GROWTH DETERMINANTS IN SMALL TO MEDIUM FIRMS

A STUDY OF GROWTH FIRMS IN THE: SCOTTISH PLASTICS SUPPLY INDUSTRY; ABERDEEN'S OIL AND GAS RELATED INDUSTRY; AND GLASGOW'S FINANCIAL SERVICES.

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APPENDICES

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APPENDIX A2

APPENDIX A2A:
SUPPLY AND DEMAND CURVES

APPENDIX A2B:
SHORT AND LONG-RUN PRODUCTION CURVES

APPENDIX A2C:
RELATIONSHIP BETWEEN
SHORT-RUN AND DEMAND/SUPPLY CURVES

APPENDIX A2D:
PRODUCTION POSSIBILITY FRONTIER

APPENDIX A2E:
SOLOW'S GROWTH MODEL

APPENDIX A2A:

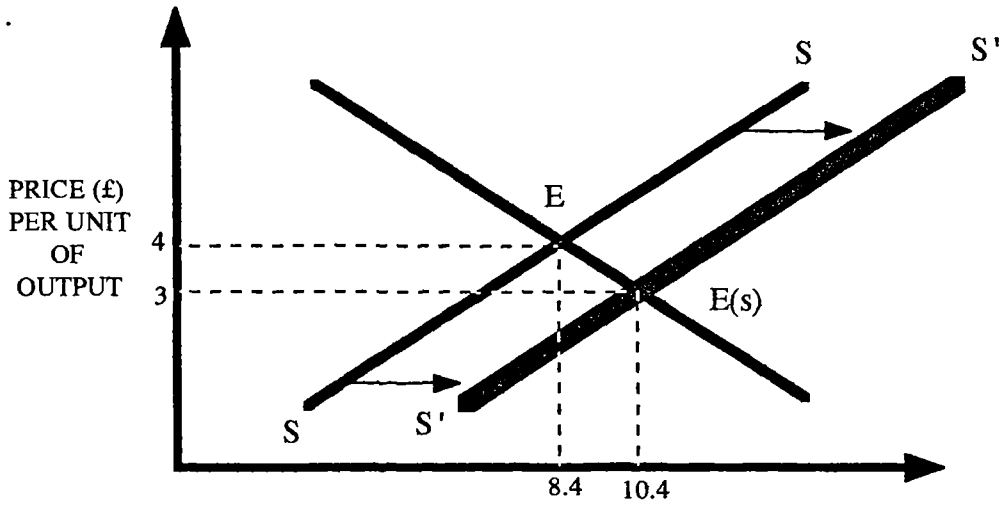
SUPPLY AND DEMAND CURVES

Neoclassical economics developed a mathematical model for explaining why the demand curve slopes downwards using the concept of marginal utility (*where the intensity of consumer desire decreases with each unit consumed*). One of the most powerful concepts in neoclassical economics was that developed by Marshall (*Pass et al, 1988*) of superimposing demand and supply curves on top of one another for a product in a particular market, in order to determine a product's value. This concept permitted sophisticated analytical techniques such as static equilibrium analysis and dynamic analysis to be developed that allowed differences in two or more equilibrium states for equilibrium market prices to be compared for different supply and demand curves. The equilibrium market price is where the price at which the quantity demanded of a good is exactly equal to the quantity supplied. The demand curve depicts the quantity that consumers are prepared to buy at particular prices while the supply curve depicts the quantity that producers are prepared to sell at particular prices.

Figure A2.1 demonstrates how supply and demand curves for a particular firm's operations can be used to study in the most general terms, how expansion in a firm's output might occur. In part (a) of figure A2.1, the firm's management make a conscious decision to expand in the face of a static demand curve. The firm's supply curve shifts to the right to position S'S' to form a new market equilibrium point E_S away from its previous position of SS with market equilibrium point E_0. The new market equilibrium point E_S is located further down the demand curve DD and although demand would be higher, it is at the expense of the market lowering the price that it is prepared to pay per unit of output. Here output has increased from 8.4 to 10.4 million units, but because demand was static at the unit price originally being offered (*i.e. £4 per unit*), this has forced the unit price to drop to £3 before the market can soak up the firm's excess production. By the measure of the value of sales turnover, the firm has actually declined, decreasing from £33.6 million down to £31.2 million. A decline in sales turnover does not always happen when a firm increases output in the absence of a commensurate increase in consumer demand. This is because not all demand and supply curves are straight. They can be curvilinear, although whatever geometry they assume both curves should be continuous functions and decrease (*for demand curves*) or increase (*for supply curves*) in an incremental manner. Depending on the nature of the demand curve, increased

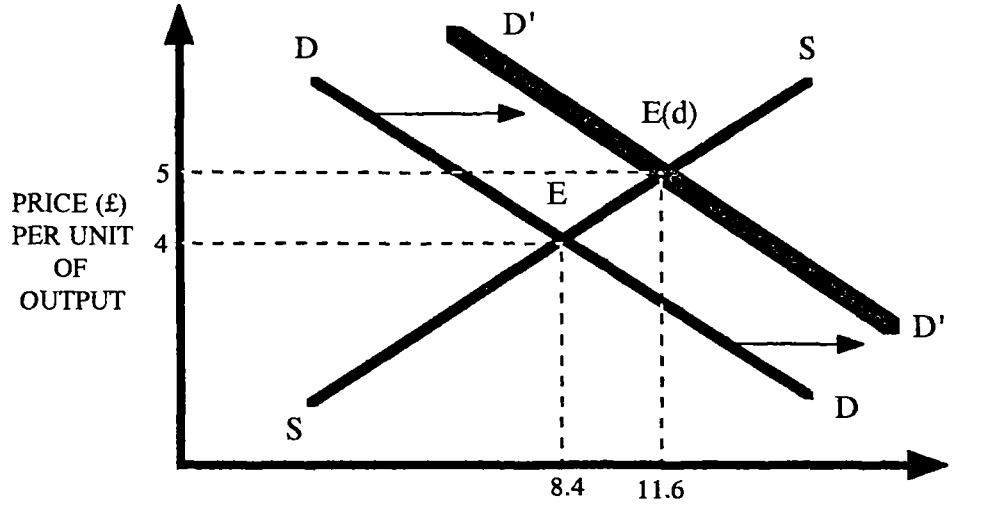
FIGURE A2.1:
CHANGES IN MARKET EQUILIBRIUM FOR SUPPLY-DEMAND CURVES OF AN EXPANDING FIRM

(a) Firm expands its output while market demand remains static.



Changes experienced by firm:
Output: increases from 8.4 to 10.4 million units
Turnover: decreases from £33.6m to £32.1m
Price: decreases from £4 to £3 per unit

(b) Firm expansion in output in response to increased market demand.



Changes experienced by firm:
Output: increases from 8.4 to 11.6 million units
Turnover: decreases from £33.6m to £58m
Price: decreases from £4 to £5 per unit

SOURCE: FOGIEL, 1980

output of the firm can still result in increased turnover, although the marginal profitability of each unit of output will decline. Firm's that pursue a growth strategy in the absence of increased consumer demand in the hope of increasing market share or perhaps in an attempt to stimulate demand, run the danger of undermining the firm's profitability in the short term and possibly constraining the firm's long term growth prospects.

In part (b) of figure A2.1, the firm expands in response to increased market demand. The demand curve moves from position DD to position D'D' resulting in the market equilibrium position increasing from E_0 to E_D. The firm's supply curve does not necessarily change unless the ultimate productive capacity of the firm happens to be insufficient to cope with the new level of market demand. In the hypothetical example examined here, increased consumer demand has driven up the unit price from £4 to £5, increased output from 8.4 to 11.6 million units and sales turnover has increased from £33.6 to £58 million. Demand-led growth allows the firm to significantly increase its output without compromising the price per unit output that it earns or its marginal profitability. The lower levels of commercial risk therefore make this the most desirable growth strategy for firm's to pursue, compared to the options of either trying to increase market share, stimulating consumer demand or creating new demand for new products.

Marshall (*Pass et al, 1988*) reasoned that in the short run, demand would determine the price of a product and output, but that in the long run, changes in resource inputs and production costs would influence price in the long run.

APPENDIX A2B:
SHORT AND LONG-RUN PRODUCTION CURVES

A particularly useful concept for analysing firm production behaviour is what are known as short-run and long-run production cost curves (*Fogiel, 1980*). In the short run, one or more inputs remain fixed whilst in the long run, the period is sufficiently long enough for all inputs to be variable. Generally, all production occurs in the short run of a firm. The long run is normally a concept employed to consider various production and marketing strategies that a firm may choose to plan for. An important aspect that complements the concept of short and long run production curves, is the idea that the geometry of these curves can be used to illustrate the impact of a firm attaining economies of scale. Economies of scale are achieved through

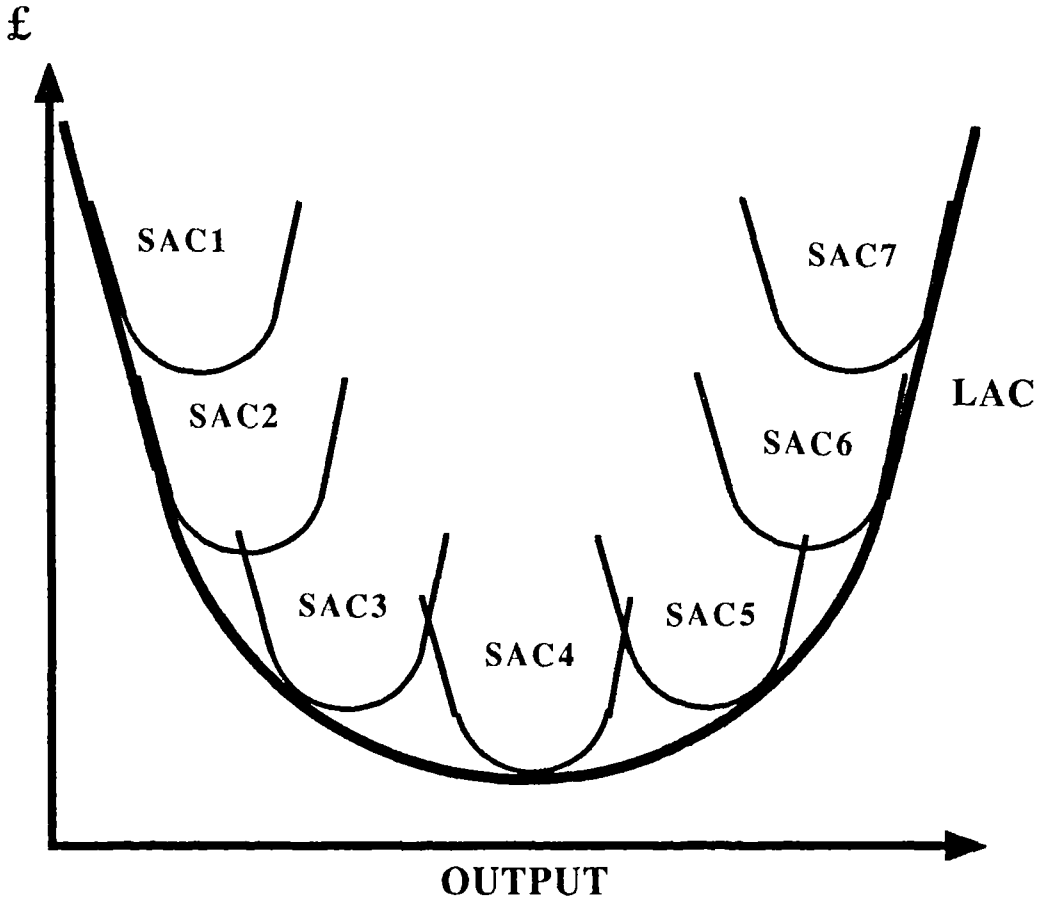
greater specialization and maximised production output up to the limit of the firm's production efficiency, thereby resulting in reduced costs and prices. The short-run production curves are often U-shaped whilst the long run production curves may tend towards a L-shape, with long run costs per unit of output remaining stable no matter how much output the firm has.

Figure A2.2 illustrates the relationship between short run and long run production cost curves. The long run production average cost curve is the family of all possible short run production average cost curves for a particular market sector at a given point in time (*Fogiel, 1980*). Each short run production average cost curve represents a distinct production system for the market sector concerned in the short term. The short run production average cost curves, numbered 1 through to seven in figure A2.2, represent production system options of increasing capacity and efficiency combinations. A firm's potential for growth is delineated by the envelope of the long run average cost curve and the firm's position on the locus of that curve relative to the ultimate output on the long run average cost curve. A small firm in a particular market sector intent on a growth strategy designed to achieve market dominance in the market sector indicated by the long run production average cost curve in figure A2.2, would start at SAC_1 and progress through each of the short run average cost curves culminating in SAC_7, along the envelope of the long run production average cost curve.

APPENDIX A2C:
RELATIONSHIP BETWEEN
SHORT-RUN AND DEMAND/SUPPLY CURVES

Demand and supply curves for a market or industry sector can be used in conjunction with the short term average cost curve of a firm in order to determine a firm's potential for expansion as has been illustrated in figure A2.3 (*Thompson, 1981*). However, this analytical technique requires the acceptance of several assumptions, namely that the firm being studied is one of many producers in the market and is unable to manipulate the market equilibrium price to its advantage; that the firm can produce its product for a range of costs less than the market equilibrium price; that the firm will sell its products at the market equilibrium price; and that the firm will expand only until it reaches a point in the short run average cost curve where its total profit is at a maximum. If an accurate short run average cost curve for a firm can be determined together with demand/supply curves for the particular industry or market that the firm is part of, this analytical technique can be used to determine the

FIGURE A2.2:
SHORT AND LONG RUN PRODUCTION CURVES FOR A FIRM



NOTES:
SAC1, SAC2, SAC3, SAC4, SAC5, SAC6 and SAC7 are the family of short-run production average cost curves for the long-run production average cost curve (LAC) of a particular firm.

A firm's potential for growth is delineated by the envelope of the long-run average cost curve and the firm's position on the locus of that curve relative to the ultimate output on the long-run average cost curve.

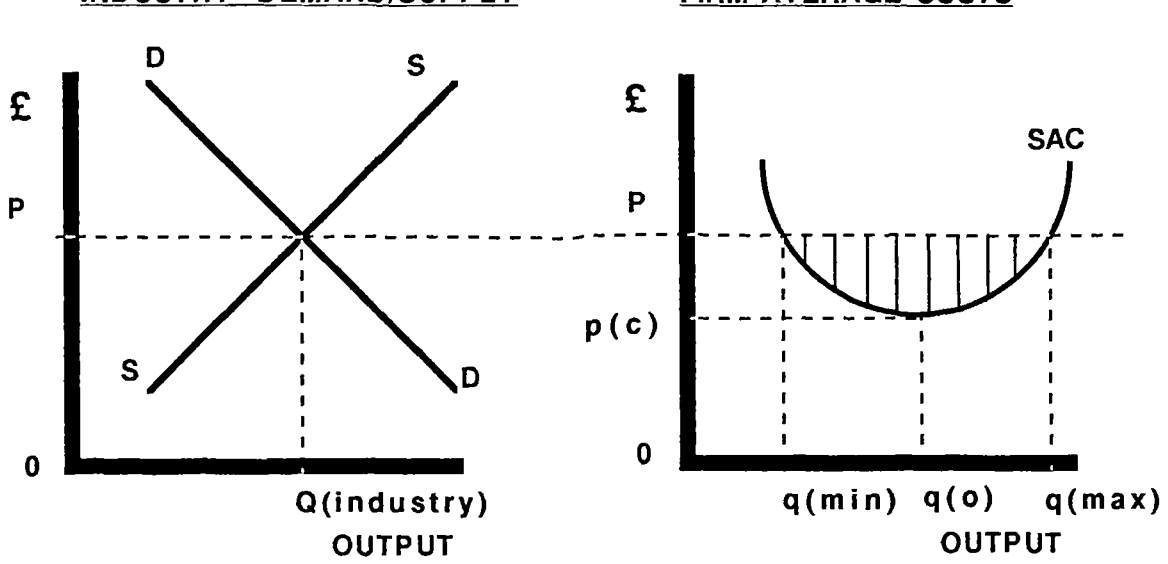
The short-run average cost curves, 1 through 7, represent production system options of increasing capacity and efficiency combinations.

A growth firm starting at SAC1, will progress through each of the short-run average cost curves culminating in SAC7, along the envelope of the long-run average cost curve.

SOURCE: FOGIEL, 1980

range of outputs that are profitable for a firm; how profitable a firm will be at the market equilibrium price; and perhaps most importantly, the potential for growth that a firm will have at the market equilibrium price given its existing short run average cost curve. From figure A2.3, it would seem that maximum growth potential should coincide with the maximum output the firm can manage without making a loss (*i.e. at q(max)*). However, from the neoclassical economics perspective, the firm should not

FIGURE A2.3:
RELATIONSHIP BETWEEN SHORT RUN AVERAGE COST AND SUPPLY/DEMAND CURVES



NOTES:

£ unit cost D demand S Supply
P Equilibrium unit market price
SAC Short run average cost curve
p(c) minimum average unit cost for firm's production run at output q(o)
Q(industry) equilibrium output for industry to satisfy market demand
q(min) minimum breakeven output for firm at market unit price P
q(o) optimum profitable output at market unit price P for maximum total profits
q(max) maximum breakeven output for firm at market unit price P

*Maximum total profits=[P-p(c)] x q(o)

SOURCE: FOGIEL, 1980

expand beyond the point of maximum production efficiency, which happens to coincide with maximum total profits (*at q(o)*). Therefore, referring to figure A2.3 as an example, if a firm's output was at q(min), then [q(o) - q(min)] would be the maximum practical growth potential for a firm, (*in terms of output*). The total profits due to the firm at the point of maximum production efficiency (*which happens to be maximum total profit*), can be estimated from figure A2.3 from the firm's short run average cost curve by multiplying the difference between the firm's minimum unit production cost (*p(c)*) and the market equilibrium price (*p*), by the firm's output (*q(o)*) at its minimum average unit production costs.

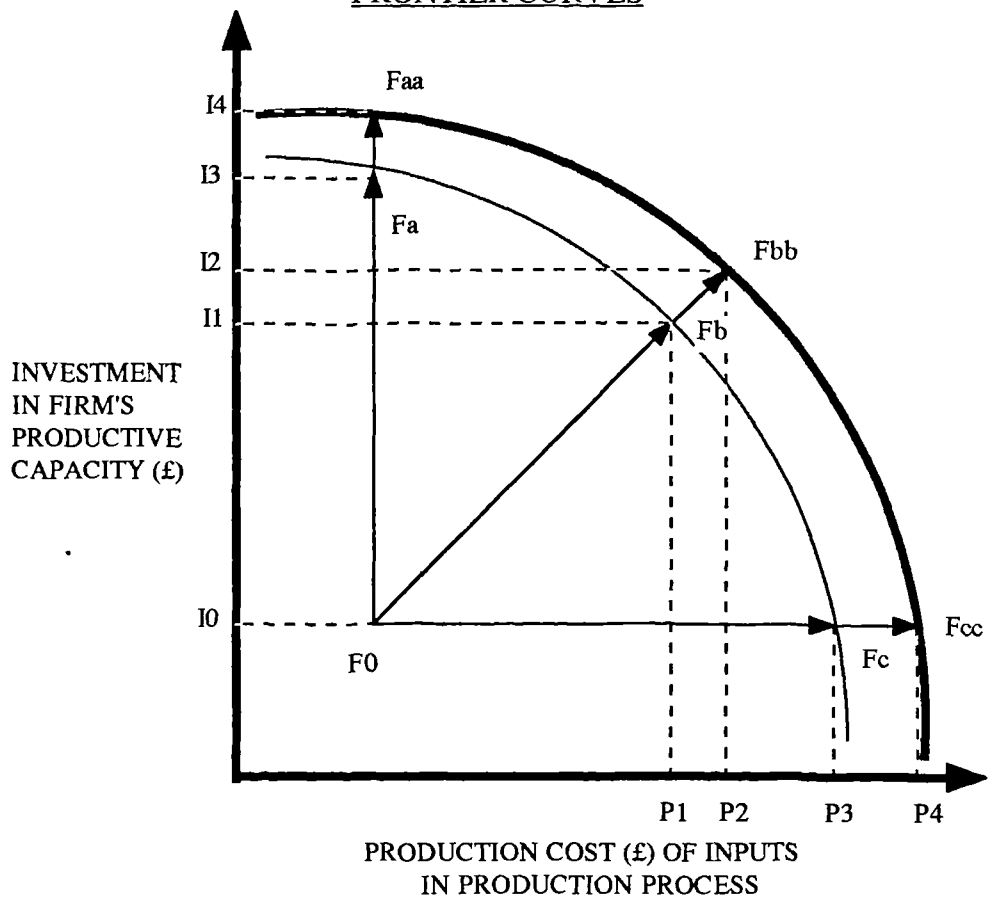
APPENDIX A2D:

PRODUCTION POSSIBILITY FRONTIER

Production possibility frontier curves (*Fogiel, 1980*) are primarily used to examine the trade-off between investment and present production that a firm must make in order to finance growth The principles employed in their use are identical at both the macro-economic level of the regional and national economy and at the micro-economic level of the firm. Figure A2.4 illustrates production possibility frontier curves for a firm. From figure A2.4, it can be seen that firm F_0 in the short term, through increased production efficiency, can expand to positions F_a, F_b and F_c on its production possibility frontier curve (*the inner curve*). In the long term, firm F_0 can increase its production capacity sufficiently to push its production possibility frontier outwards to the position of the outer curve, where firm F_0 can occupy positions F_{aa}, F_{bb} and F_{cc} on the new production possibility frontier. Wherever firm F_0 happens to be located on the diagram, the tradeoff between investment in the firm's future productive capacity and the inputs necessary for maximising the firm's present productive outputs, has to be considered. At positions F_a and F_{aa}, this tradeoff is directed in favour of maximising the firm's growth. At positions F_b and F_{bb}, the tradeoff between investment and current production is evenly balanced. At positions F_c and F_{cc}, the tradeoff is directed in favour of minimising investment in expanding the firm's future productive capacity and in maximising the firm's current output.

A firm that is not intent on a growth strategy may choose to use all of its capital resources on the cost of its inputs of production. A firm that is in pursuit of growth, will set aside some of its capital resources to invest in the firm's future expansion in the form of extra production capacity in the short term or research and development in the long term. The tradeoff between the cost of investment in increasing production capacity and the cost of the inputs of production has clearly tangible implications for the firm's future growth aspirations. If no investment in expanded production capacity takes place, then the firm will not be in a position to meet increased consumer demand in future if it occurs, whereas if the investment is made in extra production capacity and consumer demand increases, then the firm will be able to expand. With investment in research and development, however, the tradeoff between increased production in the present and investment becomes much less certain, since investment in research and development can be intermittent in the benefits that it yields.

FIGURE A2.4:
GROWTH POTENTIAL OF A FIRM UTILIZING PRODUCTION POSSIBILITY FRONTIER CURVES



SOURCE: FOGIEL, 1980

Production possibility frontier curves can be used to examine two approaches that a firm may adopt to achieve growth. The first approach is through increased production efficiency and the second approach is through expansion of the firm's production possibility frontier through new investment. Figure A2.4 illustrates how these two approaches to firm growth can be presented graphically utilizing production possibility frontier curves. From figure A2.4, it can be seen that firm F_0 can expand by increasing its production efficiency to the limits of the production possibility frontier curve (*the inner curve*) in the short term. In the long term, firm F_0 can invest in extra production capacity, thereby allowing its production possibility frontier curve to be pushed outwards to the position of the outer production possibility frontier curve in figure A2.4.

The most useful aspect of the production possibility frontier curve approach is in terms of understanding the tradeoff that inevitably occurs in any

production decision between maximising investment for future growth and maximising current production. It has value as a conceptual tool but tends to be limited in practical terms when trying to analyse actual firms in the marketplace.

APPENDIX A2E:
SOLOW'S GROWTH MODEL

Perhaps the most significant example of a growth model developed within the framework of neoclassical economics theory, is that of Solow's work in 1971 (*Crew 1975*). Solow's model of growth in a firm is what Crew (1975) calls the "steady state variety", in which the firm selects a constant rate of growth at which it grows, and remains at that growth rate forever. This simplifying assumption enables growth to be studied with the familiar maximising discipline of calculus.

Solow developed a production function in which output is a function of capital and labour. This model permits capital to be substituted for labour and displays diminishing returns. Therefore, if capital is increased relative to labour, the resulting increases in labour become progressively smaller. If the assumption of a variable capital-output ratio is adopted as a firm's capital stock increases, diminishing returns set in and produce progressively smaller increments in output. Sustained economic growth for a firm requires both capital widening and capital deepening investment. Capital widening refers to an increase in the capital input in a firm at the same rate as the increase in the labour input so that the proportion in which capital and labour are combined to produce a firm's output remains unchanged. Capital deepening refers to an increase in the capital input in a firm at a faster rate than the increase in the labour input so that proportionately more capital to labour is used to produce the firm's output. Technological progressiveness in terms of new production techniques, processes and methods and new products, offsets the diminishing returns to capital as the capital stock increases (*Pass et al 1988*).

Solow (*Crew, 1975*) symbolizes the growth rate of the firm as g. All prices are assumed to be constant, and the economy itself is assumed to have growth at g_0 which is always greater than g (*otherwise it is reasoned, the firm could eventually take over the whole economy*). The list of variables using Solow's (*Crew, 1975*) notation is given below:

g=constant growth rate of firm (output, capital assets, employment)
g_0=constant growth rate of economy where $g_0 > g$

m=unit cost of capital
f=depreciation rate per unit time
b=number of units of output produced by unit of capital
a=variable costs per unit of capital
n=elasticity of demand=constant
S(g)=selling costs to achieve growth in sales of g expressed as a fraction of sales revenue
T(g)=1-S(g)
i=discount rate (this takes into account such factors as the riskiness of the type of business which the firm is in)
Q=output
p=price=$Q^{-1/n}$ (n is constant elasticity)
Ø=1-1/n
K=firm's stock of capital

Solow (*Crew, 1975*) assumes that all growth is financed out of the firm's retained earnings.
The value of the firm is given by the following formula:

$$V=[T(g)b^{Ø}K^{Ø}-(a+m(f+g))K]/(i-g)$$

A firm can achieve maximum value V if it starts with capital goods of K and grows forever at g. Faster growth produces lower value for the firm because the costs of faster expansion impede larger sales. Similarly, if the firm had larger capital, it would be worth less because higher sales would drive down the price too much.

Solow's model (*Crew, 1975*) can be used to demonstrate the behaviour of owner-motivated and growth motivated firms. The model is useful in showing the effects of changes in parameters such as taxes, the cost of capital, depreciation rates of capital equipment, the growth rate of the economy, selling costs and the discount rate.

Solow's model requires that the firm achieve a certain marginal value per unit of capital employed. In this model, the shareholder is less interested in maximising the value of the firm than in maximising a firm's rate of growth.

Theories of the firm that make growth an independent objective recognize that fast growth might be at the expense of profits. Profits might be so low

relative to assets that there may be a threat of takeover for the firm. A problem with mathematical models is the difficulty in determining the initial stock of capital that the firm begins with. Crew (1975) points out that there is no reason why a firm should not choose a very small stock of capital consistent with a high growth rate. Solow overcomes this problem by assuming that the initial stock of capital is given by some historical accident leaving the firm's management to simply choose its steady state growth rate. Crew (1975) states that this allows comparison to be made between growth (*managerial*) and conventional (*shareholder*) type models of firms. Through the application of a mathematical proof employing techniques of analytical calculus techniques to Solow's model, Crew (1975) demonstrates that both these types of models of firm behaviour essentially respond the same way to changes in the economic environment. Thus, Crew suggests for Solow's model that qualitatively growth and profit oriented firms whose managements have adopted similar rates of growth objectives, respond in the same way to changes in the economic environment. Unfortunately, it would appear that research on whether differences between the growth rates adopted by a profit oriented firm (*i.e. a lower growth rate in favour of maximising profits*) as opposed to a growth oriented firm (*i.e. a higher growth rate to expand the firm*) is lacking. The upshot of Crew's mathematical proof for Solow's model implies that whether growth or profit is the cardinal objective of a firm's management makes little difference to the economic behaviour of the firm when confronted with the same economic conditions.

APPENDIX A3

APPENDIX A3A:
PA CONSULTING GROUP'S MODEL:
ADVOCATED STRATEGIES

APPENDIX A3B:
NOTES ON PORTER'S MODEL:
THE DETERMINANT OF FACTOR CONDITIONS

APPENDIX A3C:
NOTES ON PORTER'S MODEL:
THE DETERMINANT OF DEMAND CONDITIONS

APPENDIX A3D:
NOTES ON PORTER'S MODEL:
THE DETERMINANT OF
RELATED AND SUPPORTING INDUSTRIES

APPENDIX A3E:
GROWTH-POLE THEORY

APPENDIX A3F:
IMPLICATIONS OF PORTER'S MODEL FOR COMPANY STRATEGY

APPENDIX A3G:
IMPLICATIONS OF PORTER'S MODEL ON GOVERNMENT POLICY

APPENDIX A3

APPENDIX A3A:

PA CONSULTING GROUP'S MODEL: ADVOCATED STRATEGIES

With the 'new product process', the model (*Department of Trade and Industry, 1990*) advocates a firm to pursue the following strategy:

1. Objectives give meaning and direction to the R & D function.
2. Designers get close to customers.
3. Marketers, designers and manufacturing engineers work as a team at the source of product research and development.
4. More effort is put into the earlier concept and development phases since correcting product problems increases costs the closer the product is to the launch stage.
5. Ensure that technologies are adequately researched.
6. Have a disciplined creative process that encourages creativity.
7. Make use of computer aided engineering in which all staff components have access to essential data on the product being created through every step of the production process.

The 'rational factory' requires firms to pursue the following strategies:

1. Concentrating on core component production while out-sourcing the non-core components to effective and reliable suppliers.
2. Select flexible, low-inertia processes (e.g. flexible automation) to the manufacture of core items.
3. Create flexible, low inertia factories, with focused units that can handle mix variations and can be reconfigured for short product life cycles.
4. Ensure processes, handling and assembly have high capability/consistency in operation, and provide high reliability/availability.
5. Minimise adverse environmental effects and maximise efficiency of material usage.
6. Create factory working environments and devolved responsibilities, which are likely to attract, retain and motivate employees.

'Integrated logistics' involves firms in the following strategies:

1. Creating an integrated logistics network to maximise work flow and minimise development lead time.
2. Optimising the logistics network by evaluating and resolving all the trade-offs involved: cost versus service level versus capacity versus lead time versus inventory versus location.
3. Building in sufficient flexibility and responsiveness to cater for all the uncertainties such as product mix, volume, short life cycles, supplier changes and customer developments.

'Integrated organisation' requires firms to engage in the following strategies:

1. Select factory locations to maximise skill and labour availability, and access to supply infrastructure.
2. Adopt a total and major effort for attracting and retaining staff.
3. Adopt flat, responsive organisations.
4. Transform culture and work practices to achieve excellence, team work and collective responsibility.
5. Assess and develop all employees.
6. Train and re-skill operations/middle managers to suit the flexible, low inertia manufacturing environment.

The 'integrated information' strategies involve firms:

1. Identifying where integrated information is critical to key business 'flows':
    -from concept to product realisation;
    -from suppliers through production to customers.
2. Recognising the firm's database as critical and enduring, with hardware and software being less enduring. The firm will need database, networking and communication skills.
3. Employees will have to be trained to work with integrated information to achieve business goals.

APPENDIX A3B:

NOTES ON PORTER'S MODEL:
THE DETERMINANT OF FACTOR CONDITIONS

Human resources as a factor condition includes the quantity, skills and cost of personnel. Physical resources refers to the abundance, quality, accessibility and cost of a nation's land, water, mineral or timber deposits, power and other physical assets. It may also include climatic conditions and proximity of firms to key suppliers and markets. Knowledge resources refers to the stock of scientific, technical and market knowledge bearing on goods and services. Capital resources refers to the amount and cost of capital available to finance an industry. Infrastructure includes the type, quality and user-cost of infrastructure available that affects the competitiveness of firms in the industry. Firms in an industry are able to gain competitive advantage if they possess low-cost or uniquely high-quality factors, but it depends on how efficiently and effectively they are deployed.

APPENDIX A3C:

NOTES ON PORTER'S MODEL:
THE DETERMINANT OF DEMAND CONDITIONS

Home demand composition covers three issues: the segment structure of demand; sophisticated and demanding buyers; and anticipatory buyer needs. The segment structure of demand refers to the fact that firms can be successful if they cater to a large and important segment of the national economy. Sophisticated and demanding buyers pressure local firms to meet high standards in terms of product quality , features and service. Buyers can also be demanding, where home product needs in an industry are especially stringent or challenging because of local circumstances. If the needs of home buyers anticipate needs elsewhere in other nations, a nation's firms will gain competitive advantage.

Demand size and pattern of growth refers to the size of home demand; the number of independent buyers; the rate of growth of home demand; early home demand; and early saturation. Large home demand is not necessarily an advantage unless it is for segments demanded in other nations. The advantages that a larges home demand confers on an industry is in terms of economies of scale being achieved which is most important in those industries with heavy research and development requirements, substantial economies of scale in production, large generational leaps in technology, or high levels of uncertainty.

The advantages to an industry of a large number of independent buyers is that they expand the pool of market information and motivate progress, because they have a variety of ideas about product needs. They can also stimulate entry and investment in the industry by reducing perceived market risk.

Rapid growth of domestic demand, leads an industry's firms to adopt new technologies faster, with less fear that they will make existing investments redundant. It also encourages them to build large, efficient production efficiencies with the confidence that they will be utilized.

Early home demand for a product/service in a nation, if it anticipates buyer needs in other nations, helps local firms to move sooner than foreign rivals to become established in an industry.

Early product saturation of an industry's home market forces local firms to continue innovating and upgrading. A saturated home market pressures firms to push down prices, introduce new features and improve product performance. Local firm rivalries are intensified, thereby forcing cost-cutting and the shaking out of the weakest firms in the industry. This results in vigorous efforts in the industry to expand sales into foreign markets and fully utilize capacity. Product saturation of the industry's home market can be particularly beneficial if it is combined with buoyant growth in foreign markets.

Internationalization of domestic demand occurs if a nation's buyers for a product/service are mobile or multinational companies, thereby providing a base of often loyal customers in foreign markets that pulls a nation's products/services abroad. The other manner in which domestic needs and desires are inculcated in foreign buyers is through foreigners coming into the country for training; the demonstration effect in the scientific community; through exports that disseminate the nation's culture; and through political alliances or historical ties.

APPENDIX A3D:

NOTES ON PORTER'S MODEL: THE DETERMINANT OF RELATED AND SUPPORTING INDUSTRIES

Competitive advantage in supplier industries includes convenient availability of machinery or inputs; home-based suppliers permit better co-ordination of the overall production process. There is a process of innovation and upgrading that results from a close working relationship between world-class suppliers and the industry; a competitive domestic supplier industry is preferable to relying on even well qualified foreign suppliers; and an industry's firms receive maximum benefit when their suppliers are themselves global competitors.

APPENDIX A3E:

GROWTH-POLE THEORY

The concept of polarisation refers to the development of agglomeration economies as other economic units are polarised into the "growth pole" by the rapid growth of the leading industries. The concept of spread effects refers to the growth pole radiating outwards into the surrounding locality resulting in "trickle-down" or "spread" effects for the remainder of the economy. (*See pp172-173 An Introduction to Regional Planning by John Glasson, 2nd Edition, Hutchinson, London, 1978*)

APPENDIX A3F:

IMPLICATIONS OF PORTER'S MODEL FOR COMPANY STRATEGY

The prescription that Porter (1990) suggests as the necessary implications for company strategy are as follows:

1. Competitive advantage grows fundamentally out of improvement, innovation and change. Innovation includes new technologies and new ways of doing things and can be manifested in new product design, a new production process, a new approach to marketing or a new way of training or organising.

2. Sustaining advantage demands that its sources be upgraded. Lower-order advantages can be easily replicated and include basic factor costs. Higher-order advantages are more sustainable but more difficult to create, since they include such things as having established brand names.

3. A company needs to actively seek out pressure and challenge by:

-selling to the most sophisticated and demanding buyers;
-seeking out buyers with the most difficult needs;
-setting their own standards so that they exceed the toughest regulatory hurdles or product standards;
-sourcing from the most advanced and international home-based suppliers;
-treating employees as permanent;
-establishing outstanding competitors as motivators.

4. A company needs to perceive new possibilities for new strategies by:
-identifying and serving buyers with the most anticipatory needs;
-investigating all emerging new buyers;
-finding markets with localities whose regulations foreshadow those elsewhere;
-discovering and highlighting trends in factor costs;
-maintaining on-going relationships with centres of research and the sources of the most talented people;
-studying all competitors, especially the new and unconventional ones;
-bringing in some outsiders into the management team.

5. A company must take advantage of its home-nation of world-class suppliers and related industries or "cluster" as Porter (1990) calls it, through:
-regular senior management contact;
-formal and on-going interchange between research organisations;
-reciprocity in serving as test sites for new products and services;
-cooperation in penetrating and serving international markets.

6. Firms cannot leave the task of factor creation to chance or government. They need to take explicit steps to create factors by:
-establishing institutions that assist and develop their industry such as trade associations;
-develop close ties with educational and research institutions, through for example, sponsorship programmes;
-undertake their own training, research and infrastructure building;
-becoming actively involved in the efforts of government entities, educational institutions and the local community.

7. Firms can and should play an active role in the formation of clusters. This can be done by:

-upgrading their competitive position and becoming international by encouraging them to invest abroad and awarding them overseas as well as domestic business;

-entering upstream (i.e. suppliers) and related industries to speed their development.

8. Porter (1990) is not a great proponent of diversification strategies, particularly unrelated diversification through acquisition because of their mixed record. However, Porter (1990) does see diversification as useful in an industry when it occurs within a cluster or when it extends a cluster , in other words, into closely related fields. The diversification strategies advocated by Porter (1990) are as follows:

-new industries for diversification should be selected based on those where a favourable national "diamond" is present or can be created;

-diversification should follow or extend clusters in which a firm already competes;

-internal development of new businesses, supplemented by small acquisitions, is more likely to create and sustain competitive advantage than is the acquisition of large established companies.

-diversification should not be into unrelated businesses that lack common buyers, suppliers or close technological connections, since this will undermine the prospects for sustaining advantage in the core businesses.

9.Porter (1990) recommends firms adopt a global strategy so that they can maintain their competitive advantage. A global strategy entails selectively tapping into sources of advantage in other national "diamonds" to supplement the firm's own home-base advantages , which should be to off-set home-based disadvantages.

10. If a firm is to remain competitive on a global scale, then it must sell to all significant national markets. Identifying sophisticated buyers in other nations will help the firm understand the most important new needs and create pressures that stimulate rapid progress in products and services.

11. A firm should conceive of its production system in global terms, dispersing selected production activities to whichever country offers the best advantages. However, Porter (1990) insists that the knowledge and capability to design and

upgrade the product and to improve and operate the complete production process must be maintained in the home nation.

12. A firm must meet the best rivals in both the home and global marketplaces because capable rivals provide the bench-mark for measuring competitive advantage and provide the best stimulus for innovation and change.

13. Selective foreign acquisitions are seen as useful for two reasons: firstly, to gain access to a foreign market or to gain access to selective skills; and secondly, to gain access to a highly favourable national "diamond".

14. Porter (1990) is suspicious of alliances (*halfway between normal market transactions and mergers*), since they run the risk of deterring the firm's own efforts at upgrading. Alliances include joint ventures, licences, cross licences, sales agreements and supply agreements. They have the advantage of speeding up the process of globalising strategy, reaping economies of scale, gaining access to technology or markets, and still allow corporate independence without the need to resort to a costly merger.

15. For a firm to be successful, it is vital that it demonstrates corporate leadership, by energising their organisations to meet competitive challenges, to serve demanding needs and to keep progressing. Leaders avoid becoming preoccupied with improving financial performance, soliciting government assistance, and seeking stability through forming alliances and merging with competitors.

APPENDIX A3G:
IMPLICATIONS OF PORTER'S MODEL ON GOVERNMENT POLICY

The central goal of government policy towards the economy is to deploy a nation's resources (labour and capital) with high and rising levels of productivity. The implications of Porter's (1990) model for government policy and strategy are as follows:

1. Government needs to work towards improving human resources in terms of skills and abilities.

2. Government needs to stimulate improvements in science and technology.

3. Government has an important role to play in facilitating a modern and improving infrastructure.

4. Government has a role in affecting both the supply and cost of capital as well as the markets through which it is allocated.

5. Government plays an important role in maximising the amount and quality of information available.

6. Direct subsidies are used by governments for items such as the cost of procuring capital, research costs, raw material costs, the selling price of exports and direct grants. Porter's (1990) work found that subsidies are rarely effective in developing competitive firms since they limit flexibility, dampen innovation, dull incentives and create an attitude of dependence. Tax incentives and indirect subsidies in areas such as education, research universities, and advanced infrastructure are the preferred options by Porter (1990) for assisting developing firms.

7. Fiscal and monetary policy, regulation of energy markets, and policies to influence the collective bargaining process are prominent tools to manipulate wage levels, energy costs and exchange rates, the objective of which is to help firms compete more effectively in international markets. The policies available to governments in this area are:

-devaluation: Porter (1990) advises against this form of government policy because it results in a nation's standard of living being lowered and forces its firms to become dependent on price competition and constrains the process of upgrading in the economy towards higher order industries.
-input prices: Government should not be tempted to assist firms by holding down input prices artificially since increasing input costs give early warnings of trends that may affect international competition.
-wages: Porter (1990) recommends that wages growth should not be constrained by government policy,even if they rise with or slightly ahead of productivity growth. This pressures firms to seek more advanced sources of competitive advantage and gives consumers increased purchasing power, thereby improving demand conditions.
-workforce growth: Porter (1990) does not really advocate any particular policy prescription here because it tends to be a two-edged sword. While workforce growth fuels economic growth through increased demand

conditions,the pressures are eased off firms to boost productivity, upgrade skills and seek more advanced forms of competitive advantage.

8. The principal aims of demand-side policies should be to improve the quality of domestic demand.

9. Porter (1990) believes that regulatory standards are useful to improving firms' competitive advantage (*especially if they anticipate standards that will spread internationally*) if they improve quality , upgrade technology and provide features of important customer (*and social*) concern. But regulation can undermine competitive advantage if a nation's regulations lag behind those of other nations or are anachronistic.

10. Porter (1990) advocates relaxed government policy over advertising access to the media in order to stimulate demand.

11. Government policy should aim to nurture and reinforce industry clusters. Government can create new clusters by providing specialised infrastructure and technical centres, but Porter (1990) indicates that government policy is far more likely to succeed if it aims at reinforcing an existing or nascent industry cluster.

12. Porter (1990) is critical of past attempts at regional policy in Britain and Germany in particular, to lure firms into depressed regions with subsidies and inducements, since industry clusters rarely develop from such approaches. Regional policy is more effective if it builds on industry clusters using universities, research laboratories, specialised infrastructure, or trained labour pools as magnets for those clusters.

13. Government policy should actively encourage an international outlook and exports, through provision and dissemination of foreign market and technical information.

14. Government taxation policy must encourage effort by individuals to work hard.

15. Government policy should encourage individuals' motivation through such policies as an open educational system, financial aid for training and education and strict policies against discrimination.

16. There should be favourable tax treatment of long-term capital gains on equity investment in firms. A desirable approach would be to tax short-term gains much higher than long-term gains.

17. Government policy should have a corporate governance structure that provides proper management incentives. This would require compensation to management to be based on long-term rather than short-term results, and can be influenced through personal taxation policy. Porter (1990) recommends governance structures in which boards represent the interests of investors and where large investors have a role in management.

18. Government policy should encourage firms to establish generous reserves to help tide them over difficult periods, and help them avoid over-reacting when trying to protect short-term financial results. Such a policy would take the form of permitting tax deductions from income.

19. The importance of domestic rivalry for national competitive advantage has strong implications for antitrust policy covering in particular, merges, alliances and collusive behaviour.

20. Porter (1990) is against the regulation of competition which involves such policies as maintaining a state monopoly, controlling entry, or fixing process. Regulation of competition stifles rivalry and innovation.

21. Protectionism is another policy that governments can employ. It insulates domestic firms from the pressure of international competition and is usually justified in terms of either maturing emerging local industries or providing "breathing space" to allow an established industry to adjust. Protectionism of infant industries can be effective when there is a lack of well-established competitors in an industry in which strong foreign rivals are present. It can work as a policy, but only under three conditions. The first is the presence of effective domestic rivalry. The second condition is the presence of a favourable national "diamond". And the third condition is that the protection is of limited duration. Porter (1990) maintains that protection for the purposes of industrial restructuring does not address the real causes of industrial decline which reside in an unfavourable "diamond".

22. To assist new business formation, Porter (1990) recommends encouraging private venture capital through tax incentives for long-term capital gains, providing that other parts of the national "diamond" are favourable. Government policy should streamline regulations for new companies and provide assistance in finding infrastructure.

23. Government should pursue open markets vigorously in every foreign nation. Trade policy should seek to open markets wherever a nation has competitive advantage, eliminate unfair practices and not protect domestic competitors from foreign competition. Remedies should concentrate on the dismantling of barriers not on directly regulating exports or imports. On the problem of dumping of imports at below cost, Porter (1990) favours compensatory tariffs against the offending nation, rather than import quotas, and restricting firms from the offending nation from investing either in the forms of acquisitions or production facilities.

24. Government policy towards foreign investment should only intervene in circumstances where it threatens the health of rivalry through for example, acquisition of a leading domestic firm, or where market access in the industry is restricted in the foreign firm's home nation or where the nation engages in unfair trade practices or investment under international rules. Porter (1990) is of the opinion that widespread inward investment is a sign that government needs to take stock of the situation and come up with policy initiatives that upgrade a nation's "diamond" to improve the competitiveness of its domestic firms.

APPENDIX A4

APPENDIX A4A:

POSTAL QUESTIONNAIRE SURVEY FOR THE
SCOTTISH PLASTICS SUPPLY SECTOR

APPENDIX A4B:

POSTAL QUESTIONNAIRE SURVEY FOR
ABERDEEN'S OIL AND GAS RELATED SECTOR

APPENDIX A4C:

POSTAL QUESTIONNAIRE SURVEY FOR
GLASGOW'S FINANCIAL SERVICES SECTOR

APPENDIX A4D:

PERSONAL INTERVIEW STRUCTURE PLAN
FOR MANAGERS' OF CASE STUDY FIRMS

APPENDIX A4E:

FIELDWORK COSTS

APPENDIX A4F:

CHISQUARED METHODOLOGY EMPLOYED
IN TESTING ASSOCIATIONS OF FACTORS WITH GROWTH
FOR STATISTICAL SIGNIFICANCE

APPENDIX A4A:

POSTAL QUESTIONNAIRE SURVEY FOR THE SCOTTISH PLASTICS SUPPLY SECTOR

SCOTTISH PLASTICS MANUFACTURING INDUSTRY
RESEARCH PROJECT

AUGUST 1991

CONFIDENTIAL

GENERAL INFORMATI N:

This questionnaire is intended to provide information on the plastics manufacturing industry in Scotland. The information that you provide in this questionnaire will be treated in strict confidence. Individual details of your establishment will not be divulged to any third parties. All information collected in this survey will only be presented in aggregate form.

All the questions relate to this establishment. By establishment, we mean a coherent business operating entity which may extend over more than one site in Scotland.

Please complete and return the questionnaire using the stamped addressed envelope enclosed. If you should have any queries regarding the survey, please contact Andrew Allan on

☎041-552-4400 ext.4048

✍ Name and position of respondent(s): .....
.....
.....
.....
.....

Your contact phone number☎ .....

