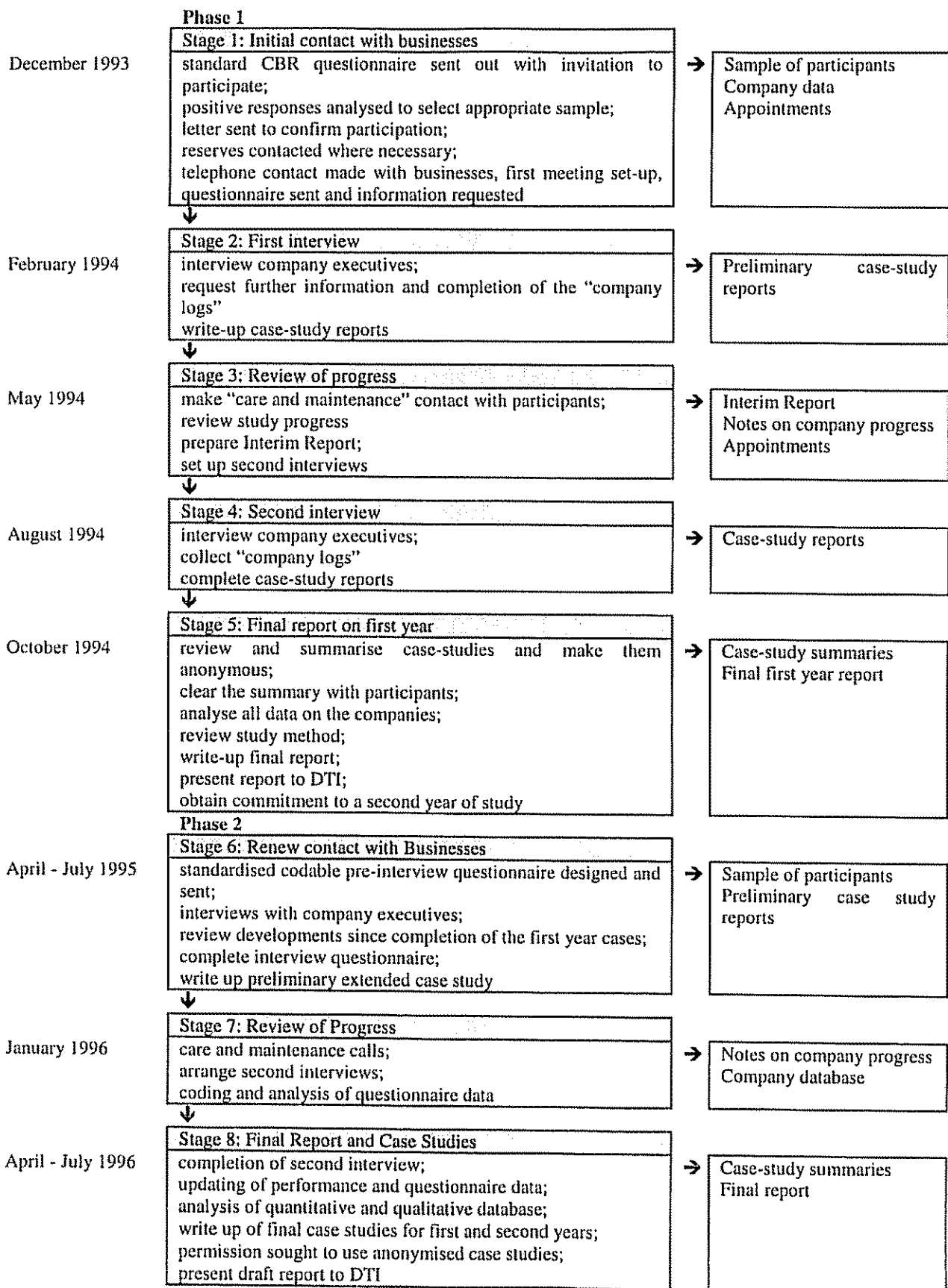
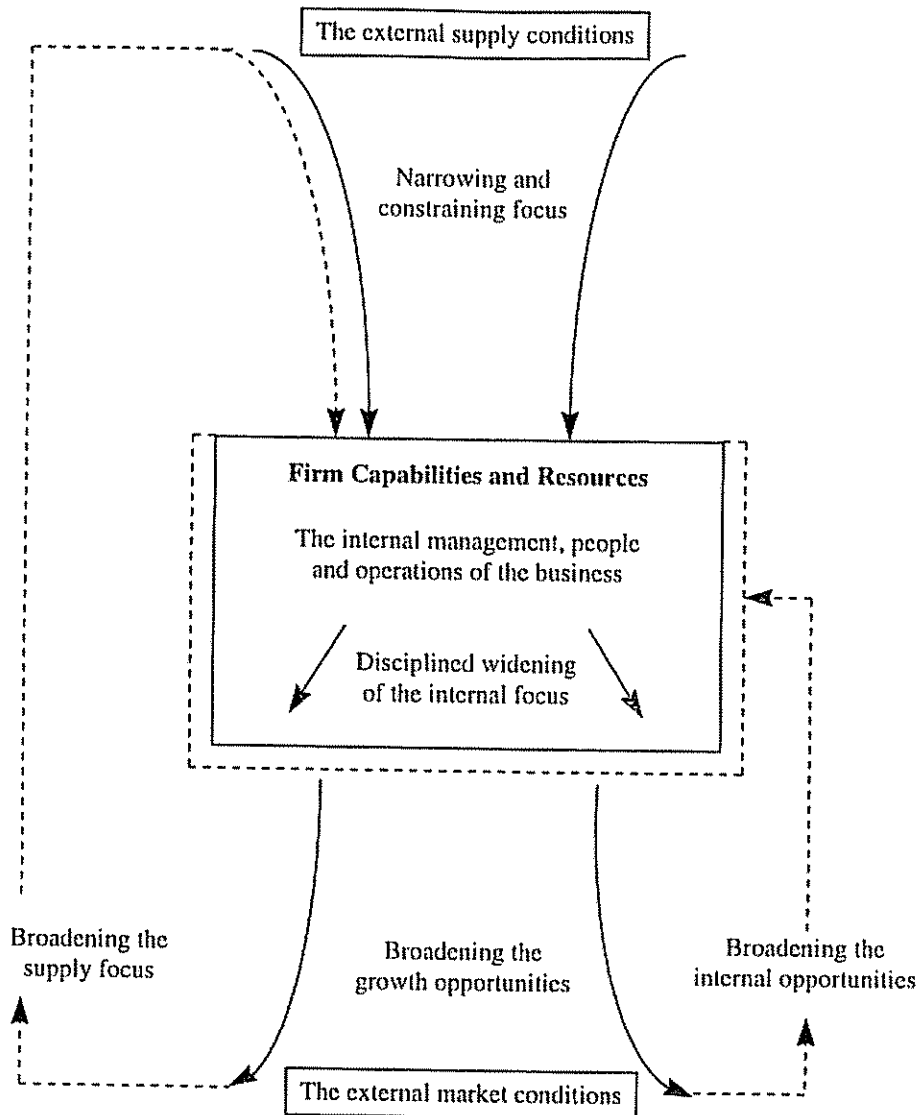


Figure 7.1 The conditions for sustained growth



1. If this depiction of the conditions for sustained growth is accepted, it follows that, given the generic external constraints facing small mature firms in the finance market, the product market and the managerial labour market, it is internal capabilities which are central to success. Firms which are most likely to sustain growth are those most capable of managing internal resources, devolving responsibility and broadening their market, managerial and technological bases.

2. It follows from this that a major objective of policy should be to raise the awareness of the importance of internal developments and to raise the general level and depth of management capability.

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