A.GENERAL

1 In what year did this establishment commence operations? ✍ .....

2 Please indicate which of the following functions you have at this establishment:

✔ *(Please tick appropriate boxes in table below)*

*Contracted out to other companies

*Provided by this establishment ⬇

FUNCTION	XXXXX ⬇	XXXXX ⬇
(a) Personnel		
(b) Financial control		
(c) Sales & marketing		
(d) Purchasing of material inputs		
(e) Research & development of new products		
(f) Capacity to adapt existing products		
(g) Product testing facilities		
(h) Manufacturing of own products		
(i) Manufacturing on a sub-contract basis		
(j) Capacity for training staff		
(k) Transport of material inputs and finished products		
(l) Other (please specify) ✍		

3 Is this establishment:

(Please tick appropriate box) ✔

(a) a private sole trader company ❑
(b) a private partnership company ❑
(c) a private limited company ❑
(d) a public limited company (*with shares issued to the public*) ❑
(e) other form of business (*please specify below*) ❑

✍ .....

B.OWNERSHIP & MANAGEMENT

4.Who manages this establishment?:

(Please tick appropriate box) ✔

(a) the owner/s ❑
(b) managers employed by the firm ❑
(c) other arrangement (*Please specify below*) ❑

✍ .....

5.Is this establishment:

(Please tick appropriate box)✔

(a) an independent Scottish company operating only from this site; ❑

OR

(b) a subsidiary of a company based elsewhere in:

(i) Scotland; ❑

(ii) the UK except Scotland; ❑

(iii) another country outside the UK ❑

6.Are the owners of this establishment involved in decisions concerned with:

(Please tick appropriate box)✔

(a) operational management (i.e.day-to-day management); ❑

(b) strategic management; ❑

7.Please complete the following details for the manager of this establishment:

(Please tick appropriate boxes)✔

(a) sex: ❑male ❑female

(b) age: ❑<25yrs ❑26-35yrs ❑36-45yrs ❑46-55yrs ❑>55yrs

(c) educational background: ❑'O' levels
❑'A' levels or 'Highers'
❑Trade certificate/s
❑Diploma/s
❑Bachelor degree/s
❑Postgraduate degree/s

(d) tenure as manager of this establishment: ❑<1yr
❑1-3yrs
❑4-10yrs
❑>10yrs

C.BUSINESS OBJECTIVES

8.Please rate the importance of the following objectives for your establishment.
A rating of **1** is "*very important*", while at the other end of the scale, a rating of **5** is "*not important*".

(Please circle the appropriate number for each objective below)○

	<very important>				<not important>
(a) high profits;	[1]	[2]	[3]	[4]	[5]
(b) high sales turnover;	[1]	[2]	[3]	[4]	[5]
(c) large firm size in terms of production capacity	[1]	[2]	[3]	[4]	[5]
(d) creation of jobs;	[1]	[2]	[3]	[4]	[5]
(e) maximise productivity;	[1]	[2]	[3]	[4]	[5]
(f) maximise market share;	[1]	[2]	[3]	[4]	[5]
(g) improve product quality;	[1]	[2]	[3]	[4]	[5]
(i) create the most innovative product for the market segment	[1]	[2]	[3]	[4]	[5]
(j) good working conditions for employees	[1]	[2]	[3]	[4]	[5]
(k) good rapport between management and employees	[1]	[2]	[3]	[4]	[5]
(l) high job satisfaction for employees	[1]	[2]	[3]	[4]	[5]

9.Would you say that your establishment's attitude to growth is:

(Please tick appropriate box)✔

(a) actively looking for significant expansion; ❑

(b) expecting to grow but fairly slowly; ❑

(c) more concerned to maintain current level of output and/or sales ❑

(d) anticipating a degree of contraction ❑

10. Would you consider this establishment's size defined in terms of sales, employment and production capacity, during the past three years to have been:

(Please tick appropriate boxes)

	*production capacity ⬇	*employment ⬇	*sales ⬇
(a) stable	☐	☐	☐
(b) declining	☐	☐	☐
(c) growing steadily but slowly	☐	☐	☐
(d) growing quickly in a controlled manner	☐	☐	☐
(e) growing rapidly in an ad hoc manner	☐	☐	☐

11. Do you expect this establishment's size defined in terms of sales, employment and production capacity during the next three years to:

(Please tick appropriate box)

	*production capacity ⬇	*employment ⬇	*sales ⬇
(a) remain stable	☐	☐	☐
(b) decline slightly	☐	☐	☐
(c) decline rapidly	☐	☐	☐
(d) grow steadily but slowly	☐	☐	☐
(e) grow quickly in a controlled manner	☐	☐	☐
(f) grow rapidly in an ad hoc manner	☐	☐	☐

D. FACTORS IN BUSINESS DEVELOPMENT AND GROWTH

12. Many factors can influence a company's potential to achieve success or simply survive in the marketplace. What impact have the following factors had during the past three years to the development of this establishment's business in terms of the degree of difficulties experienced?

(Please tick appropriate boxes)

12a MANAGEMENT FACTORS	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Surplus management time to plan growth					
Sufficient management skills to plan, organize and manage growth					

12b PRODUCTION ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Sufficient plant capacity					
Producing innovative, market leading products					
Creating innovative production techniques					
High product quality relative to similar products of competitors					
Sufficient training capability for staff needs					
High level of production efficiency					

12c FINANCIAL FACTORS	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Maintaining sufficient cash flow					
Achieving a high sales turnover					
Attaining satisfactory overall profitability					
Obtaining external finance through bank loans					
Obtaining external finance through building societies/insurance companies/merchant banks					
Obtaining external finance through venture capitalists					
Raising equity finance					
Securing government grants					
Raising finance from firm's internal financial resources (*e.g.liquid assets*)					

12d LABOUR ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Adequate supply of skilled labour					
Affordable unskilled and semi-skilled labour					
Good work ethic amongst employees					
Good labour relations between employees and management					
Influence of trade unions in company business					

12e MARKET-RELATED ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Finding sufficient market demand					
Finding suitable market niche for product/s					
Finding new geographic markets					

12f GOVERNMENT RELATED ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Rate of company taxation					
Lack of tax exemptions for company expenses					
Poor training of local population					

12g GENERAL ECONOMIC ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Depressed local economic conditions (*i.e. local regional council district your firm is in*)					
Depressed national economic conditions					
High interest rates					

12h LOCATION ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Suitability of premises					
Suitability of service infrastructure and services (*i.e. electricity, gas, water, sewerage, solid waste disposal and drainage*)					
Adequacy of local road infrastructure serving industrial area					
Adequacy of main road network serving industrial area					
Suitability of public transport serving industrial area					
Adequacy of telecommunications infrastructure					
Adequacy of primary and secondary education facilities in area for employees' families					
Adequacy of higher education facilities in area for employees' families					
Adequacy of community services and facilities (eg. health and social welfare)					
Adequacy of recreational amenities					
Proximity to a major city (*e.g Glasgow, Edinburgh or Aberdeen*)					
Attractiveness of local residential areas for current and prospective employees					
Adequacy of cultural facilities (*eg restaurants, social clubs, cinemas, theatres, museums, etc*)					
Distance from company's markets					

12i NATURE OF COMPETITION	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Strong competition from other Scottish firms					
Strong competition from other UK firms					
Strong competition from imports					
Strong demand from Scottish market					
Strong demand from UK market excluding Scotland					
Strong demand from export markets					
Demanding customers who settle for nothing less than top quality products					

12j.RELATED AND SUPPORTING INDUSTRIES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Proximity to raw material suppliers					
Companies involved in the production of products that are complementary to your company's products					
Components suppliers in the locality					

E.CHANGES IN THE DEVELOPMENT OF THIS BUSINESS

13. Has this establishment done any of the following over the past three years?

(Please tick appropriate boxes)✔

(a).Employed more staff	❑
(b).Introduced new production techniques	❑
(c).Introduced new products into your firm's existing markets	❑
(d).Introduced new products into new markets	❑
(e).Developed new markets with existing products	❑
(f).Reorganised the way work is carried out to improve production efficiency	❑
(g).Expanded production capacity	❑
(h).Acquired other firm/s	❑

14. What proportion of **development capital** (*i.e. capital invested to develop and improve the business as opposed to working capital for the day-to day running of the business*) for the last financial year was from:

✍(*Please give the approximate proportions of funding sources as a percentage of the total funding*:)

SOURCE OF DEVELOPMENT CAPITAL	PROPORTION
1.Internal financial resources of establishment	%
2.Equity (*shares made available to public*)	%
3.Bank loans	%
4.Financial institutions other than banks	%
5.Owner's personal financial resources	%
6.Grants	%
7.Other external financial sources	%
TOTAL	100%

15. Please rate how useful each of the following sources have been in assisting your establishment to develop over the past three years (*Please tick appropriate boxes*)✔

SOURCE	Very useful	Somewhat useful	Helpful but not useful	Unhelpful	Did not seek assistance
SDA/Scottish Enterprise					
Locate in Scotland					
Scottish Office Department/s					
Enterprise Initiative					
Regional/ District Council/s					
Universities & Colleges					
Banks					
Accountants					
Management Consultants					
Others					

16 Please provide where possible, a breakdown of part-time(P-T) and full-time (F-T) employment at this establishment for the years 1988 and 1991 in the table below:

✍

EMPLOYEE CATEGORY	1988	1991
Managerial & Executive (e.g. sales)	P/T:_____ F/T:	P/T:_____ F/T:
Skilled technical (including engineers and technicians)	P/T:_____ F/T:	P/T:_____ F/T:
Clerical/ Administrative	P/T:_____ F/T:	P/T:_____ F/T:
Skilled manual (e.g. craftsmen)	P/T:_____ F/T:	P/T:_____ F/T:
Less-skilled manual (e.g. assembly operatives)	P/T:_____ F/T:	P/T:_____ F/T:
TOTAL	P/T:_____ F/T:	P/T:_____ F/T:

17. Could you please indicate the approximate percentage change over the past three years that your establishment has experienced for annual sales turnover, annual profits, total assets and annual capital employed.

17(a)What percentage change in the amount of **Annual Sales Turnover** has occurred for this establishment over the past three years:(✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What was the approximate value of sales turnover of this establishment for the last financial year?

✍ £.....

17(b)What percentage change in the amount of **Annual Profitability** has occurred for this establishment over the past three years: (✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What were the approximate profits of this establishment for the last financial year?

✍ £.....

17(c)What percentage change in the amount of **Total assets** (*plant machinery, buildings, land, equipment and stocks*) has occurred for this establishment over the past three years: (✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What was the value of this establishment's total assets for the last financial year?

✍ £.....

17(d)What percentage change in the amount of **Annual Capital Employed** (*i.e. value of shares, loans and liquid assets of company*), has occurred for this establishment over the past three years:

(✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What was the approximate amount of capital employed by this establishment last financial year?

✍ £.....

F.MARKETS

18. Where are your competitors based? Please indicate in the table below the estimated percentage share of where your competitors are based:

Scotland	rest of UK	rest of world	TOTAL
_____%	_____%	_____%	100 %

19. Please estimate the percentage share of total sales destined to customers/markets in Scotland, the rest of the U.K. and the rest of the world:

✍ (*Please write estimated percentage share of sales for each area below*)

19(a)In 1990/91:

Scotland	rest of UK	rest of world	TOTAL
_____%	_____%	_____%	100 %

19(b)In 1987/88:

Scotland	rest of UK	rest of world	TOTAL
_____%	_____%	_____%	100 %

❖ YOUR CO-OPERATION IS VERY MUCH APPRECIATED ❖

✉ *Please return to:*

Andrew Allan
Centre for Planning,
University of Strathclyde,
50 Richmond Street,
GLASGOW G1 1XN

APPENDIX A4B:

POSTAL QUESTIONNAIRE SURVEY FOR ABERDEEN'S OIL AND GAS RELATED SECTOR

STUDY
OF
OIL AND GAS RELATED COMPANIES
IN THE
GRAMPIAN REGION

OCTOBER/NOVEMBER 1991

CONFIDENTIAL

GENERAL INFORMATION·

This questionnaire is intended to provide information on companies operating within the oil and gas related sectors of the Grampian region's economy. The information that you provide in this questionnaire will be treated in strict confidence. All information collected will be presented in the report on the survey's findings in aggregate form only. Special care will be taken to ensure that individual company details cannot be identified from the survey data and you can rest assured that your company's anonymity will be guaranteed.

All the questions relate to this establishment. By establishment, we mean a coherent business operating entity which may extend over more than one site within the areal jurisdiction of Grampian Regional Council.

The majority of the questions require ticked responses. However, there are a few questions that ask for some facts concerning your company, which I hope you will be able to provide, since this will help to make the survey findings somewhat more tangible.

Please complete and return the questionnaire using the stamped addressed envelope enclosed. If you should have any queries regarding the survey, please contact Andrew Allan on

☎041-552-4400 ext.4048

✍ Name and position of respondent(s): .....
.....
.....
.....
.....

Your contact phone number☎ .....

A.GENERAL

1.In what year did this establishment commence operations? ✍ .....

2.What products/services does this establishment provide?

✍ .....

.....

.....

.....

.....

3.Please indicate which of the following functions you have at this establishment:

✔ (*Please tick appropriate boxes in table below*)

*Contracted out to other companies

*Provided by this establishment

FUNCTION	XXXXX	XXXXX
(a) Personnel management		
(b) Financial control		
(c) Sales & marketing		
(d) Research & development of new products		
(e) Product testing facilities		
(f) Manufacturing of own products		
(g) Capacity for training staff		
(h) Transport of material inputs and finished products		

B.OWNERSHIP & MANAGEMENT

4.Is this establishment:

(*Please tick appropriate box*)✔

(a) a private sole trader company ❑
(b) a private partnership company ❑
(c) a private limited company ❑
(d) a public limited company (*with shares issued to the public*) ❑
(e) other form of business (*please specify below*) ❑

✍ .....

5.Who manages this establishment?:

(*Please tick appropriate box*)✔

(a) the owner/s ❑
(b) manager/s employed by the firm ❑
(c) other arrangement (*Please specify below*) ❑

✍ .....

6. Is this establishment:

(Please tick appropriate box) ✔

(a) an independent Scottish company operating only from this site; ❑

OR

(b) a subsidiary of a company based elsewhere in:

(i) Scotland; ❑

(ii) the UK except Scotland; ❑

(iii) another country outside the UK ❑

7. Please complete the following details for the manager of this establishment:

(Please tick appropriate boxes) ✔

(a) sex: ❑male ❑female

(b) age: ❑<26yrs ❑26-35yrs ❑36-45yrs ❑46-55yrs ❑>55yrs

(c) educational background: ❑'O' levels
❑'A' levels or 'Highers'
❑Diploma/s
❑Bachelor degree/s
❑Postgraduate degree/s

(d) tenure as manager of this establishment:
❑<1yr ❑1-3yrs ❑4-10yrs ❑>10yrs

C. BUSINESS OBJECTIVES

8. Please rate the importance of the following objectives for your establishment.
A rating of **1** is "*very important*", while at the other end of the scale, a rating of **5** is "*not important*".

(Please circle the appropriate number for each objective below) ○

	<very important>				<not important>
(a) high profits;	[1]	[2]	[3]	[4]	[5]
(b) high sales turnover;	[1]	[2]	[3]	[4]	[5]
(c) large firm size in terms of physical size (*e.g.capital assets*)	[1]	[2]	[3]	[4]	[5]
(d) large firm size in terms of turnover;	[1]	[2]	[3]	[4]	[5]
(e) large firm size in terms of employment	[1]	[2]	[3]	[4]	[5]
(f) maximise productivity;	[1]	[2]	[3]	[4]	[5]
(g) maximise production efficiency	[1]	[2]	[3]	[4]	[5]
(h) maximise market share;	[1]	[2]	[3]	[4]	[5]
(i) improve quality of products produced;	[1]	[2]	[3]	[4]	[5]
(j) create the most innovative products for the market	[1]	[2]	[3]	[4]	[5]
(k) creation of jobs;	[1]	[2]	[3]	[4]	[5]
(l) good working conditions for employees	[1]	[2]	[3]	[4]	[5]
(k) good rapport between management and employees	[1]	[2]	[3]	[4]	[5]
(l) high job satisfaction for employees	[1]	[2]	[3]	[4]	[5]

9. Would you consider this establishment's size defined in terms of sales, employment and production capacity, during the past three years to have been:

(Please tick appropriate boxes) ✔

	*sales ↓	*employment ↓	*production capacity ↓
(a) stable	❑	❑	❑
(b) declining	❑	❑	❑
(c) growing steadily but slowly	❑	❑	❑
(d) growing quickly in a controlled manner	❑	❑	❑
(e) growing rapidly in an ad hoc manner	❑	❑	❑

10 Do you expect this establishment's size defined in terms of sales, employment and production capacity during the next three years to:

(Please tick appropriate box) ✔

	*production capacity ⬇	*employment ⬇	*sales ⬇
(a) remain stable	☐	☐	☐
(b) decline slightly	☐	☐	☐
(c) decline rapidly	☐	☐	☐
(d) grow steadily but slowly	☐	☐	☐
(e) grow quickly in a controlled manner	☐	☐	☐
(f) grow rapidly in an ad hoc manner	☐	☐	☐

D.MARKETS

11 Where are your competitors based? Please indicate in the table below the estimated percentage share of where your competitors are based:

Grampian Region	rest of Scotland	rest of UK	rest of world	TOTAL
				100 %

12 Please estimate the percentage share of total sales destined to customers/markets in Scotland, the rest of the U.K. and the rest of the world:

✍ *(Please write estimated percentage share of sales for each area below)*

12(a) In 1990/91:

Grampian Region	rest of Scotland	rest of UK	rest of world	TOTAL
				100 %

12(b) In 1987/88:

Grampian Region	rest of Scotland	rest of UK	rest of world	TOTAL
				100 %

E.CHANGES IN THE DEVELOPMENT OF THIS BUSINESS

13 Has this establishment done any of the following over the past three years?

(Please tick appropriate boxes) ✔

(a) Employed more staff	☐
(b) Introduced new products/services into your firm's existing markets	☐
(c) Introduced new products/services into new markets	☐
(d) Developed new markets with existing products/services	☐
(e) Reorganised the way work is carried out to improve work efficiency	☐
(f) Expanded production capacity	☐
(g) Acquired other firm/s	☐

14. What proportion of **development capital** (*i.e. capital invested to develop and improve the business as opposed to working capital for the day-to day running of the business*) for the last financial year was from:

✍ (*Please give the approximate proportions of funding sources as a percentage of the total funding:*)

SOURCE OF DEVELOPMENT CAPITAL	PROPORTION
1.Internal financial resources of establishment	%
2.Equity (*shares made available to public*)	%
3.Bank loans	%
4.Financial institutions other than banks	%
5.Owner's personal financial resources	%
6.Grants	%
7.Other external financial sources	%
TOTAL	100%

15. Please rate how useful each of the following sources have been in assisting your establishment to develop over the past three years (*Please tick appropriate boxes*) ✔

SOURCE	Very useful	Somewhat useful	Unhelpful	Did not seek assistance
SDA/Scottish Enterprise				
Locate in Scotland				
Scottish Office Department/s				
Enterprise Initiative				
Regional/ District Council/s				
Universities & Colleges				
Banks				
Accountants				
Management Consultants				

16. Please provide a breakdown of the numbers of part-time(P-T) and full-time (F-T) employees at this establishment for the years 1988 and 1991 in the table below:

✍ (*Please write down the numbers of employees for each category for the years 1988 and 1991*)

EMPLOYEE CATEGORY	1988	1991
Managerial & Executive (*eg sales, production planning*)	P/T:_____ F/T:	P/T:_____ F/T:
Professional (*other than managerial & executive*)	P/T:_____ F/T:	P/T:_____ F/T:
Clerical/ Administrative	P/T:_____ F/T:	P/T:_____ F/T:
Skilled technical (*eg craftsmen, technicians*)	P/T:_____ F/T:	P/T:_____ F/T:
Unskilled manual work (*eg assembly operatives*)	P/T:_____ F/T:	P/T:_____ F/T:
TOTALS ⇨	P/T:_____ F/T:	P/T:_____ F/T:

17. Please indicate the approximate percentage change over the past three years that your establishment has experienced for annual sales turnover and annual profits.

17(a) What percentage change in the amount of **Annual Sales Turnover** has occurred for this establishment over the past three years: (✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What was the approximate value of sales turnover of this establishment for the last financial year?

✍ £.....

17(b) What percentage change in the amount of **Annual Profitability** has occurred for this establishment over the past three years: (✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What were the approximate profits of this establishment for the last financial year?

✍ £.....

F.FACTORS IN BUSINESS DEVELOPMENT AND GROWTH

18. Many factors can influence a company's potential to achieve success or simply survive in the marketplace. What impact have the following factors had during the past three years to the development of this establishment's business in terms of the degree of difficulties experienced?

(*Please tick appropriate boxes*)✔

18a MANAGEMENT FACTORS	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Surplus management time to plan growth					
Sufficient management skills to plan, organize and manage growth					

☆ ☆ ☆ ☆ ☆ ☆

18b PRODUCTION ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Sufficient plant capacity					
Producing innovative, market leading products					
Creating innovative production techniques					
High product quality relative to similar products of competitors					
Sufficient training capability for staff needs					
High level of production efficiency					

☆ ☆ ☆ ☆ ☆ ☆

18c MARKET-RELATED ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Finding sufficient market demand					
Finding suitable market niche for product/s					
Finding new geographic markets					

☆ ☆ ☆ ☆ ☆ ☆

18d FINANCIAL FACTORS	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Maintaining sufficient cash flow					
Achieving a high sales turnover					
Attaining satisfactory overall profitability					
Obtaining external finance through bank loans					
Obtaining external finance through building societies/insurance companies/merchant banks					
Obtaining external finance through venture capitalists					
Raising equity finance					
Securing government grants					
Raising finance from firm's internal financial resources (*e.g. liquid assets*)					

☆ ☆ ☆ ☆ ☆ ☆

18e LABOUR ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Adequate supply of skilled labour					
Affordable unskilled and semi-skilled labour					
Good work ethic amongst employees					
Good labour relations between employees and management					
Influence of trade unions in company business					

☆ ☆ ☆ ☆ ☆ ☆

18f GOVERNMENT RELATED ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Rate of company taxation					
Lack of tax exemptions for company expenses					
Poor training of local population					

☆ ☆ ☆ ☆ ☆ ☆

18g GENERAL ECONOMIC ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Depressed local economic conditions (*i.e. local regional council district your firm is in*)					
Depressed national economic conditions					
High interest rates					

☆ ☆ ☆ ☆ ☆ ☆

18h NATURE OF COMPETITION	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Competition from other Grampian firms					
Strong competition from other UK firms					
Strong competition from imports					
Strong demand from Scottish market					
Strong demand from UK market excluding Scotland					
Strong demand from export markets					
Demanding customers who settle for nothing less than top quality products					

18i LOCATION ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Suitability of premises					
Suitability of service infrastructure and services (*i.e. electricity, gas, water, sewerage, solid waste disposal and drainage*)					
Adequacy of local road infrastructure serving industrial area					
Adequacy of main road network serving industrial area					
Suitability of public transport serving industrial area					
Adequacy of telecommunications infrastructure					
Adequacy of primary and secondary education facilities in area for employees' families					
Adequacy of higher education facilities in area for employees' families					
Adequacy of community services and facilities (eg. health and social welfare)					
Adequacy of recreational amenities					
Proximity to Aberdeen					
Attractiveness of local residential areas for current and prospective employees					
Adequacy of cultural facilities (*eg restaurants, social clubs, cinemas, theatres, museums, etc*)					
Distance from company's markets					

☆ ☆ ☆ ☆ ☆ ☆

18j RELATED AND SUPPORTING INDUSTRIES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Proximity to raw material suppliers					
Companies involved in the production of products that are complementary to your company's products					
Components suppliers in the locality					

Please write down how long it took for you to complete this questionnaire_____

Thankyou for your time and effort in participating in this survey. You are welcome to write down any comments or queries concerning this survey below and on the reverse side of this page.

YOUR CO-OPERATION IS VERY MUCH APPRECIATED

Please return to:

Andrew Allan
Centre for Planning,
University of Strathclyde,
50 Richmond Street,
GLASGOW G1 1XN

APPENDIX A4C:

POSTAL QUESTIONNAIRE SURVEY FOR GLASGOW'S FINANCIAL SERVICES SECTOR

STUDY
OF THE
FINANCIAL SERVICES SECTOR
IN
GLASGOW

SEPTEMBER 1991

CONFIDENTIAL

GENERAL INFORMATION:

This questionnaire is intended to provide information on the financial services sector in Glasgow. The information that you provide in this questionnaire will be treated in strict confidence. Individual details of your establishment will not be divulged to any third parties. All information collected in this survey will only be presented in aggregate form.

All the questions relate to this establishment. By establishment, we mean a coherent business operating entity which may extend over more than one site in the city of Glasgow.

Please complete and return the questionnaire using the stamped addressed envelope enclosed. If you should have any queries regarding the survey, please contact Andrew Allan on

☎041-552-4400 ext.4048

✍ Name and position of respondent(s): .....
.....
.....
.....
.....

Your contact phone number ☎ .....

A.GENERAL

1.In what year did this establishment commence operations? .....

2.What services does this establishment provide?

.....

.....

.....

.....

.....

3.Please indicate which of the following functions you have at this establishment:

✔ (*Please tick appropriate boxes in table below*)

*Contracted out to other companies

*Provided by this establishment

FUNCTION	XXXXX	XXXXX
(a) Personnel Management		
(b) Management of your establishment's finances		
(c) Sales		
(d) Marketing		
(e) Research & development of new services		
(f) Capacity for training staff		
(g) Other (please specify)		

B.OWNERSHIP & MANAGEMENT

4.Is this establishment:

(*Please tick appropriate box*)✔

(a) a private sole trader company ☐
(b) a private partnership company ☐
(c) a private limited company ☐
(d) a public limited company (*with shares issued to the public*) ☐
(e) other form of business (*please specify below*) ☐

.....

5. Who manages this establishment?:

(*Please tick appropriate box*)✔

(a) the owner/s ❑

(b) manager/s employed by the firm ❑

(c) other arrangement (*Please specify below*) ❑

✍ .....

6. Is this establishment:

(*Please tick appropriate box*)✔

(a) an independent Scottish company operating only from this site; ❑

OR

(b) a subsidiary of a company based elsewhere in:

(i) Scotland; ❑

(ii) the UK except Scotland; ❑

(iii) another country outside the UK ❑

7. Are the owners of this establishment involved in decisions concerned with:

(*Please tick appropriate box*)✔

(a) operational management (*i.e.day-to-day management*); ❑

(b) strategic management (*i.e. long term planning*); ❑

8. Please complete the following details for the manager of this establishment:

(*Please tick appropriate boxes*)✔

(a) sex: ❑male ❑female

(b) age: ❑<26yrs ❑26-35yrs ❑36-45yrs ❑46-55yrs ❑>55yrs

(c) educational background: ❑'O' levels
❑'A' levels or 'Highers'
❑Diploma/s
❑Bachelor degree/s
❑Postgraduate degree/s

(d) tenure as manager of this establishment: ❑<1yr
❑1-3yrs
❑4-10yrs
❑>10yrs

C.BUSINESS OBJECTIVES

9. Please rate the importance of the following objectives for your establishment.
A rating of **1** is "*very important*", while at the other end of the scale, a rating of **5** is "*not important*".

(Please circle the appropriate number for each objective below)

	<very important>				<not important>
(a) high profits;	[1]	[2]	[3]	[4]	[5]
(b) high sales turnover;	[1]	[2]	[3]	[4]	[5]
(c) large firm size in terms of physical size (*e.g.capital assets*)	[1]	[2]	[3]	[4]	[5]
(d) large firm size in terms of turnover;	[1]	[2]	[3]	[4]	[5]
(e) large firm size in terms of employment	[1]	[2]	[3]	[4]	[5]
(f) maximise productivity;	[1]	[2]	[3]	[4]	[5]
(g) maximise business efficiency	[1]	[2]	[3]	[4]	[5]
(f) maximise market share;	[1]	[2]	[3]	[4]	[5]
(g) improve quality of services provided;	[1]	[2]	[3]	[4]	[5]
(i) create the most innovative services for the market segment	[1]	[2]	[3]	[4]	[5]
(e) creation of jobs;	[1]	[2]	[3]	[4]	[5]
(j) good working conditions for employees	[1]	[2]	[3]	[4]	[5]
(k) good rapport between management and employees	[1]	[2]	[3]	[4]	[5]
(l) high job satisfaction for employees	[1]	[2]	[3]	[4]	[5]

10. Would you consider this establishment's size defined in terms of sales, employment and capacity to provide services, during the past three years to have been:

(Please tick appropriate boxes)

	*sales ↓	*employment ↓	*capacity to provide services ↓
(a) stable	☐	☐	☐
(b) declining	☐	☐	☐
(c) growing steadily but slowly	☐	☐	☐
(d) growing quickly in a controlled manner	☐	☐	☐
(e) growing rapidly in an ad hoc manner	☐	☐	☐

11. Do you expect this establishment's size defined in terms of sales, employment and capacity to provide services during the next three years to:

(Please tick appropriate box)

	*sales ↓	*employment ↓	*capacity to provide services ↓
(a) remain stable	☐	☐	☐
(b) decline slightly	☐	☐	☐
(c) decline rapidly	☐	☐	☐
(d) grow steadily but slowly	☐	☐	☐
(e) grow quickly in a controlled manner	☐	☐	☐
(f) grow rapidly in an ad hoc manner	☐	☐	☐

D.MARKETS

12. Where are your competitors based? Please indicate in the table below the estimated percentage share of where your competitors are based:

Scotland	rest of UK	rest of world	TOTAL
%	%	%	100 %

13. Please estimate the percentage share of total sales destined to customers/markets in Scotland, the rest of the U.K. and the rest of the world:

✍ *(Please write estimated percentage share of sales for each area below)*

13(a) In 1990/91:

Scotland	rest of UK	rest of world	TOTAL
%	%	%	100 %

13(b) In 1987/88:

Scotland	rest of UK	rest of world	TOTAL
%	%	%	100 %

E.CHANGES IN THE DEVELOPMENT OF THIS BUSINESS

14. Has this establishment done any of the following over the past three years?

(Please tick appropriate boxes) ✔

(a). Employed more staff ☐
(b). Introduced new services into your firm's existing markets ☐
(c). Introduced new services into new markets ☐
(d). Developed new markets with existing services ☐
(e). Reorganised the way work is carried out to improve work efficiency ☐
(f). Expanded office floorspace ☐
(g). Acquired other firm/s ☐

15. What proportion of **development capital** (*i.e. capital invested to develop and improve the business as opposed to working capital for the day-to day running of the business*) for the last financial year was from:

✍ *(Please give the approximate proportions of funding sources as a percentage of the total funding:)*

SOURCE OF DEVELOPMENT CAPITAL	PROPORTION
1. Internal financial resources of establishment	%
2. Equity (*shares made available to public*)	%
3. Bank loans	%
4. Financial institutions other than banks	%
5. Owner's personal financial resources	%
6. Grants	%
7. Other external financial sources	%
TOTAL	100%

16 Please rate how useful each of the following sources have been in assisting your establishment to develop over the past three years (*Please tick appropriate boxes*) ✔

SOURCE	Very useful	Somewhat useful	Unhelpful	Did not seek assistance
SDA/Scottish Enterprise				
Locate in Scotland				
Scottish Office Department/s				
Enterprise Initiative				
Regional/ District Council/s				
Universities & Colleges				
Banks				
Accountants				
Management Consultants				
Others				

17 Please provide a breakdown of part-time(P-T) and full-time (F-T) employment at this establishment for the years 1988 and 1991 in the table below:

✍ (*Please write down the numbers of employees for each category for the years 1988 and 1991*)

EMPLOYEE CATEGORY	1988	1991
Managerial & Executive	P/T:_____ F/T:	P/T:_____ F/T:
Professional (*other than managerial & executive*)	P/T:_____ F/T:	P/T:_____ F/T:
Clerical/ Administrative	P/T:_____ F/T:	P/T:_____ F/T:
Skilled technical	P/T:_____ F/T:	P/T:_____ F/T:
Unskilled manual work	P/T:_____ F/T:	P/T:_____ F/T:
TOTAL	P/T:_____ F/T:	P/T:_____ F/T:

18. Could you please indicate the approximate percentage change over the past three years that your establishment has experienced for annual sales turnover, annual profits, total assets and annual capital employed.

18(a)What percentage change in the amount of **Annual Sales Turnover** has occurred for this establishment over the past three years:(✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What was the approximate value of sales turnover of this establishment for the last financial year?

✍ £.....

18(b)What percentage change in the amount of **Annual Profitability** has occurred for this establishment over the past three years: (✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What were the approximate profits of this establishment for the last financial year?

✍ £.....

18(c)What percentage change in the amount of **Total assets** (*buildings, land, equipment and stocks*) has occurred for this establishment over the past three years: (✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26 50%	decrease of 1 25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What was the value of this establishment's total assets for the last financial year?

✍ £.....

18(d)What percentage change in the amount of **Annual Capital Employed** (*i.e. value of shares, loans and liquid assets of company*), has occurred for this establishment over the past three years: (✔ *Please tick appropriate box*)

decrease by >50%	decrease of 26-50%	decrease of 1-25%	No Change	increase of 1-25%	increase of 26-50%	increase of 51-100%	increase of 101-200%	increase of 201 300%	increase of >300%

What was the approximate amount of capital employed by this establishment last financial year?

✍ £.....

F.FACTORS IN BUSINESS DEVELOPMENT AND GROWTH

19 Many factors can influence a company's potential to achieve success or simply survive in the marketplace. What impact have the following factors had during the past three years to the development of this establishment's business in terms of the degree of difficulties experienced?

(Please tick appropriate boxes)✔

19a MANAGEMENT FACTORS	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Surplus management time to plan growth					
Sufficient management skills to plan, organize and manage growth					

19b SUPPLY ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Premises of sufficient size					
Producing innovative, market leading services					
Obtaining suitable information processing technology					
High quality of services relative to similar services of competitors					
Sufficient training capability for staff needs					
High level of efficiency amongst employees					

19c FINANCIAL FACTORS	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Maintaining sufficient cash flow					
Achieving a high sales turnover					
Attaining satisfactory overall profitability					
Obtaining external finance through bank loans					
Obtaining external finance through building societies/insurance companies/merchant banks					
Obtaining external finance through venture capitalists					
Raising equity finance					
Securing government grants					
Raising finance from firm's internal financial resources (*e.g. liquid assets*)					

19d LABOUR ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Adequate supply of skilled labour					
Affordable unskilled and semi-skilled labour					
Good work ethic amongst employees					
Good labour relations between employees and management					
Influence of trade unions in company business					

(Please tick appropriate boxes)✔

19e MARKET-RELATED ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Finding sufficient market demand					
Finding suitable market niche for services/s					
Finding new geographic markets					

19f GOVERNMENT RELATED ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Rate of company taxation					
Lack of tax exemptions for company expenses					
Useful general business advice on conducting business in Glasgow					
Poor training of local population					

19g LOCATION ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Suitability of premises					
Suitability of service infrastructure and services (*i.e. electricity, gas, water, sewerage, solid waste disposal and drainage*)					
Adequacy of local road infrastructure serving the City of Glasgow					
Adequacy of main road network serving Glasgow					
Adequacy of public transport network serving City of Glasgow					
Adequacy of telecommunications infrastructure					
Adequacy of primary and secondary education facilities in area for employees' families					
Adequacy of higher education facilities in area for employees' families					
Adequacy of community services and facilities for employees					
Adequacy of recreational amenities for employees					
Attractiveness of local residential areas for current and prospective employees					
Adequacy of cultural facilities (*eg restaurants, social clubs, cinemas, theatres, museums, etc*)					

19h GENERAL ECONOMIC ISSUES	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Depressed local economic conditions in Glasgow area					
Depressed national economic conditions					
High interest rates					

19i NATURE OF COMPETITION	Major Difficulty	Moderate Difficulty	Minor Difficulty	No Difficulty	Does Not Apply
Strong competition from other Scottish firms					
Strong competition from other UK firms					
Strong competition from foreign firms					
Strong demand from Scottish market					
Strong demand from UK market excluding Scotland					
Strong demand from export markets					

❖ YOUR CO-OPERATION IS VERY MUCH APPRECIATED ❖

✉ *Please return to:*

Andrew Allan
Centre for Planning,
University of Strathclyde,
50 Richmond Street,
GLASGOW G1 1XN

APPENDIX A4D:
PERSONAL INTERVIEW STRUCTURE PLAN FOR MANAGERS' OF CASE STUDY FIRMS

A.GENERAL:

1.Could you give me some background detail on the history of your company such as who founded your company and how it was done?

2.Could you tell me something about your background and experience in the context of this company?

3.Did your company develop the production technology utilised by your firm?

(source of production equipment used;
how firm developed or aquired this production technology)

4.Did your company develop the products you produce?

(source of products;
how were these product ideas developed or acquired)

5.What would you put your company's past success down to? What constraints to growth has your company faced over the past four years?

B.FACTOR CONDITIONS:

6.What were the main reasons that your company located in this area?

7.How important are the following location issues to your company's activities?
-near suppliers;
-near to markets;
-close to rivals so that you can keep an eye on what they're doing;
-near to where management/owners live?
-close to a ready labour market;
-in an area where labour is relatively cheap because of high unemployment;
-able to take advantage of tax holidays/breaks and grants targeted at a local area;
-in an area with an excellent, well serviced industrial estate;
-excellent infrastructure;
-good local community and social facilities;
-finance.

C.GOVERNMENT POLICY:

8.Has your company secured any government grants?

9.Has your company received any advice from government bodies that may have helped your company to grow? (regional/district level; Scottish Office & Enterprise)

10.Do you think government policy does enough in this industry to help firms to be successful?

D.COMPETITIVENESS:

11.Is the threat of new entrants to the industry of concern to your firm?
(i.e. from either new firms or from international subsidiaries)

12.Do you worry about the threat of substitute products or services from other

companies displacing your products?

13.How strong is rivalry amongst existing competitors and what form does it take? (i.e. on price, quality, reliability, product performance)

E.STRATEGY:

14.Where does the emphasis in your firm's strategy lie? (products [cost/quality] processes, marketing)

15.What would you say your company's major objective/s and target for growth are:

16.What would you consider you company's product marketing strategy to be:

17.What would you consider your company's management strategy to be:

18.Does you firm have any clear employment strategies?
(e.g.training; local employment; job security; staff turnover; recruitment policy)

19.Does your firm have any particular growth strategies?

F.DEMAND CONDITIONS:

20.How would you describe the market for your product over the last 3 years?

21.Could you tell me some general points about your customers, such as:
-where are they located (% of sales to Scotland/England/export)?
-what type of customers do you have?
-do you have a few key customers or many small ones?
-what share of output to your largest customer; which firm is this?
-how long would most of your product life cycles be?
-how closely do you liaise with your customers when it comes to designing and developing your product for their needs?
-what do you find your customers most demanding about:
price,innovation,quality,lead delivery times,reliability,custom. product?
-Do you directly seek out your customers, or do they come to you in response to advertising or do they come unsolicited?

G.RELATED AND SUPPORTING INDUSTRIES:

22.What suppliers are you dependent on?
-nature of inputs; number of suppliers; location; working relationship with suppliers; most important things valued in a supplier.

23.Are there any related firms on which your firm is dependent?
-number; location; what do they produce; extent of co-operation in R & D

APPENDIX A4E:

FIELDWORK COSTS

The cost of the postal questionnaire survey came to about 95p per questionnaire sent out, which covered the cost of photocopying 10 pages, collating and stapling, 2 envelopes and outgoing and return postage. The cost of conducting the pilot study was about £7 for six postal questionnaires. The aggregate cost for plastics supply sector came to £87.40; £128.25 for the financial services sector; and £306.85 for the oil and gas related sector. Following up non-responses to the postal questionnaire was carried out using the Centre for Planning's resources in the case of the plastics supply sector, which was estimated to be about £11.00 for 57 phone calls in the case of the plastics supply sector in two rounds; and while for the financial services sector, the cost was £38.13 for 82 follow-up letters with stamped self-addressed envelopes. Effective follow-up of non-responses with the oil and gas related sector was considered uneconomic and far too time consuming. The total material cost of conducting the postal questionnaire research in the three sectors (*not including labour input*) amounted to £571.63, or about £1.04 per questionnaire sent out. The average cost of producing a usable questionnaire for research purposes, was £1.97 for the plastics supply sector; £3.62 for the financial services sector; and £4.38, although it must be stressed that if the labour effort put into following up the original non-responses in the plastics sector were taken into account, there would not be such a large disparity in questionnaire costs between the three sectors.

Compared to extensive survey research techniques, intensive survey research techniques can be very expensive to conduct if it involves significant travel away from one's research base. Incidental costs associated with arranging each interview (*a contact letter requesting an interview with follow-up phone calls to arrange an appointment*) required a relatively modest outlay of about 60p per interview, and since each interview was recorded, there was an additional cost of about £1.50 per audio cassette tape. In the case of the plastics supply sector, case study interview costs ranged from £8 up to £35 (*when a hire car was necessary for a firm in the Borders area of Scotland*). The six interviews carried out in this sector came to a cost of £93 at an average of about £15.50 per interview. In the case of the oil and gas related sector, the case study interviews had to be conducted in Aberdeen, which necessitated the use of a hire-car and staying overnight in Aberdeen for three nights. The cost of accommodation, meals, petrol, hire-car charges, letters and phonecalls arranging the interviews, and audio cassette tapes amounted to about £220 for five interviews at an average cost of £44 per interview. The financial services

sector case study interviews required a very modest outlay of around £15 for 5 interviews at an average of £3 per interview, since the case study firms were all very close to the University of Strathclyde campus and travel costs were very small. The total cost for the case study phase of the research therefore came to £328, an average cost of £20.50 per interview.

The total direct costs of the fieldwork therefore came to £907, not including the cost of labour required to collect the fieldwork data, which would otherwise have to be taken into account in a research project conducted by a consultancy or research establishment.

APPENDIX A4F:

CHISQUARED METHODOLOGY EMPLOYED IN TESTING ASSOCIATIONS OF FACTORS WITH GROWTH FOR STATISTICAL SIGNIFICANCE

The crosstabulations of growth with various other factors derived from the fieldwork results, were all subjected to chisquared tests to determine if there was a statistically significant association between the two variables. All of the crosstabulations tested in this manner had only one degree of freedom determined according to the following formula:

$$v=(n_r-1)(n_c-1)$$

where v=degrees of freedom;
n_r=number of rows in crosstabulation
n_c=number of columns in crosstabulation

Chisquared scores were calculated according to the following formula:

$$X^2=SUM\{(|F_O-F_E|-0.5\}^2/F_E \quad \text{(for one degree of freedom)}$$

Where
F_O=observed frequency in a particular cell of a crosstabulation
F_E=expected frequency in a particular cell of a crosstabulation

The expected frequency for each cell of the crosstabulation is determined from the observed frequencies in the following manner:

$$\frac{\{\text{column total of for cell concerned x row total for cell concerned}\}}{\{\text{grand total of observed frequencies in crosstabulation}\}}$$

The grand total of the observed frequencies in the crosstabulation is either a summation of its row totals or its column totals.

The calculated chisquared score for a table is then compared with the values in a table of chisquared scores to determine what degree of statistical significance the X^2 test statistic has. For a crosstabulation with 1 degree of freedom, the critical scores are detailed below in table A4.1.

TABLE A4.1:
LEVELS OF STATISTICAL SIGNIFICANCE FOR CRITICAL CHISQUARED SCORES FOR 1 DEGREE OF FREEDOM

LEVEL OF STATISTICAL SIGNIFICANCE:	X^2 SCORE
0.30	1.074
0.25	1.323
0.20	1.642
0.10	2.706
0.05	3.841
0.025	5.024
0.02	5.412
0.01	6.635
0.005	7.879
0.001	10.827

The null hypothesis assumes that there is no association if the test statistic X^2 is less than the score for a given level of statistical significance. For example, at the 0.05 level of statistical significance, the test statistic would have to be less than 3.841 for there to be no association. However, if the test statistic X^2 was equal to or exceeded 3.841, then the null hypothesis is rejected and it is concluded that there is an association.

APPENDIX A5

APPENDIX A5A:

TESTS FOR STATISTICAL SIGNIFICANCE OF VARIABLES POSSIBLY ASSOCIATED WITH FIRM GROWTH IN THE PLASTICS SUPPLY SECTOR

APPENDIX A5B:

CHARACTERISTICS OF FIRMS IN POSTAL QUESTIONNAIRE SURVEY OF PLASTICS SUPPLY INDUSTRY

APPENDIX A5C:

CASE STUDIES OF SELECTED GROWTH FIRMS

APPENDIX A5D:

LIST OF FIRMS THAT PARTICIPATED IN POSTAL QUESTIONNAIRE SURVEY OF PLASTICS SUPPLY SECTOR

APPENDIX A5

APPENDIX A5A:
TESTS FOR STATISTICAL SIGNIFICANCE OF VARIABLES POSSIBLY ASSOCIATED WITH FIRM GROWTH IN THE PLASTICS SUPPLY SECTOR

TABLE A5.1:
GROWTH VERSUS LEGAL FORM OF COMPANY

GROWTH MEASURE (Employm./Sales/Profits)➡ LEGAL FORM OF COMPANY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Private company(no firms)	Emp:22 Sales:18 Profits:22	Emp:8 Sales:18 Profits:9	Emp:30 Sales:36 Profits:31	
*Public company(no. firms)	Emp:2 Sales:3 Profits:3	Emp:2 Sales:3 Profits:1	Emp:4 Sales:6 Profits:4	
*TOTAL (no. firms)	Emp:24 Sales:21 Profits:25	Emp:10 Sales:21 Profits:10	Emp:34 Sales:42 Profits:35	E:0.143 S:0.194 P:0.176

TABLE A5.2:
GROWTH VERSUS TYPE OF MANAGEMENT CONTROL

GROWTH MEASURE (Employm./Sales/Profits)➡ TYPE OF MANAGEMENT CONTROL⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Owner-managed(no. firms)	Emp:17 Sales:11 Profits:13	Emp:3 Sales:11 Profits:4	Emp:20 Sales:22 Profits:17	
*Employed management(no. firms)	Emp:7 Sales:7 Profits:8	Emp:6 Sales:9 Profits:6	Emp:13 Sales:16 Profits:14	
*TOTAL (no. firms)	Emp:24 Sales:18 Profits:21	Emp:9 Sales:20 Profits:10	Emp:33 Sales:38 Profits:31	E:2.446 S:0.003 P:0.577

TABLE A5.3:
GROWTH VERSUS COUNTRY OF OWNERSHIP

GROWTH MEASURE (Employm./Sales/Profits)➡ COUNTRY OF OWNERSHIP⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Scottish owned(no. firms)	Emp:17 Sales:19 Profits:21	Emp:7 Sales:13 Profits:10	Emp:24 Sales:32 Profits:31	
*Ownership Outwith Scotland(no. firms)	Emp:7 Sales:2 Profits:4	Emp:4 Sales:8 Profits:0	Emp:11 Sales:10 Profits:4	
*TOTAL (no. firms)	Emp:24 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	Emp:35 Sales:42 Profits:35	E:0.001 S:3.281 P:0.572

TABLE A5.4:
GROWTH VERSUS INFLUENCE OF OWNERS IN MANAGEMENT DECISIONS

GROWTH MEASURE (Employm./Sales/Profits)➡ INFLUENCE OF OWNERS IN MANAGEMENT DECISIONS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*OPERATIONAL MANAGEMENT(no. firms)	Emp:10 Sales:6 Profits:7	Emp:0 Sales:6 Profits:7	Emp:10 Sales:12 Profits:14	
*STRATEGIC MANAGEMENT(no. firms)	Emp:6 Sales:3 Profits:2	Emp:5 Sales:9 Profits:5	Emp:11 Sales:12 Profits:7	
*TOTAL (no. firms)	Emp:16 Sales:9 Profits:9	Emp:5 Sales:15 Profits:12	Emp:21 Sales:24 Profits:21	E:3.723 S:0.711 P:0.219

TABLE A5.5:
GROWTH VERSUS AGE OF MANAGER

GROWTH MEASURE (Employm./Sales/Profits)➡ AGE OF MANAGER⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*35 YEARS OR LESS(no. firms)	Emp:2 Sales:2 Profits:4	Emp:2 Sales:3 Profits:1	Emp:4 Sales:5 Profits:5	
*OVER 35 YEARS(no. firms)	Emp:20 Sales:15 Profits:17	Emp:9 Sales:18 Profits:9	Emp:29 Sales:33 Profits:26	
*TOTAL (no. firms)	Emp:22 Sales:17 Profits:21	Emp:11 Sales:21 Profits:10	Emp:33 Sales:38 Profits:31	E:0.036 S:0.065 P:0.014

TABLE A5.6:
GROWTH VERSUS TENURE OF MANAGER

GROWTH MEASURE (Employm./Sales/Profits)➡ TENURE OF MANAGERS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*3 YEARS OR LESS(no. firms)	Emp:6 Sales:3 Profits:5	Emp:2 Sales:5 Profits:3	Emp:8 Sales:8 Profits:8	
*MORE THAN 3 YEARS(no. firms)	Emp:16 Sales:15 Profits:18	Emp:9 Sales:16 Profits:7	Emp:25 Sales:31 Profits:25	
*TOTAL (no. firms)	Emp:22 Sales:18 Profits:23	Emp:11 Sales:21 Profits:10	Emp:33 Sales:39 Profits:33	E:0.021 S:0.023 P:0.004

TABLE A5.7:
GROWTH VERSUS IMPORTANCE OF HIGH PROFITS

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF HIGH PROFITS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:19 Sales:18 Profits:24	Emp:10 Sales:17 Profits:10	Emp:29 Sales:35 Profits:34	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:4 Sales:3 Profits:1	Emp:1 Sales:3 Profits:0	Emp:5 Sales:6 Profits:1	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.015 S:0.142 P:0.232

TABLE A5.8:
GROWTH VERSUS IMPORTANCE OF HIGH SALES TURNOVER

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF HIGH SALES TURNOVER⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:18 Sales:18 Profits:24	Emp:9 Sales:17 Profits:10	Emp:27 Sales:35 Profits:34	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:5 Sales:3 Profits:1	Emp:2 Sales:3 Profits:0	Emp:7 Sales:6 Profits:1	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.046 S:0.142 P:0.232

TABLE A5.9:
GROWTH VERSUS IMPORTANCE OF LARGE FIRM SIZE IN TERMS OF PRODUCTION CAPACITY

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF LARGE FIRM SIZE IN TERMS OF PRODUCTION CAPACITY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:10 Sales:18 Profits:15	Emp:6 Sales:17 Profits:5	Emp:16 Sales:35 Profits:20	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:13 Sales:3 Profits:10	Emp:5 Sales:3 Profits:5	Emp:18 Sales:6 Profits:15	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.057 S:0.142 P:0.026

TABLE A5.10:
GROWTH VERSUS IMPORTANCE OF CREATING JOBS

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF CREATING JOBS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:16 Sales:16 Profits:17	Emp:7 Sales:13 Profits:7	Emp:23 Sales:29 Profits:24	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:7 Sales:5 Profits:8	Emp:4 Sales:5 Profits:3	Emp:11 Sales:10 Profits:11	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:18 Profits:10	Emp:34 Sales:39 Profits:35	E:0.002 S:0.007 P:0.083

TABLE A5.11:
GROWTH VERSUS IMPORTANCE OF MAXIMISING PRODUCTIVITY

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF MAXIMISING PRODUCTIVITY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:21 Sales:20 Profits:25	Emp:10 Sales:18 Profits:10	Emp:31 Sales:38 Profits:35	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:2 Sales:1 Profits:0	Emp:1 Sales:2 Profits:0	Emp:3 Sales:3 Profits:0	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.370 S:0.002 P:NA

TABLE A5.12:
GROWTH VERSUS IMPORTANCE OF MAXIMISING MARKET SHARE

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF MAXIMISING MARKET SHARE⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:19 Sales:17 Profits:24	Emp:9 Sales:18 Profits:8	Emp:28 Sales:35 Profits:32	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:4 Sales:4 Profits:1	Emp:2 Sales:2 Profits:2	Emp:6 Sales:6 Profits:3	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.180 S:0.142 P:0.738

TABLE A5.13:
GROWTH VERSUS IMPORTANCE OF IMPROVING PRODUCT QUALITY

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF IMPROVING PRODUCT QUALITY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:21 Sales:20 Profits:25	Emp:10 Sales:18 Profits:10	Emp:31 Sales:38 Profits:35	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:2 Sales:1 Profits:0	Emp:1 Sales:2 Profits:0	Emp:3 Sales:3 Profits:0	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.370 S:0.002 P:NA

TABLE A5.14:
GROWTH VERSUS IMPORTANCE OF CREATING INNOVATIVE PRODUCTS

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF CREATING MOST INNOVATIVE PRODUCT FOR MARKET SEGMENT⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:17 Sales:15 Profits:22	Emp:9 Sales:18 Profits:7	Emp:26 Sales:33 Profits:29	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:5 Sales:5 Profits:2	Emp:2 Sales:2 Profits:3	Emp:7 Sales:7 Profits:5	
*TOTAL (no. firms)	Emp:22 Sales:20 Profits:24	Emp:11 Sales:20 Profits:10	Emp:33 Sales:40 Profits:34	E:0.023 S:0.693 P:1.197

TABLE A5.15:
GROWTH VERSUS IMPORTANCE OF GOOD WORKING CONDITIONS FOR EMPLOYEES

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF GOOD WORKING CONDITIONS FOR EMPLOYEES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:21 Sales:20 Profits:25	Emp:10 Sales:18 Profits:10	Emp:31 Sales:38 Profits:35	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:2 Sales:1 Profits:0	Emp:1 Sales:2 Profits:0	Emp:3 Sales:3 Profits:0	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.370 S:0.002 P:NA

TABLE A5.16:
GROWTH VERSUS IMPORTANCE OF A GOOD RAPPORT BETWEEN MANAGEMENT AND EMPLOYEES

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF A GOOD RAPPORT BETWEEN MANAGEMENT AND EMPLOYEES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:21 Sales:20 Profits:25	Emp:10 Sales:18 Profits:10	Emp:31 Sales:38 Profits:35	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:2 Sales:1 Profits:0	Emp:1 Sales:2 Profits:0	Emp:3 Sales:3 Profits:0	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.370 S:0.002 P:NA

TABLE A5.17:
GROWTH VERSUS IMPORTANCE OF HIGH JOB SATISFACTION FOR EMPLOYEES

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF HIGH JOB SATISFACTION FOR EMPLOYEES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:21 Sales:20 Profits:25	Emp:10 Sales:18 Profits:10	Emp:31 Sales:38 Profits:35	
*NOT IMPORTANT: Rating of 4 to 5 (no. firms)	Emp:2 Sales:1 Profits:0	Emp:1 Sales:2 Profits:0	Emp:3 Sales:3 Profits:0	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.370 S:0.002 P:NA

TABLE A5.18:
GROWTH VERSUS INTRODUCTION OF NEW PRODUCTION TECHNIQUES

GROWTH MEASURE (Employm./Sales/Profits)➡ EXPANSION THROUGH INTRODUCTION OF NEW PRODUCTION TECHNIQUES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*YES (no. firms)	Emp:14 Sales:16 Profits:19	Emp:9 Sales:16 Profits:8	Emp:23 Sales:32 Profits:27	
*NO (no. firms)	Emp:10 Sales:5 Profits:6	Emp:2 Sales:5 Profits:2	Emp:12 Sales:10 Profits:8	
*TOTAL (no. firms)	Emp:24 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	Emp:35 Sales:42 Profits:35	E:0.951 S:0.131 P:0.036

TABLE A5.19:
GROWTH VERSUS INTRODUCTION OF NEW PRODUCTS INTO EXISTING MARKETS

GROWTH MEASURE (Employm./Sales/Profits)➡ EXPANSION THROUGH INTRODUCTION OF NEW PRODUCTS INTO EXISTING MARKETS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*YES (no. firms)	Emp:19 Sales:16 Profits:17	Emp:6 Sales:14 Profits:8	Emp:25 Sales:30 Profits:25	
*NO (no. firms)	Emp:5 Sales:5 Profits:8	Emp:5 Sales:7 Profits:2	Emp:10 Sales:12 Profits:10	
*TOTAL (no. firms)	Emp:24 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	Emp:35 Sales:42 Profits:35	E:1.196 S:0.117 P:0.088

TABLE A5.20:
GROWTH VERSUS INTRODUCTION OF NEW PRODUCTS INTO NEW MARKETS

GROWTH MEASURE (Employm./Sales/Profits)➡ EXPANSION THROUGH INTRODUCTION OF NEW PRODUCTS INTO NEW MARKETS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*YES (no. firms)	Emp:13 Sales:9 Profits:11	Emp:6 Sales:13 Profits:7	Emp:19 Sales:22 Profits:18	
*NO (no. firms)	Emp:10 Sales:12 Profits:14	Emp:5 Sales:8 Profits:3	Emp:16 Sales:20 Profits:17	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	Emp:35 Sales:42 Profits:35	E:0.119 S:0.859 P:1.032

TABLE A5.21:
GROWTH VERSUS DEVELOPMENT OF NEW MARKETS WITH EXISTING PRODUCTS

GROWTH MEASURE (Employm./Sales/Profits)➡ EXPANSION THROUGH DEVELOPMENT OF NEW MARKETS WITH EXISTING PRODUCTS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*YES (no. firms)	Emp:11 Sales:8 Profits:9	Emp:4 Sales:8 Profits:4	Emp:15 Sales:16 Profits:13	
*NO (no. firms)	Emp:3 Sales:13 Profits:16	Emp:7 Sales:13 Profits:6	Emp:10 Sales:26 Profits:22	
*TOTAL (no. firms)	Emp:14 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	Emp:25 Sales:42 Profits:35	E:2.983 S:0.101 P:0.028

TABLE A5.22:
GROWTH VERSUS REORGANISING THE WAY WORK IS CARRIED OUT TO IMPROVE PRODUCTION EFFICIENCY

GROWTH MEASURE (Employm./Sales/Profits)➡ EXPANSION THROUGH REORGANISING THE WAY WORK IS CARRIED OUT TO IMPROVE PRODUCTION EFFICIENCY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*YES (no. firms)	Emp:18 Sales:15 Profits:21	Emp:9 Sales:18 Profits:7	Emp:27 Sales:33 Profits:28	
*NO (no. firms)	Emp:6 Sales:6 Profits:4	Emp:2 Sales:3 Profits:3	Emp:8 Sales:9 Profits:7	
*TOTAL (no. firms)	Emp:24 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	Emp:35 Sales:42 Profits:35	E:0.000 S:0.566 P:0.219

TABLE A5.23:
GROWTH VERSUS DEVELOPMENT CAPITAL FROM FIRM'S INTERNAL FINANCIAL RESOURCES

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: FIRM'S INTERNAL FINANCIAL RESOURCES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:7 Sales:6 Profits:7	Emp:2 Sales:5 Profits:2	Emp:9 Sales:11 Profits:9	
*34% TO 100% (no. firms)	Emp:10 Sales:10 Profits:11	Emp:9 Sales:12 Profits:6	Emp:19 Sales:22 Profits:17	
*TOTAL (no. firms)	Emp:17 Sales:16 Profits:18	Emp:11 Sales:17 Profits:8	Emp:28 Sales:33 Profits:26	E:0.736 S:0.015 P:0.058

TABLE A5.24:
GROWTH VERSUS DEVELOPMENT CAPITAL FROM EQUITY

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: EQUITY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:17 Sales:16 Profits:18	Emp:10 Sales:17 Profits:8	Emp:27 Sales:33 Profits:26	
*34% TO 100% (no. firms)	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	
*TOTAL (no. firms)	Emp:17 Sales:16 Profits:18	Emp:10 Sales:17 Profits:8	Emp:27 Sales:33 Profits:26	E:NA S:NA P:NA

TABLE A5.25:
GROWTH VERSUS DEVELOPMENT CAPITAL FROM BANK LOANS

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: BANK LOANS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:16 Sales:15 Profits:17	Emp:9 Sales:16 Profits:7	Emp:25 Sales:31 Profits:24	
*34% TO 100% (no. firms)	Emp:1 Sales:1 Profits:1	Emp:1 Sales:1 Profits:1	Emp:2 Sales:2 Profits:2	
*TOTAL (no. firms)	Emp:17 Sales:16 Profits:18	Emp:10 Sales:17 Profits:8	Emp:27 Sales:33 Profits:26	E:0.134 S:0.470 P:0.034

TABLE A5.26:
GROWTH VERSUS DEVELOPMENT CAPITAL FROM FINANCIAL INSTITUTIONS OTHER THAN BANKS

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: FINANC. INSTITUTIONS OTHER THAN BANKS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:15 Sales:13 Profits:16	Emp:10 Sales:16 Profits:7	Emp:25 Sales:29 Profits:23	
*34% TO 100% (no. firms)	Emp:2 Sales:3 Profits:2	Emp:0 Sales:1 Profits:1	Emp:2 Sales:4 Profits:3	
*TOTAL (no. firms)	Emp:17 Sales:16 Profits:18	Emp:10 Sales:17 Profits:8	Emp:27 Sales:33 Profits:26	E:0.134 S:0.358 P:0.317

TABLE A5.27:
GROWTH VERSUS DEVELOPMENT CAPITAL FROM OWNER'S PERSONAL FINANCES

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: OWNER'S PERSONAL FINANCES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:15 Sales:15 Profits:16	Emp:9 Sales:15 Profits:7	Emp:24 Sales:30 Profits:23	
*34% TO 100% (no. firms)	Emp:2 Sales:1 Profits:2	Emp:1 Sales:2 Profits:1	Emp:3 Sales:3 Profits:3	
*TOTAL (no. firms)	Emp:17 Sales:16 Profits:18	Emp:10 Sales:17 Profits:8	Emp:27 Sales:33 Profits:26	E:0.243 S:0.003 P:0.317

TABLE A5.28:
GROWTH VERSUS DEVELOPMENT CAPITAL FROM GRANTS

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: GRANTS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:17 Sales:16 Profits:19	Emp:10 Sales:17 Profits:8	Emp:27 Sales:33 Profits:27	
*34% TO 100% (no. firms)	Emp:1 Sales:1 Profits:0	Emp:0 Sales:0 Profits:0	Emp:1 Sales:1 Profits:0	
*TOTAL (no. firms)	Emp:18 Sales:17 Profits:19	Emp:10 Sales:17 Profits:8	Emp:28 Sales:34 Profits:27	E:0.092 S:0.000 P:NA

TABLE A5.29:
GROWTH VERSUS DEVELOPMENT CAPITAL FROM OTHER EXTERNAL FINANCIAL RESOURCES

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: OTHER EXTERNAL FINANC. RESOURCES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:17 Sales:15 Profits:15	Emp:9 Sales:15 Profits:8	Emp:26 Sales:30 Profits:23	
*34% TO 100% (no. firms)	Emp:0 Sales:1 Profits:3	Emp:1 Sales:2 Profits:0	Emp:1 Sales:3 Profits:3	
*TOTAL (no. firms)	Emp:17 Sales:16 Profits:18	Emp:10 Sales:17 Profits:8	Emp:27 Sales:33 Profits:26	E:0.075 S:0.003 P:0.317

TABLE A5.30:
GROWTH VERSUS USEFULNESS OF SDA/SCOTTISH ENTERPRISE

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF SOURCES OF ASSISTANCE: SDA/SCOTTISH ENTERPRISE⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL (no. firms)	Emp:8 Sales:6 Profits:9	Emp:2 Sales:7 Profits:3	Emp:10 Sales:13 Profits:12	
*NO USE (no. firms)	Emp:9 Sales:7 Profits:11	Emp:6 Sales:12 Profits:6	Emp:15 Sales:19 Profits:17	
*TOTAL (no. firms)	Emp:17 Sales:13 Profits:20	Emp:8 Sales:19 Profits:9	Emp:25 Sales:32 Profits:29	E:0.375 S:0.026 P:0.033

TABLE A5.31:
GROWTH VERSUS USEFULNESS OF SCOTTISH OFFICE

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF SOURCES OF ASSISTANCE: SCOTTISH OFFICE DEPARTMENT/S⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL (no. firms)	Emp:5 Sales:4 Profits:4	Emp:3 Sales:4 Profits:3	Emp:8 Sales:8 Profits:7	
*NO USE (no. firms)	Emp:2 Sales:6 Profits:7	Emp:2 Sales:3 Profits:1	Emp:4 Sales:9 Profits:8	
*TOTAL (no. firms)	Emp:7 Sales:10 Profits:11	Emp:5 Sales:7 Profits:4	Emp:12 Sales:17 Profits:15	E:0.043 S:0.041 P:0.549

TABLE A5.32:
GROWTH VERSUS USEFULNESS OF ENTERPRISE INITIATIVE

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF SOURCES OF ASSISTANCE: ENTERPRISE INITIATIVE⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL (no. firms)	Emp:6 Sales:3 Profits:6	Emp:2 Sales:6 Profits:2	Emp:8 Sales:9 Profits:8	
*NO USE (no. firms)	Emp:0 Sales:1 Profits:3	Emp:2 Sales:3 Profits:1	Emp:2 Sales:4 Profits:4	
*TOTAL (no. firms)	Emp:6 Sales:4 Profits:9	Emp:4 Sales:9 Profits:3	Emp:10 Sales:13 Profits:12	E:1.276 S:0.123 P:0.500

TABLE A5.33:
GROWTH VERSUS USEFULNESS OF REGIONAL/DISTRICT COUNCIL/S

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF SOURCES OF ASSISTANCE: REGIONAL/DISTRICT COUNCIL/S⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL (no. firms)	Emp:4 Sales:5 Profits:8	Emp:3 Sales:6 Profits:2	Emp:7 Sales:11 Profits:10	
*NO USE (no. firms)	Emp:7 Sales:4 Profits:5	Emp:2 Sales:4 Profits:4	Emp:9 Sales:8 Profits:9	
*TOTAL (no. firms)	Emp:11 Sales:9 Profits:13	Emp:5 Sales:10 Profits:6	Emp:16 Sales:19 Profits:19	E:0.115 S:0.073 P:0.423

TABLE A5.34:
GROWTH VERSUS USEFULNESS OF BANKS

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF SOURCES OF ASSISTANCE: BANKS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL (no. firms)	Emp:6 Sales:11 Profits:13	Emp:7 Sales:7 Profits:5	Emp:13 Sales:18 Profits:18	
*NO USE (no. firms)	Emp:6 Sales:2 Profits:2	Emp:1 Sales:6 Profits:3	Emp:7 Sales:8 Profits:5	
*TOTAL (no. firms)	Emp:12 Sales:13 Profits:15	Emp:8 Sales:13 Profits:8	Emp:20 Sales:26 Profits:23	E:1.548 S:1.625 P:0.652

TABLE A5.35:
GROWTH VERSUS USEFULNESS OF ACCOUNTANTS

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF SOURCES OF ASSISTANCE: ACCOUNTANTS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL (no. firms)	Emp:11 Sales:11 Profits:14	Emp:6 Sales:11 Profits:5	Emp:17 Sales:22 Profits:19	
*NO USE (no. firms)	Emp:2 Sales:2 Profits:3	Emp:1 Sales:2 Profits:1	Emp:3 Sales:4 Profits:4	
*TOTAL (no. firms)	Emp:13 Sales:13 Profits:17	Emp:7 Sales:13 Profits:6	Emp:20 Sales:26 Profits:23	E:0.349 S:0.296 P:0.327

TABLE A5.36:
GROWTH VERSUS COMPETITORS IN SCOTLAND

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS: SCOTLAND⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:17 Sales:12 Profits:16	Emp:7 Sales:14 Profits:8	Emp:24 Sales:26 Profits:24	
*34% TO 100% (no. firms)	Emp:6 Sales:9 Profits:9	Emp:4 Sales:6 Profits:2	Emp:10 Sales:15 Profits:11	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.045 S:0.281 P:0.268

TABLE A5.37:
GROWTH VERSUS COMPETITORS IN REST OF UK

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS: REST IF UK⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:11 Sales:10 Profits:9	Emp:3 Sales:5 Profits:2	Emp:14 Sales:15 Profits:11	
*34% TO 100% (no. firms)	Emp:12 Sales:11 Profits:16	Emp:8 Sales:15 Profits:8	Emp:20 Sales:26 Profits:24	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.588 S:1.389 P:0.268

TABLE A5.38:
GROWTH VERSUS COMPETITORS IN REST OF WORLD

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS: REST OF WORLD⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:16 Sales:10 Profits:19	Emp:10 Sales:5 Profits:9	Emp:26 Sales:15 Profits:28	
*34% TO 100% (no. firms)	Emp:7 Sales:11 Profits:6	Emp:1 Sales:15 Profits:1	Emp:8 Sales:26 Profits:7	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:20 Profits:10	Emp:34 Sales:41 Profits:35	E:0.885 S:1.389 P:0.219

TABLE A5.39:
GROWTH VERSUS MARKETS IN REST OF UK

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS: REST OF UK⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:12 Sales:10 Profits:13	Emp:8 Sales:14 Profits:6	Emp:20 Sales:24 Profits:19	
*34% TO 100% (no. firms)	Emp:6 Sales:8 Profits:7	Emp:2 Sales:2 Profits:2	Emp:8 Sales:10 Profits:9	
*TOTAL (no. firms)	Emp:18 Sales:18 Profits:20	Emp:10 Sales:16 Profits:8	Emp:28 Sales:34 Profits:28	E:0.097 S:2.767 P:0.004

TABLE A5.40:
GROWTH VERSUS MARKETS IN REST OF WORLD

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS: REST OF WORLD⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*0 TO 33% (no. firms)	Emp:12 Sales:12 Profits:12	Emp:8 Sales:11 Profits:6	Emp:20 Sales:23 Profits:18	
*34% TO 100% (no. firms)	Emp:6 Sales:6 Profits:8	Emp:2 Sales:5 Profits:2	Emp:8 Sales:11 Profits:10	
*TOTAL (no. firms)	Emp:18 Sales:18 Profits:20	Emp:10 Sales:16 Profits:8	Emp:28 Sales:34 Profits:28	E:0.097 S:0.056 P:0.097

TABLE A5.41:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS LABOUR FACTOR CONDITIONS

FACTOR CONDITION⬇ Growth Measure➡ 1.Adequate supply of skilled labour	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:18 Sales:14 Profits:21	Emp:8 Sales:17 Profits:7	E:26 S:31 P:28	
NO DIFFICULTY(firms)	Emp:6 Sales:7 Profits:4	Emp:3 Sales:4 Profits:3	E:9 S:11 P:7	
TOTAL (firms)	Emp:24 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	E:35 S:42 P:35	E:0.075 S:0.493 P:0.219
2.Affordable unskilled and semi-skilled labour				
SOME DIFFICULTY(firms)	Emp:7 Sales:7 Profits:13	Emp:7 Sales:11 Profits:3	E:14 S:18 P:16	
NO DIFFICULTY(firms)	Emp:13 Sales:11 Profits:10	Emp:4 Sales:9 Profits:6	E:17 S:20 P:16	
TOTAL (firms)	Emp:20 Sales:18 Profits:23	Emp:11 Sales:20 Profits:9	E:31 S:38 P:32	E:1.336 S:0.446 P:0.618
3.Poor training of local population				
SOME DIFFICULTY(firms)	Emp:14 Sales:13 Profits:20	Emp:8 Sales:15 Profits:7	E:22 S:28 P:27	
NO DIFFICULTY(firms)	Emp.3 Sales:4 Profits:4	Emp:1 Sales:2 Profits:2	E:4 S:6 P:6	
TOTAL	Emp:17 Sales:17 Profits:24	Emp:9 Sales:17 Profits:9	E:26 S:34 P:33	E:0.017 S:0.202 P:0.019

TABLE A5.42:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS PHYSICAL RESOURCES FACTOR CONDITIONS

FACTOR CONDITION⬇ Growth Measure➡ 1.Suitability of premises	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:5 Sales:5 Profits:7	Emp:5 Sales:6 Profits:3	E:10 S:11 P:10	
NO DIFFICULTY(firms)	Emp:9 Sales:9 Profits:3	Emp:2 Sales:8 Profits:6	E:11 S:17 P:9	
TOTAL (firms)	Emp:14 Sales:14 Profits:10	Emp:7 Sales:14 Profits:9	E:21 S:28 P:19	E:1.170 S:0.000 P:1.295
2.Proximity to a major city				
SOME DIFFICULTY(firms)	Emp:4 Sales:4 Profits:5	Emp:2 Sales:2 Profits:1	E:6 S:6 P:6	
NO DIFFICULTY(firms)	Emp:17 Sales:18 Profits:17	Emp:9 Sales:14 Profits:8	E:26 S:32 P:25	
TOTAL (firms)	Emp:21 Sales:22 Profits:22	Emp:11 Sales:16 Profits:9	E:32 S:38 P:31	E:0.174 S:0.001 P:0.059
3.Attractiveness of local residential areas for current and prospective employees				
SOME DIFFICULTY(firms)	Emp:6 Sales:7 Profits:8	Emp:2 Sales:5 Profits:2	E:8 S:12 P:10	
NO DIFFICULTY(firms)	Emp:14 Sales:11 Profits:15	Emp:8 Sales:14 Profits:6	E:22 S:25 P:21	
TOTAL	Emp:20 Sales:18 Profits:23	Emp:10 Sales:19 Profits:8	E:30 S:37 P:31	E:0.021 S:0.216 P:0.005
4.Distance from company markets				
SOME DIFFICULTY(firms)	Emp:7 Sales:8 Profits:12	Emp:3 Sales:6 Profits:1	E:10 S:14 P:13	
NO DIFFICULTY(firms)	Emp:9 Sales:10 Profits:11	Emp:8 Sales:11 Profits:7	E:17 S:21 P:18	
TOTAL	Emp:16 Sales:18 Profits:23	Emp:11 Sales:17 Profits:8	E:27 S:35 P:31	E:0.217 S:0.043 P:2.380

TABLE A5.43:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS EDUCATIONAL RESOURCES FACTOR CONDITIONS

FACTOR CONDITION⬇ Growth Measure➡ 1.Adequacy of secondary and primary education facilities	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:0 Sales:2 Profits:3	Emp:1 Sales:2 Profits:1	E:1 S:4 P:4	
NO DIFFICULTY(firms)	Emp:20 Sales:16 Profits:21	Emp:9 Sales:17 Profits:7	E:29 S:33 P:28	
TOTAL (firms)	Emp:20 Sales:18 Profits:24	Emp:10 Sales:19 Profits:8	E:30 S:37 P:32	E:0.129 S:0.223 P:0.381
2.Adequacy of higher education facilities				
SOME DIFFICULTY(firms)	Emp:3 Sales:3 Profits:4	Emp:0 Sales:3 Profits:1	E:3 S:6 P:5	
NO DIFFICULTY(firms)	Emp:15 Sales:12 Profits:17	Emp:9 Sales:15 Profits:6	E:24 S:27 P:23	
TOTAL (firms)	Emp:18 Sales:15 Profits:21	Emp:9 Sales:18 Profits:7	E:27 S:33 P:28	E:0.422 S:0.042 P:0.081

TABLE A5.44:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS CAPITAL RESOURCES FACTOR CONDITIONS

FACTOR CONDITION⬇ Growth Measure➡	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
1.Availability of bank loans				
SOME DIFFICULTY(firms)	Emp:6 Sales:4 Profits:3	Emp:2 Sales:3 Profits:2	E:8 S:7 P:5	
NO DIFFICULTY(firms)	Emp:7 Sales:10 Profits:12	Emp:6 Sales:10 Profits:4	E:13 S:20 P:16	
TOTAL (firms)	Emp:13 Sales:14 Profits:15	Emp:8 Sales:13 Profits:6	E:21 S:27 P:21	E:0.257 S:0.013 P:0.007
2.Availability of finance through building societies/insurance companies/merchant banks				
SOME DIFFICULTY(firms)	Emp:2 Sales:3 Profits:2	Emp:1 Sales:0 Profits:1	E:3 S:3 P:3	
NO DIFFICULTY(firms)	Emp:2 Sales:4 Profits:5	Emp:5 Sales:6 Profits:3	E:7 S:10 P:8	
TOTAL (firms)	Emp:4 Sales:7 Profits:7	Emp:6 Sales:6 Profits:4	E:10 S:13 P:11	E:0.179 S:1.364 P:0.331
3.Availability of finance through venture capitalists				
SOME DIFFICULTY(firms)	Emp:2 Sales:3 Profits:2	Emp:1 Sales:0 Profits:1	E:3 S:3 P:3	
NO DIFFICULTY(firms)	Emp:1 Sales:1 Profits:2	Emp:2 Sales:2 Profits:1	E:3 S:3 P:3	
TOTAL (firms)	Emp:3 Sales:4 Profits:4	Emp:3 Sales:2 Profits:2	E:6 S:6 P:6	E:0.000 S:0.750 P:0.750
4.Raising equity finance				
SOME DIFFICULTY(firms)	Emp:2 Sales:3 Profits:2	Emp:0 Sales:0 Profits:1	E:2 S:3 P:3	
NO DIFFICULTY(firms)	Emp:1 Sales:1 Profits:2	Emp:2 Sales:3 Profits:1	E:3 S:4 P:3	
TOTAL (firms)	Emp:3 Sales:4 Profits:4	Emp:2 Sales:3 Profits:2	E:5 S:7 P:6	E:0.313 S:1.470 P:0.750
5.Securing government grants				
SOME DIFFICULTY(firms)	Emp:10 Sales:10 Profits:13	Emp:3 Sales:8 Profits:1	E:13 S:18 P:14	
NO DIFFICULTY(firms)	Emp:5 Sales:3 Profits:3	Emp:3 Sales:6 Profits:4	E:8 S:9 P:7	
TOTAL (firms)	Emp:15 Sales:13 Profits:16	Emp:6 Sales:14 Profits:5	E:21 S:27 P:21	E:0.045 S:0.464 P:3.970

TABLE A5.45:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS INFRASTRUCTURE PROVISION FACTOR CONDITIONS

FACTOR CONDITION⬇ Growth Measure➡	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
1.Suitability of service infrastructure and services				
SOME DIFFICULTY(firms)	Emp:4 Sales:4 Profits:7	Emp:5 Sales:7 Profits:4	E:9 S:11 P:11	
NO DIFFICULTY(firms)	Emp:18 Sales:15 Profits:16	Emp:6 Sales:14 Profits:6	E:24 S:29 P:22	
TOTAL (firms)	Emp:22 Sales:19 Profits:23	Emp:11 Sales:21 Profits:10	E:33 S:40 P:33	E:1.550 S:0.264 P:0.018
2.Adequacy of local road infra-structure serving industrial area				
SOME DIFFICULTY(firms)	Emp:2 Sales:3 Profits:4	Emp:2 Sales:3 Profits:2	E:4 S:6 P:6	
NO DIFFICULTY(firms)	Emp:20 Sales:16 Profits:19	Emp:9 Sales:18 Profits:8	E:29 S:34 P:27	
TOTAL (firms)	Emp:22 Sales:19 Profits:23	Emp:11 Sales:21 Profits:10	E:33 S:40 P:33	E:0.036 S:0.096 P:0.098
3.Adequacy of main road network serving industrial area				
SOME DIFFICULTY(firms)	Emp:3 Sales:3 Profits:4	Emp:2 Sales:3 Profits:2	E:5 S:6 P:6	
NO DIFFICULTY(firms)	Emp:19 Sales:16 Profits:19	Emp:9 Sales:18 Profits:8	E:28 S:34 P:27	
TOTAL (firms)	Emp:22 Sales:19 Profits:23	Emp:11 Sales:21 Profits:10	E:33 S:40 P:33	E:0.030 S:0.096 P:0.098
4.Suitability of public transport serving industrial area				
SOME DIFFICULTY(firms)	Emp:10 Sales:10 Profits:11	Emp:5 Sales:9 Profits:6	E:15 S:19 P:17	
NO DIFFICULTY(firms)	Emp:10 Sales:7 Profits:11	Emp:4 Sales:10 Profits:2	E:14 S:17 P:13	
TOTAL (firms)	Emp:20 Sales:17 Profits:22	Emp:9 Sales:19 Profits:8	E:29 S:36 P:30	E:0.016 S:0.013 P:0.649
5.Adequacy of telecommunications infrastructure				
SOME DIFFICULTY(firms)	Emp:2 Sales:1 Profits:1	Emp:0 Sales:2 Profits:2	E:2 S:3 P:3	
NO DIFFICULTY(firms)	Emp:21 Sales:19 Profits:23	Emp:11 Sales:19 Profits:8	E:33 S:38 P:31	
TOTAL (firms)	Emp:23 Sales:20 Profits:24	Emp:11 Sales:21 Profits:10	E:35 S:41 P:34	E:0.056 S:0.002 P:0.672

TABLE A5.45 (CONTINUED)

FACTOR CONDITION⬇ Growth Measure➡ 6.Adequacy of community services and facilities	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:1 Sales:2 Profits:3	Emp:2 Sales:2 Profits:1	E:3 S:4 P:4	
NO DIFFICULTY(firms)	Emp:18 Sales:15 Profits:20	Emp:8 Sales:16 Profits:7	E:26 S:31 P:27	
TOTAL (firms)	Emp:19 Sales:17 Profits:23	Emp:10 Sales:18 Profits:8	E:29 S:35 P:31	E:0.357 S:0.222 P:0.328
7.Adequacy of recreational amenities				
SOME DIFFICULTY(firms)	Emp:0 Sales:0 Profits:2	Emp:1 Sales:3 Profits:1	E:1 S:3 P:3	
NO DIFFICULTY(firms)	Emp:19 Sales:18 Profits:22	Emp:9 Sales:15 Profits:6	E:28 S:33 P:28	
TOTAL (firms)	Emp:19 Sales:18 Profits:24	Emp:10 Sales:18 Profits:7	E:29 S:36 P:31	E:0.110 S:1.455 P:0.066
8.Adequacy of cultural facilities				
SOME DIFFICULTY(firms)	Emp:5 Sales:6 Profits:10	Emp:5 Sales:6 Profits:3	E:10 S:12 P:13	
NO DIFFICULTY(firms)	Emp:4 Sales:13 Profits:14	Emp:4 Sales:12 Profits:4	E:8 S:25 P:18	
TOTAL (firms)	Emp:9 Sales:19 Profits:24	Emp:9 Sales:18 Profits:7	E:18 S:37 P:31	E:0.225 S:0.056 P:0.144

TABLE A5.46:
CHI-SQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS DEMAND CONDITIONS

Demand Condition⬇ Growth Measure➡ 1.Finding sufficient market demand	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:15 Sales:15 Profits:18	Emp:4 Sales:11 Profits:6	E:19 S:26 P:24	
NO DIFFICULTY(firms)	Emp:8 Sales:6 Profits:7	Emp:7 Sales:10 Profits:4	E:15 S:16 P:11	
TOTAL (firms)	Emp:23 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	E:34 S:42 P:35	E:1.479 S:0.910 P:0.083
2.Finding suitable market niche for product/s				
SOME DIFFICULTY(firms)	Emp:8 Sales:9 Profits:11	Emp:4 Sales:7 Profits:4	E:12 S:16 P:15	
NO DIFFICULTY(firms)	Emp:9 Sales:8 Profits:8	Emp:6 Sales:9 Profits:5	E:15 S:17 P:13	
TOTAL (firms)	Emp:17 Sales:17 Profits:19	Emp:10 Sales:16 Profits:9	E:27 S:33 P:28	E:0.002 S:0.032 P:0.068

TABLE A5.46 (CONTINUED)

Demand Condition⬇ Growth Measure➡ 3.Finding new geographic markets	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:15 Sales:12 Profits:17	Emp:5 Sales:12 Profits:4	E:20 S:24 P:21	
NO DIFFICULTY(firms)	Emp:5 Sales:6 Profits:5	Emp:3 Sales:5 Profits:4	E:8 S:11 P:9	
TOTAL (firms)	Emp:20 Sales:18 Profits:22	Emp:8 Sales:17 Profits:8	E:28 S:35 P:30	E:0.039 S:0.013 P:0.982
4.Strong demand from Scottish market				
SOME DIFFICULTY(firms)	Emp:14 Sales:11 Profits:15	Emp:6 Sales:10 Profits:5	E:20 S:21 P:20	
NO DIFFICULTY(firms)	Emp:7 Sales:9 Profits:9	Emp:3 Sales:7 Profits:2	E:10 S:16 P:11	
TOTAL (firms)	Emp:21 Sales:20 Profits:24	Emp:9 Sales:17 Profits:7	E:30 S:37 P:31	E:0.179 S:0.010 P:0.000
5.Strong demand from UK market not including Scotland				
SOME DIFFICULTY(firms)	Emp:13 Sales:11 Profits:14	Emp:4 Sales:9 Profits:5	E:17 S:20 P:19	
NO DIFFICULTY(firms)	Emp:7 Sales:8 Profits:8	Emp:4 Sales:6 Profits:2	E:11 S:14 P:10	
TOTAL (firms)	Emp:20 Sales:19 Profits:22	Emp:8 Sales:15 Profits:7	E:28 S:34 P:29	E:0.094 S:0.052 P:0.006
6.Strong demand from export markets				
SOME DIFFICULTY(firms)	Emp:7 Sales:4 Profits:10	Emp:2 Sales:8 Profits:2	E:9 S:12 P:12	
NO DIFFICULTY(firms)	Emp:9 Sales:8 Profits:7	Emp:0 Sales:2 Profits:1	E:9 S:10 P:8	
TOTAL (firms)	Emp:16 Sales:12 Profits:17	Emp:2 Sales:10 Profits:3	E:18 S:22 P:20	E:0.563 S:3.094 P:0.147
7.Demanding customers who settle for nothing less than top quality products				
SOME DIFFICULTY(firms)	Emp:10 Sales:9 Profits:11	Emp:4 Sales:7 Profits:5	E:14 S:16 P:16	
NO DIFFICULTY(firms)	Emp:12 Sales:11 Profits:13	Emp:7 Sales:13 Profits:4	E:19 S:24 P:17	
TOTAL (firms)	Emp:22 Sales:20 Profits:24	Emp:11 Sales:20 Profits:9	E:33 S:40 P:33	E:0.016 S:0.104 P:0.011

TABLE A5.47:
CHI-SQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS MANAGEMENT ISSUES

Management Issues⬇ Growth Measure➡ 1.Surplus management time to plan growth	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:12 Sales:11 Profits:17	Emp:9 Sales:14 Profits:6	E:21 S:25 P:23	
NO DIFFICULTY(firms)	Emp:5 Sales:4 Profits:3	Emp:1 Sales:4 Profits:2	E:6 S:8 P:5	
TOTAL (firms)	Emp:17 Sales:15 Profits:20	Emp:10 Sales:18 Profits:8	E:27 S:33 P:28	E:0.479 S:0.012 P:0.006
2.Sufficient management skills to plan, organise and manage growth				
SOME DIFFICULTY(firms)	Emp:13 Sales:12 Profits:13	Emp:9 Sales:13 Profits:7	E:22 S:25 P:20	
NO DIFFICULTY(firms)	Emp:9 Sales:8 Profits:12	Emp:2 Sales:8 Profits:3	E:11 S:16 P:15	
TOTAL (firms)	Emp:22 Sales:20 Profits:25	Emp:11 Sales:21 Profits:10	E:33 S:31 P:35	E:0.835 S:2.340 P:0.353

TABLE A5.48:
CHI-SQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS PRODUCTION ISSUES

Production Issues⬇ Growth Measure➡ 1.Sufficient plant capacity	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:6 Sales:10 Profits:12	Emp:8 Sales:8 Profits:4	E:14 S:18 P:16	
NO DIFFICULTY(firms)	Emp:17 Sales:11 Profits:13	Emp:2 Sales:11 Profits:5	E:19 S:22 P:18	
TOTAL (firms)	Emp:23 Sales:21 Profits:25	Emp:10 Sales:19 Profits:9	E:33 S:40 P:34	E:6.233 S:0.001 P:0.043
2.Producing innovative, market leading products				
SOME DIFFICULTY(firms)	Emp:12 Sales:9 Profits:11	Emp:3 Sales:8 Profits:5	E:15 S:17 P:16	
NO DIFFICULTY(firms)	Emp:5 Sales:5 Profits:5	Emp:1 Sales:4 Profits:0	E:6 S:9 P:5	
TOTAL (firms)	Emp:17 Sales:14 Profits:16	Emp:4 Sales:12 Profits:5	E:21 S:26 P:21	E:0.193 S:0.082 P:0.690

TABLE A5.48 (CONTINUED)

3.Creating innovative production techniques				
SOME DIFFICULTY(firms)	Emp:11 Sales:5 Profits:10	Emp:4 Sales:11 Profits:6	E:15 S:16 P:16	
NO DIFFICULTY(firms)	Emp:8 Sales:9 Profits:8	Emp:4 Sales:6 Profits:2	E:12 S:15 P:10	
TOTAL (firms)	Emp:19 Sales:14 Profits:18	Emp:8 Sales:17 Profits:8	E:27 S:31 P:26	E:0.002 S:1.553 P:0.254
4.High product quality relative to similar products of competitors				
SOME DIFFICULTY(firms)	Emp:10 Sales:5 Profits:8	Emp:4 Sales:10 Profits:4	E:14 S:15 P:12	
NO DIFFICULTY(firms)	Emp:14 Sales:15 Profits:16	Emp:6 Sales:10 Profits:5	E:20 S:25 P:21	
TOTAL (firms)	Emp:24 Sales:20 Profits:24	Emp:10 Sales:20 Profits:9	E:34 S:40 P:33	E:0.086 S:1.707 P:0.034
5.Sufficient training capability for staff needs				
SOME DIFFICULTY(firms)	Emp:16 Sales:10 Profits:14	Emp:6 Sales:14 Profits:8	E:22 S:24 P:22	
NO DIFFICULTY(firms)	Emp:7 Sales:9 Profits:9	Emp:3 Sales:5 Profits:1	E:10 S:14 P:10	
TOTAL (firms)	Emp:23 Sales:19 Profits:23	Emp:9 Sales:19 Profits:9	E:32 S:38 P:32	E:0.070 S:1.018 P:1.240
6.High level of production efficiency				
SOME DIFFICULTY(firms)	Emp:18 Sales:15 Profits:21	Emp:9 Sales:16 Profits:7	E:27 S:31 P:28	
NO DIFFICULTY(firms)	Emp:6 Sales:6 Profits:4	Emp:2 Sales:5 Profits:3	E:8 S:11 P:7	
TOTAL (firms)	Emp:24 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	E:35 S:42 P:35	E:0.000 S:0.000 P:0.219

TABLE A5.49:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY FINANCIAL ISSUES

Financial Issue⬇ Growth Measure➡ 1.Maintaining sufficient cash flow	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:17 Sales:15 Profits:19	Emp:7 Sales:10 Profits:4	E:24 S:25 P:23	
NO DIFFICULTY(firms)	Emp:7 Sales:6 Profits:6	Emp:4 Sales:11 Profits:6	E:11 S:17 P:12	
TOTAL (firms)	Emp:24 Sales:21 Profits:25	Emp:11 Sales:21 Profits:10	E:35 S:42 P:35	E:0.001 S:1.581 P:2.666

TABLE A5.49 (CONTINUED)

2.Achieving a high sales turnover				
SOME DIFFICULTY(firms)	Emp:18 Sales:15 Profits:20	Emp:8 Sales:17 Profits:7	E:26 S:32 P:27	
NO DIFFICULTY(firms)	Emp:4 Sales:3 Profits:3	Emp:1 Sales:3 Profits:3	E:5 S:6 P:6	
TOTAL (firms)	Emp:22 Sales:18 Profits:23	Emp:9 Sales:20 Profits:10	E:31 S:38 P:33	E:0.003 S:0.093 P:0.448
3.Attaining satisfactory overall profitability				
SOME DIFFICULTY(firms)	Emp:18 Sales:16 Profits:21	Emp:9 Sales:16 Profits:7	E:27 S:32 P:28	
NO DIFFICULTY(firms)	Emp:4 Sales:3 Profits:3	Emp:2 Sales:5 Profits:3	E:6 S:8 P:6	
TOTAL (firms)	Emp:22 Sales:19 Profits:24	Emp:11 Sales:21 Profits:10	E:33 S:40 P:34	E:0.229 S:0.056 P:0.527
4.Raising finance from firm's internal financial resources				
SOME DIFFICULTY(firms)	Emp:7 Sales:6 Profits:8	Emp:2 Sales:5 Profits:1	E:9 S:11 P:9	
NO DIFFICULTY(firms)	Emp:7 Sales:8 Profits:8	Emp:7 Sales:11 Profits:7	E:14 S:19 P:15	
TOTAL (firms)	Emp:14 Sales:14 Profits:16	Emp:9 Sales:16 Profits:8	E:23 S:30 P:24	E:0.800 S:0.078 P:1.800

TABLE A5.50:
CHI-SQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS COMPANY LABOUR ISSUES

LABOUR ISSUE⬇ Growth Measure➡ 1.Good work ethic amongst employees	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:7 Sales:8 Profits:10	Emp:4 Sales:6 Profits:3	E:11 S:14 P:13	
NO DIFFICULTY(firms)	Emp:17 Sales:12 Profits:13	Emp:6 Sales:14 Profits:7	E:23 S:26 P:20	
TOTAL (firms)	Emp:24 Sales:20 Profits:23	Emp:10 Sales:20 Profits:10	E:34 S:40 P:33	E:0.045 S:0.110 P:0.116
2.Good labour relations between employees and management				
SOME DIFFICULTY(firms)	Emp:5 Sales:5 Profits:5	Emp:3 Sales:4 Profits:3	E:8 S:9 P:8	
NO DIFFICULTY(firms)	Emp:19 Sales:15 Profits:19	Emp:8 Sales:17 Profits:7	E:27 S:32 P:26	
TOTAL (firms)	Emp:24 Sales:20 Profits:24	Emp:11 Sales:21 Profits:10	E:35 S:41 P:34	E:0.000 S:0.007 P:0.017

TABLE A5.50 (CONTINUED)

3.Influence of trade unions in company business				
SOME DIFFICULTY(firms)	Emp:2 Sales:2 Profits:2	Emp:0 Sales:1 Profits:0	E:2 S:3 P:2	
NO DIFFICULTY(firms)	Emp:8 Sales:4 Profits:	Emp:0 Sales:4 Profits:1	E:8 S:8 P:8	
TOTAL (firms)	Emp:10 Sales:6 Profits:7	Emp:0 Sales:5 Profits:1	E:10 S:11 P:10	E:NA S:0.034 P:0.625

TABLE A5.51:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY RIVALRY ISSUES

Rivalry issue⬇ Growth Measure➡ 1.Strong competition from other Scottish firms	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:12 Sales:13 Profits:13	Emp:6 Sales:10 Profits:6	E:18 S:23 P:19	
NO DIFFICULTY(firms)	Emp:10 Sales:6 Profits:10	Emp:4 Sales:11 Profits:4	E:14 S:17 P:14	
TOTAL (firms)	Emp:22 Sales:19 Profits:23	Emp:10 Sales:21 Profits:10	E:32 S:40 P:33	E:0.009 S:1.018 P:0.039
2.Strong competition from other UK firms				
SOME DIFFICULTY(firms)	Emp:16 Sales:15 Profits:19	Emp:9 Sales:17 Profits:8	E:25 S:32 P:27	
NO DIFFICULTY(firms)	Emp:6 Sales:5 Profits:6	Emp:2 Sales:4 Profits:1	E:8 S:9 P:7	
TOTAL (firms)	Emp:22 Sales:20 Profits:25	Emp:11 Sales:21 Profits:9	E:33 S:41 P:34	E:0.021 S:0.007 P:0.115
3.Strong competition from imports				
SOME DIFFICULTY(firms)	Emp:11 Sales:8 Profits:12	Emp:4 Sales:10 Profits:4	E:15 S:18 P:16	
NO DIFFICULTY(firms)	Emp:9 Sales:8 Profits:8	Emp:5 Sales:9 Profits:5	E:14 S:17 P:13	
TOTAL (firms)	Emp:20 Sales:16 Profits:20	Emp:9 Sales:19 Profits:9	E:29 S:35 P:29	E:0.016 S:0.034 P:0.141

TABLE A5.52:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS ISSUES FOR RELATED AND SUPPORTING INDUSTRIES

Issue⬇ Growth Measure➡ 1.Proximity to raw material suppliers	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:13 Sales:10 Profits:16	Emp:5 Sales:11 Profits:3	E:18 S:21 P:19	
NO DIFFICULTY(firms)	Emp:9 Sales:10 Profits:8	Emp:5 Sales:9 Profits:6	E:14 S:19 P:14	
TOTAL (firms)	Emp:22 Sales:20 Profits:24	Emp:10 Sales:20 Profits:9	E:32 S:40 P:33	E:0.009 S:0.000 P:1.769
2.Companies involved in the production of products that are complementary to your company's products				
SOME DIFFICULTY(firms)	Emp:10 Sales:10 Profits:12	Emp:2 Sales:6 Profits:1	E:12 S:16 P:13	
NO DIFFICULTY(firms)	Emp:7 Sales:7 Profits:10	Emp:8 Sales:12 Profits:6	E:15 S:19 P:16	
TOTAL (firms)	Emp:17 Sales:17 Profits:22	Emp:10 Sales:18 Profits:7	E:27 S:35 P:29	E:2.432 S:1.377 P:2.043
3.Components suppliers in the locality				
SOME DIFFICULTY(firms)	Emp:15 Sales:10 Profits:14	Emp:4 Sales:11 Profits:4	E:19 S:21 P:18	
NO DIFFICULTY(firms)	Emp:4 Sales:5 Profits:6	Emp:5 Sales:8 Profits:4	E:9 S:13 P:10	
TOTAL (firms)	Emp:19 Sales:15 Profits:20	Emp:9 Sales:19 Profits:8	E:28 S:34 P:28	E:1.939 S:0.028 P:0.315

TABLE A5.53:
CHI-SQUARED TESTS FOR SIGNIFICANCE: GROWTH V TAXATION ISSUES

Issue⬇ Growth Measure➡ 1.Rate of company taxation	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:14 Sales:16 Profits:19	Emp:9 Sales:13 Profits:3	E:25 S:29 P:22	
NO DIFFICULTY(firms)	Emp:7 Sales:3 Profits:5	Emp:1 Sales:7 Profits:6	E:8 S:10 P:11	
TOTAL (firms)	Emp:21 Sales:19 Profits:24	Emp:10 Sales:20 Profits:9	E:33 S:39 P:33	E:0.980 S:1.013 P:4.297
2.Lack of tax exemptions for company expenses				
SOME DIFFICULTY(firms)	Emp:14 Sales:13 Profits:15	Emp:7 Sales:14 Profits:8	E:21 S:27 P:23	
NO DIFFICULTY(firms)	Emp:6 Sales:4 Profits:7	Emp:3 Sales:3 Profits:2	E:9 S:7 P:9	
TOTAL (firms)	Emp:20 Sales:17 Profits:22	Emp:10 Sales:17 Profits:10	E:30 S:34 P:32	E:0.179 S:0.000 P:0.070

TABLE A5.54:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS ECONOMIC CLIMATE ISSUES

Issue⬇ Growth Measure➡ 1.Depressed local economic conditions (i.e.within region)	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:8 Sales:9 Profits:13	Emp:5 Sales:11 Profits:4	E:13 S:20 P:17	
NO DIFFICULTY(firms)	Emp:6 Sales:5 Profits:7	Emp:4 Sales:5 Profits:3	E:10 S:10 P:10	
TOTAL (firms)	Emp:14 Sales:14 Profits:20	Emp:9 Sales:16 Profits:7	E:23 S:30 P:27	E:0.127 S:0.017 P:0.007
2.Depressed national economy				
SOME DIFFICULTY(firms)	Emp:15 Sales:15 Profits:18	Emp:8 Sales:15 Profits:8	E:23 S:30 P:26	
NO DIFFICULTY(firms)	Emp:5 Sales:3 Profits:5	Emp:3 Sales:5 Profits:2	E:8 S:8 P:7	
TOTAL (firms)	Emp:20 Sales:18 Profits:23	Emp:11 Sales:20 Profits:10	E:31 S:38 P:33	E:0.084 S:0.053 P:0.123
3.High interest rates				
SOME DIFFICULTY(firms)	Emp:18 Sales:17 Profits:21	Emp:8 Sales:14 Profits:7	E:26 S:31 P:28	
NO DIFFICULTY(firms)	Emp:3 Sales:2 Profits:2	Emp:1 Sales:5 Profits:2	E:4 S:7 P:4	
TOTAL (firms)	Emp:21 Sales:19 Profits:23	Emp:9 Sales:19 Profits:9	E:30 S:38 P:32	E:0.124 S:0.700 P:0.199

TABLE A5.55
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS USEFULNESS OF GOVERNMENT AGENCIES

USEFULNESS⬇ Growth Measure➡ 1.Scottish Development Agency/ Scottish Enterprise	STAGNANT/ DECLINE(firms)	GROWING>25% (firms)	TOTAL (firms)	CHISQUARE
USEFUL(firms)	Emp:8 Sales:6 Profits:9	Emp:2 Sales:7 Profits:3	E:10 S:13 P:12	
NOT USEFUL(firms)	Emp:9 Sales:7 Profits:11	Emp:6 Sales:12 Profits:6	E:15 S:19 P:17	
TOTAL (firms)	Emp:17 Sales:13 Profits:20	Emp:8 Sales:19 Profits:9	E:25 S:32 P:29	E:0.375 S:0.026 P:0.033

TABLE A5.55 (CONTINUED)

2.Locate in Scotland				
USEFUL(firms)	Emp:1 Sales:2 Profits:5	Emp:4 Sales:6 Profits:2	E:5 S:8 P:7	
NOT USEFUL(firms)	Emp:1 Sales:1 Profits:1	Emp:1 Sales:1 Profits:1	E:2 S:2 P:2	
TOTAL (firms)	Emp:2 Sales:3 Profits:6	Emp:5 Sales:7 Profits:3	E:7 S:10 P:9	E:0.018 S:0.030 P:0.080
3.Scottish Office Department/s				
USEFUL(firms)	Emp:5 Sales:4 Profits:4	Emp:3 Sales:4 Profits:3	E:8 S:8 P:7	
NOT USEFUL(firms)	Emp:2 Sales:6 Profits:7	Emp:2 Sales:3 Profits:1	E:4 S:9 P:8	
TOTAL (firms)	Emp:7 Sales:10 Profits:11	Emp:5 Sales:7 Profits:4	E:12 S:17 P:15	E:0.043 S:0.041 P:0.549
4.Enterprise Initiative				
USEFUL(firms)	Emp:6 Sales:3 Profits:6	Emp:2 Sales:6 Profits:2	E:8 S:9 P:8	
NOT USEFUL(firms)	Emp:0 Sales:1 Profits:3	Emp:2 Sales:3 Profits:1	E:2 S:4 P:4	
TOTAL (firms)	Emp:6 Sales:4 Profits:9	Emp:4 Sales:9 Profits:3	E:10 S:13 P:12	E:1.276 S:0.123 P:0.500
5.Regional/District Council/s				
USEFUL(firms)	Emp:4 Sales:5 Profits:8	Emp:3 Sales:6 Profits:2	E:7 S:11 P:10	
NOT USEFUL(firms)	Emp:7 Sales:4 Profits:5	Emp:2 Sales:4 Profits:4	E:9 S:8 P:9	
TOTAL (firms)	Emp:11 Sales:9 Profits:13	Emp:5 Sales:10 Profits:6	E:16 S:19 P:19	E:0.115 S:0.073 P:0.423

APPENDIX A5B:

CHARACTERISTICS OF FIRMS IN POSTAL QUESTIONNAIRE SURVEY OF PLASTICS SUPPLY INDUSTRY

A5B.1 Age of Firms

The average age of firms was found to be 16.9 years, with the oldest firm being 85 years old and the youngest a year old. The survey results would seem to indicate that the plastics supply industry is well established in Scotland with 60% firms being 10 years or older. It is not a mature industry in the way that, for example, the steel industry is, using technology whose basic processes have not in essence changed since the turn of the century.

A5B.2 Legal Form of Firms

The predominant legal form of firms in the survey was that of private limited companies, which accounted for 38 firms (76%). Only 2 firms (4%) were sole traders; 3 firms (6%) were private partnerships; one firm (2%) was a public limited company; one firm (2%) was a local subsidiary of another local company; another firm (2%) described itself as a "supported company"; and one firm (2%) was a subsidiary of a foreign company.

A5B.3 Ownership of Firms by Country

The bulk of firms, 34 (68%) were independent firms operating only from one site within Scotland. 5 firms (10%) were subsidiaries of companies based elsewhere in Scotland. 7 firms (14%) were subsidiaries of companies based elsewhere in the UK outside Scotland. And 4 firms (8%) were subsidiaries of a company based in a country outside the UK. Examination of firm ownership reveals the strong indigenous nature of this industry with 78% of firms apparently owned within Scotland and 92% owned within the UK.

A5B.4 Employment

The survey attempted to secure a breakdown of employment for the years 1988 and 1991 according to broad based occupation definitions and whether it was of a part-time or full-time nature. Table A5B.1 illustrates the results of that exercise.

The survey results suggested that the average firm size increased from around 39 full-time employees/firm in 1988 to 59.5 full-time employees in 1991. The

TABLE A5B.1:
OCCUPATIONAL STRUCTURE OF EMPLOYMENT FOR 1988 AND 1991

EMPLOYMENT CATEGORY	AVERAGE NO. EMPLOYEES/FIRM			
	1988		1991	
	Part-time	Full-time	Part time	Full-time
Managerial &Executive	0.3 5.7%	2.9 7.5%	0.3 4.4%	3.7 6.2%
Skilled Technical	0.0 0%	3.6 9.3%	0.0 0%	5.4 9.1%
Clerical/Administrative	0.4 7.5%	2.5 6.5%	0.6 8.8%	3.0 5.0%
Skilled Manual	0 0%	3.8 9.8%	0 0%	4.8 8.1%
Less Skilled Manual	3.2 60.4%	18.0 46.6%	3.9 57.4%	38.6 64.9%
TOTAL	**5.3** **100%**	**38.6** **100%**	**6.8** **100%**	**59.5** **100%**

NOTES:
1.Missing observations for 1988 are 12 (24% of respondents)
2.Missing observations for 1991 are 10 (20% of respondents)
3.Totals may not necessarily reflect aggregate of stated employment categories due to missing observations and respondents who did not consider categories to reflect all of the occupations within their firm.
4.Some respondents, particularly those from small firms, stated that their employees fulfilled multiple occupational roles, which the survey could not accurately take into account.
5.Total of 50 firms in survey sample.

occupational structure of employment for full-time employment in the industry from 1988 to 1991, changed from 7.1% down to 6.1% for managerial and executives; marginally from 9.0% down to 8.9% for skilled technical; from 6.2% down to 4.9% for clerical/administrative; from 9.2% down to 7.8% for skilled manual; and from 42.8% up to 63.1% for less skilled manual (*such as assembly operatives*). It would appear then that growth in this industry has had the greatest impact on the less skilled segment of the workforce, little impact on the skilled technical segment, whilst the management/executive, clerical/administrative and skilled manual segments appear to have had their comparative shares of employment somewhat eroded over this three year period. However, it should be noted that in absolute terms, all segments of the occupational employment structure for the industry experienced big gains in full-time employment.

The significance of part-time employment to the industry, was found to be 11.5% of total employment in 1988, which dropped to 10.3% of total employment in 1991, although in absolute terms it increased by 44% over the same period. Full-time employment increased faster in absolute terms by some 63% over the same period. Part-time employment was most dominant in the area of less skilled manual employment, accounting for 61% of total part-time employment in 1988 and 56% of full-time employment in 1991. The other important employment segment for part-time

employment was the clerical/administrative category which had an 8.3% share of part-time employment in 1988, increasing to 8.5% in 1991.

A5B.5 Sales Turnover

The average annual sales turnover of the 37 firms that responded to this question in the survey was approximately £2.42m in 1991. More than half of the firms (52%) had annual sales turnovers from £0.5m to £4.9m. The average volume of 1991 sales generated per employee was £37,574/employee for the 32 firms that responded to the relevant questions, with the highest value at £83,333/employee, the lowest value at £15,455.

A5B.6 Profitability

The lack of response for this particular question was high at 46%. The total profits generated in 1991 for the 26 firms that answered this question was £9.95m, which worked out to yield an average of £382,538. None of the firms in the survey admitted to having lost money, although one firm stated that it had not made a profit. The highest profit per firm was £5m and the lowest £1,000 (*excluding the firm that did not post a profit*). Unfortunately, the results have been considerably skewed by a few very large firms, but the modal value of £50,000 puts the very high average in a more realistic perspective. The average profits per employee per annum for 1991 was £6,655, with a modal value of £1,207 per employee/annum and standard deviation of £16,679 per employee/annum, and ranged from £76,375 per employee/annum down to £200 per employee/annum (*excluding the firm that did not post a profit*).

A5B.7 Functions of Firms

Table A5B.2 details various functions that a typical manufacturing firm would be concerned with. The intention of this portion of the survey was to ascertain to what extent firms in this industry provide these functions "in-house" or contracted them out to other firms. The findings strongly indicate that for firms within the survey population at least, they are largely self-reliant in most aspects of their operations. There were only four areas were there was any significant wholesale contracting out of activities to other firms and these were: research and development of new products (5 firms or 10%); product testing facilities (6 firms or 12%); capacity for training staff (6 firms or 12%); and the transport of material inputs and finished products (21 firms or 42%). In some areas, there were high numbers of firms that did not consider functions to be applicable to their operations, namely personnel management (8 firms

or 16%); research and development of new products (10 firms or 20%); product testing facilities (8 firms or 16%); manufacturing of products (8 firms or 16%); and manufacturing on a sub-contract basis (11 firms or 22%). The majority of firms in the survey were autonomous in their operations. Only one firm (2%) in the survey had a parent company providing some of its functions, and that was in the areas of personnel management; financial control; the research and development of new products; and the provision of product testing facilities.

TABLE A5B.2
FUNCTIONS OF FIRMS

FUNCTION	PROVIDED WITHIN FIRM	PROVIDED BY PARENT COMPANY	CONTRACTED OUT TO OTHER COMPANIES	PROVIDED BY FIRM AND CONTRACTED OUT
Personnel Management	74%	2%	2%	0
Financial control	80%	2%	4%	2%
Sales & marketing	82%	0	2%	2%
Purchasing of material inputs	92%	0	0	0
Research & development of new products	56%	2%	10%	8%
Capacity to adapt existing products	82%	0	2%	2%
Product testing facilities	60%	2%	12%	6%
Manufacturing of own products	72%	0	4%	4%
Manufacturing on a sub contract basis	70%	0 0	0	4%
Capacity for training staff	70%	0	12%	6%
Transport of material inputs and finished products	40%	0	42%	6%

NOTES:
1.Survey population of 50 firms=100%
2.Non response rate of 4%
3.Percentages for each function may not add up to 100%. This is because some firms do not consider some functions as being applicable to their circumstances. The proportion of firms in this category can be determined from the difference obtained by subtracting the aggregate of percentages for each function from 100%.

A5B.8 Location of Competitors

On average firms considered most of their competitors (54.9%) to be located in the rest of the UK. Scotland as a location for competitors comes second with 31.2%. The rest of the world is perceived to be a minor source of competition with only 13.9% of competitors on average located there. Thus, the overwhelming impression is that of an industry that is not internationalised to any great extent and largely indigenous to the UK, if not Scotland.

A5B.9 Location of Markets

Firms were asked which markets their products were destined for in 1988 and 1991. Three markets were identified: Scotland; the rest of the UK; and the rest of the world. Overall, change in the markets for the categories of firms by employment was slight over the three year period, with the Scottish share of markets declining slightly from 57.6% to 54.1%, while other parts of the UK increased their share of markets from 37.4% to 39.1% and other countries outside the UK increased their share from 4.7% to 6.7%.

A5B.10 Assessment of Agencies Providing Advice and Assistance

Respondents were asked to indicate what forms of assistance that they had used during the period 1988 to 1991 and then to rate the usefulness of nine sources of both public and private sector assistance according to whether they thought each respective source had been very useful,somewhat useful, helpful but not useful or unhelpful. The main findings were that:

1. Scottish Enterprise was the source most firms approached in seeking assistance or advice, attracting 70% of firms. Unfortunately, only 30% of firms (*43% of those firms that actively sought out assistance*) found the assistance of Scottish Enterprise to be of any use, while 12% (*17% of those seeking assistance*), rated them as being unhelpful. In one sense, Scottish Enterprise can take some comfort from the fact that they have achieved a high profile in industry as a possible source of advice and assistance but it is probably also somewhat worrying that 40% of firms do not rate them highly when it comes to utility. It is interesting to note that Scottish Enterprise recorded the highest proportion of dissatisfied firms at 12%, beating Management Consultants on 8%.
2. Perhaps somewhat predictably, banks and accountants are the other prime sources that firms turn to when they seek assistance or advice, probably because these sources are most likely to be involved in the firm's financing arrangements. Respectively, they attracted 54% and 52%. The satisfaction rate with them too, is highest, with the assistance sought rated "very useful" by 16% of firms for banks and 24% of firms for accountants. Indeed, the assistance of accountants' utility actually rated the highest of all sources of assistance at 44% (*85% of those seeking assistance*). Banks followed with 38% of firms (*70% of those seeking assistance*).

A5B.11 Sources of Development Capital

An interesting finding of the survey is the very high reliance of the 36 firms that answered this question on their internal financial resources (67.5%) which when aggregated to the category of "owner's personal financial resources" (6.3%), indicates that 73.8% of development capital for the average firm comes purely from within the firm's and owner's resources. Surprisingly, bank loans and grants as sources of development capital do not figure prominently at all, with firms saying that on average, these sources would respectively account for only 3.8% and 4.6% of their development capital. These findings strongly suggest that firms are largely on their own when it comes to financing expansion or undertaking research and development and cannot reliably count on much support to be forthcoming from banks or the public sector, in the form of grants.

A5B.12 Characteristics of Management

The bulk of the firms in the survey were owner-managed (56%), while firms that employed managers to manage their establishments, accounted for 34% of survey participants. Arrangements in which owners and managers employed by the firm jointly managed the firm was the situation for 8% of firms. One firm (2%) was managed by its directors who happened to be the principle shareholders. Considering that some 86% of the firms in the survey are private companies of one form or another, it is perhaps not at all surprising that the ownership of these firms generally seems to play such a dominant role in the management of firms in this industry. Indeed, the close intertwining of management and ownership was clearly demonstrated when respondents were asked whether the owners were involved in decisions concerned with the operational and strategic management of the firm, to which 66% and 64% of respondents respectively answered yes.

Firms were also asked about the characteristics of their managers in terms of their sex, age, educational attainments and tenure in their post. Firms' management structures were found to be overwhelmingly dominated by males, with the main manager being male in 90% of firms and female in a mere 2% of firms. There were four firms (8%) with joint management structures, of which 2 firms (4%) had a female manager. Male domination of this industry is probably due to the tendency of women within society generally to avoid professions or trades with a strong engineering and/or manufacturing bias.

The age structure of managers of firms that participated in the survey was largely concentrated in the 36-55 age group (*68% of firms*). Only one firm (2%) had a manager younger than 25 years of age and five firms (10%) in the 26-35 age group, suggesting that management in this industry is largely by mature individuals with considerable life experience behind them.

Managers with some form of post-school training represented 64% of respondents compared with 34% of respondents without any form of training beyond what they received at school. There was quite a high proportion of managers (*42% of firms*) who had received some tertiary education in the form of a diploma, bachelor degree or post-graduate degree. Some 20% of managers had a degree, although the survey was not able to ascertain whether it happened to be related to their current employment post. The proportion of firms with managers that did not have any formal training was surprisingly large at 34%, given that this industry is one in which technical knowledge of the manufacturing processes being dealt with would be an advantage to a firm's success in the marketplace.

Generally it would seem that most managers were well established within their current position, with 46% of firms' managers holding more than 10 years tenure and 26% of firms' managers holding tenure from 4 to 10 years. Very new managers (*those with less than a year's tenure*), represented only 12% of firms. In the intermediate category, there were 8% of firms with managers that had 1 to 3 years tenure. It is interesting that in an industry with a low average age at just under 17 years, that the dominant tenure category for managers is "more than 10 years". This gives the impression of an industry in which firms are largely mature and stable in the way that they carry out their business. Perhaps this is not really all that surprising, considering that the bulk of firms are owner-managed and are private companies.

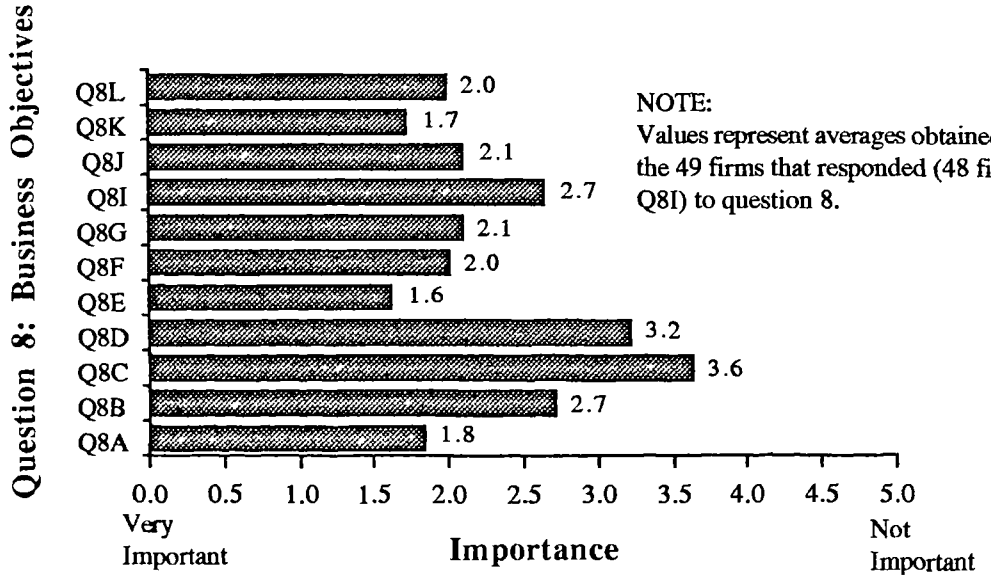
A5B.13 Objectives of Management

Respondents were asked to rank the importance of 11 business objectives according to a continuous five point scale representing degrees of increasing importance from a value 1 (*maximum importance*) to a value of 5 (*minimum importance*). An indifferent response would be a value of 3. The results of this exercise are illustrated in the bar chart in figure A5B.1.

It would seem then from this analysis, that what firms consider to be of paramount importance are the issues of product quality, profitability, productivity and

the rapport between management and employees. And what they consider to be of minimal importance is the creation of jobs for the sake of it and maximising a firm's physical size.

FIGURE A5B.1
AVERAGE IMPORTANCE RATINGS FOR BUSINESS OBJECTIVES



KEY:
Q8A: High profits
Q8B: High sales turnover
Q8C: Large firm size in terms of production capacity
Q8D: Creation of jobs
Q8E: Maximisation of productivity
Q8F: Maximisation of market share
Q8G: Improving product quality
Q8I: Creating the most innovative product for the market segment
Q8J: Good working conditions for employees
Q8K: Good rapport between management and employees
Q8L: High job satisfaction for employees

APPENDIX A5C:

CASE STUDIES OF SELECTED GROWTH FIRMS

This appendix provides a detailed account of the case studies of growth firms discussed in section 5.4.2. The six case studies examined are: Tenma (UK) Ltd. (*an example of Japanese inward investment*); Polbeth Packaging Ltd. (*an example of indigenous firm growth*); Vitafoam Ltd. (*an example of growth as part of a large UK group*); Silleck Mouldings Ltd. (*expansion of an English firm into the Scottish market*); Forbes Plastics Ltd. (*growth through locating in Scotland to minimise costs*); and Foam Plus (*another example of indigenous firm growth*).

A5C.1 An example of growth through inward investment by a Japanese company: Tenma (UK)

Tenma is an example of inward investment into Scotland from Japan, which commenced production in March, 1989 at a greenfield factory site in Cumbernauld. Its 1992 employment was 117 full-time employees (*100 of which are unskilled workers and only 9 are skilled/technical and managerial/executive*) and this plant produced a profit of £600,000 (*£5,128/employee*) on sales of £3.9m (*£33,333/employee*) in 1991. The method of growth employed was simply to expand production capacity and take on greater numbers of employees. The company is an excellent example of dependent growth (*on its parent company and government financial assistance*) and the limitations of branch plant investment in terms of a poor range of jobs, lack of local management, marketing, research and development and engineering skills. The main reason for the growth of this company in Scotland are due to the established corporate might of the firm's Japanese parent, established links with its key customers and economies of scale. Being part of a successful Japanese corporation, resulted in a minimal financial risk since the parent company largely underwrote the cost of investing in Scotland. It had guaranteed markets from its two major customers in Scotland, JVC in East Kilbride and Mitsubishi Electric at Livingston. Indeed, JVC initially made overtures to Tenma (Japan) to become a locally based supplier of TV plastic casings for its UK operations and it was on that basis that Tenma decided to commence manufacturing operations in the UK. Tenma had a competitive advantage over its other UK competitors in that it can produce 28" and 29" TV cabinets which its competitors are unable to match because their plastic injection moulding machinery is not large enough. Success in the UK market was also greatly aided by using tried and tested production technology and products that had

been developed by Tenma's parent company in Japan. Tenma also considered its very low establishment costs (*through very cheap land costs and a Regional Development Grant for 15% of its start-up costs*) compared to the rest of the UK to have played an important part in its ability to quickly produce a profit from start-up. A cheap labour pool in the Cumbernauld area (*as a result of high youth unemployment in Cumbernauld*), has helped the company to maximise profitability by reigning in costs. A problem with Tenma's contribution to local economic development, is that almost all of the local jobs created are of a menial nature with poor long term prospects. Tenma would seem to have high expectations of future growth because its factory site allows plenty of scope for expansion of factory floor space and its machinery is underutilised compared to its main competitor Silleck Mouldings (8 hours/day compared to 24 hours/day).

A5C.2 Indigenous firm growth through Market Leadership, Government support and entrepreneurial flair: Polbeth Packaging Ltd

Polbeth Packaging Ltd is a private limited company incorporated in the UK, which is an example of successful indigenous firm growth in Scotland, whose early success was greatly facilitated by government assistance in the form of grants, provision of premises and advice. Its growth over the past three years has been characterised by an expansion in production capacity (*extra machinery together with a 50% increase in factory floorspace*) and increased employment. Future growth for the company is now in the context of being part of an American multinational Corporation.

Polbeth perceives itself as primarily a food packaging company for biscuit and confectionery manufacturers, which converts PVC plastic as its raw material into various types of plastic food packaging. It also sees itself as a packaging advisory service designed to meet customers' specific needs. The firm has hundreds of customers, but the most significant part of their business is in packaging for major customers such as Rowntrees, Cadbury's and United Biscuits. The firm is the UK market leader in confectionery and biscuit plastic packaging products. Other customers in the food industry include dairy, meat and poultry producers. Non-food outlets include toiletries and cosmetic manufacturers, and general industrial applications.

The company was established as a small concern in 1981 by its three directors, Jack Burnett, Richard Allen, Ronnie Gray, who at the time of start-up, had

extensive industry related experience. In 1990, the company was taken over by an American company, Packaging Corporation of America (PCA), but continues to be managed by the three men that established the company. The new owners of the company are largely concerned with strategic management of the firm and leave operational management decisions/tasks to the local management team. The company felt this was necessary to achieve their ambitions of becoming industry leader, although it is interesting to note that PCA first made the approach to Polbeth and initiated the takeover. PCA is a leading supplier of plastic containers in the United States with annual global sales of over £750m, and has a committed strategy to develop a similar market position in Europe. Polbeth considers the main benefits of combining with PCA to be access to: abundant financial resources; and gaining access to extensive expertise in new product design and development; knowledge about multi-material extrusion and thermoforming techniques; market development experience across all segments of the food industry; and recycling technologies. These benefits are already beginning to be realised.

During the past three years (1988-1991), annual sales turnover increased by 26-50% to £7m (*about £30,435/full-time employee*) and annual profitability has increased by 51-100% to £400,000 (*about £1,739/full-time employee*). The company's major source of development capital in 1990/91 has been its own financial resources. Bank loans have provided 10% of development capital and government grants a further 10%. The US parent provided the remaining development capital of 30%.

Over the period from 1988 to 1991, part-time employment increased from 60 to 80 employees (*33% growth*), whilst full-time employment increased from 140 to 190 employees (*36% growth*). Employees are all locally sourced within the Livingston area. Unskilled and semi-skilled employees account for about 75% of employees; technical staff, 10%; administrative staff, 8%; and managerial/executive staff, 8%. Staff turnover is quite high, because of the boring nature of the work and the young workforce, but generally the company can rely on a core of 70% of employees remaining loyal to the firm.

The company's sales are predominantly concentrated in England (90%), with Scotland accounting for only 10% of sales. Over the period 1988-1991, there has not been any appreciable change in the distribution of sales.

At present, the company sees its competitors as all being UK based, of which there would be no more than half a dozen. For the products it produces, the company considered that only 5% of its competitors are based in Scotland, while 95% are based in England.

Polbeth is concerned about the threat of new entrants to the industry but does not perceive any immediate threat. The threat of substitute product or services from other firms does not worry Polbeth. Rivalry amongst existing competitors (*all UK based*), is strong and is sometimes difficult to tackle because it focuses on price cutting.

The firm's major objectives for growth stress survival most importantly, relatively modest growth and improving manufacturing efficiency to enhance the company's profitability.

The company's strategy emphasizes customer service, rather than the products, processes or marketing. Polbeth does not have any particular management strategy. It has a conventional management hierarchy of board members at its pinnacle, broadening out to intermediate echelons of senior, middle and junior management, with unskilled and semi-skilled employees at its base. All functions within the company are provided in-house, with the exception of staff recruitment and some training.

It would seem that the main reasons for Polbeth's success in its early stages (*from 1981*), appear to be due to the drive, enthusiasm and extensive industry-related business experience of the three founders; and secondly, due to extensive government assistance in the form of grants, advice and provision of premises; and thirdly, due to a favourable environment for industrial development around Livingston. As the firm's growth gathered momentum in the mid-1980's, success became dependent on being totally dedicated to the requirements of the customer resulting in market leadership; an in-depth understanding of customer's businesses and markets; and a very close relationship with their customers' technical and manufacturing functions. Government policy still continued to play an important part in this phase of growth with regard to financial assistance. The next phase (*since 1990*) of planned growth is as part of a multinational corporation, which gives Polbeth the necessary financial and technical resources to capitalise on any opportunities that may arise in the UK marketplace in future.

A5C.3 Growth as part of a large UK operation with Economies of Scale: Vitafoam

Vitafoam's Paisley factory is an example of successful inward investment from an English company for the purposes of better serving the Scottish market. Growth has been mainly characterised by an increase in employment, expanded production capacity and improved production efficiency. The Vitafoam factory in Paisley is a subsidiary of Vitafoam Ltd. of Middleton in Manchester, England. The Paisley factory commenced operations in 1965 by taking over McCraig and Drew Ltd, a Scottish polymer firm which had its premises in Paisley. Vitafoam Ltd. is owned by Vita, a public limited UK company which claims to be an international leader in the application of science, technology and engineering in the area of producing specialised polymer, fibre and fabric components for the furnishing, transportation, apparel, packaging and engineering industries. Its Paisley operations process cellular polymer products as its raw materials obtained from its Middleton factory, into various shapes and sizes for packaging and upholstery purposes.

Overall employment increased by 28% over the period 1988-1991 from 80 to 102 for the Paisley factory. The occupational categories that were the beneficiaries of this growth in employment were: managerial and executive staff, (*increasing from 7 to 11*); clerical and administrative staff (*increasing from 6 to 8*); and less skilled staff or assembly operatives (*increasing from 65 to 81*).

In the chairman's review published in March 1992, Mr McGee stated that growth continues to be the primary goal of the Vita Group. The core of Vita's growth strategy is to continue building a chain of polymer processing operations across the UK and Continental Europe. Growth is funded mainly through retained profits and equity funding. In 1992, Vita was seeking to raise approximately £73.4m from the stock market and its shareholders. It admits that in the coming year, little growth is expected to come from its operations in the UK market.

Vita's UK operations account for 32% of Vita's £904m in sales in 1991. During the period 1987 to 1991, Vita's growth performance has been impressive. Global turnover of Vita's businesses and related business interests has increased by 135% from £385m to £904m. And profit on ordinary activities before taxation increased by 78% from £28.3m to £50.4m. For its UK operations, profits increased by 74.3% from £10.1m to £17.6m. During the period 1988-1991, the

financial performance for the Paisley branch was: an increase of 51-100% in annual sales turnover to £4.5m (*£45,000/employee*); and no change in annual profitability of £100,000 per annum (*£1,000/employee*).

The structure of its UK operations consists of a total of 15 public limited companies incorporated in England (*including Vitafoam*) and one public limited company in Scotland (*Royalite Plastics Ltd, which declined to participate in this survey*). One company is a holding company for the Vita Group and two other companies handle the Vita's property management and administrative services needs respectively. Two companies produce polymeric compounds; four companies produce cellular polymer products (*including Vitafoam*); three companies produce polymeric products (*including Royalite Plastics*); three companies produce specialised textiles; and one company is involved in fibre processing.

A manager is employed by the firm to run its Paisley branch. Vita, the owners of the company, are concerned with strategic management issues and leave operational management to the local management, in this case, Mr.Cook, the local general manager. As general manager, Mr. Cook is largely autonomous in his dealings, except when it comes to matters of finance, which are carefully scrutinized by the parent firm in Middleton.

The Paisley factory mainly fabricates packaging material out of cellular polymer foam products created by the company's main operations in Middleton, England, but some years ago, also produced cut and shaped foam inserts for the Scottish furniture industry. However, in recent years, the Scottish furniture industry has declined by more than 50%, resulting in a 25% decline in business from this source (*upholstery fillings and bed settees now account for 30% and 15% of sales respectively*). Packaging related business has grown steadily for the company over the past three years. Today, 55% of their business is in producing protective packaging for major electronics companies in Scotland such as IBM, Compaq and Digital. They are also involved in a considerable amount of specialist packaging. The Paisley factory is not overly reliant on any particular customer for sales. In the upholstery business, it has one key customer that accounts for 25% of business, while with packaging, no single customer accounts for more than 5% of sales. The Paisley factory's markets over the period 1988-1991 declined from 90% to 80% for Scotland, whilst increasing from 10% to 20% for the rest of the UK. The manager Mr. Cook

considers the most important feature valued by customers to be the delivery of a quality product on time.

The firm sees the bulk of its competitors (90%) as being concentrated in the UK not including Scotland, while 10% of competitors are in Scotland. Rivalry is mainly on the basis of price. The foam Vitafoam uses is combustion modified foam which is more costly to manufacture than standard foam which some foreign competitors are producing (*mainly from Italy*), leaving the firm at a cost disadvantage. Vitafoam does not envisage the threat of competition from producers of substitute products for the foreseeable future.

The main strategy of Vitafoam has been to concentrate on the development of its core business. Mr. Cook believes that the success of company mainly due to company's commitment to people and head office providing the necessary finances to fuel expansion. The company's attitude to growth is to actively look for significant expansion. During the past three years, the company has grown quickly in a controlled manner, by the measures of sales, employment and production capacity. Over the next three years, the company expects to grow steadily but slowly by the measures of sales, employment and production capacity. The main constraint to growth that the firm has faced in recent years, is the demise of the Scottish furniture industry which at one stage was producing 2,500 suites per week, but has declined by 50%. Growth targets for the Paisley factory are to grow by 10% per annum, although the head office in Middleton largely determines whether its subsidiaries can go ahead with any expansion strategy, and provides the necessary support for such a strategy.

A substantial proportion of its activities are carried out by Vitafoam's parent company in Middleton, England and is typical of many branch plant operations. These include: personnel; financial control; research and development of new products; the manufacturing of foam used in the production process; and the capacity for training staff. This helps the Paisley factory to achieve economies of scale that would be very difficult to realise if it were an indigenous company.

The Paisley branch has control of: sales and marketing; purchasing of material inputs; the capacity to adapt existing products; product testing facilities; manufacturing on a sub-contract basis; and the transport of material inputs and finished products. The company does not have a marketing function as such. Instead, it conducts a marketing audit every six months.

To conclude, the main elements in Vita's success at the corporation level, has been its pursuit of efficiency; a commitment to maintain the most competitive facilities; investment in extensive product development; enormous capital resources; the significant autonomy given to the operational management of Vita' various subsidiaries; and the capability to secure additional finance from the stockmarket. At the level of Vitafoam's Paisley operations, the key ingredients of success would appear to have been effective management; a good relationship between management and employees; close liaison with customers; a strong determination to seek out all possible customers; and the substantial financial backing of Vita Ltd. Much of the Paisley subsidiary's recent growth during the past 5 years, appears to be due to the large amount of inward investment from computer firms such as Compaq with their high associated demand for protective packaging material.

A5C.4 Growth Through Entry into the Scottish Market by an English Company Through New Branch Plants: Silleck Mouldings

Silleck Mouldings Ltd is an example of inward investment by an English company, primarily for the purpose of exploiting an opportunity to serve the growing Scottish market in plastic components during the late 1980s. This growth in demand for plastics in Scotland is associated with the large number of consumer electronics and computer firms now manufacturing in Scotland. The growth of Silleck Mouldings has been characterised by inward investment (*setting up a new factory at Inchinnan near Paisley*) and firm acquisition (*acquisition of Douglas Plastics' East Kilbride plant*). Growth in the Inchinnan factory has taken the form of increased employment and increased production capacity.

Silleck Mouldings Ltd is a private limited English company that was established in 1967 by Mr. Casey Ellis at Eaglescliffe near Stockton-on-Tees. In 1983, there was a management buy-out of the firm by its three directors who immediately set about reorganising and re-equipping the firm. The firm's new management were keen to seek out opportunities to expand and considered the growing Scottish market for plastics components to be the ideal vehicle to facilitate this growth. There were two stages to this strategy. The first stage involved the development of the Inchinnan factory which was opened in 1987 (*the company's Eaglescliffe factory also underwent expansion in production capacity in the same year*). And the second stage involved the acquisition of the East Kilbride operation of

Douglas Plastics (*with 29 employees*) in 1989. Acquisition of the East Kilbride operation of Douglas Plastics has increased Silleck's machine range and given it BS5750 certification, thereby allowing it to compete with Tenma in producing very large plastic components, such as the plastic casings for TV sets. The Inchinnan and East Kilbride factories both have autonomous operational managements, while the English parent company controls strategy, finances and employment.

The business of Silleck's Inchinnan factory is purely as a subcontractor to companies like Polaroid, IBM, OKI and Hoover. It is able to manufacture all plastic components for consumer and electronic goods. Silleck does not really seek out its customers, since most customers come to Silleck with the design and specification of its product already determined. However, the factory does have a tool-making and design facility for customers unsure of their needs. The Inchinnan plant relies on a total of about 12 major customers, 6 of whom provide 80% of the factory's sales. When the factory first opened, 80% of its markets were in Scotland and 20% in the rest of the UK. The factory now exclusively serves the Scottish market, while the Eaglescliffe factory caters to the English market. The bulk of the Inchinnan branch's competitors are based in the UK outwith Scotland (75%), while 20% are located in Scotland and the remainder (5%) are foreign.

The production process uses heat and high pressure over time applied to small plastic pellets which are forced into a mould to produce plastic components. Technical issues related to the design of production equipment are carried out by the company's head office in England. Because of the high capital investment in the production equipment, the factory operates round the clock, 5 days a week.

When the Inchinnan factory participated in the postal questionnaire survey, the market for the plastics supply sector was still performing strongly. Overall, employment has increased by 30% from 70 to 100 for full-time employees and by 20% from 50 to 60 for part-time employees during the period 1988-1991. All occupational groups benefited from this growth with managerial and executive staff increasing from 6 to 7; skilled technical employees increasing from 12 to 15; clerical/administrative staff doubling to 4; skilled manual employees increasing from 4 to 6; and less skilled manual employees increasing from 46 to 68 for full-time employees and from 50 to 60 for part-time employees. Annual sales turnover increased in the range of 26-50% over the period 1988-1991 to £6.2 million (*£47,700/employee*). Silleck was unwilling to provide figures for the profitability of

its Inchinnan branch, except to state that it had not changed during the period 1988-1991. In the intervening ten months between the postal questionnaire survey and the case study interview, according to Mr. Adams, the Inchinnan factory manager, the recession was beginning take effect resulting in some machines having to be left idle. Mr. Adams believed that the industry had passed its peak and felt that new entrants to the industry would be destructive to the sales prospects of existing firms.

Mr. Adams posited the main reasons for Silleck's growth as being an excellent work-force; up-to-date and reliable production equipment; and a commitment to good customer service. The company competes mainly on cost, reliable delivery and customer service, since most of its rival firms are technically competent. One technological feature which has helped Silleck Inchinnan plant to perform well, is its innovative heat recovery system which was commended by the Energy Efficiency Office of the Department of Energy. The system was installed into the factory in 1990 to absorb the excess heat that the plant machinery generates and it is used to minimise electricity consumption and provide space heating for the factory. In financial terms, this system has saved the firm around £20,000/year.

Government grants were helpful at the time of start-up but not critically important to the firm's success in Scotland or its decision to enter the Scottish market. The firm found that the advice of Scottish Enterprise very helpful at the time of start-up. Important factor conditions for the Inchinnan branch were: to be close to customers (*the firm's prime reason for setting up in Scotland*), being close to a ready labour market; and being in an area with an excellent, well serviced industrial estate. Being close to suppliers was not of critical locational importance because the raw materials are cheaply produced in England, the USA and Japan.

The major constraint to growth that currently faces Silleck's Inchinnan branch is the lack of demand brought on by the current recession. Significant difficulties that the firm has faced over the past three years include: procuring an adequate supply of skilled labour; and poor public transport links to Paisley (*a difficult problem to solve because of the factory's round-the-clock pattern of shift work).* Finding the time and skills to plan, organize and manage growth presented some difficulty. Financial factors such as maintaining cash flow and profitability caused minor difficulty to the firm. Meeting the demands of demanding customers also caused difficulty to the company.

When the postal questionnaire survey asked about the company's outlook for growth, the expectation was for slow steady growth by the measures of sales, employment and production capacity. However, when the branch manager was personally interviewed, the estimate for growth was much more pessimistic since the current recession appears to have no end in sight and the firm's sales had already begun to dip.

To conclude, Silleck Mouldings is an example of a medium sized English company expanding through entry into the Scottish market, to capitalise on the demand for plastics components generated by Scotland's electronics consumer industry. The resources of the English parent have exclusively underwritten the Inchinnan factory and its management has been ultimately in the hands of the parent company. Its success has been helped by good working relations with its staff; the best contemporary production equipment and a strong emphasis on customer service. Although Silleck Mouldings Ltd is a relatively small company, its entry into the Scottish market fits the pattern of the branch plant syndrome. However, having said that, it has made a much more positive contribution to the local economy than Tenma's impact, because all of the employment created is locally based and 32 of the jobs provided are of a non-menial nature and seem to offer the prospect of some career development.

A5C.5 Growth Through Government Grants, Dynamic Owner-Management, Innovative Product Development and Good Labour Relations: Forbes Plastics

Forbes Plastics is an example of growth through government start-up assistance, dynamic owner-management involvement; innovative adaptation of plastic materials to industrial tank applications, good staff relations and high product quality. Forbes Plastics uses various forms of plastic materials to custom build a variety of large vessels for industrial applications. Wherever tanks or large vessels are needed, Forbes Plastics have a market. Their products are used in waste and water treatment and in the manufacture of: chemicals; paper and pulp; pharmaceuticals and proprietaries; distilled and fermented products; soft drinks; dairy products; general food stuffs; oil and gas exploration; and numerous other products. Forbes Plastics have not created completely new products as such, rather, they have recognised the advantages of plastics in terms of price, low maintenance, light weight, reliability, longevity and chemical inertness, and substituted them for metal in large vessels used in industrial applications. Indeed, Forbes Plastics were the UK pioneers in the use of

plastics in vessels for industrial applications, aggressively challenging the contemporary wisdom that steel was the only acceptable material.

Forbes Plastics was established in 1960 in the English town of Downhammarket in Norfolk. It started out as a small family business and today continues to be owned and managed by the Forbes family as a private limited company. Originally, all of the company's operations were at Norfolk, but in 1970 the Forbes family decided to relocate the manufacturing side of their operations to the Borders town of Kelso, mainly to take advantage of what they considered to be a generous government cash grant which covered 40% of the firm's development costs. The administrative aspect of the company's operations remained in Norfolk. The other reasons given for locating in Kelso, was that the type of labour available suited the company. Mr Forbes, the owner-manager, stressed the labour issue as being very important since they needed a work-force with good skills and reliability. A small rural community was preferred as a location because of what Mr. Forbes considered to be their intensely parochial and feudal attitude to life which helps to ensure a sense of continuity in the community and encourage commitment to the firm.

The founder started as a distributor for an American plastics firm supplying fabricating and ducting work. He soon discovered a way of welding plastic sheets together which allowed large tanks to be fabricated exclusively from plastic. Initially, industries and firms that might have been interested in this new way of constructing storage vessels were sceptical of the durability of Forbes products, but after two decades of proven performance, industry has now largely accepted plastic vessels. The work of Forbes Plastics is not of a "high-tech" nature and it relies on a work-force who are more craft-based than intellectually clever. Mr. Forbes considered his company to be small, but added that the market his company was in was a "tiny pond" which his company dominated with a 25% market share. Most of the firm's competitors (*only 7 in the UK*) are based in England (*6 firms*) with only 1 firm based in Scotland. There are no foreign competitors and unlikely to be in the future because the large volume of the product and its custom designed nature makes it uneconomic to compete against. Rivalry with its UK competitors is of a friendly nature and all are in a federation which meets to discuss general concerns to the industry.

During the period 1988-1991, the management considered the company to have grown steadily but slowly by the measures of employment and production capacity. Employment growth was 18% from 45 to 53 employees at its Kelso plant

during this period which benefited the following occupational groups: skilled technical employees (*increasing from 3 to 4*); skilled manual employees (*increasing from 28 to 33*); and less-skilled manual employees (*increasing from 10 to 12*). Managerial and executive staff remained constant at 3, as did clerical/administrative staff (*1 full-time and 1 part-time*). Annual profits of £350,000 (*£6,422/employee*) were generated on sales of £4.2 million (*£77,064/employee*) in 1991, an increase in the range of 26-50% over the firm's 1988 performance. The company is not highly geared, deriving only 10% of its development capital from outside the firm. It is in a financially healthy position and owns all of its capital equipment.

Mr. Forbes gave five reasons for his company's success since its establishment, which are: (1) continuity of ownership; (2) ability to meet customer demands in a highly specialised market; (3) very strong customer relationships which has led to repeat business; (4) continued company improvement; and (5) good labour relations.

It seemed clear from Mr. Forbes that his drive, enthusiasm; perseverance and innovation had an important part to play in his firm's success. Mr. Forbes takes a keen interest in every aspect of his business from management and labour relations down to the finest point of technical detail. Although this continuity of owner-management is where the key strength of the firm has been since its inception, it also has the potential to be its greatest weakness if Mr. Forbes suddenly became unable to manage the firm through illness or death. The ability to meet customer demands in a highly specialised market comes from the firm's unrivalled expertise across a whole field of plastics fabrication and the ability to custom design and build vessels to meet a customer's specific needs. Their efficient and effective production techniques, compliance with British standards, high level of technical competence, free impartial advice, reliable delivery, product reliability and high product quality, gives customers considerable confidence in Forbes' products. Mr. Forbes stressed that his was a customer-oriented business in which the customer was "king". Once Forbes has secured a customer, it usually finds that they are offered repeat business. Continued company improvement is achieved through its total quality concept programme which entails a three-pronged strategy: (1) total quality management; (2) total quality control; and (3) quality assurance. Total quality management aims to ensure through efficient administration, good labour relations and utilisation of the best production practives that customers can expect a good reliable quality product tailored to their exact needs that is cost effective. Total quality control refers to a rigourous

inspection procedure during the process of manufacture and installation of the vessels to ensure that they comply with British standards. Quality assurance aims to ensure that any unsatisfactory work received by a customer is rectified forthwith. Good labour relations are achieved by offering employees who make a commitment to the firm (*demonstrated by their skill capability and output*), security of employment, retirement and health benefit plans, and a productivity bonus scheme which can boost one's salary by 30% to £200/week. Furthermore, labour relations are enhanced by making management very approachable to employees. Mr. Forbes stated that each employee was treated as an expert in their own particular task and he therefore valued any opinions that they offered. Labour issues are viewed as one of the most important aspects to the business because the production process is extremely staff reliant. Disgruntled employees are not likely to work at their best, so it is in the interests of everyone in the firm to be happy with their work environment. Although the minimum wage is low, with the bonus Mr. Forbes claims it to be better than its competitors. Once employees have satisfied the six month probationary period (*about 50% make it*), they tend to remain committed to the firm.

The main constraint to growth that Forbes Plastics has faced is the limited size of the UK market. The company is constantly seeking out new market niches' for their product applications. In 1992, the recession was dampening demand for its products which placed pressure on its already tight profit margins. The recession has increased competitive pressures in the industry for whatever new custom there happens to be around. There was also some apprehension expressed by Mr. Forbes about closer integration into the European Community, because of increased regulation driving up costs and the increasing complexity of the production process. Company taxes were also mentioned as a moderate constraint to growth.

Forbes Plastics does not have a growth strategy per se. Its manager expects it to grow but fairly slowly in terms of production capacity, employment and sales. Its main concern is to maintain its market share and consolidate its position by carving a distinct market niche for itself. The contract nature of its sales for one-off manufactured products is not particularly suited to a high growth strategy.

In conclusion, it would seem that Forbes Plastics has grown steadily in recent years through its dedication to product development and quality; cultivating good customer relations and good employee relations. The government assistance that Forbes received to relocate its manufacturing operations to Kelso, undoubtedly helped

the firm to reduce its costs during the 1970s and paved the way for the company's modest expansion during the late 1980s. If the company could transpose its success in the UK market to markets the size of continental Europe or the USA, then it would have very promising growth prospects.

A5C.6 Growth of an Indigenous Firm Through Business Commitment and Planning and Latterly being part of a Large Business Conglomerate: Foam Plus

Foam Plus started out as an indigenous Scottish company. It is now an example of growth through commitment to the business, careful planning of capital investment in advance of anticipated demand and being part of a growing Irish business conglomerate to finance growth. The company manufactures expanded polystyrene and polypropylene packaging material for use in consumer electronics goods (*such as computers, cameras and hi-fi speakers*) and some food packaging. Growth in this company has been characterised by an increase in production capacity and an increase in employment, both of which have more than doubled during the period 1988-1991.

Foam Plus is a private limited company that was established in 1985 in Montrose on Scotland's east coast by the firm's current managing director and four other people to meet the packaging needs of the fish processing industry and to a lesser extent, agricultural producers in the area. In the first 18 months of the business, there was very little growth, but from 1987 to 1990 the business grew rapidly to a turnover of around £3 million/year. In 1987, the company relocated to Linwood (*in the old Chrysler factory building*), Renfrewshire, because its management recognised greater opportunities in supplying packaging material to the electronics sector than in food packaging. The large volume, bulkiness and low value of packaging material, necessitated being located within a 50 mile radius of its customers. One of the firm's founders originally came from Renfrewshire and so was keen for the firm to relocate there. Moreover, Tilbury Douglas Homes, the lessor of the factory, provided very attractive rental rates for the first five year period. In 1989, the group was taken over by an Irish conglomerate public limited company (*a holding company*). The directors decided to sell out to the Irish company, which is building up a portfolio of successful small-medium businesses in Europe because it seemed like a good vehicle for growth while allowing the firm's existing management a large degree of autonomy. The impressive profitability and management skills of the Irish conglomerate further convinced the firm's existing management that their firm's future growth prospects

would be best served by becoming part of this conglomerate. The main influence that the conglomerate exerts over the business is in the area of levels of investment and strategic management. The firm's dividends continue to be reinvested in the business.

The suppliers of raw materials undertake most of the research and development work in the industry. German firms (98%) provide most of the raw materials and production equipment used in the business. The company does have a small design team of 2-3 people, but its mainly for the purposes of shaping packaging to a customer's requirements. All of the firm's production is on a just-on-time basis. In order to maximise its return on capital equipment. The company operates its production output 7 days a week, 24 hours/day. Industry training is provided by the supplier firms when new equipment is introduced and by the firm itself.

The company has two main Scottish rivals, both about the same size, one in Glasgow and the other in Livingston, and a smaller rival in England. The structure of the company's markets has not changed significantly during the period 1988-1991 with approximately one third of its markets sourced in Scotland and the remaining two thirds sourced in the rest of the UK. Unlike most firms in this industry, a substantial proportion of its development capital (40%) comes from bank loans.

In terms of employment, the company's growth has been quite dramatic increasing by 97% to 71 full-time employees and by 124% to 47 part-time employees over the period 1988-1991. Annual sales turnover increased in the range of 201-300% to £4 million (*£42,328/employee*) over the same period and annual profitability almost doubled. The occupational groups to benefit from this growth during 1988-1991 were: managerial and executive (*increasing from 1 to 2 part-time employees and from 3 to 6 full-time employees*); skilled technical (*increasing from 3 to 5 full-time employees*); and less skilled manual (*increasing from 20 to 45 part-time employees and from 30 to 60 full-time employees*).

The reasons given for the firm's success were: (1) management's drive and commitment to the business; (2) clear strategies for growth; (3) effective and efficient production techniques; (4) being well capitalised with production equipment to meet anticipated demand; (5) strong relationships with a few key customers; and (6) being part of a conglomerate with the financial and managerial resources to underwrite a growth strategy. The management of Foam Plus has fundamentally changed over

the past 2 years. The intention has been to move away from individual "hands-on" management towards a team management approach with three directors: a managing director (*the "driver" of the company*); a technical director; and a commercial director. Foam Plus' management have explicit objectives for growth such as to double sales over the previous year (*1992 compared to 1991*) and achieve a 10-15% growth in assets each year. The company aims to achieve growth through increased market share, rather than seeking out new markets. Other strategies that Foam Plus has, are to improve the efficiency and quality of production; and to form long term business partnerships with key customers (*there are about 6*), so that the firm has a secure base from which to project its growth aspirations. The company aims to improve the effectiveness and efficiency of its production techniques through the introduction of British standards and regular meetings with employees to discuss any production or work related issue. The company has been able to keep up with the most obvious pressure of growth which is provide sufficient output to meet demand. This has been achieved by ensuring that it has slightly excess production capacity in place to meet its growth targets over the coming year. The company concentrates its focus on a few solid companies and aims to build a long term relationship with its main customers, to ensure that the company has a solid and dependable customer base. This helps the company when it is seeking outside funding because long-term contracts help to maintain continuity of cash flow. It was still too early to say whether being part of a conglomerate had resulted in any tangible benefits for Foam Plus. The recession has dampened the firm's potential for growth in 1992 and it has been content to remain stable for the time being. However, being part of a conglomerate provides a future framework in which to pursue growth when the economic climate becomes more favourable.

The main obstacle to growth at the current time for Foam Plus is a lack of demand, due primarily to the current recession. Also of concern were the high interest rates the firm faced up until the UK withdrew from the European Exchange Rate Mechanism in October 1992. The suitability of premises was rated as a major constraint to growth, since the firm was locked into a 5 year contract. At the time Foam Plus participated in the postal questionnaire survey in August 1991, finding sufficient time and skills to plan, organise and manage growth was a cited as a significant constraint to growth, but since then, the team based management approach has ameliorated this problem. An important area of concern for the company was the reliability and the work ethic of labour. Because of the monotonous unskilled nature of the work and the round-the-clock pattern of shift work, a lack of job security and

little hope of career development, the company has difficulty maintaining a stable work-force that is committed to the company. This acts as a drain on management resources since considerable effort is required in managing such a volatile personnel environment. The lack of financial assistance from government in this firm's development, was not viewed as a constraint to growth. Some advice was recieved from Renfrew Enterprise, but it was not considered useful. Mr. Gibson, the managing director, was of the opinion that government's role should be to provide a good base for training and to encourage firms to invest, mainly through advice and information on business opportunities (*as opposed to financial assistance*).

When the firm participated in the postal questionnaire survey, management's attitude was that the company was actively looking for expansion and that it expected to growth quickly in a controlled manner by the measures of sales, employment and production capacity. At the time of the in-depth interview almost a year later, Mr. Gibson was much more cautious about the firm's prospects for growth in light of the current economic climate, but believed the agenda had been set in place for the company to actively pursue growth when the recession ends.

APPENDIX A5D:

LIST OF FIRMS THAT PARTICIPATED IN POSTAL QUESTIONNAIRE SURVEY OF PLASTICS SUPPLY SECTOR

Allenwest Mouldings Ltd, Sanquhar Industrial Estate, Sanquhar, DUMFRIESSHIRE
ANAPLAST LTD, Ardeer, STEVENSTON
Arcol Thermoplastics Ltd., GLASGOW
Argival Plastics Ltd., METHIL FIFE
Barholm Tool & Gauge Co Ltd, RUTHERGLEN
Cademuir Toolmaking Ltd, Riverside Industrial Area, SELKIRK
Caledonian Rubber Ltd, Hillington Industrial Estate, GLASGOW
Charles Tennant & Co Ltd, GLASGOW
Connector Moulds (Scotland) Ltd, Nerston Industrial Estate, EAST KILBRIDE
Craigmillar Works, EDINBURGH
D.C.B. (Mouldings), Kirkton Industrial Estate, Arbroath, TAYSIDE
Devol Engineering Ltd, GREENOCK
Douglas Plastics Ltd, Douglas, LANARKSHIRE
Easter Road Plastics Ltd, EDINBURGH
Edinburgh Plastics Ltd, COWDENBEATH
Foam Plus Ltd, Linwood, RENFREWSHIRE
Forbes (Plastics) Ltd, Pinnaclehill Industrial Estate, Kelso, ROXBURGHSHIRE
Fortis Mouldings Ltd, Easthouses Industrial Estate, Dalkeith, MIDLOTHIAN
Glendale Plastics Ltd, Southfield Industrial Estate, GLENROTHES
Glossbrook Eng Ltd, Bathgate, WEST LOTHIAN
Hambleside Manufacturing Ltd, Dalcross Industrial Estate,INVERNESS
Hollingworth (*Mr Richard*), Co. Proprietor, Kirkcaldy, FIFE
I.C.L Tech Plastics Ltd, GLASGOW
Intercobra Ltd, Queensway Industrial Estate, GLENROTHES
Jaycee (Mouldmakers) Ltd, High Blantyre Industrial Estate, GLASGOW
John Drummond (Engineers) Ltd, Bellcraig Works, GLASGOW
Mainetti (UK) Ltd, JEDBURGH
McAlpine & Co Ltd, Hillington Estate, GLASGOW
McLaren Plastics Ltd, Penicuik, MIDLOTHIAN
Merimate Ltd, Wester Gourdie Industrial Estate, DUNDEE
M.G.C. Ltd, Harthill, STRATHCLYDE
Mongoose Plastics Ltd, Whitehill Industrial Estate, Glenrothes, FIFE
N.E.I. Control Systems Ltd, (Edgcumbe Instruments), Bothwell, GLASGOW

Nylon Machining Services Ltd, Righead Industrial Estate, BELSHILL
Plasboard Plastics Ltd, Broomfield Industrial Estate, Montrose, TAYSIDE
Plaslant/Olgelin Ltd, Newhouse Industrial Estate, Newhouse, MOTHERWELL
Plastics Design & Fabrications Ltd, Plade Works, Barrhead, GLASGOW
Plastipress Eng & Services, Netherton Industrial Estate, Wishaw, STRATHCLYDE
Polbeth Packaging Ltd, Brucefield Industrial Park, Livingston, WEST LOTHIAN
Polydex Mouldings Ltd, Southfield, GLENROTHES
Polyscot Polystyrene, DUNFERMLINE
P.W.G Plastics W. Graham Ltd, DUNDEE
Quality Precision Mouldings Ltd, Whitehill Industrial Estate, Glenrothes, FIFE
Silleck Mouldings Ltd, Inchinnen Industrial Estate, RENFREW
Tenma (UK) Ltd, CUMBERNAULD
The Spark Erosion Centre, BLANTYRE
The Taylor Group, Plastic Mouldings, Carntyne Industrial Estate, GLASGOW
Thredgards Ltd, ALVA
Tri-Mould (Scotland) Ltd, East Kilbride, GLASGOW
Vitapac Ltd, Colinslee Works,PAISLEY

APPENDIX A6

APPENDIX A6A:
TESTS FOR STATISTICAL SIGNIFICANCE OF VARIABLES POSSIBLY ASSOCIATED WITH FIRM GROWTH IN THE OIL AND GAS RELATED SECTOR

APPENDIX A6B:
CHARACTERISTICS OF FIRMS IN POSTAL QUESTIONNAIRE SURVEY OF OIL AND GAS RELATED INDUSTRY

APPENDIX A6C:
CASE STUDIES OF SELECTED GROWTH FIRMS

APPENDIX A6D:
LIST OF FIRMS THAT PARTICIPATED IN POSTAL QUESTIONNAIRE SURVEY OF OIL AND GAS RELATED SECTOR

APPENDIX A6A:
TESTS FOR STATISTICAL SIGNIFICANCE OF VARIABLES POSSIBLY ASSOCIATED WITH FIRM GROWTH IN THE OIL AND GAS RELATED SECTOR

TABLE A6.1:
GROWTH VERSUS AGE OF COMPANY

GROWTH MEASURE (Employm./Sales/Profits)➡ COMPANY AGE ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
10yrs<	Emp:16 Sales:8 Profits:16	Emp:18 Sales:18 Profits:10	Emp:34 Sales:26 Profits:26	
10yrs>=	Emp:10 Sales:16 Profits:19	Emp:16 Sales:20 Profits:16	Emp:26 Sales:36 Profits:35	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:34 Sales:38 Profits:26	Emp:60 Sales:62 Profits:61	E:0.168 S:0.655 P:0.096

TABLE A6.2:
GROWTH VERSUS LEGAL FORM OF COMPANY

GROWTH MEASURE (Employm./Sales/Profits)➡ LEGAL FORM OF COMPANY ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
private	Emp:25 Sales:23 Profits:33	Emp:30 Sales:33 Profits:22	Emp:55 Sales:56 Profits:55	
public	Emp:1 Sales:1 Profits:3	Emp:3 Sales:6 Profits:4	Emp:4 Sales:7 Profits:7	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:33 Sales:39 Profits:26	Emp:59 Sales:63 Profits:62	E:0.097 S:1.693 P:0.210

TABLE A6.3:
GROWTH VERSUS FORM OF MANAGEMENT

GROWTH MEASURE (Employm./Sales/Profits)➡ FORM OF MANAGEMENT ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
owner-managed	Emp:19 Sales:23 Profits:19	Emp:17 Sales:36 Profits:15	Emp:36 Sales:59 Profits:34	
professional management	Emp:7 Sales:1 Profits:15	Emp:13 Sales:3 Profits:8	Emp:20 Sales:4 Profits:23	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:34	Emp:30 Sales:39 Profits:23	Emp:56 Sales:63 Profits:57	E:1.079 S:0.001 P:0.188

TABLE A6.4:
GROWTH VERSUS LOCATION OF OWNERSHIP: SCOTLAND

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF OWNERSHIP (Scotland) ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
Scotland	Emp:19 Sales:16 Profits:20	Emp:21 Sales:21 Profits:17	Emp:40 Sales:37 Profits:37	
outwith Scotland	Emp:7 Sales:8 Profits:16	Emp:14 Sales:18 Profits:9	Emp:21 Sales:26 Profits:25	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.675 S:0.590 P:0.270

TABLE A6.5:
GROWTH VERSUS LOCATION OF OWNERSHIP: UK

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF OWNERSHIP (UK) ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
rest of UK	Emp:26 Sales:16 Profits:28	Emp:28 Sales:29 Profits:21	Emp:54 Sales:45 Profits:49	
outwith UK	Emp:3 Sales:4 Profits:8	Emp:7 Sales:10 Profits:5	Emp:10 Sales:14 Profits:13	
*TOTAL (no. firms)	Emp:29 Sales:20 Profits:36	Emp:35 Sales:39 Profits:26	Emp:64 Sales:59 Profits:62	E:0.588 S:0.027 P:0.000

TABLE A6.6:
GROWTH VERSUS AGE OF MANAGER

GROWTH MEASURE (Employm./Sales/Profits)➡ AGE OF MANAGER ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
35yrs=<	Emp:3 Sales:4 Profits:6	Emp:7 Sales:6 Profits:5	Emp:10 Sales:10 Profits:11	
>35yrs	Emp:23 Sales:20 Profits:30	Emp:28 Sales:33 Profits:21	Emp:51 Sales:53 Profits:51	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.265 S:0.049 P:0.001

TABLE A6.7:
GROWTH VERSUS EDUCATION OF MANAGER

GROWTH MEASURE (Employm./Sales/Profits)➡ EDUCATION OF MANAGER ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
tertiary	Emp:13 Sales:13 Profits:20	Emp:20 Sales:22 Profits:14	Emp:33 Sales:35 Profits:34	
no tertiary	Emp:13 Sales:11 Profits:15	Emp:15 Sales:17 Profits:12	Emp:28 Sales:28 Profits:27	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:61	E:0.085 S:0.008 P:0.000

TABLE A6.8:
GROWTH VERSUS TENURE OF MANAGER

GROWTH MEASURE (Employm./Sales/Profits)➡ TENURE OF MANAGER ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
3yrs=<	Emp:6 Sales:6 Profits:11	Emp:9 Sales:11 Profits:6	Emp:15 Sales:17 Profits:17	
>3 yrs	Emp:20 Sales:18 Profits:25	Emp:26 Sales:28 Profits:20	Emp:46 Sales:46 Profits:45	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.004 S:0.000 P:0.142

TABLE A6.9:
GROWTH VERSUS IMPORTANCE OF HIGH TURNOVER

GROWTH MEASURE (Employm./Sales/Profits)➡ HIGH SALES TURNOVER ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:14 Sales:12 Profits:17	Emp:19 Sales:21 Profits:16	Emp:33 Sales:33 Profits:33	
not important	Emp:12 Sales:12 Profits:19	Emp:16 Sales:18 Profits:10	Emp:28 Sales:30 Profits:29	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.051 S:0.001 P:0.738

TABLE A6.10:
GROWTH VERSUS IMPORTANCE OF LARGE FIRM SIZE BY CAPITAL ASSETS

GROWTH MEASURE (Employm./Sales/Profits)➡ LARGE FIRM SIZE (e.g. capital assets) ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:1 Sales:1 Profits:4	Emp:6 Sales:6 Profits:3	Emp:7 Sales:7 Profits:7	
not important	Emp:24 Sales:22 Profits:30	Emp:28 Sales:32 Profits:23	Emp:52 Sales:54 Profits:53	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:34	Emp:34 Sales:38 Profits:26	Emp:59 Sales:61 Profits:60	E:1.250 S:0.808 P:0.144

TABLE A6.11:
GROWTH VERSUS IMPORTANCE OF LARGE FIRM SIZE BY TURNOVER

GROWTH MEASURE (Employm./Sales/Profits)➡ LARGE FIRM SIZE IN TERMS OF TURNOVER ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:4 Sales:4 Profits:6	Emp:9 Sales:11 Profits:8	Emp:13 Sales:15 Profits:14	
not important	Emp:21 Sales:19 Profits:28	Emp:25 Sales:27 Profits:18	Emp:46 Sales:46 Profits:46	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:34	Emp:34 Sales:38 Profits:26	Emp:59 Sales:61 Profits:60	E:0.387 S:0.477 P:0.703

TABLE A6.12:
GROWTH VERSUS IMPORTANCE OF LARGE FIRM SIZE BY EMPLOYMENT

GROWTH MEASURE (Employm./Sales/Profits)➡ LARGE FIRM SIZE IN TERMS OF EMPLOYMENT ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:4 Sales:4 Profits:4	Emp:5 Sales:6 Profits:5	Emp:9 Sales:10 Profits:9	
not important	Emp:22 Sales:20 Profits:31	Emp:29 Sales:32 Profits:21	Emp:51 Sales:52 Profits:52	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:34 Sales:38 Profits:26	Emp:60 Sales:62 Profits:61	E:0.086 S:0.070 P:0.209

TABLE A6.13:
GROWTH VERSUS IMPORTANCE OF MAXIMISATION OF PRODUCTIVITY

GROWTH MEASURE (Employm./Sales/Profits)➡ MAXIMISATION OF PRODUCTIVITY ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:22 Sales:17 Profits:26	Emp:24 Sales:30 Profits:20	Emp:46 Sales:47 Profits:46	
not important	Emp:4 Sales:7 Profits:9	Emp:8 Sales:6 Profits:4	Emp:12 Sales:13 Profits:13	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:32 Sales:36 Profits:24	Emp:58 Sales:60 Profits:59	E:0.360 S:0.669 P:0.278

TABLE A6.14:
GROWTH VERSUS IMPORTANCE OF MAXIMISED PRODUCTION EFFICIENCY

GROWTH MEASURE (Employm./Sales/Profits)➡ MAXIMISED PRODUCTION EFFICIENCY ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:21 Sales:15 Profits:23	Emp:22 Sales:29 Profits:20	Emp:43 Sales:44 Profits:43	
not important	Emp:5 Sales:9 Profits:11	Emp:10 Sales:6 Profits:4	Emp:15 Sales:15 Profits:15	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:34	Emp:32 Sales:35 Profits:24	Emp:58 Sales:59 Profits:58	E:0.595 S:2.117 P:1.254

TABLE A6.15:
GROWTH VERSUS IMPORTANCE OF MAXIMISED MARKET SHARE

GROWTH MEASURE (Employm./Sales/Profits)➡ MAXIMISED MARKET SHARE ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:20 Sales:15 Profits:25	Emp:28 Sales:33 Profits:23	Emp:48 Sales:48 Profits:48	
not important	Emp:5 Sales:8 Profits:10	Emp:7 Sales:6 Profits:3	Emp:12 Sales:14 Profits:13	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:35	Emp:35 Sales:39 Profits:26	Emp:60 Sales:62 Profits:61	E:0.107 S:2.012 P:2.137

TABLE A6.16:
GROWTH VERSUS IMPORTANCE OF PRODUCT QUALITY IMPROVEMENT

GROWTH MEASURE (Employm./Sales/Profits)➡ PRODUCT QUALITY IMPROVEMENT ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:24 Sales:19 Profits:29	Emp:27 Sales:34 Profits:23	Emp:51 Sales:53 Profits:52	
not important	Emp:2 Sales:5 Profits:7	Emp:7 Sales:4 Profits:2	Emp:9 Sales:9 Profits:9	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:34 Sales:38 Profits:25	Emp:60 Sales:62 Profits:61	E:1.421 S:0.545 P:1.016

TABLE A6.17:
GROWTH VERSUS IMPORTANCE OF MOST INNOVATIVE PRODUCTS

GROWTH MEASURE (Employm./Sales/Profits)➡ HAVING THE MOST INNOVATIVE PRODUCTS IN THE MARKET⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:17 Sales:17 Profits:26	Emp:24 Sales:25 Profits:15	Emp:41 Sales:42 Profits:41	
not important	Emp:8 Sales:6 Profits:9	Emp:10 Sales:12 Profits:10	Emp:18 Sales:18 Profits:19	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:35	Emp:34 Sales:37 Profits:25	Emp:59 Sales:60 Profits:60	E:0.005 S:0.056 P:0.801

TABLE A6.18:
GROWTH VERSUS IMPORTANCE OF CREATING JOBS

GROWTH MEASURE (Employm./Sales/Profits)➡ CREATION OF JOBS ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:6 Sales:9 Profits:11	Emp:10 Sales:8 Profits:6	Emp:16 Sales:17 Profits:17	
not important	Emp:20 Sales:15 Profits:24	Emp:24 Sales:30 Profits:20	Emp:44 Sales:45 Profits:44	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:34 Sales:38 Profits:26	Emp:60 Sales:62 Profits:61	E:0.063 S:1.389 P:0.201

TABLE A6.19:
GROWTH VERSUS IMPORTANCE OF GOOD RAPPORT BETWEEN STAFF

GROWTH MEASURE (Employm./Sales/Profits)➡ GOOD RAPPORT BETWEEN MANAGEMENT AND EMPLOYEES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:25 Sales:21 Profits:31	Emp:31 Sales:37 Profits:25	Emp:56 Sales:58 Profits:56	
not important	Emp:1 Sales:2 Profits:4	Emp:4 Sales:2 Profits:1	Emp:5 Sales:4 Profits:5	
*TOTAL (no. firms)	Emp:26 Sales:23 Profits:35	Emp:35 Sales:39 Profits:26	Emp:61 Sales:62 Profits:61	E:0.527 S:0.000 P:0.526

TABLE A6.20:
GROWTH VERSUS IMPORTANCE OF JOB SATISFACTION FOR EMPLOYEES

GROWTH MEASURE (Employm./Sales/Profits)➡ HIGH JOB SATISFACTION FOR EMPLOYEES ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
important	Emp:25 Sales:23 Profits:33	Emp:31 Sales:35 Profits:24	Emp:56 Sales:58 Profits:57	
not important	Emp:1 Sales:1 Profits:3	Emp:4 Sales:4 Profits:2	Emp:5 Sales:5 Profits:5	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.527 S:0.217 P:0.147

TABLE A6.21:
GROWTH VERSUS EXPECTATION OF GROWTH BY EMPLOYMENT

GROWTH MEASURE (Employm./Sales/Profits)➡ MANAGEMENT'S EXPECTATION OF GROWTH IN EMPLOYMENT OVER NEXT THREE YEARS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Expecting growth	Emp:15 Sales:9 Profits:11	Emp:25 Sales:11 Profits:10	Emp:40 Sales:20 Profits:21	
*Not expecting growth	Emp:11 Sales:15 Profits:25	Emp:10 Sales:28 Profits:16	Emp:21 Sales:43 Profits:41	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.695 S:0.252 P:0.137

TABLE A6.22:
GROWTH VERSUS EXPECTATION OF GROWTH IN PRODUCTION CAPACITY

GROWTH MEASURE (Employm./Sales/Profits)➡ MANAGEMENT'S EXPECTATION OF GROWTH IN PRODUCTION CAPACITY OVER NEXT 3YR⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Expecting growth	Emp:18 Sales:8 Profits:9	Emp:21 Sales:7 Profits:7	Emp:39 Sales:15 Profits:16	
*Not expecting growth	Emp:8 Sales:14 Profits:24	Emp:8 Sales:26 Profits:14	Emp:16 Sales:40 Profits:38	
*TOTAL (no. firms)	Emp:26 Sales:22 Profits:33	Emp:29 Sales:33 Profits:21	Emp:55 Sales:55 Profits:54	E:0.001 S:0.944 P:0.028

TABLE A6.23:
GROWTH VERSUS LOCATION OF COMPETITORS IN GRAMPIAN

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS: GRAMPIAN ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in Grampian	Emp:9 Sales:10 Profits:19	Emp:19 Sales:19 Profits:10	Emp:28 Sales:29 Profits:29	
33% <= located in Grampian	Emp:16 Sales:14 Profits:17	Emp:14 Sales:17 Profits:14	Emp:30 Sales:31 Profits:31	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:36	Emp:33 Sales:36 Profits:24	Emp:58 Sales:60 Profits:60	E:1.778 S:0.326 P:0.348

TABLE A6.24:
GROWTH VERSUS LOCATION OF COMPETITORS IN REST OF SCOTLAND

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS: REST OF SCOTLAND⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in rest of Scotland	Emp:3 Sales:2 Profits:5	Emp:3 Sales:4 Profits:1	Emp:6 Sales:6 Profits:6	
33%<= located in rest of Scotland	Emp:22 Sales:22 Profits:31	Emp:30 Sales:32 Profits:23	Emp:52 Sales:54 Profits:54	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:36	Emp:33 Sales:36 Profits:24	Emp:58 Sales:60 Profits:60	E:0.006 S:0.007 P:1.096

TABLE A6.25:
GROWTH VERSUS LOCATION OF COMPETITORS IN REST OF UK

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS: REST OF UK ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in rest of UK	Emp:6 Sales:5 Profits:6	Emp:5 Sales:6 Profits:6	Emp:11 Sales:11 Profits:12	
33%<= located in rest of UK	Emp:19 Sales:19 Profits:30	Emp:28 Sales:30 Profits:18	Emp:47 Sales:49 Profits:48	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:36	Emp:33 Sales:36 Profits:24	Emp:58 Sales:60 Profits:60	E:0.287 S:0.005 P:0.193

TABLE A6.26:
GROWTH VERSUS LOCATION OF COMPETITORS IN REST OF WORLD

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS: REST OF WORLD⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in rest of world	Emp:7 Sales:8 Profits:9	Emp:10 Sales:10 Profits:8	Emp:17 Sales:18 Profits:17	
33%<= located in rest of world	Emp:18 Sales:16 Profits:27	Emp:23 Sales:26 Profits:16	Emp:41 Sales:42 Profits:43	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:36	Emp:33 Sales:36 Profits:24	Emp:58 Sales:60 Profits:60	E:0.001 S:0.031 P:0.158

TABLE A6.27:
GROWTH VERSUS LOCATION OF MARKETS IN GRAMPIAN

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS: GRAMPIAN ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in Grampian	Emp:19 Sales:15 Profits:25	Emp:23 Sales:26 Profits:15	Emp:42 Sales:41 Profits:40	
33%<= located in Grampian	Emp:7 Sales:9 Profits:11	Emp:11 Sales:12 Profits:10	Emp:18 Sales:21 Profits:21	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:34 Sales:38 Profits:25	Emp:60 Sales:62 Profits:61	E:0.030 S:0.041 P:0.239

TABLE A6.28:
GROWTH VERSUS LOCATION OF MARKETS IN REST OF SCOTLAND

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS: REST OF SCOTLAND ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in rest of Scotland	Emp:1 Sales:2 Profits:3	Emp:2 Sales:1 Profits:1	Emp:3 Sales:3 Profits:4	
33%<= located in rest of Scotland	Emp:25 Sales:22 Profits:33	Emp:32 Sales:37 Profits:25	Emp:57 Sales:59 Profits:58	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:34 Sales:38 Profits:26	Emp:60 Sales:62 Profits:62	E:0.054 S:0.222 P:0.047

TABLE A6.29:
GROWTH VERSUS LOCATION OF MARKETS IN REST OF UK

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS: REST OF UK ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in rest of UK	Emp:3 Sales:4 Profits:5	Emp:5 Sales:3 Profits:2	Emp:8 Sales:7 Profits:7	
33%<= located in rest of UK	Emp:23 Sales:20 Profits:31	Emp:29 Sales:35 Profits:23	Emp:52 Sales:55 Profits:54	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:34 Sales:38 Profits:25	Emp:60 Sales:62 Profits:61	E:0.001 S:0.488 P:0.111

TABLE A6.30:
GROWTH VERSUS LOCATION OF MARKETS IN REST OF WORLD

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS: REST OF WORLD ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33% located in rest of world	Emp:5 Sales:4 Profits:7	Emp:9 Sales:13 Profits:10	Emp:14 Sales:17 Profits:17	
33%<= located in rest of world	Emp:21 Sales:20 Profits:29	Emp:25 Sales:25 Profits:15	Emp:46 Sales:45 Profits:44	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:34 Sales:38 Profits:25	Emp:60 Sales:62 Profits:61	E:0.117 S:1.380 P:1.930

TABLE A6.31:
GROWTH VERSUS METHOD OF GROWTH OVER THE PAST 3 YEARS

GROWTH MEASURE (Employm./Sales/Profits)➡ METHOD OF GROWTH⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
1. INTRODUCED NEW PRODUCTS/SERVICES INTO EXISTING MARKETS				
yes	Emp:21 Sales:21 Profits:33	Emp:33 Sales:35 Profits:22	Emp:54 Sales:56 Profits:55	
no	Emp:5 Sales:3 Profits:3	Emp:2 Sales:4 Profits:4	Emp:7 Sales:7 Profits:7	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:1.780 S:0.018 P:0.210
2. INTRODUCED NEW PRODUCTS/SERVICES INTO NEW MARKETS				
yes	Emp:13 Sales:12 Profits:20	Emp:23 Sales:26 Profits:17	Emp:36 Sales:38 Profits:37	
no	Emp:13 Sales:12 Profits:16	Emp:12 Sales:13 Profits:9	Emp:25 Sales:25 Profits:25	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.915 S:1.046 P:0.270
3. DEVELOPED NEW MARKETS WITH EXISTING PRODUCTS/SERVICES				
yes	Emp:18 Sales:16 Profits:26	Emp:25 Sales:31 Profits:20	Emp:43 Sales:47 Profits:46	
no	Emp:8 Sales:8 Profits:10	Emp:10 Sales:8 Profits:6	Emp:18 Sales:16 Profits:16	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.009 S:0.667 P:0.016
4. REORGANISED THE WAY WORK IS CARRIED OUT TO IMPROVE PRODUCTION EFFICIENCY				
yes	Emp:23 Sales:19 Profits:31	Emp:31 Sales:34 Profits:22	Emp:54 Sales:53 Profits:53	
no	Emp:3 Sales:5 Profits:5	Emp:4 Sales:5 Profits:4	Emp:7 Sales:10 Profits:9	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.154 S:0.228 P:0.040
5. EXPANDED PRODUCTION CAPACITY				
yes	Emp:14 Sales:11 Profits:18	Emp:19 Sales:23 Profits:16	Emp:33 Sales:34 Profits:34	
no	Emp:12 Sales:13 Profits:18	Emp:16 Sales:16 Profits:10	Emp:28 Sales:29 Profits:28	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.051 S:0.549 P:0.414

TABLE A6.31 (CONTINUED)

6. ACQUIRED OTHER FIRM/S	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
yes	Emp:5 Sales:5 Profits:11	Emp:10 Sales:12 Profits:6	Emp:15 Sales:17 Profits:17	
no	Emp:21 Sales:19 Profits:25	Emp:25 Sales:27 Profits:20	Emp:46 Sales:46 Profits:45	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.275 S:0.312 P:0.142

TABLE A6.32:
GROWTH VERSUS SOURCE OF DEVELOPMENT CAPITAL

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL⬇ 1. Firm's internal financial resources	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33%	Emp:16 Sales:14 Profits:23	Emp:23 Sales:29 Profits:19	Emp:39 Sales:43 Profits:42	
33%<=	Emp:9 Sales:10 Profits:12	Emp:9 Sales:7 Profits:5	Emp:18 Sales:17 Profits:17	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:35	Emp:32 Sales:36 Profits:24	Emp:57 Sales:60 Profits:59	E:0.119 S:2.446 P:0.753
2. Equity				
>33%	Emp:0 Sales:0 Profits:0	Emp:1 Sales:1 Profits:1	Emp:1 Sales:1 Profits:1	
33%<=	Emp:26 Sales:24 Profits:35	Emp:31 Sales:35 Profits:23	Emp:57 Sales:59 Profits:58	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:32 Sales:36 Profits:24	Emp:58 Sales:60 Profits:59	E:0.009 S:0.036 P:0.024
3. Bank Loans				
>33%	Emp:5 Sales:5 Profits:5	Emp:4 Sales:4 Profits:4	Emp:9 Sales:9 Profits:9	
33%<=	Emp:21 Sales:19 Profits:30	Emp:28 Sales:32 Profits:20	Emp:49 Sales:51 Profits:50	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:32 Sales:36 Profits:24	Emp:58 Sales:60 Profits:59	E:0.126 S:0.495 P:0.013
4. Financial Institutions other than banks				
>33%	Emp:1 Sales:2 Profits:2	Emp:1 Sales:1 Profits:1	Emp:2 Sales:3 Profits:3	
33%<=	Emp:25 Sales:22 Profits:33	Emp:31 Sales:35 Profits:23	Emp:56 Sales:57 Profits:56	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:32 Sales:36 Profits:24	Emp:58 Sales:60 Profits:59	E:0.344 S:0.172 P:0.128

TABLE A6.32 (CONTINUED)

5. Owner's personal financial resources	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
>33%	Emp:2 Sales:1 Profits:4	Emp:3 Sales:4 Profits:1	Emp:5 Sales:5 Profits:5	
33% <=	Emp:24 Sales:23 Profits:31	Emp:29 Sales:32 Profits:23	Emp:53 Sales:55 Profits:54	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:32 Sales:36 Profits:24	Emp:58 Sales:60 Profits:59	E:0.057 S:0.206 P:0.402
6. Government grants				
>33%	Emp:0 Sales:0 Profits:1	Emp:1 Sales:1 Profits:1	Emp:1 Sales:1 Profits:2	
33% <=	Emp:26 Sales:24 Profits:34	Emp:31 Sales:35 Profits:23	Emp:57 Sales:59 Profits:57	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:32 Sales:36 Profits:24	Emp:58 Sales:60 Profits:59	E:0.009 S:0.036 P:0.188

TABLE A6.33:
GROWTH VERSUS SOURCES OF ADVICE/ASSISTANCE

GROWTH MEASURE (Employm./Sales/Profits)➡ ADVICE/ASSISTANCE FROM⬇ 1. Universities & Colleges	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
USEFUL(firms)	Emp:5 Sales:5 Profits:7	Emp:6 Sales:6 Profits:4	Emp:11 Sales:11 Profits:11	
NOT USEFUL(firms)	Emp:21 Sales:19 Profits:29	Emp:28 Sales:32 Profits:21	Emp:49 Sales:51 Profits:50	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:34 Sales:38 Profits:25	Emp:60 Sales:62 Profits:61	E:0.033 S:0.028 P:0.000
2. Banks				
USEFUL(firms)	Emp:18 Sales:15 Profits:19	Emp:20 Sales:23 Profits:18	Emp:38 Sales:38 Profits:37	
NOT USEFUL(firms)	Emp:8 Sales:9 Profits:17	Emp:15 Sales:16 Profits:8	Emp:23 Sales:25 Profits:25	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.515 S:0.000 P:1.125
3. Management Consultants				
USEFUL(firms)	Emp:7 Sales:5 Profits:7	Emp:11 Sales:12 Profits:10	Emp:18 Sales:17 Profits:17	
NOT USEFUL(firms)	Emp:18 Sales:18 Profits:28	Emp:24 Sales:27 Profits:16	Emp:42 Sales:45 Profits:44	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:35	Emp:35 Sales:39 Profits:26	Emp:60 Sales:62 Profits:61	E:0.000 S:0.218 P:1.528

TABLE A6.34:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS LABOUR FACTOR CONDITIONS

GROWTH MEASURE (Employm./Sales/Profits)➡ FACTOR CONDITION⬇ 1. Adequate supply of skilled labour	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:22 Sales:20 Profits:29	Emp:25 Sales:30 Profits:20	Emp:47 Sales:50 Profits:49	
NO DIFFICULTY(firms)	Emp:3 Sales:3 Profits:6	Emp:10 Sales:9 Profits:6	Emp:13 Sales:12 Profits:12	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:35	Emp:35 Sales:39 Profits:26	Emp:60 Sales:62 Profits:61	E:1.926 S:0.481 P:0.062
2. Affordable unskilled and semi-skilled labour				
SOME DIFFICULTY(firms)	Emp:14 Sales:11 Profits:18	Emp:16 Sales:21 Profits:14	Emp:30 Sales:32 Profits:32	
NO DIFFICULTY(firms)	Emp:8 Sales:10 Profits:14	Emp:15 Sales:13 Profits:7	Emp:23 Sales:23 Profits:21	
*TOTAL (no. firms)	Emp:22 Sales:21 Profits:32	Emp:31 Sales:34 Profits:21	Emp:53 Sales:55 Profits:53	E:0.367 S:0.158 P:0.227
3. Good work ethic amongst employees				
SOME DIFFICULTY(firms)	Emp:9 Sales:10 Profits:19	Emp:18 Sales:18 Profits:10	Emp:27 Sales:28 Profits:29	
NO DIFFICULTY(firms)	Emp:15 Sales:12 Profits:15	Emp:16 Sales:20 Profits:15	Emp:31 Sales:32 Profits:30	
*TOTAL (no. firms)	Emp:24 Sales:22 Profits:34	Emp:34 Sales:38 Profits:25	Emp:58 Sales:60 Profits:59	E:0.767 S:0.016 P:0.937
4. Poor training of local population				
SOME DIFFICULTY(firms)	Emp:16 Sales:17 Profits:24	Emp:21 Sales:21 Profits:14	Emp:37 Sales:38 Profits:38	
NO DIFFICULTY(firms)	Emp:6 Sales:4 Profits:8	Emp:11 Sales:13 Profits:8	Emp:17 Sales:17 Profits:16	
*TOTAL (no. firms)	Emp:22 Sales:21 Profits:32	Emp:32 Sales:34 Profits:22	Emp:54 Sales:55 Profits:54	E:0.067 S:1.758 P:0.352

TABLE A6.35:
GROWTH VERSUS PHYSICAL RESOURCES FACTOR CONDITIONS

GROWTH MEASURE (Employm./Sales/Profits)➡ FACTOR CONDITION⬇ 1. Suitability of premises	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:6 Sales:7 Profits:10	Emp:14 Sales:12 Profits:10	Emp:20 Sales:19 Profits:20	
NO DIFFICULTY(firms)	Emp:11 Sales:8 Profits:10	Emp:8 Sales:12 Profits:9	Emp:19 Sales:20 Profits:19	
*TOTAL (no. firms)	Emp:17 Sales:15 Profits:20	Emp:22 Sales:24 Profits:19	Emp:39 Sales:39 Profits:39	E:1.978 S:0.016 P:0.024
2. Proximity to Aberdeen				
SOME DIFFICULTY(firms)	Emp:5 Sales:4 Profits:4	Emp:5 Sales:5 Profits:5	Emp:10 Sales:9 Profits:9	
NO DIFFICULTY(firms)	Emp:20 Sales:20 Profits:30	Emp:29 Sales:31 Profits:21	Emp:49 Sales:51 Profits:51	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:34	Emp:34 Sales:36 Profits:26	Emp:59 Sales:60 Profits:60	E:0.036 S:0.006 P:0.172
3. Attractiveness of local residential areas for current and prospective employees				
SOME DIFFICULTY(firms)	Emp:2 Sales:1 Profits:2	Emp:3 Sales:6 Profits:4	Emp:5 Sales:7 Profits:6	
NO DIFFICULTY(firms)	Emp:23 Sales:23 Profits:33	Emp:32 Sales:31 Profits:21	Emp:55 Sales:54 Profits:54	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:35	Emp:35 Sales:37 Profits:25	Emp:60 Sales:61 Profits:60	E:0.154 S:0.952 P:0.614
4. Distance from company's markets				
SOME DIFFICULTY(firms)	Emp:9 Sales:6 Profits:5	Emp:7 Sales:8 Profits:9	Emp:16 Sales:14 Profits:14	
NO DIFFICULTY(firms)	Emp:14 Sales:15 Profits:25	Emp:22 Sales:24 Profits:14	Emp:36 Sales:39 Profits:39	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:30	Emp:29 Sales:32 Profits:23	Emp:52 Sales:53 Profits:53	E:0.812 S:0.001 P:2.050

TABLE A6.36:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS EDUCATIONAL RESOURCES FACTOR CONDITIONS

GROWTH MEASURE (Employm./Sales/Profits)➡ FACTOR CONDITION⬇ 1. Adequacy of primary and secondary education facilities in area for employees' families	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:4 Sales:3 Profits:2	Emp:4 Sales:6 Profits:6	Emp:8 Sales:9 Profits:8	
NO DIFFICULTY(firms)	Emp:21 Sales:21 Profits:31	Emp:29 Sales:29 Profits:19	Emp:50 Sales:50 Profits:50	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:33	Emp:33 Sales:35 Profits:25	Emp:58 Sales:59 Profits:58	E:0.002 S:0.014 P:1.984
2. Adequacy of higher education facilities in area for employees' families				
SOME DIFFICULTY(firms)	Emp:5 Sales:3 Profits:2	Emp:6 Sales:6 Profits:8	Emp:11 Sales:9 Profits:10	
NO DIFFICULTY(firms)	Emp:19 Sales:20 Profits:30	Emp:27 Sales:29 Profits:17	Emp:46 Sales:49 Profits:47	
*TOTAL (no. firms)	Emp:24 Sales:23 Profits:32	Emp:33 Sales:35 Profits:25	Emp:57 Sales:58 Profits:57	E:0.008 S:0.003 P:3.833

TABLE A6.37:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS CAPITAL RESOURCES FACTOR CONDITIONS

GROWTH MEASURE (Employm./Sales/Profits)➡ FACTOR CONDITION⬇ 1. Availability of finance through bank loans	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:8 Sales:6 Profits:8	Emp:8 Sales:8 Profits:5	Emp:16 Sales:14 Profits:13	
NO DIFFICULTY(firms)	Emp:14 Sales:9 Profits:12	Emp:10 Sales:16 Profits:13	Emp:24 Sales:25 Profits:25	
*TOTAL (no. firms)	Emp:22 Sales:15 Profits:20	Emp:18 Sales:24 Profits:18	Emp:40 Sales:39 Profits:38	E:0.037 S:0.006 P:0.219
2. Availability of finance through building societies/insurance companies/merchant banks				
SOME DIFFICULTY(firms)	Emp:5 Sales:4 Profits:4	Emp:4 Sales:5 Profits:4	Emp:9 Sales:9 Profits:8	
NO DIFFICULTY(firms)	Emp:4 Sales:1 Profits:5	Emp:3 Sales:7 Profits:3	Emp:7 Sales:8 Profits:8	
*TOTAL (no. firms)	Emp:9 Sales:5 Profits:9	Emp:7 Sales:12 Profits:7	Emp:16 Sales:17 Profits:16	E:0.197 S:1.252 P:0.000

TABLE A6.37 (CONTINUED)

3. Availability of finance through venture capitalists	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:3 Sales:2 Profits:4	Emp:5 Sales:6 Profits:4	Emp:8 Sales:8 Profits:8	
NO DIFFICULTY(firms)	Emp:4 Sales:3 Profits:5	Emp:3 Sales:4 Profits:2	Emp:7 Sales:7 Profits:7	
*TOTAL (no. firms)	Emp:7 Sales:5 Profits:9	Emp:8 Sales:10 Profits:6	Emp:15 Sales:15 Profits:15	E:0.057 S:0.031 P:0.104
4. Raising equity finance				
SOME DIFFICULTY(firms)	Emp:2 Sales:2 Profits:2	Emp:3 Sales:3 Profits:3	Emp:5 Sales:5 Profits:5	
NO DIFFICULTY(firms)	Emp:5 Sales:2 Profits:5	Emp:4 Sales:7 Profits:4	Emp:9 Sales:9 Profits:9	
*TOTAL (no. firms)	Emp:7 Sales:4 Profits:7	Emp:7 Sales:10 Profits:7	Emp:14 Sales:14 Profits:14	E:0.000 S:0.009 P:0.000
5. Securing government grants				
SOME DIFFICULTY(firms)	Emp:12 Sales:8 Profits:9	Emp:7 Sales:11 Profits:11	Emp:19 Sales:19 Profits:20	
NO DIFFICULTY(firms)	Emp:3 Sales:1 Profits:6	Emp:9 Sales:10 Profits:5	Emp:12 Sales:11 Profits:11	
*TOTAL (no. firms)	Emp:15 Sales:9 Profits:15	Emp:16 Sales:21 Profits:16	Emp:31 Sales:30 Profits:31	E:3.703 S:4.427 P:0.018

TABLE A6.38:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS INFRASTRUCTURE PROVISION FACTOR CONDITIONS

GROWTH MEASURE (Employm./Sales/Profits)➡ FACTOR CONDITION⬇ 1. Suitability of service infrastructure and services	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:3 Sales:6 Profits:7	Emp:10 Sales:6 Profits:4	Emp:13 Sales:12 Profits:11	
NO DIFFICULTY(firms)	Emp:23 Sales:17 Profits:27	Emp:24 Sales:32 Profits:22	Emp:47 Sales:49 Profits:49	
*TOTAL (no. firms)	Emp:26 Sales:23 Profits:34	Emp:34 Sales:38 Profits:26	Emp:60 Sales:61 Profits:60	E:1.651 S:0.455 P:0.035

TABLE A6.38 (CONTINUED)

2. Adequacy of local road infrastructure serving industrial area	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:7 Sales:9 Profits:10	Emp:12 Sales:11 Profits:9	Emp:19 Sales:20 Profits:19	
NO DIFFICULTY(firms)	Emp:18 Sales:14 Profits:24	Emp:23 Sales:27 Profits:17	Emp:41 Sales:41 Profits:41	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:34	Emp:35 Sales:38 Profits:26	Emp:60 Sales:61 Profits:60	E:0.054 S:0.305 P:0.022
3. Adequacy of main road network serving industrial area				
SOME DIFFICULTY(firms)	Emp:9 Sales:11 Profits:14	Emp:11 Sales:13 Profits:9	Emp:20 Sales:24 Profits:23	
NO DIFFICULTY(firms)	Emp:17 Sales:12 Profits:20	Emp:23 Sales:25 Profits:17	Emp:40 Sales:37 Profits:37	
*TOTAL (no. firms)	Emp:26 Sales:23 Profits:34	Emp:34 Sales:38 Profits:26	Emp:60 Sales:61 Profits:60	E:0.009 S:0.654 P:0.065
4. Suitability of public transport serving industrial area				
SOME DIFFICULTY(firms)	Emp:11 Sales:11 Profits:14	Emp:16 Sales:18 Profits:16	Emp:27 Sales:29 Profits:30	
NO DIFFICULTY(firms)	Emp:13 Sales:9 Profits:16	Emp:15 Sales:17 Profits:8	Emp:28 Sales:26 Profits:24	
*TOTAL (no. firms)	Emp:24 Sales:20 Profits:30	Emp:31 Sales:35 Profits:24	Emp:55 Sales:55 Profits:54	E:0.023 S:0.001 P:1.455
5. Adequacy of telecommunications infrastructure				
SOME DIFFICULTY(firms)	Emp:4 Sales:5 Profits:5	Emp:10 Sales:10 Profits:9	Emp:14 Sales:15 Profits:14	
NO DIFFICULTY(firms)	Emp:22 Sales:19 Profits:30	Emp:25 Sales:28 Profits:17	Emp:47 Sales:47 Profits:47	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:35 Sales:38 Profits:26	Emp:61 Sales:62 Profits:61	E:0.760 S:0.034 P:2.103
6. Adequacy of community services and facilities (eg. health and social welfare)				
SOME DIFFICULTY(firms)	Emp:3 Sales:3 Profits:1	Emp:1 Sales:1 Profits:2	Emp:4 Sales:4 Profits:3	
NO DIFFICULTY(firms)	Emp:22 Sales:21 Profits:34	Emp:34 Sales:36 Profits:23	Emp:56 Sales:57 Profits:57	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:35	Emp:35 Sales:37 Profits:25	Emp:60 Sales:61 Profits:60	E:1.163 S:1.468 P:0.072

TABLE A6.38 (CONTINUED)

7. Adequacy of recreational amenities	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:5 Sales:5 Profits:5	Emp:9 Sales:8 Profits:8	Emp:14 Sales:13 Profits:13	
NO DIFFICULTY(firms)	Emp:21 Sales:18 Profits:28	Emp:24 Sales:29 Profits:19	Emp:45 Sales:47 Profits:47	
*TOTAL (no. firms)	Emp:26 Sales:23 Profits:33	Emp:33 Sales:37 Profits:27	Emp:59 Sales:60 Profits:60	E:0.162 S:0.097 P:0.962
8. Adequacy of cultural facilities				
SOME DIFFICULTY(firms)	Emp:6 Sales:4 Profits:4	Emp:5 Sales:6 Profits:7	Emp:11 Sales:10 Profits:11	
NO DIFFICULTY(firms)	Emp:20 Sales:20 Profits:31	Emp:30 Sales:32 Profits:19	Emp:50 Sales:52 Profits:50	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:35 Sales:38 Profits:26	Emp:61 Sales:62 Profits:61	E:0.327 S:0.070 P:1.267

TABLE A6.39:
CHI-SQUARED TESTS FOR SIGNIFICANCE: GROWTH V DEMAND CONDITIONS

GROWTH MEASURE (Employm./Sales/Profits)➡ DEMAND CONDITION⬇ 1. Finding sufficient market demand	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:22 Sales:19 Profits:29	Emp:24 Sales:31 Profits:19	Emp:46 Sales:50 Profits:48	
NO DIFFICULTY(firms)	Emp:4 Sales:5 Profits:7	Emp:11 Sales:8 Profits:7	Emp:15 Sales:13 Profits:14	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:1.554 S:0.084 P:.0.148
2. Finding suitable market niche for product/s				
SOME DIFFICULTY(firms)	Emp:17 Sales:14 Profits:16	Emp:19 Sales:22 Profits:18	Emp:36 Sales:36 Profits:34	
NO DIFFICULTY(firms)	Emp:5 Sales:8 Profits:15	Emp:15 Sales:14 Profits:7	Emp:20 Sales:22 Profits:22	
*TOTAL (no. firms)	Emp:22 Sales:22 Profits:31	Emp:34 Sales:36 Profits:25	Emp:56 Sales:58 Profits:56	E:2.167 S:0.008 P:1.715
3. Finding new geographic markets				
SOME DIFFICULTY(firms)	Emp:19 Sales:13 Profits:16	Emp:24 Sales:28 Profits:18	Emp:43 Sales:41 Profits:34	
NO DIFFICULTY(firms)	Emp:4 Sales:5 Profits:15	Emp:5 Sales:7 Profits:7	Emp:9 Sales:12 Profits:22	
*TOTAL (no. firms)	Emp:23 Sales:18 Profits:31	Emp:29 Sales:35 Profits:25	Emp:52 Sales:53 Profits:56	E:0.126 S:0.081 P:1.715

TABLE A6.39 (CONTINUED)

4. Strong demand from Scottish market	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:6 Sales:7 Profits:12	Emp:12 Sales:13 Profits:8	Emp:18 Sales:20 Profits:20	
NO DIFFICULTY(firms)	Emp:15 Sales:12 Profits:18	Emp:20 Sales:22 Profits:17	Emp:35 Sales:34 Profits:35	
*TOTAL (no. firms)	Emp:21 Sales:19 Profits:30	Emp:32 Sales:35 Profits:25	Emp:53 Sales:54 Profits:55	E:0.136 S:0.075 P:0.116
5. Strong demand from UK market excluding Scotland				
SOME DIFFICULTY(firms)	Emp:7 Sales:8 Profits:13	Emp:13 Sales:14 Profits:9	Emp:20 Sales:22 Profits:22	
NO DIFFICULTY(firms)	Emp:11 Sales:8 Profits:14	Emp:16 Sales:20 Profits:14	Emp:27 Sales:28 Profits:28	
*TOTAL (no. firms)	Emp:18 Sales:16 Profits:27	Emp:29 Sales:34 Profits:23	Emp:47 Sales:50 Profits:50	E:0.001 S:0.082 P:0.130
6. Strong demand from export markets				
SOME DIFFICULTY(firms)	Emp:8 Sales:6 Profits:9	Emp:14 Sales:15 Profits:11	Emp:22 Sales:21 Profits:20	
NO DIFFICULTY(firms)	Emp:13 Sales:10 Profits:17	Emp:11 Sales:17 Profits:10	Emp:24 Sales:27 Profits:27	
*TOTAL (no. firms)	Emp:21 Sales:16 Profits:26	Emp:25 Sales:32 Profits:21	Emp:46 Sales:48 Profits:47	E:0.807 S:0.092 P:0.832
7. Demanding customers who settle for nothing less than top quality products				
SOME DIFFICULTY(firms)	Emp:7 Sales:10 Profits:16	Emp:19 Sales:18 Profits:11	Emp:26 Sales:28 Profits:27	
NO DIFFICULTY(firms)	Emp:19 Sales:14 Profits:19	Emp:15 Sales:20 Profits:15	Emp:34 Sales:34 Profits:34	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:34 Sales:38 Profits:26	Emp:60 Sales:62 Profits:61	E:3.700 S:0.031 P:0.000

TABLE A6.40:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS MANAGEMENT ISSUES

GROWTH MEASURE (Employm./Sales/Profits)➡ MANAGEMENT ISSUE⬇ 1. Surplus management time to plan growth	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:19 Sales:17 Profits:23	Emp:26 Sales:28 Profits:21	Emp:45 Sales:45 Profits:44	
NO DIFFICULTY(firms)	Emp:5 Sales:4 Profits:5	Emp:4 Sales:5 Profits:4	Emp:9 Sales:9 Profits:9	
*TOTAL (no. firms)	Emp:24 Sales:21 Profits:28	Emp:30 Sales:33 Profits:25	Emp:54 Sales:54 Profits:53	E:0.135 S:0.000 P:0.035
2. Sufficient management skills to plan, organize and manage growth				
SOME DIFFICULTY(firms)	Emp:13 Sales:13 Profits:22	Emp:27 Sales:29 Profits:19	Emp:40 Sales:42 Profits:41	
NO DIFFICULTY(firms)	Emp:13 Sales:11 Profits:13	Emp:7 Sales:9 Profits:7	Emp:20 Sales:20 Profits:20	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:35	Emp:34 Sales:38 Profits:26	Emp:60 Sales:62 Profits:61	E:4.622 S:2.267 P:0.331

TABLE A6.41:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS PRODUCTION ISSUES

GROWTH MEASURE (Employm./Sales/Profits)➡ PRODUCTION ISSUE⬇ 1. Sufficient plant capacity	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:7 Sales:10 Profits:18	Emp:17 Sales:16 Profits:9	Emp:24 Sales:26 Profits:27	
NO DIFFICULTY(firms)	Emp:14 Sales:9 Profits:10	Emp:10 Sales:14 Profits:11	Emp:24 Sales:23 Profits:21	
*TOTAL (no. firms)	Emp:21 Sales:19 Profits:28	Emp:27 Sales:30 Profits:20	Emp:48 Sales:49 Profits:48	E:2.929 S:0.060 P:1.119
2. Producing innovative, market leading products				
SOME DIFFICULTY(firms)	Emp:8 Sales:11 Profits:12	Emp:14 Sales:15 Profits:12	Emp:22 Sales:26 Profits:24	
NO DIFFICULTY(firms)	Emp:6 Sales:6 Profits:10	Emp:7 Sales:9 Profits:5	Emp:13 Sales:15 Profits:15	
*TOTAL (no. firms)	Emp:14 Sales:17 Profits:22	Emp:21 Sales:24 Profits:17	Emp:35 Sales:41 Profits:39	E:0.045 S:0.034 P:0.493

TABLE A6.41 (CONTINUED)

3. Creating innovative production techniques	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:14 Sales:13 Profits:19	Emp:17 Sales:19 Profits:11	Emp:31 Sales:32 Profits:30	
NO DIFFICULTY(firms)	Emp:2 Sales:4 Profits:5	Emp:5 Sales:4 Profits:3	Emp:7 Sales:8 Profits:8	
*TOTAL (no. firms)	Emp:16 Sales:17 Profits:24	Emp:22 Sales:23 Profits:14	Emp:38 Sales:40 Profits:38	E:0.167 S:0.006 P:0.135
4. High product quality relative to similar products of competitors				
SOME DIFFICULTY(firms)	Emp:9 Sales:9 Profits:15	Emp:14 Sales:13 Profits:6	Emp:23 Sales:22 Profits:21	
NO DIFFICULTY(firms)	Emp:14 Sales:12 Profits:14	Emp:12 Sales:16 Profits:14	Emp:26 Sales:28 Profits:28	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:29	Emp:26 Sales:29 Profits:20	Emp:49 Sales:50 Profits:49	E:0.535 S:0.022 P:1.673
5. Sufficient training capability for staff needs				
SOME DIFFICULTY(firms)	Emp:12 Sales:13 Profits:22	Emp:26 Sales:28 Profits:18	Emp:38 Sales:41 Profits:40	
NO DIFFICULTY(firms)	Emp:11 Sales:8 Profits:9	Emp:5 Sales:6 Profits:5	Emp:16 Sales:14 Profits:14	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:31	Emp:31 Sales:34 Profits:23	Emp:54 Sales:55 Profits:54	E:5.312 S:1.816 P:0.088
6. High level of production efficiency				
SOME DIFFICULTY(firms)	Emp:14 Sales:15 Profits:22	Emp:22 Sales:21 Profits:14	Emp:36 Sales:36 Profits:36	
NO DIFFICULTY(firms)	Emp:8 Sales:4 Profits:5	Emp:4 Sales:8 Profits:6	Emp:12 Sales:12 Profits:11	
*TOTAL (no. firms)	Emp:22 Sales:19 Profits:27	Emp:26 Sales:29 Profits:20	Emp:48 Sales:48 Profits:47	E:1.924 S:0.031 P:0.326

TABLE A6.42:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY FINANCIAL ISSUES

GROWTH MEASURE (Employm./Sales/Profits)➡ COMPANY FINANCIAL ISSUE⬇ 1. Maintaining sufficient cash flow	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:20 Sales:17 Profits:26	Emp:25 Sales:30 Profits:20	Emp:45 Sales:47 Profits:46	
NO DIFFICULTY(firms)	Emp:6 Sales:6 Profits:9	Emp:8 Sales:8 Profits:5	Emp:14 Sales:14 Profits:14	
*TOTAL (no. firms)	Emp:26 Sales:23 Profits:35	Emp:33 Sales:38 Profits:25	Emp:59 Sales:61 Profits:60	E:0.042 S:0.019 P:0.044
2. Achieving a high sales turnover				
SOME DIFFICULTY(firms)	Emp:21 Sales:20 Profits:30	Emp:29 Sales:32 Profits:22	Emp:50 Sales:52 Profits:52	
NO DIFFICULTY(firms)	Emp:3 Sales:3 Profits:5	Emp:5 Sales:4 Profits:2	Emp:8 Sales:7 Profits:7	
*TOTAL (no. firms)	Emp:24 Sales:23 Profits:35	Emp:34 Sales:36 Profits:24	Emp:58 Sales:59 Profits:59	E:0.022 S:0.035 P:0.094
3. Attaining satisfactory overall profitability				
SOME DIFFICULTY(firms)	Emp:22 Sales:20 Profits:31	Emp:24 Sales:29 Profits:18	Emp:46 Sales:49 Profits:49	
NO DIFFICULTY(firms)	Emp:4 Sales:4 Profits:5	Emp:10 Sales:9 Profits:7	Emp:14 Sales:13 Profits:12	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:34 Sales:38 Profits:25	Emp:60 Sales:62 Profits:61	E:1.084 S:0.127 P:1.084
4. Obtaining external finance through bank loans				
SOME DIFFICULTY(firms)	Emp:8 Sales:6 Profits:8	Emp:8 Sales:8 Profits:5	Emp:16 Sales:14 Profits:13	
NO DIFFICULTY(firms)	Emp:14 Sales:9 Profits:12	Emp:10 Sales:16 Profits:13	Emp:24 Sales:25 Profits:25	
*TOTAL (no. firms)	Emp:22 Sales:15 Profits:20	Emp:18 Sales:24 Profits:18	Emp:40 Sales:39 Profits:38	E:0.037 S:0.006 P:0.219

TABLE A6.43:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY LABOUR ISSUES

GROWTH MEASURE (Employm./Sales/Profits)➡ LABOUR ISSUE⬇ 1. Good work ethic amongst employees	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:9 Sales:10 Profits:19	Emp:18 Sales:18 Profits:10	Emp:27 Sales:28 Profits:29	
NO DIFFICULTY(firms)	Emp:15 Sales:12 Profits:15	Emp:16 Sales:20 Profits:15	Emp:31 Sales:32 Profits:30	
*TOTAL (no. firms)	Emp:24 Sales:22 Profits:34	Emp:34 Sales:38 Profits:25	Emp:58 Sales:60 Profits:59	E:0.767 S:0.016 P:0.937
2. Good labour relations between employees and management				
SOME DIFFICULTY(firms)	Emp:6 Sales:6 Profits:12	Emp:13 Sales:13 Profits:6	Emp:19 Sales:19 Profits:18	
NO DIFFICULTY(firms)	Emp:19 Sales:18 Profits:24	Emp:22 Sales:25 Profits:19	Emp:41 Sales:43 Profits:43	
*TOTAL (no. firms)	Emp:25 Sales:24 Profits:36	Emp:35 Sales:38 Profits:25	Emp:60 Sales:62 Profits:61	E:0.605 S:0.225 P:0.273
3. Influence of trade unions in company business				
SOME DIFFICULTY(firms)	Emp:3 Sales:2 Profits:3	Emp:4 Sales:5 Profits:2	Emp:7 Sales:7 Profits:5	
NO DIFFICULTY(firms)	Emp:4 Sales:3 Profits:6	Emp:7 Sales:8 Profits:6	Emp:11 Sales:11 Profits:12	
*TOTAL (no. firms)	Emp:7 Sales:5 Profits:9	Emp:11 Sales:13 Profits:8	Emp:18 Sales:18 Profits:17	E:0.050 S:0.232 P:0.026

TABLE A6.44:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY RIVALRY ISSUES

GROWTH MEASURE (Employm./Sales/Profits)➡ RIVALRY ISSUES⬇ 1. Competition from other Grampian firms	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:16 Sales:14 Profits:25	Emp:27 Sales:28 Profits:16	Emp:43 Sales:42 Profits:41	
NO DIFFICULTY(firms)	Emp:6 Sales:6 Profits:8	Emp:7 Sales:10 Profits:8	Emp:13 Sales:16 Profits:16	
*TOTAL (no. firms)	Emp:22 Sales:20 Profits:33	Emp:34 Sales:38 Profits:24	Emp:56 Sales:58 Profits:57	E:0.063 S:0.000 P:0.207

TABLE A6.44 (CONTINUED)

2. Strong competition from other UK firms	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:19 Sales:14 Profits:24	Emp:24 Sales:30 Profits:19	Emp:43 Sales:44 Profits:43	
NO DIFFICULTY(firms)	Emp:5 Sales:7 Profits:8	Emp:8 Sales:7 Profits:6	Emp:13 Sales:14 Profits:14	
*TOTAL (no. firms)	Emp:24 Sales:21 Profits:32	Emp:32 Sales:37 Profits:25	Emp:56 Sales:58 Profits:57	E:0.002 S:0.782 P:0.050
3. Strong competition from imports				
SOME DIFFICULTY(firms)	Emp:11 Sales:13 Profits:16	Emp:15 Sales:14 Profits:11	Emp:26 Sales:27 Profits:27	
NO DIFFICULTY(firms)	Emp:7 Sales:4 Profits:10	Emp:13 Sales:17 Profits:11	Emp:20 Sales:21 Profits:21	
*TOTAL (no. firms)	Emp:18 Sales:17 Profits:26	Emp:28 Sales:31 Profits:22	Emp:46 Sales:48 Profits:48	E:0.041 S:4.184 P:0.268

TABLE A6.45:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS ISSUES FOR RELATED AND SUPPORTING INDUSTRIES

GROWTH MEASURE (Employm./Sales/Profits)➡ RELATED & SUPPORTING INDUSTRY ISSUE⬇ 1. Proximity to raw material suppliers	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:14 Sales:10 Profits:14	Emp:16 Sales:21 Profits:17	Emp:30 Sales:31 Profits:31	
NO DIFFICULTY(firms)	Emp:6 Sales:8 Profits:12	Emp:14 Sales:12 Profits:7	Emp:20 Sales:20 Profits:19	
*TOTAL (no. firms)	Emp:20 Sales:18 Profits:26	Emp:30 Sales:33 Profits:24	Emp:50 Sales:51 Profits:50	E:0.864 S:0.068 P:0.911
2. Companies involved in the production of products that are complementary to your company's products				
SOME DIFFICULTY(firms)	Emp:14 Sales:11 Profits:15	Emp:12 Sales:17 Profits:13	Emp:26 Sales:28 Profits:28	
NO DIFFICULTY(firms)	Emp:9 Sales:10 Profits:16	Emp:17 Sales:16 Profits:9	Emp:26 Sales:26 Profits:25	
*TOTAL (no. firms)	Emp:23 Sales:21 Profits:31	Emp:29 Sales:33 Profits:22	Emp:52 Sales:54 Profits:53	E:1.361 S:0.047 P:0.240

TABLE A6.45 (CONTINUED)

3. Components suppliers in the locality	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:15 Sales:12 Profits:14	Emp:12 Sales:14 Profits:12	Emp:27 Sales:26 Profits:26	
NO DIFFICULTY(firms)	Emp:9 Sales:10 Profits:16	Emp:17 Sales:18 Profits:11	Emp:26 Sales:28 Profits:27	
*TOTAL (no. firms)	Emp:24 Sales:22 Profits:30	Emp:29 Sales:32 Profits:23	Emp:53 Sales:54 Profits:53	E:1.732 S:0.265 P:0.014

TABLE A6.46:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS TAXATION ISSUES

GROWTH MEASURE (Employm./Sales/Profits)➡ TAXATION ISSUE⬇ 1. Rate of company taxation	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:19 Sales:16 Profits:26	Emp:25 Sales:28 Profits:18	Emp:44 Sales:44 Profits:44	
NO DIFFICULTY(firms)	Emp:6 Sales:6 Profits:6	Emp:6 Sales:7 Profits:7	Emp:12 Sales:13 Profits:13	
*TOTAL (no. firms)	Emp:25 Sales:22 Profits:32	Emp:31 Sales:35 Profits:25	Emp:56 Sales:57 Profits:57	E:0.009 S:0.094 P:0.258
2. Lack of tax exemptions for company expenses				
SOME DIFFICULTY(firms)	Emp:19 Sales:16 Profits:24	Emp:24 Sales:29 Profits:22	Emp:43 Sales:45 Profits:46	
NO DIFFICULTY(firms)	Emp:5 Sales:4 Profits:5	Emp:5 Sales:5 Profits:3	Emp:10 Sales:9 Profits:8	
*TOTAL (no. firms)	Emp:24 Sales:20 Profits:29	Emp:29 Sales:34 Profits:25	Emp:53 Sales:54 Profits:54	E:0.000 S:0.015 P:0.026

TABLE A6.47:
CHI-SQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS ECONOMIC CLIMATE ISSUES

GROWTH MEASURE (Employm./Sales/Profits)➡ ECONOMIC CLIMATE ISSUES⬇ 1. Depressed local economic conditions	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:5 Sales:5 Profits:5	Emp:5 Sales:3 Profits:4	Emp:10 Sales:8 Profits:9	
NO DIFFICULTY(firms)	Emp:15 Sales:11 Profits:17	Emp:18 Sales:24 Profits:16	Emp:33 Sales:35 Profits:33	
*TOTAL (no. firms)	Emp:20 Sales:16 Profits:22	Emp:23 Sales:27 Profits:20	Emp:43 Sales:43 Profits:42	E:0.012 S:1.861 P:0.027

TABLE A6.47 (CONTINUED)

2. Depressed national economic conditions	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
SOME DIFFICULTY(firms)	Emp:8 Sales:7 Profits:13	Emp:20 Sales:20 Profits:14	Emp:28 Sales:27 Profits:27	
NO DIFFICULTY(firms)	Emp:13 Sales:12 Profits:16	Emp:13 Sales:16 Profits:11	Emp:26 Sales:28 Profits:27	
*TOTAL (no. firms)	Emp:21 Sales:19 Profits:29	Emp:33 Sales:36 Profits:25	Emp:54 Sales:55 Profits:54	E:1.687 S:1.012 P:0.294
3. High interest rates				
SOME DIFFICULTY(firms)	Emp:18 Sales:13 Profits:22	Emp:26 Sales:31 Profits:21	Emp:44 Sales:44 Profits:43	
NO DIFFICULTY(firms)	Emp:4 Sales:5 Profits:5	Emp:4 Sales:4 Profits:4	Emp:8 Sales:9 Profits:9	
*TOTAL (no. firms)	Emp:22 Sales:18 Profits:27	Emp:30 Sales:35 Profits:25	Emp:52 Sales:53 Profits:52	E:0.008 S:1.144 P:0.016

TABLE A6.48:
GROWTH VERSUS USEFULNESS OF ADVICE FROM GOVERNMENT AGENCIES

GROWTH MEASURE (Employm./Sales/Profits)➡ ADVICE/ASSISTANCE FROM: 1. SDA/Scottish Enterprise⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
USEFUL(firms)	Emp:10 Sales:6 Profits:9	Emp:10 Sales:11 Profits:10	Emp:20 Sales:17 Profits:19	
NOT USEFUL(firms)	Emp:16 Sales:18 Profits:27	Emp:25 Sales:29 Profits:16	Emp:41 Sales:47 Profits:43	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:40 Profits:26	Emp:61 Sales:64 Profits:62	E:0.304 S:0.005 P:0.681
2. Locate in Scotland				
USEFUL(firms)	Emp:4 Sales:2 Profits:2	Emp:2 Sales:2 Profits:1	Emp:6 Sales:4 Profits:3	
NOT USEFUL(firms)	Emp:22 Sales:22 Profits:34	Emp:33 Sales:37 Profits:25	Emp:55 Sales:59 Profits:59	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.859 S:0.001 P:0.096
3. Scottish Office/Department/s				
USEFUL(firms)	Emp:4 Sales:3 Profits:4	Emp:5 Sales:7 Profits:4	Emp:9 Sales:10 Profits:8	
NOT USEFUL(firms)	Emp:21 Sales:20 Profits:31	Emp:30 Sales:34 Profits:22	Emp:51 Sales:54 Profits:53	
*TOTAL (no. firms)	Emp:25 Sales:23 Profits:35	Emp:35 Sales:41 Profits:26	Emp:60 Sales:64 Profits:61	E:0.034 S:0.004 P:0.004

TABLE A6.48 (CONTINUED)

4. Enterprise Initiative				
USEFUL(firms)	Emp:5 Sales:5 Profits:5	Emp:9 Sales:7 Profits:8	Emp:14 Sales:12 Profits:13	
NOT USEFUL(firms)	Emp:21 Sales:19 Profits:31	Emp:26 Sales:32 Profits:18	Emp:47 Sales:51 Profits:49	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.080 S:0.002 P:1.445
5. Regional/District Council/s				
USEFUL(firms)	Emp:5 Sales:4 Profits:7	Emp:6 Sales:6 Profits:3	Emp:11 Sales:10 Profits:10	
NOT USEFUL(firms)	Emp:21 Sales:20 Profits:29	Emp:29 Sales:33 Profits:23	Emp:50 Sales:53 Profits:52	
*TOTAL (no. firms)	Emp:26 Sales:24 Profits:36	Emp:35 Sales:39 Profits:26	Emp:61 Sales:63 Profits:62	E:0.016 S:0.049 P:0.281

APPENDIX A6B:

CHARACTERISTICS OF FIRMS IN POSTAL QUESTIONNAIRE SURVEY OF OIL AND GAS RELATED INDUSTRY

A6B.1 Age of Firms

The average age of firms in the survey was 11.4 years. The firms ranged in age from just over a year to a maximum of 69 years. The oldest firm was an indigenous Scottish firm involved in producing chemical products and treatments and some light, precision engineering work. Most of the surveyed firms were well established with 56% of firms being 10 years or older. Some firms were established specifically to cater to the oil and gas industry operating out of Aberdeen. More than 75% of the surveyed firms had been established since the first supplies of North Sea oil and gas came on stream in 1976, suggesting that many of these firms may have become established to exploit the business created by the birth of this new industry in Grampian region.

A6B.2 Legal Form of Firms

The overwhelming majority of surveyed firms (89%) where private companies. A mere 4.3% of firms were public limited companies (*with shares held by the public*). About 7% of firms existed in other legal forms such as being a wholly owned subsidiary of another company. The breakdown of legal forms for the private firms were: 4.3% sole traders; 5.7% private partnership companies; and 78.6% were private limited companies.

A6B.3 Ownership of Firms by Country

More than half of the surveyed firms (57.1%) were independent Scottish companies operating from only one site, while another 4.3% of firms were independent Scottish firms operating from several sites. The remaining surveyed firms were subsidiaries of firms based outside Aberdeen, of which 2.9% were in another part of Scotland; 15% were in the rest of the UK; and 20% were in the rest of the world. It would seem then that the surveyed firms were mostly indigenous to the UK (80%) and for that matter, Scotland (64%), assuming that each firm's current ownership status is the same as the country in which it was originally established.

A6B.4 Employment

Table A6B.1 provides a breakdown of the occupational employment structure of oil and gas related companies for 1988 and 1991, according to the broad based occupation definitions and whether it was of a part-time or full-time nature. The

TABLE A6B.1:
OCCUPATIONAL STRUCTURE OF EMPLOYMENT FOR 1988-1991

EMPLOYMENT CATEGORY	AVERAGE NO. EMPLOYEES/FIRM			
	1988		1991	
	Part-time	Full-time	Part-time	Full-time
Managerial & Executive	0.2 18.2%	9.2 12.2%	0.1 7.7%	10.2 10.2%
Professional (other than managerial & executive)	0.1 9.1%	6.1 8.0%	0.1 7.7%	9.6 9.6%
Clerical/Administrative	0.4 36.4%	8.8 11.6%	0.6 46.2%	11.4 11.4%
Skilled Technical	0.3 27.3%	29.6 39.1%	0.3 23.1%	40.5 40.7%
Unskilled Manual Work	0.1 9.1%	22.1 29.2%	0.2 15.4%	27.9 28.0%
TOTAL	1.1 100.0%	75.8 100.0%	1.3 100.0%	99.6 100.0%

NOTES:
1.Missing observations for 1988 are 9 (13% of respondents)
2.Missing observations for 1991 are 3 (4% of respondents)
3.Totals may not necessarily reflect aggregate of stated employment categories due to missing observations and respondents who did not consider categories to reflect all of the occupations within their firm.
4.Some respondents, particularly those from small firms, stated that their employees fulfilled multiple occupational roles, which the survey could not accurately take into account.
5.Total of 70 firms in survey sample.

occupational categories of managerial & executive; professional; and clerical/ administrative, in terms of their share of employment in the average firm, appear to be almost equally dominant with each category in 1991 accounting for a 10% share. The occupational category of skilled technical was the most dominant category with a 40.7% share. The unskilled manual work occupational group was the second most dominant, with a 28% share of average firm employment in 1991.

The survey results indicated that the average firm size increased from 75.8 full-time employees/firm in 1988 to 99.6 full-time employees/firm in 1991, an increase of almost 25%. Part-time employment per firm in both 1988 and 1991 remained insignificant at about 1.1 employee per firm. The occupational groups to benefit from the growth in the average size of firms were professionals (*increasing from 8.0% to 9.6% share of average employment per firm*); and skilled technical employees (*increasing from 39.1% to 40.7%*). The unskilled manual work occupational group declined in its share of average firm employment from 29.2% down to 28.0%. The occupational groups to decline in their share of average firm employment were the managerial and executive group (*decreasing from 12.2% to 10.2%*) and the less skilled manual work occupational group (*decreasing from 29.2% to 28.0%*). The share of average firm employment for the clerical/administrative occupational group remained almost unchanged at about 11.5%. These findings

indicate that although in absolute terms, every occupational group at least equalled or bettered its 1988 performance in terms of the average number of employees/firm, the occupational structure did not change markedly during the period 1988-1991.

A6B.5 Sales Turnover

The average sales turnover of the 57 firms that answered this question was approximately £11.6m in 1991, ranging from a minimum of £80,000 up to a maximum of £125m. The modal value was £2.43m. The average sales generated per employee of £165,347, was more than four times the average sales/employee generated by the plastics supply industry (*see appendix A5B.6*), indicating that firms in this sector are highly productive and produce products of high value.

A6B.6 Profitability

The average annual profitability in 1991 was approximately £600,000 for the 55 firms that responded to this question, ranging from a loss of -£80,000 per annum up to a maximum of £4m per annum. The average annual profitability generated per employee was £10,126 in 1991, which as more than 50% higher than that obtained for firms in the plastics supply sector.

A6B.7 Functions of Firms

The postal questionnaire survey investigated a number of functions that a firm in the oil and gas related sector might typically be expected to have. Table A6B.2 examines to what extent services are provided "in-house", contracted out to other firms, or handled by the firm's head office, where applicable. As with the plastics supply industry, firms within this survey population were largely self-reliant in most aspects of their operations. Transport of material inputs and finished products stood out as the most significant activity that was contracted out to other companies (*at 31.4% of surveyed firms*). However, three other functions contracted out to a significant although lesser extent, were: (1) product testing facilities (*17.1% of firms*); manufacturing of own products (*12.9% of firms*); and (3) capacity for training staff (*21.4% of firms*). Compared to the plastics supply industry, there was much less contracting out of business for the research and development of new products. Generally, all firms indicated that they had the functions of personnel management, financial control and sales and marketing (*84-97%*), but only 36-59% of firms indicated that they had the functions of: research and development of new products; product testing facilities; manufacturing of own products; capacity for training staff; and transport of material inputs and finished products, which may reflect the greater

orientation of the surveyed firms to service-type activities. With the plastics supply sector, all of the surveyed firms were engaged in some sort of manufacturing activity, and as a result, very high proportions of firms (*60-90%*) indicated that all of these functions were present within these firms (*compare tables A5B.2 with A6B.2*), with the exception of transport.

TABLE A6B.2:
FUNCTIONS OF FIRMS

FUNCTION	PROVIDED WITHIN FIRM	PROVIDED BY PARENT COMPANY	CONTRACTED OUT TO OTHER COMPANIES	PROVIDED BY FIRM AND CONTRACTED OUT
Personnel Management	84.3%	0	1.4%	0
Financial control	88.6%	1.4%	2.9%	1.4%
Sales & Marketing	97.1%	0	0	1.4%
Research & Development of new products	58.6%	2.9%	5.7%	5.7%
Product testing facilities	54.3%	2.9%	17.1%	2.9%
Manufacturing of own products	50.0%	1.4%	12.9%	11.4%
Capacity for training staff	50.0%	1.4%	21.4%	12.9%
Transport of material inputs and finished products	35.7%	1.4%	31.4%	14.3%

NOTES:
1.Survey population of 70 firms=100%
2.Non response rate of 0
3.Percentages for each function may not add up to 100%. This is because some firms do not consider some functions as being applicable to their circumstances. The proportion of firms in this category can be determined from the difference obtained by subtracting the aggregate of percentages for each function from 100%.

A6B.8 Location of Competitors

Firms were asked to estimate the percentage share of the locations for where their competitors were based. The responses were then averaged for each of the four regions. The average for the UK was 75% and 25% for the rest of the world. The results demonstrated that firms perceived their competitors to be highly localised within the Grampian region with an average of 42% of firms' competitors perceived to be based there. The rest of Scotland (*excluding Grampian region*) accounted for around 13% of competitors, while the rest of UK (*excluding Scotland*), accounted for 20%. Generalising, it would seem that the oil and gas related sector based in Aberdeen is a highly localised clustering of an industry sector, but nevertheless, the surveyed firms perceived that competitors from the rest of the world are a more significant competitive threat than competitors from the rest of the UK (*excluding Scotland*).

A6B.9 Location of Markets

Firms were asked what markets their products were destined for in 1988 and 1991. The markets were indicated to be: Grampian region; the UK excluding Scotland; and the rest of the world. There was found to be negligible change in the structure of firms' markets between 1988 and 1991, with Grampian region holding a 54% share; the rest of Scotland with a 9% share; the rest of the UK with a 15% share; and the rest of the world with a 22% share. Clearly, these firms are strongly tied into the Grampian region's economy and would seem to benefit the Scottish economy. However, these firms would also seem to have significant export markets, particularly when they are compared with the parochial nature of the Scottish Plastics supply industry (*22% versus 6% for the latter*).

A6B.10 Assessment of Agencies Providing Advice and Assistance

Respondents were asked to rate the usefulness of advice/assistance that they received during the period 1988-1991 from various public and private agencies. The main findings were that:

1. Banks (*approached by 66% of firms*) and accountants (*approached by 56% of firms*) were the "agencies" that received the largest contact from the surveyed firms that had sought out advice/assistance. Scottish Enterprise achieved the next highest level of exposure amongst firms, with 47% of firms seeking its advice/assistance. Management Consultants (*approached by 34% of firms*), the Regional/District Councils (*33% of firms*), and the Enterprise Initiative (*29% of firms*) achieved moderate exposure from firms (*relative to this survey group*). The Scottish Office (*approached by 21% of firms*) and Universities and Colleges (*contact with 23% of firms*), achieved low exposure amongst firms. "Locate in Scotland" attracted the lowest exposure amongst firms with only 8%, but this was probably because it aims to attract inward investment rather than assist firms in general. Interestingly, compared to the results obtained for the plastics supply sector, firms in the oil and gas related sector had a similar level of contact with banks (*66% for oil and gas versus 62% for plastics*); accountants (*56% versus 60%*); and management consultants for the purposes of seeking advice/assistance. However, oil and gas related companies were much less likely to seek advice/assistance from public agencies than were firms in the plastics supply sector. For example, with Scottish Enterprise, only 47% of oil and gas related firms sought assistance/advice compared with 78% of plastics supply firms; for "Locate in Scotland", it was 10% (*oil and gas*) versus 30% (*plastics*); for the Scottish Office, it was 21% (*oil and gas*) versus 42% (*plastics*); for the Enterprise Initiative, it

was 29% (*oil and gas*) versus 38% (*plastics*); for Regional/District Council/s, it was 33% versus 50%; and for Universities and Colleges, it was 23% versus 36%. This would seem to suggest that compared to firms in the plastics supply sector, oil and gas related companies prefer to seek advice/assistance from private agencies possibly already handling their finances than with public agencies such as the Scottish Office and the Regional/District Council/s.

2. Banks far outstripped the usefulness of all other sources of advice/assistance with 30% of firms rating them to be very useful, and another 31% of firms rating them as being somewhat useful. Accountants appeared to be the next most useful source of advice/assistance with 10% of firms rating them to be very useful and 37% rating them somewhat useful. Scottish Enterprise was rated by 10% of firms to be very useful and by 21% of firms to be somewhat useful, but obtained a very high dissatisfaction rating with 16% of firms judging them to be unhelpful.

3. Public agencies such as Scottish Enterprise and Regional/District Council/s produced high rates of dissatisfaction amongst firms with 16% of firms finding Scottish Enterprise unhelpful (*compared to 31% that found it useful*) and 17% of firms which found the Regional/District Council/s unhelpful. Interestingly, there was a significant proportion of firms (12%) in the plastics supply sector that were dissatisfied with the advice/assistance received from Scottish Enterprise, which suggests that either Scottish Enterprise is only concerned with specific targets, or that it has a public relations problem in delivering advice/assistance to firms that approach it.

A6B.11 Sources of Development Capital

As with the plastics supply sector, firms were found to have a very high reliance on their internal financial resources (9.6%), indicates that 75% of development capital for the average firm is sourced from within the firm's and the owner's resources. Bank loans accounted for 12% of development capital but "financial institutions other than banks" accounted for only 3.3%. Grants (1.9%) and equity (1.5%) have only a very slight contribution to make as a source of development capital and do not seem to be significant at all. These findings suggest that either firms prefer to restrict sourcing of their development capital to their own resources (*probably to maintain maximum control over the business and avoid becoming over-committed*) or that external sources of finance are too difficult to secure for the majority of firms.

A6B.12 Characteristics of Management

The bulk of firms (56%) were found to be owner-managed. Firms with professional management teams accounted for 36% of firms, while firms that were both owner-managed and managed by professional managers accounted for 7% of firms. One firm (1%) was managed by a Board of Directors. The high level of owner-management amongst the surveyed firms is perhaps not surprising given that over 88% of firms were private companies of some form.

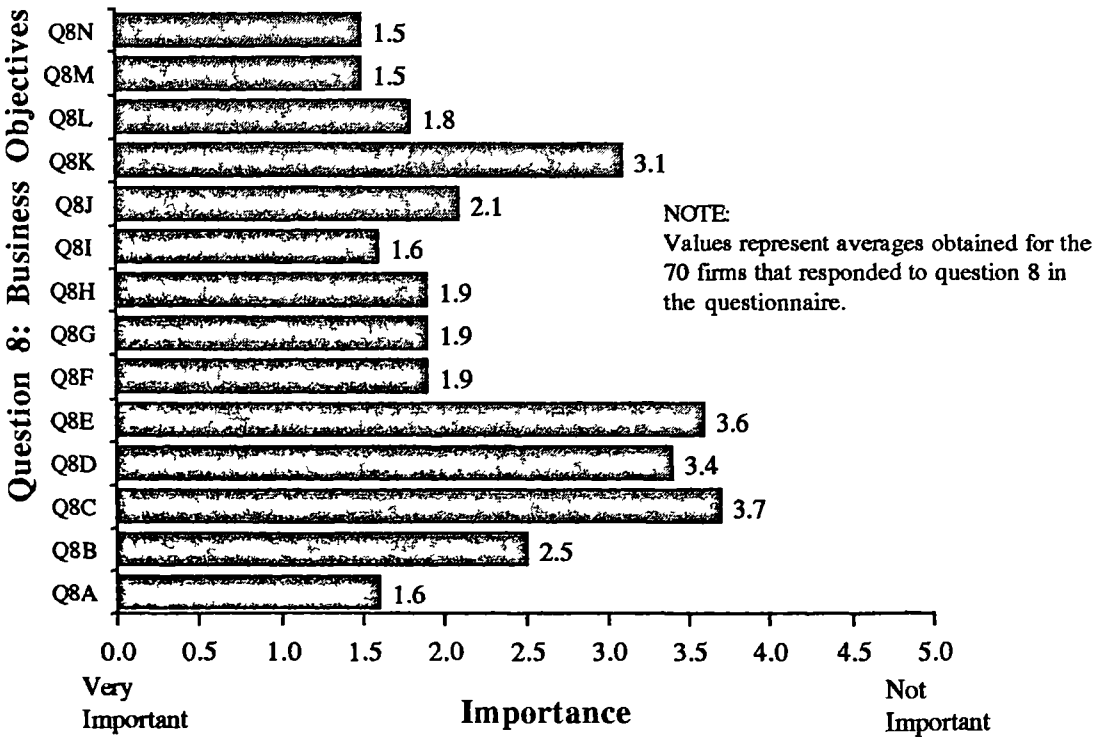
The personal characteristics of the surveyed firms' managers were that: managers were exclusively male; most managers were in the 36-45 year age range (49%); 53% of managers had tertiary education in the form of a University degree or diploma; and 49% of managers had tenure of between 4 and 10 years inclusive with their current firm. It would seem then that the majority of managers were well experienced in terms of life experience (*i.e. age*), education and their length of tenure as manager.

A6B.13 Objectives of Management

Firms were asked to rate the importance of various business objectives (*see figure A6B.1*) on a scale from 1 (*very important*) to 5 (*minimum importance*). An indifferent response would attract a rating of 3.

Of the 14 objectives examined, 4 objectives stood out as being of paramount importance. These were: (1) "high job satisfaction for employees" (*average rating of 1.5*); (2) "good rapport between management and employees" (*average rating of 1.5*); (3) "high profits" (*average rating of 1.6*); and (4) "improving the quality of products produced" (*average rating of 1.6*). Other objectives of importance with average ratings in the range of 1.8 to 2.1 were: (1) "good working conditions for employees"; (2) "maximisation of productivity"; (3) "maximisation of market share"; (4) "maximisation of production efficiency"; and (5) creating the most innovative products for the market. Firms verged on almost an indifferent response to the objective of "high sales turnover" (*average rating of 2.5*). Indifferent responses, with ratings of 3.1 and 3.4 respectively, were produced with the objectives of: (1)"the creation of jobs"; and (2) "large firm size in terms of turnover". Only two objectives were not considered to be important on average, which were: (1) "large firm size in terms of employment" (3.6); and (2) "large firm size in terms of physical size" (3.7).

FIGURE A6B.1:
AVERAGE IMPORTANCE RATINGS FOR BUSINESS OBJECTIVES



KEY:
Q8A: High profits
Q8B:High sales turnover
Q8C: Large firm size in terms of physical size (*e.g.capital assets*)
Q8D: Large firm size in terms of turnover
Q8E: Large firm size in terms of employment
Q8F: Maximisation of productivity
Q8G: Maximised production efficiency
Q8H: Maximised market share
Q8I: Improved quality of products produced
Q8J: Creation of the most innovative products for the market
Q8K: Creation of jobs
Q8L: Good working conditions for employees
Q8M: Good rapport between management and employees
Q8N: High job satisfaction for employees

Compared to the results obtained for the firms in the plastics supply sector, there was remarkable similarity in the attitudes of management to various business objectives, with both sectors stressing the importance of a good workforce, profitability, efficiency and maximisation of market share, and minimising the importance of large firm size. Areas of divergence between the two sectors were that the oil and gas related companies placed greater emphasis than plastics supply firms on the importance of maximising product quality; creating the most innovative products for the market; and in striving to achieve high job satisfaction for employees. These results would seem to underline that the fundamental difference between the two

sectors is that oil and gas related companies consider competitive advantage to be the result of producing products/services at the cutting edge of technology in their field, while ensuring maximised quality, whereas with the plastics supply sector, which is a comparatively low technology area, firms tend to be product satisficers, manufacturing products down to a cost rather than on a quality/innovation basis.

APPENDIX A6C:

CASE STUDIES OF SELECTED GROWTH FIRMS

This appendix provides a detailed account of the case studies of growth firms discussed in section 6.4.3. The five case studies examined are: Neptune Marine (*an alias; initially indigenous growth, but latterly as part of a Danish controlled UK holding company*); Furmanite Engineering Limited (*an example of inward investment from an English based group*); Rockwater (*an indigenous company that grew initially in organic fashion, then by acquisition and latterly as part of a joint venture company by two foreign based international corporations*); and the John Wood Group (*an indigenous company which has grown through an aggressive acquisition policy and the strong entrepreneurial drive of its founder*).

A6C.1 An example indigenous growth initially and latterly, growth as part of a major UK holding company: Neptune Marine (*an alias*)

Neptune started out as an indigenous Scottish company in the Aberdeen area that expanded organically until it sold out to a UK corporation that is ultimately controlled by a Danish holding company.

Neptune (*Marine & Industrial*) is a private limited company that was established in 1973 as an industrial coatings company during the early exploration and construction phases of the UK offshore oil and gas industry. The company is basically a services company. During the 1970s, scaffolding and insulation services were introduced for use in construction and maintenance work on platforms, rigs, module construction yards, terminals and oil and gas processing plants. In the early 1980s, demand for fireproofing and accommodation fit-out were added to the firm's range of services. Other services provided by Neptune include blasting and painting, industrial cleaning and technical surveys.

Neptune operates from two locations in the UK: its Aberdeen premises and from Great Yarmouth in Norfolk, England. Overall management for these two branches of Neptune is handled by the Maersk Company Ltd based in London, which although incorporated in the UK (*since 1953*), is ultimately controlled through ownership by a Danish corporation, AP Mueller. Maersk acquired Neptune in 1984. Until recently, a company called Premium Tubular Services Ltd at Peterhead was also part of the Neptune group of companies, but this was sold off because it was not considered to be complementary to the existing core businesses, and because that

particular business was beginning to face extremely stiff competition. Being a small part of the overall business, it was decided that the best thing to do was to sell off the pipe business.

Neptune started off as a small partnership company providing specialist coating services and contracting of skilled labour services to the oil and gas industry operating out of Aberdeen and Peterhead. The business rapidly grew away from being a simple provider of specialist skills to the oil and gas industry into providing managed contracts using a computerised planning function. Merging with Maersk provided much needed capital investment in expansion, developing new specialisations and skills, and reorganising the management of their activities.

The business objectives most highly stressed by the firm were: (1) maximising market share; (2) improving the quality of the products/services produced; (3) having a good rapport between management and employees; and (4) high job satisfaction amongst employees. Business objectives of secondary importance were: (1) high profits; (2) high sales turnover; (3) maximising work efficiency; (4) creating the most innovative product/services for the market; and (5) good working conditions for employees. Business objectives that met with an indifferent response were: (1) large firm size in terms of employment or turnover; (2) maximisation of productivity; and (3) the creation of jobs. "Large firm size in terms of physical size (*e.g. capital assets*) was not considered important.

Most of Neptune competitors (80%) are based in the Grampian region, while 10% are in the rest of Scotland and 10% in the rest of the world. During the period 1988-1991, the share of Neptune' markets to Grampian region (*from 70% down to 65%*) and the "rest of the world" (*ex-UK*) (*down from 7% to 0*) contracted, while the "rest of Scotland" (*up from 13% to 20%*) and "the rest of the UK" (*up from 10% to 15%*) increased their market share. In spite of the shift in the location of markets, local markets in the Grampian region were overwhelmingly dominant.

A professional management team is employed to manage the firm. The current manager has been part of Neptune for two years, is in the 46-55 year age group and is university educated with a bachelor degree

Neptune' record of growth during the period 1988-1991 has been quite impressive by the measures of employment, turnover and profitability. In employment

terms, Neptune' Aberdeen facility increased by 62% from 346 (*6 of which were part-time*) in 1988 to 550 (*8 of which were part-time*) in 1991. The change in the occupational employment structure mainly benefited the categories of "clerical/administrative" (*increasing from 40 (6 part-time) to 52 employees (8 part-time*) and "unskilled manual work" (*increasing from 300 to 500 employees*). The occupational category of "managerial & executive" remained stable throughout this period with 6 employees. What is interesting about this occupational structure is the absence of employment in the occupational categories of "professional" and "skilled technical"; the very small ratio of management employment to total employment (*only 1% in 1991!*) and the dominance of the "unskilled manual work" occupational category (*91% of employees in 1991*). During the period 1988-1991, annual sales turnover increased in the range of 201-300% to £22.8m (*£41,454 per employee*), while annual profitability increased by more than 300% to £1.6m (*£2,909/employee*).

According to the managing director of Neptune, the firm has expanded in every conceivable way. It has employed more staff; introduced new products/services into new and existing markets; developed new markets with existing products/services; reorganised the way work is carried out to improve work efficiency; expanded production capacity; and acquired other firms. The first phase of growth was in "organic" fashion, with employment and product/service capabilities expanding gradually through the 1970s. Growth occurred as Neptune diversified into a wide range of related services. The next phase of growth during the first half of the 1980s, involved selling out to a major corporation, Maersk. In 1983, Neptune was looking for ways to finance growth. Mr. Thomson, the general manager of marketing and sales, explained that the major difficulty with a small service company as Neptune was at the time, is the need for securing finance. Finance is difficult to obtain since service firms tend not to have any assets. Financial institutions will not lend to a company on the basis of the value of its contracts or its cash flow projections. Borrowings over £250,000 require assets to maintain enough security. Even today, 80% of Neptune' development capital has had to be derived from its internal resources, with only 20% sourced from bank loans. When Maersk expressed interest in acquiring Neptune, the firm's owners and founders were quite happy to sell out to Maersk because it was the only way that the firm's rate of growth could be maintained. Now that Neptune is part of a corporation with international connections, it has the resources to embark on more ambitious expansion plans in the form of firm acquisitions. Already the Group has acquired a shipping company and Neptune recently acquired a shotblasting company. If Neptune had remained an indigenous firm, its expansion plans would have to have

been considerably contracted, since it is unlikely that financial institutions would have provided the necessary finance. Although Neptune has considerable autonomy in its operational management, Maersk now controls major capital investment decisions and strategic decisions resulting to growth such as which firms to acquire. Maersk also places particular emphasis on such issues as the management of safety, quality assurance for customers, and project management and cost control.

The main reasons given by Mr. Thomson, the general manager for marketing and sales, for the successful growth of Neptune over the past decade was attributed solely to management. A strong team of dedicated managers, in which all the members of the management team had previous experience at senior levels in large companies and had been involved with the company's development at an early stage, was cited as the driving force behind the company's growth. Lately though, Mr. Thomson believed that having a parent company since 1984, had provided the firm with the financial strength to weather the slump that the oil and gas industry during 1986-1988, and helped to invest in the firm for when the market boomed again in the late 1980s.

Mr. Thomson also believed that Neptune' management philosophy of emphasizing greater efficiency, safety, reliability and quality had undoubtedly contributed towards Neptune' success, by generating strong customer confidence in the services provided by the company. The management structure is geared to this management philosophy with separate safety, training, quality and operations functions reporting to the Managing Director.

The management also attributes its success to what they term "computer planning and progress control". In 1987, Neptune introduced a computerised planning function to optimise operational efficiency on major fixed price contracts. This system, utilising the latest computer equipment, allows major contracts to be planned and permits accurate up-to-the minute reporting systems on the project's status. Moreover, it is invaluable in controlling the logistics of personnel and materials and equipment being deployed to both offshore and onshore locations.

Neptune' management considers its programme of development and innovation to be major selling points with its customers. The company has introduced and developed numerous new ideas to enhance production and ensure better standards of safety. Some examples include an innovative trolley system for access to splash-

zone structural steelwork and a containerised grit hopper system, both of which reduce the chance of injury, and result in a cleaner workplace environment. Neptune has also worked in the development and testing of many new methods of structural fireproofing.

Another selling point stressed by Neptune' management is their emphasis on quality and safety. The company's main aim is to provide a first-class service that complies exactly with what the customer specifies. Quality systems and procedures have been developed that comply with British Standards for every aspect of the business. Safety receives special consideration from the management, with a full-time safety and training manager whose responsibility it is to ensure that safety procedures and training standards are maintained to the highest possible level.

The management also believed that its employment strategy contributed to the firm's success. There are four elements to the firm's employment strategy, which are: (1) long term job security; (2) having a strong core group of employees; (3) employing service personnel on a permanent basis; and (4) having a good work environment for staff. This employment strategy seems to have created a workforce that is dedicated to the company and highly motivated.

Government policy has had very little input into the success of Neptune, although Mr. Thomson did say that the company may have made use of starting-up grants about 1981, but these were nothing of any significance to the firm's long-term growth or even early survival. Furthermore, government bodies such as Scottish Enterprise, Locate in Scotland, the Scottish Office and Regional District Council/s, were not sought by the firm for advice or assistance during the past three years. Banks, accountants and management consultants, were all rated as being "somewhat useful" as sources of advice or assistance. Surprisingly, universities and colleges were rated as being "somewhat useful" as a source of advice or assistance, although it was not clear in what capacity that was.

In the early years of Neptune' development, the main constraint to growth was a lack of finance. That constraint was solved by becoming part of an international corporation in 1983. Since becoming part of the Maersk Company, the management of Neptune did not consider the growth of their company to have been constrained in the sense that they have always been able to take on any business offered to them. What has caused difficulty for the company, however, has been that

the major oil companies have made profitability difficult because they force suppliers to operate on low profit margins. This means that there is not much in the way of retained profits to reinvest in growth. The North Sea oil and gas fields have the highest production costs in the world, partly due to the hostile environment and partly because of the many rules and regulations of government. The oil companies therefore try to remain competitive in world markets by pressuring their suppliers to reduce costs. In the past, Neptune' management believed that the oil and gas companies had promoted far too much competition that was of a destructive nature to the oil and gas related industry because the finite nature of the market simply meant that new entrants reduced the market share for existing firms. Another problem with the major oil and gas contractors has been inconsistent demand. Much of the maintenance work is carried out during the summer months, resulting in the firm's labour force being underutilised during the winter months. Recruiting middle management has also caused some difficulties for the company because of a lack of suitably experienced people available. Generally, the firm's management were not in favour of government intervention, but there was some irritation that local expertise was being ignored by government allowing large orders to be awarded overseas.

A possible long term constraint for North Sea oil and gas related industries acknowledged by Neptune, is how long reserves of oil and gas will last. Known reserves are predicted to last through to the year 2010 for oil and 2020 for gas, based on the current find rate and present rate of extraction. However, there are as yet unexplored reserves west of the Shetlands and in the deeper waters of the North Sea.

During the past three years, Neptune considered its growth by the measures of sales, employment and production capacity to have grown rapidly in an ad hoc fashion, but expected growth by these measures over the next three years to be slow and steady. The company's main strategy for the future is to become less dependent on oil companies through diversification into protective industries. The management added that the firm's main objective was to become the lowest cost provider of services (*as opposed to having the cheapest price*) and to maintain its year on year pattern of growth.

A6C.2 Growth through inward investment by an English-based company: Furmanite Engineering

Furmanite is an example of growth achieved through excellent innovative products/services that are extremely effective; a well trained, experienced

and professional workforce that is highly motivated and dedicated to the company; and excellent customer relations.

Furmanite Engineering Ltd officially established its Scottish operations operating out of Aberdeen in 1985. It is a public limited company with shares offered to the public, that is part of English company with operations worldwide. Its head office is based in Kendal, Cumbria, northern England where it was established 25 years ago and it has fully equipped workshops (*including one at Aberdeen*) at Middlesborough, Warrington, Colchester and Immingham. UK-wide, the company has a turnover of £60m, with its Aberdeen facility generating £10m of that turnover. The Aberdeen operations were started by Mr. Allison 9 years ago, working out of a small office located in Glasgow where Mr. Allison lived. Furmanite saw new opportunities arising from the oil and gas industry operating out of its bases at Aberdeen and Peterhead and decided to set up a branch located in Aberdeen's Fairburn industrial estate in 1985. The main role of the Aberdeen branch is to service offshore activities of the major oil and gas platforms and to provide worldwide support for branches in 22 countries.

Furmanite provides a mixture of specialist products and services for the oil and gas industry operating out of Aberdeen and Peterhead harbours. According to Mr. Allison, Furmanite is the foremost experienced firm in the world in sealing industrial leaks under pressure. Its Aberdonian operations specialise in repairing leaks in apparatus carrying high pressure gases or liquids in industrial plant equipment, without shutting down the system being repaired. Most of its work is in solving leak problems with oil refineries, oil and gas platforms, but it is capable of repairing leaks in vessels or pipelines used to contain liquids in any industrial system, such as chemical plants, nuclear and conventional power stations, iron and steel works, pulp and paper mills, food and drink processing plants, marine and other industries. Other services that it provides are: technicians with equipment to carry out specialist on-site machining of metal parts; hot tapping (*in which a leak is by-passed by a putting in a new by-pass pipeline*); on-site bolt tightening; testing of equipment; valve repair; on-site repair of polymer structures; the design and installation of passive fire protection materials; repair of floating tank roof centre decks; abrasive water-jet cutting both below and above water; pipe connector products; various engineering products to test pipes and valves for leaks; and products to mop up oil pollution of water-ways. Although most of the repairs the firm carries out are in-situ, the Aberdeen operations do have quite a large workshop repair facility. The company is able to keep busy all

the year round but it tends to be mainly a winter time activity because this is when the oil and gas industry is working at full capacity and when problems with leaking are most likely to occur. However, there is still work available for the company during the summer when maintenance work on the platforms is carried out.

The product and service concept was originally started by an American named Clay Furman, an American plant engineer who developed the system. An Englishman developed and adapted this system and brought it into the UK under licence, establishing Furmanite about 1966. The company is a public limited company (*one of only 3 amongst the surveyed firms*). It is now owned by an American company, Kaneb which acquired Furmanite (UK) 18 months previously. Being part of Kaneb helps to provide additional expertise and products augmenting the already extensive and established expertise of Furmanite UK.

Functions such as personnel management, day-to-day financial control, sales & marketing; research & development of new products; and product testing facilities, are all provided in-house by the Aberdeen branch. Training of staff and the transport of material inputs and finished products are provided jointly by the Aberdeen branch and contracted out to other companies. The manufacturing of specialist company products are all contracted out to other companies.

A professional management team is employed to run the company. The firm's Scottish operations were built up by the Aberdeen branch's divisional manager, Mr. John Allison, within the space of a decade from a simple agency to an operation employing over a 100 people. Mr. Allison trained as an engineer and has had almost two decades of experience in this particular field.

The business objectives that were most highly valued by the manager were: (1) to maximise market share; (2) improving the quality of services produced; (3) creating the most innovative products/services for the market; (4) having a good rapport between management and employees; and (5) high job satisfaction for employees. Business objectives of secondary importance included: (1) high profits; (2) large firm size in terms of physical size; (3) maximisation of productivity; and (4) good working conditions for employees. The business objectives of "large firm size in terms of turnover" and "the creation of jobs", met with indifference. The business objectives of "high sales turnover"; "large firm size in terms of employment"; and "the maximisation of productivity" were not considered important.

Furmanite does not see itself as having to face any major competitors. What competitors it does have, are located mainly in England (70%) or overseas (20%).

Furmanite's Aberdeen operations have grown dramatically in terms of employment growth, annual sales turnover and annual profitability. Employment for example, has increased from a total of 10 employees in 1988 to 104 employees in 1991 although it did peak at 110. The total number of employees working at the Aberdeen branch varies because Furmanite (UK) treats its labour as a national labour pool directing it to wherever it is needed. This occurs due to the sporadic nature of the work combined with the difficulty in recruiting suitably trained and experienced technicians at short notice (*technicians require a minimum of 5 years experience before being allowed to work in offshore environments*). Nationwide (UK), there are about 300 technicians, of which the Aberdeen facility at any given time normally has the use of about 75 technicians. The occupational structure of the full-time workforce during the period 1988-1991 increased: from 3 to 8 managers; from 1 to 6 professional employees (*other than managerial and executive staff*); from 2 to 4 clerical/administrative employees; and from 4 to 86 technicians. Interestingly, despite the seasonal nature of the firm's work, there was no significant part-time employment. Another interesting point to emerge about the firm's occupational structure is that none of the employees are engaged in unskilled manual work. During the period 1988-1991, annual sales turnover increased by over 300% to £10m (*£96,154 per employee*) during the period and annual profitability increased by over 300% to £2.5m (*£24,038 per employee*).

Furmanite (UK) has grown to such an extent that it now has 1,700 employees worldwide with branches in 22 countries. It now trades with Russia and China. At the current time, the greatest growth seems to be coming from the German sector, with more than 300 employees already on the payroll.

Ultimately, the extent and form of growth is controlled by Furmanite's head office in Cumbria. Head office controls development capital, major capital investment, firm acquisition plans and staff allocation amongst the various UK branches. Expansion of the Aberdeen branch has mainly been through employing more staff, but there has also been considerable expansion of the firm's premises since it was originally established. In 1985, the Aberdeen branch started out with 5,000

square feet and £5m of capital. This has now expanded to 8,500 square feet of office space and 25,000 square feet of office space spread over 2 acres of land in Aberdeen's Fairburn industrial estate. Furmanite (UK) is constantly on the alert for any small firms with special engineering expertise to acquire, since these will broaden Furmanite's range of services and capabilities. Acquisition activity is controlled by head office in Cumbria, although the Aberdeen branch is able to make suggestions about what firms it considers would be worth acquiring. Since establishment of the Aberdeen branch, several new services have been introduced into the firm's existing markets in the offshore oil and gas extraction industry, which have helped to fuel demand for its services. The manager also indicated that his company is continually striving to improve the efficiency of work carried out through better management and the introduction of technical innovations to help increase efficiency wherever possible. All sources of development capital are provided by head office.

According to the Aberdeen manager, Furmanite's growth has been the result of its own application without any overt assistance or advice from any public agencies such as Scottish Enterprise or the Scottish Office, or indeed, from private agencies such as banks, accountants and management consultants.

Furmanite is acknowledged by its customers to be one of the top UK firms in its field. Shell Conco, for example, recently rated Furmanite to be one of the top 5 companies servicing the oil and gas related industry in the UK. The main reason given by Mr. Allison for the Aberdeen branch's success (*and that of Furmanite in general*), is the strong commitment to the job amongst all employees. Other reasons given for the success of Furmanite are: (1) excellent customer relations; (2) unrivalled world-class expertise; (3) diversification into a wide range of industrial plant maintenance services; (4) expansion into world markets; and (5) innovative products and services.

Employees consist largely of highly skilled technicians with a minimum of 5 years experience. These technicians are trained as problem solvers and this tends to reassure customers. A management team of 5 managers acts as the key interface between customers and Furmanite and they also encourage motivation amongst staff. The high degree of professionalism, problem solving capability and motivation of the staff, gives customers great confidence in the work Furmanite carries out.

The motivation of employees comes mainly from guaranteeing long term employment. Furmanite has a profit sharing scheme in which one third of the profits are shared amongst the employees. Mr. Allison commented that there was a tendency in the industry to have ad hoc workforces because of the seasonal nature of the work. However, Furmanite tries to avoid having an ad hoc workforce since it takes a considerable amount of investment in time and money to recruit and train suitable people to the required level of skill and also because as Mr. Allison put it, "a service company has products with no shelf life.... so the only way to ensure that their employees' skills are kept honed is to make sure that they can apply their skills on a regular basis". This policy results in a highly mobile workforce of technicians, able to be deployed anywhere in the UK or overseas. Throughout the interview, Mr. Allison stressed that Furmanite had a distinct and deliberate employee policy based on wanting everyone to enjoy their work; encouraging a sense of teamwork; and management having a strong sense of respect for every person's job, no matter how seemingly mundane it might appear to be. Mr. Allison stated that the very low staff turnover rate was proof that Furmanite's employee policy seemed to be working.

Good staff recruitment was another reason given for the firm's success. Experience amongst prospective employees is highly valued, even if that person happens to be in their 50's. Generally, Furmanite's move into the Aberdeen area appears to have benefited local employment, since most of the recruitment has focused on Aberdeen.

Excellent customer relations have helped to ensure repeat business and have therefore been a key component of Furmanite's success. The Aberdeen branch's major customer, Shell, has changed from short-term one-off contracts to 5 year contracts, thereby indicating a high degree of customer confidence in the services provided by Furmanite. Because there are only four major contractors for the offshore platforms and since more than 80% of the Aberdeen branch's business is derived from offshore work, it is essential to maintain good customer relations. This entails ensuring that all work is carried out punctually; that workmanship is of the highest possible standard; and that in the event of faulty repair work, Furmanite undertakes to rectify the situation immediately without question.

Expanding into world markets has also greatly contributed to Furmanite's success. The North Sea environment is amongst the most challenging in oil and gas exploration/extraction work and therefore requires technology and

techniques that are state of the art, technically sophisticated, yet reliable and tough enough to operate in the most punishing physical environment on earth. Any company that can provide services and equipment to cope with the rigours of the North Sea oil and gas fields, can probably cope with any environment on earth. Furmanite recognised this fact a decade ago, and therefore expanded into world markets similarly engaged in oil and gas exploration in both onshore and offshore environs.

Furmanite's ability to create a diverse range of innovative services and products has also greatly contributed to the company's success according to Mr. Allison. For example, Furmanite has developed the best on-site tool range in the UK and even exports its products to Japan. They produce numerous precision engineered products, some of which demonstrate considerable ingenuity such as: converting 2 stroke Japanese motorbike engines into portable machine tools; developing its own bolt tightening equipment; and a machine for repairing pipe flanges that can be made portable by breaking it down into easily assembled components (*normally the weight of these machines renders them immovable to human muscle power*).

Generally Mr. Allison would not say that his company had suffered any particularly acute constraints to growth. The present economic downturn combined with reduced demand for oil following the Gulf War resulting in a surplus of oil worldwide, has made continued growth impossible in the oil and gas sector, at least for the foreseeable future. Oil companies (*particularly the offshore contractors*) have attempted to cut costs by forming themselves into a price cartel to pressure suppliers into cutting costs in the industry. Although only BP appears to be losing money heavily (*around £6billion in 1991/92*), all of the oil companies are trimming costs wherever they can. A relatively small company such as Furmanite, despite being highly respected by its major customer Shell, still has to price through every aspect of its costs in its contracts to Shell so that Shell can be sure that all costs are kept to a minimum and that profits are not what they would consider to be excessive. By contrast, large firms such as Weirs have enough weight not to have to price through every aspect of its contract. Notwithstanding this point, such was the quality, reliability and integrity of Furmanite's work, that competitors would have to have a charge-out rate at least 25% lower than Furmanite's in order to win a contract from them. Lack of capital was previously a constraint to growth for Furmanite because of its employee profit sharing scheme, but being part of a large American corporation appears to have solved these problems.

Only two issues presented major difficulties and they were: (1) finding "surplus management time to plan growth"; and (2) finding "sufficient management skills to plan, organize and manage growth". Market-related issues that presented moderate difficulty were: (1) finding sufficient market demand; and (2) finding sufficient market niche for their product/s and services". Financial issues that presented a moderate degree of difficulty were: (1) maintaining sufficient cash flow; (2) achieving a high sales turnover; (3) obtaining external finance through bank loans; and (4) obtaining external finance through building societies /insurance companies/merchant banks. The only location issue to present moderate difficulty to the firm was the issue of public transport serving the industrial area. Issues that presented minor difficulties to the firm included: (1) attaining a satisfactory level of profitability; (2) the rate of company taxation; (3) lack of tax exemptions for company expenses; (4) depressed national economic conditions; (5) high interest rates; and (6) proximity to raw material suppliers. The company did not face any constraints with labour issues; competition from other firms; excessively strong demand; or location issues.

Although the company grew rapidly over the past three years in terms of employment and sales, the manager was not optimistic of growth during the next three years. The company's two management strategies are: (1) further diversification into new services, products and markets; and (2) organic growth of the existing business as the market permits, but also through firm acquisition if the right opportunity comes along. The organic growth could come from: (1) improving its mechanical services; (2) being technically innovative; and (3) being regulation driven. Regulation can have a strong influence such as in the form of statutory instruments that regulate the frequency of shutdown rates (SI1029) and also the need for pollution monitoring and control. Furmanite was looking to diversify into maintenance work associated with gas fired power stations as coal-fired power stations are progressively phased out. Moreover, Furmanite was also on the look-out for any opportunities that may arise in the oil and gas exploration industry.

A6C.3 Growth through organic expansion, acquisition and as part of two major international corporations: Rockwater

Furmanite is an example of growth achieved through excellent innovative products/services that are extremely effective; a well trained, experienced and professional workforce that is highly motivated and dedicated to the company; and excellent customer relations.

Furmanite Engineering Ltd officially established its Scottish operations operating out of Aberdeen in 1985. It is a public limited company with shares offered to the public, that is part of English company with operations worldwide. Its head office is based in Kendal, Cumbria, northern England where it was established 25 years ago and it has fully equipped workshops (*including one at Aberdeen*) at Middlesborough, Warrington, Colchester and Immingham. UK-wide, the company has a turnover of £60m, with its Aberdeen facility generating £10m of that turnover. The Aberdeen operations were started by Mr. Allison 9 years ago, working out of a small office located in Glasgow where Mr. Allison lived. Furmanite saw new opportunities arising from the oil and gas industry operating out of its bases at Aberdeen and Peterhead and decided to set up a branch located in Aberdeen's Fairburn industrial estate in 1985. The main role of the Aberdeen branch is to service offshore activities of the major oil and gas platforms and to provide worldwide support for branches in 22 countries.

Furmanite provides a mixture of specialist products and services for the oil and gas industry operating out of Aberdeen and Peterhead harbours. According to Mr. Allison, Furmanite is the foremost experienced firm in the world in sealing industrial leaks under pressure. Its Aberdonian operations specialise in repairing leaks in apparatus carrying high pressure gases or liquids in industrial plant equipment, without shutting down the system being repaired. Most of its work is in solving leak problems with oil refineries, oil and gas platforms, but it is capable of repairing leaks in vessels or pipelines used to contain liquids in any industrial system, such as chemical plants, nuclear and conventional power stations, iron and steel works, pulp and paper mills, food and drink processing plants, marine and other industries. Other services that it provides are: technicians with equipment to carry out specialist on-site machining of metal parts; hot tapping (*in which a leak is by-passed by a putting in a new by-pass pipeline*); on-site bolt tightening; testing of equipment; valve repair; on-site repair of polymer structures; the design and installation of passive fire protection materials; repair of floating tank roof centre decks; abrasive water-jet cutting both below and above water; pipe connector products; various engineering products to test pipes and valves for leaks; and products to mop up oil pollution of water-ways. Although most of the repairs the firm carries out are in-situ, the Aberdeen operations do have quite a large workshop repair facility. The company is able to keep busy all the year round but it tends to be mainly a winter time activity because this is when the oil and gas industry is working at full capacity and when problems with leaking are

most likely to occur. However, there is still work available for the company during the summer when maintenance work on the platforms is carried out.

The product and service concept was originally started by an American named Clay Furman, an American plant engineer who developed the system. An Englishman developed and adapted this system and brought it into the UK under licence, establishing Furmanite about 1966. The company is a public limited company (*one of only 3 amongst the surveyed firms*). It is now owned by an American company, Kaneb which acquired Furmanite (UK) 18 months previously. Being part of Kaneb helps to provide additional expertise and products augmenting the already extensive and established expertise of Furmanite UK.

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profits are shared amongst the employees. Mr. Allison commented that there was a tendency in the industry to have ad hoc workforces because of the seasonal nature of the work. However, Furmanite tries to avoid having an ad hoc workforce since it takes a considerable amount of investment in time and money to recruit and train suitable people to the required level of skill and also because as Mr. Allison put it, "a service company has products with no shelf life.... so the only way to ensure that their employees' skills are kept honed is to make sure that they can apply their skills on a regular basis". This policy results in a highly mobile workforce of technicians, able to be deployed anywhere in the UK or overseas. Throughout the interview, Mr. Allison stressed that Furmanite had a distinct and deliberate employee policy based on wanting everyone to enjoy their work; encouraging a sense of teamwork; and management having a strong sense of respect for every person's job, no matter how seemingly mundane it might appear to be. Mr. Allison stated that the very low staff turnover rate was proof that Furmanite's employee policy seemed to be working.

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Expanding into world markets has also greatly contributed to Furmanite's success. The North Sea environment is amongst the most challenging in oil and gas exploration/extraction work and therefore requires technology and techniques that are state of the art, technically sophisticated, yet reliable and tough enough to operate in the most punishing physical environment on earth. Any company

that can provide services and equipment to cope with the rigours of the North Sea oil and gas fields, can probably cope with any environment on earth. Furmanite recognised this fact a decade ago, and therefore expanded into world markets similarly engaged in oil and gas exploration in both onshore and offshore environs.

Furmanite's ability to create a diverse range of innovative services and products has also greatly contributed to the company's success according to Mr. Allison. For example, Furmanite has developed the best on-site tool range in the UK and even exports its products to Japan. They produce numerous precision engineered products, some of which demonstrate considerable ingenuity such as: converting 2 stroke Japanese motorbike engines into portable machine tools; developing its own bolt tightening equipment; and a machine for repairing pipe flanges that can be made portable by breaking it down into easily assembled components (*normally the weight of these machines renders them immovable to human muscle power*).

Generally Mr. Allison would not say that his company had suffered any particularly acute constraints to growth. The present economic downturn combined with reduced demand for oil following the Gulf War resulting in a surplus of oil worldwide, has made continued growth impossible in the oil and gas sector, at least for the foreseeable future. Oil companies (*particularly the offshore contractors*) have attempted to cut costs by forming themselves into a price cartel to pressure suppliers into cutting costs in the industry. Although only BP appears to be losing money heavily (*around £6billion in 1991/92*), all of the oil companies are trimming costs wherever they can. A relatively small company such as Furmanite, despite being highly respected by its major customer Shell, still has to price through every aspect of its costs in its contracts to Shell so that Shell can be sure that all costs are kept to a minimum and that profits are not what they would consider to be excessive. By contrast, large firms such as Weirs have enough weight not to have to price through every aspect of its contract. Notwithstanding this point, such was the quality, reliability and integrity of Furmanite's work, that competitors would have to have a charge-out rate at least 25% lower than Furmanite's in order to win a contract from them. Lack of capital was previously a constraint to growth for Furmanite because of its employee profit sharing scheme, but being part of a large American corporation appears to have solved these problems.

Only two issues presented major difficulties and they were: (1) finding "surplus management time to plan growth"; and (2) finding "sufficient management

skills to plan, organize and manage growth". Market-related issues that presented moderate difficulty were: (1) finding sufficient market demand; and (2) finding sufficient market niche for their product/s and services". Financial issues that presented a moderate degree of difficulty were: (1) maintaining sufficient cash flow; (2) achieving a high sales turnover; (3) obtaining external finance through bank loans; and (4) obtaining external finance through building societies /insurance companies/merchant banks. The only location issue to present moderate difficulty to the firm was the issue of public transport serving the industrial area. Issues that presented minor difficulties to the firm included: (1) attaining a satisfactory level of profitability; (2) the rate of company taxation; (3) lack of tax exemptions for company expenses; (4) depressed national economic conditions; (5) high interest rates; and (6) proximity to raw material suppliers. The company did not face any constraints with labour issues; competition from other firms; excessively strong demand; or location issues.

Although the company grew rapidly over the past three years in terms of employment and sales, the manager was not optimistic of growth during the next three years. The company's two management strategies are: (1) further diversification into new services, products and markets; and (2) organic growth of the existing business as the market permits, but also through firm acquisition if the right opportunity comes along. The organic growth could come from: (1) improving its mechanical services; (2) being technically innovative; and (3) being regulation driven. Regulation can have a strong influence such as in the form of statutory instruments that regulate the frequency of shutdown rates (SI1029) and also the need for pollution monitoring and control. Furmanite was looking to diversify into maintenance work associated with gas fired power stations as coal-fired power stations are progressively phased out. Moreover, Furmanite was also on the look-out for any opportunities that may arise in the oil and gas exploration industry.

A6C.4 Growth through foreign inward investment with a long established local presence: ABB Vetco Gray

ABB Vetco Gray (UK) Ltd is a private limited company producing oil and gas wellhead, drilling and production equipment. They are renowned throughout the world for their "Christmas Tree" valve assemblies. A "Christmas Tree" is the trade name used to describe a set of subsea valves to turn oil on and off at a junction of high pressure pipelines.

Vetco Gray started out as three independent companies, each with separate American parent companies. The three companies, Vetco Offshore, the Gray Tool Company and Hughes Offshore merged together in 1986 under the ownership of the Hughes Tool company. These three companies are now completely integrated and now operate as a single company. Subsequent to the merger, the Hughes Tool Company and Baker Oil amalgamated. They decided that Vetco Gray was superfluous to their core business, so they sold it to Bain Venture Capital, a venture management company operating out of Boston in the United States. They planned to float Vetco Gray in 1989/90, however, after the stockmarket collapse this was not a feasible proposition, and ABB, who already owned some of the company debentures took over. ABB (*Asea Brown Boveri*) bought Vetco Gray, renaming it ABB Vetco Gray, mainly because this was seen as a good way to consolidate their position in the oil and gas industry. ABB were looking for a "Christmas Tree" manufacturer to complement their global network of existing businesses serving the petroleum industry worldwide. ABB's prime objective was to provide a total range of services to oil and gas exploration and production companies from the wellhead to the market.

Vetco Offshore developed out of the Ventura Tool Company founded in 1930 in California. Over the past 50 years, Vetco had developed considerable expertise in subsea drilling that has placed it at the forefront of the industry. The company has its international headquarters in Houston, Texas, U.S.A. and its operations span the globe. In 1988, Vetco Gray employed some 3,000 people, and generated a turnover in excess of $US300million. Vetco Gray is organised into three branches on a geographical basis. The western hemisphere region is headquartered in Houston, Texas and has a branch in Brazil, Venezuela, 3 branches in Canada and 12 branches across the USA. The Asia/Pacific/Middle East region has its headquarters in Singapore, with a branch in Kuwait, Oman, the People's Republic of China, Saudi Arabia, 2 branches in the United Arab Emirates and 2 branches in Australia. The eastern hemisphere region, with over 1,000 employees at its disposal, has its headquarters in Aberdeen, Scotland, and has a branch in Denmark, France, Italy, 2 branches in Nigeria, 2 branches in the Netherlands, 2 branches in Norway and 5 branches in the UK.

The relationship of ABB to ABB Vetco Gray, is that of a holding company. ABB Ltd is a holding company headquartered in Zurich Switzerland. ABB is owned equally by ASEA AB Stockholm, (*Sweden*) and BBC Brown Boveri Ltd, Baden (*Switzerland*). Although the shares of ABB Ltd are not publicly traded, those

of ASEA AB and BBC Brown Boveri are listed on various stock exchanges. The ABB Group has controlling interests in some 1,300 companies worldwide, employing in 1990, 215,154 employees and generating sales revenue of $US26.7 billion (*$US124,041 per employee*). In the UK, the ABB Group employs some 15,000 people in UK wholly owned and joint venture companies. The Group is organised along the lines of a matrix structure with 5,000 profit centres that each have clearly defined accountability. Worldwide business activities are grouped into 8 business segments comprising 65 business areas. Each business area carries responsibility for global strategies, business plans, allocation of manufacturing responsibilities and product development, which has significant implications for the management plans and strategies pursued by ABB Vetco Gray.

ABB has developed a global network of businesses to serve the oil, gas refining and petrochemical sectors. The ABB worldwide petroleum industry network is solidly committed to serving all facets of businesses in this field with quality products and services. Global in reach, but local in focus, ABB provides its customers with products and services from the wellhead to the market. The ABB umbrella of companies includes ABB Vetco Gray, ABB Global Engineering, ABB Lummus Crest, ABB Randall, ABB Industry and Offshore, ABB Simcon and ABB's Kent Introl. ABB Global Engineering capabilities are: conceptual and front-end engineering for oil and gas platform production facilities, satellite subsea systems, and pipelines. ABB Lummus Crest's capabilities are: project management, Engineering, Production, Construction contracts (EPC) services, and technology for the oil and gas, refining and petrochemical sectors. ABB Randall's capabilities are: EPC services for natural gas and gas liquids processing plants. ABB Industry and Offshore capabilities are: systems automation for onshore and offshore installations. ABB Simcon's capabilities are: process plant control and optimization and training simulators. And ABB's Kent Introl's capabilities are: choke and control valves for oil and gas facilities and process plants. With major projects, customers can either approach ABB which will arrange for its umbrella companies to carry out various aspects of the project, or the customer can approach each company on an individual basis and therefore choose to remain control of total project management.

ABB Vetco Gray set up its Aberdeen branch in 1973 under the name Vetco Offshore. The other two arms of the company were the Gray Tool Company which was set up in Douglas in the late 1960s and Hughes Offshore, which was set up in Montrose in 1980. Vetco Gray's Eastern Hemisphere headquarters in Aberdeen's

Bridge of Don Estate employ some 200 employees. Also located at these headquarters, is a research and development facility with 24 staff members involved in pure research and development. Within the same estate is a large manufacturing plant employing about 200 employees engaged in the manufacture of subsea production systems such as subsea Christmas trees, control systems and wellheads. The Kirkhill facility in Aberdeen has approximately 100 employees and is configured to handle the repair and refurbishment of both surface and subsea equipment. The manufacturing plant at Douglas, 40 miles south of Glasgow, has about 200 employees and is dedicated to surface drilling and production equipment. The Montrose facility, with about 100 employees, manufactures drilling equipment, mudline suspension, Christmas trees and is a subcontractor for other Vetco Gray eastern hemisphere plants. The Great Yarmouth facility, with about 10 employees, is a sales and service centre dedicated to customers operating in the southern North Sea.

ABB Vetco Gray is split into four different business units: (1) a subsea production business unit (*Christmas tree manufacture*); (2) a surface product business unit (*surface wellhead Christmas trees*); (3) a consumable unit (*subsea wellhead, tubulars; capital marine equipment*); and (4) after market (*spares and repairs unit*). Project development work for consumables requires a lead time of around 2 to 3 years. The company's output is evenly split between project specific work (*custom designed products for particular projects*) and consumables (*i.e.products consumed in the drilling process*). The Aberdeen headquarters are largely autonomous in its dealings from the international headquarters for ABB Vetco Gray in Texas and ABB in areas such as: personnel management; financial control; sales & marketing; research & development; product testing facilities; the manufacture of its own products; staff training; and the transport of material inputs and outputs. The Aberdeen branch of ABB Vetco Gray is managed by a professional management team. The international headquarters for ABB Vetco Gray control issues such as new capital investment; expansion of the company; and major marketing strategies. ABB is more concerned with the close coordination and integration of the companies that it owns serving the petroleum industry, so that a total service can be provided. In the jargon of the industry, ABB aim to provide oil companies the option of a "turnkey" service capability, in which the wherewithal is provided to implement a project from start to finish. However, the advantage of allowing the companies that ABB owns to remain independent, is that services can be taken on an individual basis if that is what the customer would prefer.

When a new field is discovered, there is usually a 2 year lead-time in planning the necessary pipeline infrastructure and high pressure valve gear. Considerable preliminary work is usually involved in building up customer relations. Customers realise that they will typically be involved in a business relationship that may span a 2 year period. There is very close liaison with the customer in developing products, some of which are one-off designs for unique tasks. The structure of the company is more oriented towards business units. The research & development arm of the company co-ordinates its activities with other branches of the business units to ensure that any new products developed are likely to be what is demand by the oil and gas industry.

ABB Vetco Gray's UK operations are largely focused on the Grampian region. During the period 1988-1991, there was little change in the location of the firm's markets, with the Grampian region accounting for 69% of sales; the UK excluding Scotland accounting for 2% of sales; and the rest of the world (*i.e. the firm's eastern hemisphere operations outwith the UK*) accounting for 29% of sales. The offshore oil industry does include some operations outwith Scotland, with some activities operating out of Norway, Denmark and England.

ABB Vetco Gray declined to comment on any competitors it might have or where they happen to be based. In what it does, however, it is difficult to dispute its market leadership. For example, its SG wellhead system is the most widely used system in the world for deep subsea wells, being used on 43 of the 50 deepest subsea wells in the world. The comment was made that offshore operators and contractors attract companies of this nature from all over the world to service the requirements of the North Sea oil and gas industry.

The business objectives stressed as being most important were: (1) high profits; (2) high sales turnover; (3) maximised of productivity; (4) maximised production efficiency; (5) improving the quality of the products produced; and (6) creating the most innovative products for the market. Of secondary importance were the business objectives of: (1) maximised market share; (2) good working conditions for employees; (3) good rapport between management and employees; and (4) high job satisfaction for employees. The objective of achieving a large firm size in terms of capital assets, turnover or employment, met with an indifferent response. The business objective of creating jobs was not considered to be important.

ABB Vetco Gray's (UK) growth performance during the period 1988-1991, has been significant, if not spectacular. By the measure of employment, the company's growth has been most marked, with total employment increasing by 16.1% from 596 to 692 full-time employees. Every occupational category benefited from this growth with increases ranging from about 11% up to 23%. For example, the managerial and executive category increased from 190 to 220 employees, an increase of 15.8%; the professional category increased from 122 to 142 employees, an increase of 16.4%; the clerical/administrative category increased from 109 to 134, registering the largest increase at 22.9%; the skilled technical category increased from 150 to 166 employees, an increase of 10.7%; and the unskilled manual work category increased from 25 to 30 employees an increase of 20.0%. About 150 of the firm's current employment is engaged in direct manufacturing; 90 provide service for offshore facilities, mainly to install Vetco Gray products; and 24 employees are engaged in full-time research and development. The growth during this period does not appear to have altered the occupational structure of the firm, with around 32% of employees in the managerial & executive category; 20.5% of employees in the professional category; 19.4% of employees in the clerical/administrative category; 24.0% of employees in the skilled technical category; and 4.3% of employees in the unskilled manual work category. An outstanding feature of this firm is the very high proportion of its employees in either the managerial & executive or the professional employment categories, with 52.3% of employees, especially when compared with the very low proportion of its employees in unskilled manual work, with 4.3% of employees.

In terms of the growth measure of annual sales turnover, ABB Vetco Gray (UK) performed well during the period 1988-1991, increasing its sales turnover in the range of from 26 to 50% to £90m (*£130,058 per employee*). The company produced profits of only £0.5m in 1991 (*£723 per employee*), but would not divulge whether this was an improvement on its 1988 profits. Judging from the low profits per employee in 1991, it would seem unlikely that these figures represent an improvement on the firm's 1988 profits. This may be due to the expansion in staff and/or substantial capital investment soaking up profits.

Because ABB Vetco Gray's (UK) business is of such a specialised nature, its growth has been of an organic character. In other words, the company expanded through greater employment and further capital investment. As was discussed earlier in this case history, the company merged with two other companies in 1986 that had similar product specialisations in order to achieve economies of scale,

intensify their knowledge in their product area and to achieve a larger share of the market for valve assemblies used in the oil and gas industry. Growth during the past three years according to the firm's management had been achieved by employing extra staff; introducing new products/services to the firm's existing markets; and by improving production efficiency. ABB Vetco Gray (UK) relied exclusively on its own resources for development capital. However, it should be noted that being part of the ABB group of companies would give it access to ABB's considerable financial resources, some of which has been raised through share issues on stock exchanges.

The main reasons for the growth and success of ABB Vetco Gray (UK) over the years, is the result of a combination of three main factors. They are: (1) "state of the art technology" combined with the highest possible product quality; (2) after sales service with its emphasis on solving problems for the customer; and (3) a teamwork approach to everything the company does, whether it be sales, research & development, finance, marketing or human resources. The company's significant research & development effort is clear and indisputable evidence of its commitment to producing the most technologically advanced products of the highest quality possible. ABB Vecto Gray's (UK) commitment to customer satisfaction is achieved through meeting customer requirements, reliable delivery, building solid relationships based on trust and understanding, and structuring an organisation which is focused on, and can respond quickly to their customers.

An important aspect to the company's growth, is that it accepted the need for change. The oil industry in Aberdeen faced a severe downturn in 1986 and this hit some companies hard. Vetco Gray survived because it looked after its core customer base. It was able to adopt various economy measures such as cutting back on staff while maintaining its stringent quality control programme. The factors of technology and after sales service, were sufficient to differentiate the company from its competitors. In the United States, there was a drastic pruning of staff, with employment in some states cut down to 15%. Staff was generally reduced considerably in 1986/1987 due to a large drop in aggregate demand for oil and strong environmental pressures in offshore California oil fields. When Vetco Gray was managed by Bain Merchant Bankers, powerful financial constraints were placed on its operations. During the downturn in 1986/87 exploration activities were hit particularly badly. Exploration activities had been a major part of Vetco Gray's (UK) activities before the downturn. During a downturn, exploration activities are usually the first areas that oil exploration companies look to in cutting their costs. This forced Vetco

Gray (UK) to diversify into production activities and concentrate more on the downstream activities in the production process of oil and gas. Now the company carefully monitors its split between oil exploration and production related work to ensure that they are not too heavily dependent on one form of work, so that it always has continuous business to see it through the inevitable troughs of the business cycle for the oil and gas industry.

Being a private company with its roots in the United States oil industry, ABB Vetco Gray (UK) has not seriously considered local advice and assistance from either the public or private sector in helping it to grow. For example, it did not seek advice or assistance from the Scottish Office or Enterprise Initiative, nor UK universities or colleges. When it consulted with Scottish Enterprise and the Regional Council, they found these bodies quite unsuited to giving a large high technology business such as themselves, any helpful advice. This seemed to be because government policy is mainly geared to modest business start-ups and developing small businesses. However, the "Locate in Scotland" initiative was deemed to have been somewhat useful in the advice and assistance that it provided. Advice/assistance from banks, accountants and management consultants was considered to be have been somewhat useful.

The main role of government policy in Vetco Gray's (UK) case has been that the UK's local content rules that were operational for the oil and gas industry before the European Community abolished them, required foreign companies to locate and manufacture in the UK, rather than simply using the UK as a service base for the offshore installations in the UK sector of the North Sea oil fields. The view was expressed by ABB Vetco Gray (UK), that given sufficient time, overseas companies would probably have set up manufacturing and service operations in Aberdeen, since the major oil companies prefer their major suppliers to be located as close as possible to the oil and gas fields and Aberdeen had had a history of precision engineering. In the absence of the local content rules, the timescale for setting up supplier firms and contractors in the UK would probably have been much more relaxed. The local content rules helped to create a sense of urgency for companies wishing to service the UK's oil and gas fields in the North Sea, forcing them to quickly set up almost self - reliant local operations for the major oil companies.

The management at ABB Vetco Gray (UK) did not consider their firm to have its growth aspirations significantly constrained since it became part of ABB.

The firm's management do not pursue growth at all costs preferring instead to wait and see what opportunities the market will offer. The company is an acknowledged world leader in what it does, dominating the market niche that it operates within. It would seem that in the current economic climate, further growth would only be possible by diversifying into other products. However, the highly specialised nature of ABB Vetco Gray's work makes this a dangerous strategy, since it could undermine the company's core business.

Perhaps the most significant constraint to growth that ABB Vetco Gray (UK) has had to face, is the cyclical nature of the industry, which is completely beyond the control of the company. With the downturn of 1986/87, considerable financial constraints were placed on the company. These constraints were eventually overcome by becoming part of the global group ABB Asea Brown Boveri.

An important constraint to the company's growth which was associated with the 1986/87 downturn, was the difficulty in securing skilled staff. Many people left the industry in 1986/87 and were reluctant to come back. However, in 1988/91, prospects for oil and gas related companies improved markedly, and people have started coming back into the industry.

A relatively minor constraint to the firm's growth has been to do with the site, which allowed only limited room for expansion. This partly explains why the company's operations are scattered around Scotland, (*the other reason is that they started up as separate companies*).

The threat of new entrants does not seem to be of concern to the company, although it does face strong competition from Conoco (UK) Ltd, a drilling equipment company whose parent company was formed by a breakaway company from Vetco Gray in the United States. Vetco Gray has been able to maintain its market share to date and seems confident that it will continue to do so well into the foreseeable future.

The company is unconcerned about the threat of new technology replacing its services and products since it is already at the forefront of research & development in its field and they do not foresee any substitute technology affecting their market dominance for at least the next 10 to 15 years.

ABB Vetco Gray has a range of strategies to help facilitate growth. The most important strategy stressed was that the company always maintained its customer base, by concentrating on its key accounts. There is a very close liaison with customers, since many of its products are one-off designs for specific tasks or adaptations of existing designs to suit a customer's particular needs. The company aims to compete on product quality, performance and reliability, employing a management technique known as the "total quality management approach" to ensure that the very high standards of employee application to their respective jobs that is necessary to produce products of high quality, is maintained throughout the firm. To achieve this end, the firm places strong emphasis on staff training, particularly with regard to developing a problem solving capability in its employees. The company is also trying to change the attitudes of its customers (*i.e. the offshore oil industry contractors*), whose main purchasing criterion in the past has been on price, rather than quality. The company argues that although quality appears to be more expensive in the short term, it pays dividends in the long term through longer product life, better product performance and lower maintenance costs. Another aspect of the company's management strategy, is for close vertical integration of its supplier firms through close liaison, to ensure that rigorous product standards are maintained throughout the production process. A final cornerstone in the company's strategy for growth, is to reduce the design and manufacture time for its products, which is typically around 2 years, so that it can become more responsive to customer needs.

ABB Vetco Gray's (UK) management considered that during the past three years, their firm's size had grown quickly in a controlled manner by the measure of sales; grown steadily but slowly by the measure of employment; and remained stable by the measure of production capacity. The company was cautious about its growth prospects for the next three years, indicating that the company would grow steadily but slowly by the measures of sales, employment and production capacity.

The first half of 1992 has witnessed another downturn for the oil and gas industry, with every major oil firm cutting back on its orders, especially in the area of exploration. Present indicators would seem to suggest that the downturn will continue for the next year or two. The company has maintained its market share, which means that it is well placed to capitalise on any improvement in the oil and gas industry if and when it occurs. Worldwide, each of its product lines rank first or second in global market share and its concerted drive and determination to further

improve its products should ensure that at the very least the company holds on to its current market share.

A6C.5 An example of an indigenous company that has grown through aggressive acquisition and the entrepreneurial drive of its founder: John Wood Group

The John Wood Group is an outstanding example of indigenous company growth in the UK energy services industry, and one of Scotland's premier companies. The Group provides engineering and high technology services and products to the offshore oil, power generation and general industrial markets. Few Scottish companies have achieved such impressive performance, growing from a small Aberdonian ship repair company established in 1955, to a major UK corporation on the threshold of global reach in 1992. The efforts of John Wood, the Group's founder, and his son, Ian Wood, have much to do with the company's success. The entrepreneurial flair displayed by these men in the Group's development played a critical role in its development. In particular, Ian Wood, chairman and managing director of the Group, was largely responsible for having the vision and courage to steer his company into the oil and gas industry service sector, in spite of the risks that a high growth strategy obviously presented to his company. The fact that Ian Wood has been able to build up a very successful indigenous company in the North East of Scotland must have been the most significant contributing factor that led to his appointment as chairman of Grampian Enterprise, one of the local enterprise companies formed under the aegis of Scottish Enterprise for combined industrial and training promotion efforts in the north-east of Scotland.

The John Wood company began trading in 1955 when the founder, John Wood bought out the other interest in a long established small Aberdeen ship repair company, Wood & Davidson. Ian Wood, the founder's son joined the business in 1964, expanding the business from its marine base into fishing, fish processing and general marine engineering. The company acquired Aberdeen Motor Trawlers in 1966 to give it the largest fleet in Aberdeen. Fortunately the company had a very good year from fishing and it used those funds to move into fish processing for the purposes of vertically integrating the business so that it could exert more control over its earnings further down the line. As the first tentative oil exploration work began to take place in Aberdeen during the late 1960's, spin-off opportunities occurred in ship repair and small scale fabrication, which the Wood Group was well placed to take advantage of. In the 1970s, the firm translated its extensive marine engineering experience into

engineering and support services for the North Sea oil and gas industry operating out of Aberdeen, which later became the Group's prime dominant activity. A separate holding company, J W Holdings (*Scotland's largest private fishing company*), was formed to take over the Group's traditional industries so that the Wood Group could focus completely on the energy sector. The Wood Group's initial foray into the oil service sector was at the low-tech end by providing office accommodation, warehousing, transport and plant facilities which oil companies needed to hire locally. The first big move was the purchase of Aberdeen's John Lewis shipyard to provide additional quayside space to expand fabrication work. The the Wood Group had a turnover of about £4.5million and employed around 750 people in oil related and fishing industry activities. During the 1980s, the Wood Group strengthened its capability for serving the North Sea oil industry through numerous firm acquisitions. The Wood Group of companies now provides a wide range of services to every offshore installation in the UK sector of the northern North Sea. It has also established significant support facilities in Great Yarmouth, and provides engineering support and maintenance at Sullom Voe, St. Fergus and Mossmorran. Worldwide, in 1991 the Group had personnel of approximately 2,500 employees with a sales turnover of £173.8million.

During the 1990s, the Group has been making good progress towards developing exportable technology and gaining access to international offshore oil markets. The Group's Gas Turbine Division, Wood Group Fire Protection, Wood Group Engineering and Wood Group Drilling and Production Services have all been successful in increasing overseas sales of their services and products. Moreover, the Wood Group operates joint venture companies in North America, Europe, the Middle East and the Far East.

John Wood Group PLC is a public limited holding company containing seven divisions, with either part or full ownership in 36 companies. The company's head office is located in the East Tullos Industrial Estate, Aberdeen. The company's divisions are as follows: (1) oilfield logistics and supplies (*with 7 principal companies*); (2) engineering contracting (*with 6 principal companies*); (3) engineering design (*with 2 principal companies*); (4) fire and safety (*with 3 principal companies*); (5) gas turbine services (*with 4 principal companies*); (6) engineering services (*with 5 principal companies*); and (7) drilling and production services (*with 9 principal companies*). Table A6C.1 details the principal companies belonging to the Group, where the company is registered and the percentage of ordinary shares held by the

Group. Although the Group is a private company, it does trade some shares, but only to those institutional investors that are of the Group's choosing. 21 companies are owned outright by the group, with 13 of those firms owned by Ian Wood or his family. With another 7 companies, the Group holds the majority of shares, typically 60%, with the shares in 4 of those companies controlled by Ian Wood or his family. In 6 of the companies, the Group holds 50% of shares, with the shares in 3 of those companies held by Ian Wood or his family. In the remaining 2 companies, the Group has a minority ownership, of 45% and 49% respectively. In January 1992, the ownership structure for the Group was: 17 financial institutional shareholders have an 18% share in the Group; 76 management and staff shareholders hold 9% including shares under option; and the Wood family holds 73% of shares. Before the new convertible preference share issue released in January 1992, financial institution shareholders held a 9.3% share in the Group. This had the effect of reducing the stake of the Wood family and that of management and staff. Ian Wood indicated the move as part of the evolution of John Wood away from being a family concern. Some of the financial institutions investing in the Group include the 3i venture capital group, a number of investment trusts such as Alliance and Second Alliance, Scottish Investment, and American Trust, and two leading Scottish life offices, Standard Life and Scottish Amicable.

23 of the 36 companies in the Wood Group are Scottish registered firms indigenous to Scotland. 4 are English registered companies, indigenous to England. The country of registration for the remaining firms are: 5 in the United States, 4 of which are in production and drilling services; 2 in France; 1 in Italy; and 1 in the United Arab Emirates.

An example of one of the Group's constituent companies and also one of the largest with a history that extends back to the Group's earliest days, is Wood Group Offshore Limited. This company was established by the Wood Group in 1970 and to provide project management and skilled contract labour for maintenance and construction works to the offshore and onshore oil and petrochemical industries operating in the UK sector of the North Sea. The company is a private limited company registered in Scotland, and 100% owned by the John Wood Group Plc. Functions such as personnel management, financial control, sales & marketing, research & development, training of staff and transport functions, are all provided in-house by the company. A professional management team is employed by the holding company to manage the firm's activities. The relationship of the company to the

holding company John Wood Plc, is mainly in the area of major investment decisions, providing finance for development capital, long-term company strategy, and major marketing decisions. The holding company decides where retained profits will be reinvested and which of its constituent firms will be allowed to make the necessary investment for expansion. The John Wood Group helps to coordinate and integrate the company's activities with the services offered by its other divisions, thereby offering its customers the capability to carry out major projects from beginning to end. The company's markets are exclusively restricted to Scotland, with around 85% of customers derived from the Grampian region and 15% from the rest of Scotland in 1991. The company's markets appear to have become marginally less dependent on the Grampian region since 1988, when 95% of company sales were derived from the Grampian region and 5% from the rest of Scotland. The company's competitors also seem to predominantly Scottish, or at least operating out of Scottish bases. The company estimated that around 70% of its competitors come from the Grampian region; 20% from the rest of Scotland; and 10% from the rest of the UK.

During the period 1988-1991, the company's expansion was quite remarkable by the measures of employment, turnover and profitability. The company's excellent performance certainly made a significant contribution to the Group as a whole, accounting for 34.5% of its turnover and 23.7% of its profits in 1991. In 1988 for example, employment increased by 137% from 340 to 805 employees. Every occupational category in the company benefited from this growth, with managerial & executive staff increasing by 67% from 15 to 25; professional staff increasing by 900% from 5 to 50; clerical/administrative staff increasing by 50% from 20 to 30; skilled technical staff increasing by 100% from 200 to 400; and unskilled manual work staff increasing by 200% from 100 to 300. During this period of growth, the company's occupational structure changed quite markedly as the occupational categories of managerial & executive, clerical/administrative and skilled technical lost some of their share of total employment decreasing by 1.3, 4.7 and 9.1 percentage points respectively, while the occupational categories of professional and unskilled manual work increased their share of total employment by 4.7 and 7.9 percentage points respectively.

During the period 1988-1991, the firm increased its annual sales turnover by more than 300% to £60million (*£74,534/employee*). Growth in profitability made similarly spectacular gains, increasing in the range of 201 to 300% to £4million (*£4,969/employee*). However, the increase in turnover and profitability

with this firm appears to have been mainly due increased employment rather than through greater productivity on the part of employees, since the increase in staff appears to be roughly commensurate with the increase in turnover and profitability.

The main method employed in expanding the firm appears to have been in employing more staff; introducing new services into the firm's existing markets; reorganising the way work is carried out to improve work efficiency; and in acquiring other firms.

External organisations do not appear to have played a significant role in either this company's growth or indeed, the Group's performance as a whole. Banks were the only external organisation to have been rated "very useful" to the company as a source of advice/assistance in helping it to grow. Accountants were rated as having been "somewhat useful". Public sector organisations such as Scottish Enterprise and the Enterprise Initiative were rated as having been "somewhat useful". No organisations, public or private, were rated as having been unhelpful as a source of advice or assistance. The company did not seek advice or assistance from bodies such as Locate in Scotland, Scottish Office Department/s, Grampian Regional Council or Management Consultants.

The business objectives valued as being very important by the managing director, Mr. Smith of Wood Group Offshore Ltd include: (1) high profits; (2) high sales turnover; (3) maximised productivity; (4) maximised production efficiency; (5) having a good rapport between management and employees; and (6) high job satisfaction for employees. Business objectives of secondary importance include: (1) large firm size in terms of turnover or employment; (2) maximised market share; (3) the creation of jobs (*one of the very few companies to value this objective*); and (4) good working conditions for employees. The business objective of improving the quality of the products produced, and creating the most innovative products for the market, resulted in an indifferent rating. The only business objective not to be rated very important was "large firm size in terms of physical size" (*i.e. capital assets*).

During the past three years, the company judged that it had grown quickly in a controlled manner by the measure of sales and employment, but that its growth by the measure of production capacity had been slow and steady. The company's prediction for the next three years (1992-1995) was for slow, steady growth by the measures of sales and employment and to remain stable by the measure

of production capacity. This contrasts with the Group's expectations, which were much more optimistic. It would seem that the management of this part of the Wood Group are of the view that their firm's growth performance has reached a plateau. Therefore, if further growth is to occur, it will have to come from other companies in the Group (*which seems unlikely given the scale of growth desired by Ian Wood*), or from new firm acquisitions, particularly in foreign markets.

If the Wood Group can maintain its current momentum of growth through the 1990s, it should be on target to become a major service company to the oil industry worldwide. The Wood Group's performance in terms of growth in turnover and profitability from the year ending 1987 to the end of 1991 has been phenomenal. For example, with turnover, the Group's performance was: £59.2million in 1987, increasing by 39% to £82.3million in 1988, increasing by 11% to £91.2million in 1989, increasing by 32.5% to £120.8million in 1990, culminating in a 44% increase to £173.8million (*£69,520 per employee*) in 1991. And profitability did not suffer by this impressive growth in turnover. For example, with profitability, the Group's performance was similarly impressive: £2.0million (*3.4% of sales*) in 1987 increasing by 125% to £4.5million in 1988 (*5.5% of sales*), increasing by 33% to £6.0million in 1989 (*6.6% of sales*), increasing by 58% to £9.5million in 1990 (*7.9% of sales*), culminating in a 78% increase to £16.9million (*£6,760 per employee*) in 1991 (*9.7% of sales*). During 1991, the Group completed a number of acquisitions and invested a further £6.7million on additions to tangible fixed assets. The Group's excellent financial performance in 1991 allowed it to eliminate net borrowing, in spite of £6.7million invested in the Group's tangible assets, together with £2.6million on three acquisitions, and yet still finish 1991 with £9.6million of net cash balances (*this compares with a net debt of £3.0million in 1990 and £14.8million in 1988*). This leaves the Group well placed to implement further growth strategies, particularly firm acquisitions.

The proportion of 1991 turnover attributable to oil industry related activities was 89.2%, which compares with 87.3% in 1990. The proportion of profits attributable to oil industry related activities in 1991 was 82.9%, compared with 85.7% in 1990. By geographical segments, the United Kingdom in 1991 accounted for 88.4% of total sales by origin compared with 91.1% in 1990; the United States accounted for 11.0% of sales in 1991 compared with 8.9% in 1990; and the rest of the world accounted for 0.6% in 1991 compared with 0% in 1990. These figures reflect the Group's drive to become less dependent on the UK market for sales and to branch

out into international markets. However, although the Group makes much of its attempts to become less dependent on serving the oil industry, this part of the Group's activities appears to have intensified its dependence on the oil industry compared to the previous year. The Group would seem to be first and foremost an energy services company and will probably remain so well into the foreseeable future.

The Wood Group's success in the UK's highly competitive energy service industry, has been recognised with several awards. In 1989, Prime Mover Maintenance (*now part of the Rolls Wood Group, a joint venture formed with Rolls-Royce plc*) won the Queen's Award for Export Achievement. The Queen's Award for Technological Achievement and the Scottish Offshore Achievement Overall Performance Award were both won by Wood Group Production Technology in 1991.

The main form of growth adopted by the Wood Group is through firm acquisitions. The chairman, Ian Wood, is constantly on the lookout for new investment opportunities to further expand the group. In 1991 the Group doubled its budget for UK and foreign acquisitions from £20million to £11.5million.

There has been substantial organic growth in the Group's cache of companies, but Ian Wood realises that the only way to develop the diversity of skills and capabilities needed to become a major global service company to the oil industry, is through acquisition of specialist firms with the necessary expertise.

If the reasons for the Wood Group's impressive record of growth can be tied to any one event, it is probably Ian Wood's visit to Houston in 1972. There Ian Wood had his first "real eureka experience" to use his own words, realising that he had to commit his company to the oil sector "rather than just seeing it simply as a way of boosting turnover". The trip convinced Mr. Wood that Aberdeen would only progress from a minor service centre for oil exploration if it could develop the same critical mass of technology expertise as had been assembled in Houston. As a result of that visit, the Wood Group was formed with three divisions concentrating on oil: in logistics and supplies at Aberdeen, Great Yarmouth, and Invergordon; in engineering; and drilling and production services, which remains by far the most profitable section.

An important contributing factor to the Group's success is that it has learned well from working with its partners on specific technical problems. Its system of subsea gauges, known as PDR, was the result of work done with the

Government's Offshore Supplies Office (OSO) and Mobil. The Group's latest product, a slickline production logging tool, evolved from work done with the OSO and Shell. Ian Wood believes that the specialist technical knowledge acquired in the North Sea by indigenous Scottish companies will form the basis of a world export drive.

The John Wood Group is constantly aware of the need to offer its diverse range of clients the best possible service. In the last three years, it has invested over £35million in strategic acquisitions, joint ventures and research & development programmes. These customers include major oil companies, national governments, drilling contractors, mining companies, pipeline companies, major UK and international industrial concerns.

Ian Wood (*Glasgow Herald, 7 June 1991*), believed that the company's record results in 1991 reflected the benefits from their programmes of acquisitions, new technology investment and management and personnel training over the past 5 years.

A very important factor in the Group's success has been its willingness to take risks. Ian Wood considered that if the oil industry had died on the Group, the whole Group would have been placed in jeopardy. Fortunately the risks paid off and he has no such fears for the future, convinced that oil will remain the key element in the Grampian economy for the next 50 years (*16 April, 1991, Scotsman*).

Explicit reasons given for the Group's recent success by Ian Wood (*Wood Group Employment Report, 1991*), are threefold. First, the company's development and growth ambition. The company is constantly changing, evolving and growing and although mistakes are made, on balance the company does things right. Second, the company works hard at developing project management and planning skills and proprietary repair techniques. Third, and perhaps most importantly, the enthusiasm, commitment and involvement of all the company's employees.

What has further helped the Group through the difficult times such as the 1986/1987 slump, and to perform exceptionally well during the recent boom years of the North Sea oil industry, has been the company's lean cost base and the fact that it works closely with its customers to increase productivity and efficiency.

The Group has four important business policies that it believes have created a firm foundation for its success. They are: (1) providing the performance, technology, quality and value for money demanded by customers. (2) Investing in quality and quality control programmes. Most Wood Group companies now have both BS 5750 and the top quality accolades relevant to their specialist activities. Moreover, the company has now commenced work on a Total Quality Management programme. (3) Developing human resource programmes to enhance management capability, skills, productivity and efficiency. The company has started a pilot Investors in People programme which will be extended to other companies. (4) Emphasizing the safety and welfare of its employees and developing policies and programmes accordingly.

Viewing the success of the Group over the past 2 decades, it does not seem that it has ever faced any insurmountable constraints to its growth. What constraints it has faced have taken the form of deciding at what rate to expand, not whether the Group should grow or not. The most obvious constraint that the Group has faced in the past is in financing its programme of acquisitions and being careful not to overburden the Group with debt. Wherever possible, the Group has tried to ensure that new investment and acquisitions have been financed out of retained profits, or as a last resort, from institutional investors of its own choosing.

A problem that the Wood Group had faced twice during 1990/91 was the size of the acquisitions. A big company such as the Wood Group, has to make big acquisitions if it is grow significantly by this method. Unfortunately, making big acquisitions either means burdening the Group with significant borrowings or acquiring a company that is already a public company. The danger in acquiring a public company is that it might in time become a reverse takeover. This would dilute the Wood Group's control over the companies under its umbrella, which Ian Wood would prefer not to happen. However, if that is the only way to achieve the Group's growth ambitions, then Ian Wood would allow the Wood Group to become a public company, but with the Wood family remaining the majority shareholder.

In the early days of the North Sea oil industry, Ian Wood talked about the difficulty of working with the US oil men. In joint ventures, they were ready to offer expertise in showing how it should be done for part of the profits, but unwilling to share the cost of the investment. Nevertheless, this did not deter the Wood Group

from developing joint ventures with some blue-chip companies such as the Glasgow-based Weir Group, Rolls Royce in servicing industrial turbines and Foster Wheeler in petroleum engineering design work.

The future prospects for the Group through the 1990s are glowing, if Ian Wood can realise his ambitions for the Group. In June 1991 (*Glasgow Herald, 7 June 1991*), Ian Wood outlined plans to more than double the size of the Wood Group by the mid 1990s, even if this necessitated making the Group a public company. Ian Wood's ambition are for the Wood Group to have sales of £400million by 1995 and for the Group to become a meaningful player in the energy business worldwide. Whatever happens though, Ian Wood maintained that he and his family would not relinquish ultimate control over the group. Ian Wood's aim was to diversify the Group's activities so that they are not too dependent on oil. The Group's target is to reach a stage where 50% of their business is in the North Sea, 25% in the international oil sector, and 25% in non-oil activities.

Areas that were prime targets for acquisitions were Europe and the USA. The Group's recent purchase in mid-1991 of a 50% stake in a French Marseilles based company, Copgo Hunting, is the first part of its strategy to gain a toehold into the southern European market. Ian Wood also indicated that this move would be a springboard for further moves into North Africa and the Middle East. The Wood Group plans to expand into Syria and Iran as well as the oilfields in the Adriatic.

Ian Wood sees the company's "long-term stability in concentrating quite significantly on support and production" (*The Scotsman, 20 November, 1991*). Moreover, Ian Wood stressed that the Group had "been emphasising for some time the importance of exportable technology and developing niche products in the drilling and production sector."

Any moves the company makes now are carefully considered. The Wood Group did some things in the past with a large degree of risk, which fortunately paid off. However, Ian Wood has indicated that the Group would not take such big risks now.

The company's strategy for the next five years is straightforward. It intends to strengthen its North Sea market share. To achieve this end, the company is

investing significantly in its project management, planning expertise and in a wide range of engineering support services. The company intends to continue its overseas development. Its present targets are North Africa and the Middle East and over the next two years, the company will establish a presence in South East Asia. The company intends to extend their non-oil activities in the gas turbine and fire protection sectors and into other sectors where their wide ranging engineering skills can be applied. The company will continue to develop the essential new technology which will enable numerous small oilfields to be developed cost effectively over the next decade.

TABLE A6C.1:
THE PRINCIPAL GROUP COMPANIES OF JOHN WOOD GROUP PLC

DIVISION	COMPANY	Country of Registration	% of ordinary shares held
OILFIELD LOGISTICS AND SUPPLIES			
	Wood Group Offshore Ltd	Scotland	100%*
	Moray Firth Service Company Ltd	Scotland	60%*
	Woodacon Oils Ltd	Scotland	100%*
	Alexander McKay Ltd	Scotland	100%(IW)
	Finaserve Ltd	Scotland	100%*
	Great Yarmouth Cargo Handling Service Ltd	England	50%@
	Aberdeen Cargo Handling Services Ltd	Scotland	50%@
ENGINEERING CONTRACTING			
	Wood Group Engineering Ltd	Scotland	100%(IW)
	Wood Group Engineering Contractors Ltd	Scotland	100%(IW)
	Wood Group Haven Engineering Ltd	Scotland	100%(IW)
	Sella Ness Service Company Ltd	Scotland	100%(IW)
	AHT Surveys Ltd	England	100%(IW)
	Scottish Rig Repairers Ltd	Scotland	45%@
ENGINEERING DESIGN			
	Foster Wheeler Wood Group Engineering Ltd	Scotland	60%(IW)
	Mech-Tool Wood Group Ltd	Scotland	53%(IW)
FIRE AND SAFETY			
	Wood Group Fire Protection Ltd	Scotland	100%(IW)
	Fireater Ltd	England	100%(IW)
	Aberdeen Instrumentation and Mechanical Safety Ltd	Scotland	100%(IW)
GAS TURBINES			
	Lincoln Turbine Service Ltd	England	100%(IW)
	Gas Turbine Fuel Systems Ltd	Scotland	100%*
	Turbine Engine Service Corporation	USA	90%*
	Rolls Wood Group (Repair & Overhauls) Ltd	Scotland	50%@
ENGINEERING SERVICES			
	Wood Group Engineering Services (Peterhead) Ltd	Scotland	100%(IW)
	Wood-Way Engineering Services Ltd	Scotland	100%(IW)
	Enterprise Engineering Services Ltd	Scotland	100%(IW)
	Wood Group Industrial Controls Ltd	Scotland	100%*
	Arabian Oil Equipment Services Company	UAEmirates	49%@
DRILL. & PRODUCTION SERVICES			
	Wood Group Production Technology Ltd	Scotland	100%*
	Copgo Wood Group SARL	France	50%(IW)
	Copgo Wood Group SARL	Italy	50%(IW)
	Sodesep S.A.	France	50%(IW)
	Electric Submersible Pumps Inc.	USA	60%*
	Submersible Oil Services Inc.	USA	60%(IW)
	Corcote Industries Inc.	USA	60%(IW)
	NDT Systems Inc.	USA	100%(IW)
	NDT Eagle Ltd	Scotland	100%(IW)

NOTE: *Owned by John Wood Group Plc; @Associated undertakings; (IW) Owned by Ian Wood and/or family

APPENDIX A6D:

LIST OF FIRMS THAT PARTICIPATED IN POSTAL QUESTIONNAIRE SURVEY OF OIL AND GAS RELATED SECTOR

ABB INDUSTRY, Harness Road, Altens, ABERDEEN
Aberdeen Corrosion Engineers Limited, Castle Way, Ellon, ABERDEENSHIRE
Aberdeen Certification & Lifting Ltd, Kirkhill Industrial Estate,Dyce, ABERDEEN
Aberdeen Radiators Ltd, 53 Wellington Street, Footdee, ABERDEEN
James Aiken (Offshore) Ltd, Portlethen Industrial Estate, Portlethen, ABERDEEN
ASCoSMIT COMPANY Ltd (Coatings Division),
Dales Industrial Estate, PETERHEAD
Baker Oil Tools (UK), Woodside Road, Bridge of Don, ABERDEEN
Bauteil Brumac, Blackhouse Industrial Estate, Peterhead, ABERDEENSHIRE
Belmar Engineering Services Ltd, Abbotswell Road, West Tullos, ABERDEEN
B W Mud Ltd, Abbotswell Road, West Tullos, ABERDEEN
BJ Services Company(UK) Ltd, Wellheads Crescent, Dyce, ABERDEEN
Brisco Engineering Ltd, Wellheads Industrial Estate, Dyce, ABERDEEN
British Steel-Seamless Tubes, Seaforth Centre I, 30 Waterloo Quay, ABERDEEN
Caley Group Ltd, 11 Harbour Street, PETERHEAD
Cameron Iron Works Ltd, Altens Industrial Estate, ABERDEEN
Chalk Catering Ltd, 52 Carden Place, ABERDEEN
Chandlers International (Abdn) Ltd, Froghall Road, ABERDEEN
COMEX UK Limited, Howes Road, Bucksburn, ABERDEEN
Computest Well Services Ltd, Blackburn Industrial Estate, Blackburn, ABERDEEN
Consafe Engineering (UK) Ltd, Greenwell Road, East Tullos, ABERDEEN
Consortium Resource Management Ltd, Denmore Industrial Estate,
Bridge of Don, ABERDEEN
Cristal Profor SA, Kirkhill Industrial Estate, Dyce, ABERDEEN
Crosby Services International Ltd, Wellheads Crescent, Dyce, ABERDEEN
Enviro Engineering Ltd, Greenbank Crescent, East Tullos, ABERDEEN
R B Farquhar Ltd, Deveronside Works, Huntly, ABERDEENSHIRE
Firewise Protection Systems Ltd, 73 Crown Street, ABERDEEN
Franks International (UK) Ltd, Craigshaw Road, ABERDEEN
Furmanite Engineering Ltd, Farburn Industrial Estate, Dyce, ABERDEEN
Gas Services Offshore Ltd, Westhill Industrial Estate, Westhill, ABERDEEN
G H Gates & Railings, 410 King Street, ABERDEEN
GRAD Controls Ltd, Science & Technology Park, Bridge of Don, ABERDEEN
Grampian Lifting Services Ltd, Canal Road, Port Elphinstone, INVERURIE

James Greig & Co Ltd, 27 Sinclair Road, ABERDEEN
Highland Galvanizers, Pinefield Industrial Estate, Elgin,MORAY
Hydrovision Limited, Westhill Industrial Estate, ABERDEEN
Hydril UK Ltd, Minto Avenue, Altens Industrial Estate,ABERDEEN
Hydro Marine Systems Ltd, Kirkhill Industrial Estate, Dyce, ABERDEEN
JNW Services, The Supply House, 1 Harbour Street, PETERHEAD
Lasalle Engineering Limited, Harlaw Industrial Estate, INVERURIE
Long Technology Ltd, 33 Froghall Road, ABERDEEN
M.A.G.P.I.E. Limited, Marine & Gas Pressure Industrial Engineers Ltd
Maybruce Works, Harbour Road, FRASERBURGH
Marischal Industrial Services, Malcolm Road, Peterculter, ABERDEEN
Morgan Moore Engineering Ltd, Murcar Commercial Park,
Denmore Road, Bridge of Don, ABERDEEN
Multifabs Survival Ltd, Kirkhill Industrial Estate, Dyce,ABERDEEN
Nessco (Aberdeen) Ltd, Pitmedden Road Industrial Estate, Dyce, ABERDEEN
North Sea Group Ltd, Altens Industrial Estate, ABERDEEN
Nowsco Well Service (UK) Ltd, Kirkhill Industrial Estate, Dyce, ABERDEEN
Oil Technics Ltd, 88 Sinclair Road, Torry, ABERDEEN
Osprey Electronics Ltd, Aberdeen Science & Technology Park,
Balgownie Road, Bridge of Don, ABERDEEN
Petrasco Services Ltd, Special Packaging Division, Kirkhill Industrial Estate,
Dyce, ABERDEEN
Pheonix Petroleum Services Ltd, Harlaw Industrial Estate, INVERURIE
Power Systems (2M) Ltd, Kirkhill Industrial Estate, Dyce, ABERDEEN
Prowin (UK) Ltd, Auchnashag, Newmachar, ABERDEEN
Rockwater, Stoneywood Industrial Park, Dyce, ABERDEEN
Roevin Limited, Roevin House, 43 Dee Street, ABERDEEN
Rolls Wood Group (Repair & Overhauls Ltd), Wellshead Industrial Estate,
Dyce, ABERDEEN
Salamis (Marine &Industrial) Ltd, Greenhole Place, Bridge of Don, ABERDEEN
Sarb Marine Ltd, Chanonry Industrial Estate, Elgin, MORAY
Scotoil Services Ltd, Links Road, ABERDEEN
Scotvalve Services Ltd, Kirkhill Industrial Estate, Dyce, ABERDEEN
Seaforth Maritime Limited, Seaforth Centre, 30 Waterloo Quay, ABERDEEN
Seametrix Ltd, Hareness Circle, Altens, ABERDEEN
Donald Smith Modelmakers, Bridge Road, Kintore, INVERURIE
Stable Services Ltd, Silverburn Crescent, Bridge of Don, ABERDEEN

Steadfast Precision Engineers, Victoria Street, Craigellachie, BANFFSHIRE
Symons Limited, Fordoun, LAURENCEKIRK
Vaudale Engineering Ltd, Woodside Road, Bridge of Don, ABERDEEN
Vetco Gray UK Ltd, Broadfold Road, Bridge of Don, ABERDEEN
Well-Equip Limited, Airways Industrial Estate, Dyce, ABERDEEN
Wilkie Engineering, Newmill, Newburgh, ELLON
Wood Group Engineering Offshore Ltd, (Coatings Division),
Greenwell Road, East Tullos, ABERDEEN

APPENDIX A7

APPENDIX A7A:
TESTS FOR STATISTICAL SIGNIFICANCE OF VARIABLES POSSIBLY ASSOCIATED WITH FIRM GROWTH IN THE FINANCIAL SERVICES SECTOR

APPENDIX A7B:
CHARACTERISTICS OF FIRMS IN POSTAL QUESTIONNAIRE SURVEY OF GLASGOW'S FINANCIAL SERVICES SECTOR

APPENDIX A7C:
CASE STUDIES OF SELECTED GROWTH FIRMS

APPENDIX A7D:
LIST OF FIRMS THAT PARTICIPATED IN POSTAL QUESTIONNAIRE SURVEY OF GLASGOW'S FINANCIAL SERVICES SECTOR

APPENDIX A7

APPENDIX A7A:
TESTS FOR STATISTICAL SIGNIFICANCE OF VARIABLES POSSIBLY ASSOCIATED WITH FIRM GROWTH IN THE FINANCIAL SERVICES SECTOR

TABLE A7.1:
GROWTH VERSUS AGE OF COMPANY

GROWTH MEASURE (Employm./Sales/Profits)➡ AGE OF COMPANY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*10 or more years old(no. firms)	Emp:18 Sales:19 Profits:23	Emp:11 Sales:15 Profits:8	Emp:29 Sales:34 Profits:31	
*Less than 10 years old(no. firms)	Emp:3 Sales:4 Profits:7	Emp:4 Sales:4 Profits:1	Emp:7 Sales:8 Profits:8	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.248 S:0.009 P:0.106

TABLE A7.2:
GROWTH VERSUS LEGAL FORM OF COMPANY

GROWTH MEASURE (Employm./Sales/Profits)➡ LEGAL FORM OF COMPAHY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Private company(no. firms)	Emp:14 Sales:18 Profits:29	Emp:14 Sales:15 Profits:9	Emp:28 Sales:33 Profits:38	
*Public company(no. firms)	Emp:6 Sales:5 Profits:1	Emp:1 Sales:4 Profits:0	Emp:7 Sales:9 Profits:1	
*TOTAL (no. firms)	Emp:20 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:35 Sales:42 Profits:39	E:1.641 S:0.105 P:0.419

TABLE A7.3:
GROWTH VERSUS TYPE OF MANAGEMENT CONTROL

GROWTH MEASURE (Employm./Sales/Profits)➡ TYPE OF MANAGEMENT CONTROL⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Owner managed(no. firms)	Emp:10 Sales:15 Profits:19	Emp:11 Sales:11 Profits:7	Emp:21 Sales:26 Profits:26	
*Employed management(no. firms)	Emp:11 Sales:8 Profits:11	Emp:4 Sales:8 Profits:2	Emp:15 Sales:16 Profits:13	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:1.440 S:0.028 P:0.163

TABLE A7.4:
GROWTH VERSUS COUNTRY OF OWNERSHIP

GROWTH MEASURE (Employm./Sales/Profits)➡ COUNTRY OF OWNERSHIP⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Scottish owned(no. firms)	Emp:6 Sales:4 Profits:21	Emp:3 Sales:5 Profits:6	Emp:9 Sales:9 Profits:27	
*Ownership outwith Scotland(no. firms)	Emp:15 Sales:19 Profits:9	Emp:12 Sales:14 Profits:3	Emp:27 Sales:33 Profits:12	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.038 S:0.105 P:0.049

TABLE A7.5:
GROWTH VERSUS OWNER'S INVOLVEMENT IN OPERATIONAL MANAGEMENT OF FIRM

GROWTH MEASURE (Employm./Sales/Profits)➡ OWNER'S INVOLVEMENT IN OPERATIONAL MANAGEMENT⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Involved in operational management(no. firms)	Emp:16 Sales:18 Profits:26	Emp:14 Sales:17 Profits:7	Emp:30 Sales:35 Profits:33	
*Not involved(no. firms)	Emp:5 Sales:5 Profits:4	Emp:1 Sales:2 Profits:2	Emp:6 Sales:7 Profits:6	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.823 S:0.308 P:0.015

TABLE A7.6:
GROWTH VERSUS OWNER'S INVOLVEMENT IN STRATEGIC MANAGEMENT OF FIRM

GROWTH MEASURE (Employm./Sales/Profits)➡ OWNER'S INVOLVEMENT IN STRATEGIC MANAGEMENT⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Owner's involved in strategic manag.(no. firms)	Emp:16 Sales:20 Profits:26	Emp:13 Sales:16 Profits:9	Emp:29 Sales:36 Profits:35	
*Owner's not involved(no. firms)	Emp:5 Sales:3 Profits:4	Emp:2 Sales:3 Profits:0	Emp:7 Sales:6 Profits:4	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.127 S:0.036 P:0.281

TABLE A7.7:
GROWTH VERSUS AGE OF FIRM'S MANAGER

GROWTH MEASURE (Employm./Sales/Profits)➡ AGE OF FIRM'S MANAGER⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*35 years old or younger(no. firms)	Emp:5 Sales:2 Profits:4	Emp:2 Sales:3 Profits:2	Emp:7 Sales:5 Profits:6	
*More than 35 years old(no. firms)	Emp:16 Sales:19 Profits:24	Emp:12 Sales:16 Profits:7	Emp:28 Sales:35 Profits:31	
*TOTAL (no. firms)	Emp:21 Sales:21 Profits:28	Emp:14 Sales:19 Profits:9	Emp:35 Sales:40 Profits:37	E:0.067 S:0.014 P:0.002

TABLE A7.8:
GROWTH VERSUS EDUCATION OF FIRM'S MANAGER

GROWTH MEASURE (Employm./Sales/Profits)➡ EDUCATION OF FIRM'S MANAGER⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Tertiary educated(no. firms)	Emp:16 Sales:5 Profits:22	Emp:12 Sales:2 Profits:7	Emp:28 Sales:7 Profits:29	
*Non-tertiary educated(no. firms)	Emp:5 Sales:16 Profits:6	Emp:2 Sales:17 Profits:2	Emp:7 Sales:33 Profits:8	
*TOTAL (no. firms)	Emp:21 Sales:21 Profits:28	Emp:14 Sales:19 Profits:9	Emp:35 Sales:40 Profits:37	E:0.067 S:0.473 P:0.172

TABLE A7.9:
GROWTH VERSUS TENURE OF MANAGER OF FIRM

GROWTH MEASURE (Employm./Sales/Profits)➡ TENURE OF MANAGER OF FIRM⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*3 years or less(no. firms)	Emp:6 Sales:5 Profits:5	Emp:0 Sales:5 Profits:2	Emp:6 Sales:10 Profits:7	
*More than 3 years(no. firms)	Emp:15 Sales:16 Profits:23	Emp:14 Sales:14 Profits:7	Emp:29 Sales:30 Profits:30	
*TOTAL (no. firms)	Emp:21 Sales:21 Profits:28	Emp:14 Sales:19 Profits:9	Emp:35 Sales:40 Profits:37	E:3.026 S:0.033 P:0.039

TABLE A7.10:
GROWTH VERSUS IMPORTANCE OF HIGH PROFITS

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF HIGH PROFITS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:19 Sales:20 Profits:28	Emp:15 Sales:19 Profits:9	Emp:34 Sales:39 Profits:37	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:2 Sales:2 Profits:2	Emp:0 Sales:0 Profits:0	Emp:2 Sales:2 Profits:2	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:41 Profits:39	E:0.242 S:0.385 P:0.004

TABLE A7.11:
GROWTH VERSUS IMPORTANCE OF HIGH SALES TURNOVER

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF HIGH SALES TURNOVER⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:15 Sales:16 Profits:22	Emp:13 Sales:15 Profits:7	Emp:28 Sales:31 Profits:29	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:6 Sales:6 Profits:8	Emp:2 Sales:4 Profits:2	Emp:8 Sales:10 Profits:10	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:41 Profits:39	E:0.459 S:0.010 P:0.028

TABLE A7.12:
GROWTH VERSUS LARGE FIRM SIZE BY CAPITAL ASSETS

GROWTH MEASURE (Employm./Sales/Profits)➡ LARGE FIRM SIZE BY CAPITAL ASSETS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:11 Sales:9 Profits:10	Emp:6 Sales:7 Profits:3	Emp:17 Sales:16 Profits:13	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:10 Sales:13 Profits:20	Emp:9 Sales:12 Profits:5	Emp:19 Sales:25 Profits:25	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.156 S:0.003 P:0.039

TABLE A7.13:
GROWTH VERSUS LARGE FIRM SIZE BY TURNOVER

GROWTH MEASURE (Employm./Sales/Profits)➡ LARGE FIRM SIZE BY TURNOVER⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:10 Sales:10 Profits:10	Emp:7 Sales:10 Profits:3	Emp:17 Sales:20 Profits:13	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:11 Sales:12 Profits:20	Emp:8 Sales:9 Profits:5	Emp:19 Sales:21 Profits:25	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.080 S:0.021 P:0.039

TABLE A7.14:
GROWTH VERSUS LARGE FIRM SIZE BY EMPLOYMENT

GROWTH MEASURE (Employm./Sales/Profits)➡ LARGE FIRM SIZE BY EMPLOYMENT⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:10 Sales:8 Profits:15	Emp:6 Sales:8 Profits:3	Emp:16 Sales:16 Profits:18	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:11 Sales:13 Profits:15	Emp:9 Sales:11 Profits:5	Emp:20 Sales:24 Profits:20	
*TOTAL (no. firms)	Emp:21 Sales:21 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:40 Profits:38	E:0.013 S:0.004 P:0.053

TABLE A7.15:
GROWTH VERSUS IMPORTANCE OF MAXIMISED PRODUCTIVITY

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF MAXIMISED PRODUCTIVITY ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:18 Sales:20 Profits:9	Emp:14 Sales:17 Profits:4	Emp:32 Sales:37 Profits:13	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:3 Sales:2 Profits:21	Emp:1 Sales:2 Profits:4	Emp:4 Sales:4 Profits:25	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.032 S:0.139 P:0.410

TABLE A7.16:
GROWTH VERSUS MAXIMISED BUSINESS EFFICIENCY

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF MAXIMISED BUSINESS EFFICIENCY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:20 Sales:21 Profits:27	Emp:15 Sales:19 Profits:7	Emp:35 Sales:40 Profits:34	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:1 Sales:1 Profits:3	Emp:0 Sales:0 Profits:1	Emp:1 Sales:1 Profits:4	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.029 S:0.006 P:0.197

TABLE A7.17:
GROWTH VERSUS IMPORTANCE OF MAXIMISED MARKET SHARE

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF MAXIMISED MARKET SHARE ⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:15 Sales:14 Profits:29	Emp:13 Sales:17 Profits:8	Emp:28 Sales:31 Profits:37	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:6 Sales:8 Profits:1	Emp:2 Sales:2 Profits:0	Emp:8 Sales:10 Profits:1	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.459 S:2.422 P:0.518

TABLE A7.18:
GROWTH VERSUS IMPORTANCE OF IMPROVING THE QUALITY OF SERVICES PROVIDED

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF IMPROVING THE QUALITY OF SERVICES PROVIDED⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:20 Sales:21 Profits:22	Emp:15 Sales:19 Profits:6	Emp:35 Sales:40 Profits:28	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:1 Sales:1 Profits:8	Emp:0 Sales:0 Profits:2	Emp:1 Sales:1 Profits:10	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.029 S:0.006 P:0.127

TABLE A7.19:
GROWTH VERSUS THE IMPORTANCE OF CREATING THE MOST INNOVATIVE SERVICES FOR THE MARKET SEGMENT

GROWTH MEASURE (Employm./Sales/Profits)➡ CREATING THE MOST INNOVATIVE SERVICES FOR THE MARKET SEGMENT⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:16 Sales:14 Profits:29	Emp:10 Sales:16 Profits:8	Emp:26 Sales:30 Profits:37	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:10 Sales:8 Profits:1	Emp:5 Sales:3 Profits:0	Emp:15 Sales:11 Profits:1	
*TOTAL (no. firms)	Emp:26 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:41 Sales:41 Profits:38	E:0.000 S:1.275 P:0.518

TABLE A7.20:
GROWTH VERSUS THE IMPORTANCE OF CREATING JOBS

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF CREATING JOBS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:13 Sales:10 Profits:22	Emp:6 Sales:10 Profits:5	Emp:19 Sales:20 Profits:27	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:8 Sales:12 Profits:8	Emp:9 Sales:9 Profits:3	Emp:17 Sales:21 Profits:11	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.920 S:0.021 P:0.026

TABLE A7.21:
GROWTH VERSUS THE IMPORTANCE OF GOOD WORKING CONDITIONS FOR EMPLOYEES

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF GOOD WORKING CONDITIONS FOR EMPLOYEES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:20 Sales:21 Profits:13	Emp:15 Sales:19 Profits:5	Emp:35 Sales:40 Profits:18	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:1 Sales:1 Profits:17	Emp:0 Sales:0 Profits:3	Emp:1 Sales:1 Profits:20	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.029 S:0.006 P:0.321

TABLE A7.22:
GROWTH VERSUS THE IMPORTANCE OF A GOOD RAPPORT BETWEEN MANAGEMENT AND EMPLOYEES

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF A GOOD RAPPORT BETWEEN MANAGEMENT AND EMPLOYEES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:20 Sales:21 Profits:29	Emp:15 Sales:19 Profits:8	Emp:35 Sales:40 Profits:37	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:1 Sales:1 Profits:1	Emp:0 Sales:0 Profits:0	Emp:1 Sales:1 Profits:1	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.029 S:0.006 P:0.518

TABLE A7.23:
GROWTH VERSUS THE IMPORTANCE OF HIGH JOB SATISFACTION FOR EMPLOYEES

GROWTH MEASURE (Employm./Sales/Profits)➡ IMPORTANCE OF HIGH JOB SATISFACTION FOR EMPLOYEES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*IMPORTANT: Rating of 1 to 3 (no. firms)	Emp:20 Sales:21 Profits:29	Emp:15 Sales:19 Profits:8	Emp:35 Sales:40 Profits:37	
*NOT IMPORTANT: Rating of 4 to 5(no. firms)	Emp:1 Sales:1 Profits:1	Emp:0 Sales:0 Profits:0	Emp:1 Sales:1 Profits:1	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:30	Emp:15 Sales:19 Profits:8	Emp:36 Sales:41 Profits:38	E:0.029 S:0.006 P:0.518

TABLE A7.24:
GROWTH VERSUS COMPETITORS MAINLY LOCATED IN SCOTLAND

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100% in Scotland (no. firms)	Emp:17 Sales:18 Profits:25	Emp:12 Sales:16 Profits:8	Emp:29 Sales:34 Profits:33	
*0 33% outside Scotland(no. firms)	Emp:4 Sales:5 Profits:4	Emp:2 Sales:1 Profits:1	Emp:6 Sales:6 Profits:5	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:29	Emp:14 Sales:17 Profits:9	Emp:35 Sales:40 Profits:38	E:0.008 S:0.885 P:0.127

TABLE A7.25:
GROWTH VERSUS COMPETITORS MAINLY LOCATED IN REST OF UK

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100% in the UK but not Scotland(no. firms)	Emp:4 Sales:6 Profits:5	Emp:2 Sales:2 Profits:1	Emp:6 Sales:8 Profits:6	
*0-33% In Scotland and outside the UK(no. firms)	Emp:17 Sales:17 Profits:24	Emp:12 Sales:15 Profits:8	Emp:29 Sales:32 Profits:32	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:29	Emp:14 Sales:17 Profits:9	Emp:35 Sales:40 Profits:38	E:0.008 S:0.518 P:0.007

TABLE A7.26:
GROWTH VERSUS COMPETITORS MAINLY LOCATED IN REST OF WORLD

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF COMPETITORS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100% outside the UK (no. firms)	Emp:0 Sales:1 Profits:1	Emp:1 Sales:0 Profits:0	Emp:1 Sales:1 Profits:1	
*0 33% within the UK(no. firms)	Emp:21 Sales:22 Profits:28	Emp:13 Sales:17 Profits:9	Emp:34 Sales:39 Profits:37	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:29	Emp:14 Sales:17 Profits:9	Emp:35 Sales:40 Profits:38	E:0.043 S:0.024 P:0.393

TABLE A7.27:
GROWTH VERSUS MAIN MARKETS LOCATED IN SCOTLAND IN 1991

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS IN 1991⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100% in Scotland(no. firms)	Emp:19 Sales:21 Profits:30	Emp:14 Sales:16 Profits:7	Emp:33 Sales:37 Profits:37	
*0-33% outwith Scotland(no. firms)	Emp:2 Sales:2 Profits:0	Emp:0 Sales:1 Profits:1	Emp:2 Sales:3 Profits:1	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:14 Sales:17 Profits:8	Emp:35 Sales:40 Profits:38	E:0.199 S:0.075 P:0.518

TABLE A7.28:
GROWTH VERSUS MAIN MARKETS LOCATED IN REST OF UK IN 1991

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS IN 1991⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100% in UK excluding Scotland(no. firms)	Emp:2 Sales:4 Profits:2	Emp:0 Sales:1 Profits:1	Emp:2 Sales:5 Profits:3	
*0-33% Scotland and rest of world(no. firms)	Emp:19 Sales:19 Profits:28	Emp:14 Sales:16 Profits:7	Emp:33 Sales:35 Profits:35	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:14 Sales:17 Profits:8	Emp:35 Sales:40 Profits:38	E:0.199 S:0.365 P:0.038

TABLE A7.29:
GROWTH VERSUS MAIN MARKETS LOCATED IN REST OF WORLD IN 1991

GROWTH MEASURE (Employm./Sales/Profits)➡ LOCATION OF MARKETS IN 1991⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100% rest of world(no. firms)	Emp:0 Sales:1 Profits:1	Emp:0 Sales:0 Profits:0	Emp:0 Sales:1 Profits:1	
*0-33% in UK (no. firms)	Emp:21 Sales:22 Profits:29	Emp:14 Sales:17 Profits:8	Emp:35 Sales:39 Profits:37	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:14 Sales:17 Profits:8	Emp:35 Sales:40 Profits:38	E:NA S:0.024 P:0.518

TABLE A7.30:
GROWTH VS INTRODUCING NEW SERVICES INTO EXISTING MARKETS

GROWTH MEASURE (Employm./Sales/Profits)➡ INTORDUCING NEW SERVICES INTO EXISTING MARKETS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Yes(no. firms)	Emp:14 Sales:15 Profits:21	Emp:10 Sales:15 Profits:6	Emp:24 Sales:30 Profits:27	
*No(no. firms)	Emp:7 Sales:8 Profits:9	Emp:5 Sales:4 Profits:3	Emp:12 Sales:12 Profits:12	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.129 S:0.406 P:0.049

TABLE A7.31:
GROWTH VERSUS INTRODUCING NEW SERVICES INTO NEW MARKETS

GROWTH MEASURE (Employm./Sales/Profits)➡ INTRODUCING NEW SERVICES INTO NEW MARKETS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Yes(no. firms)	Emp:7 Sales:6 Profits:11	Emp:5 Sales:9 Profits:2	Emp:12 Sales:15 Profits:13	
*No(no. firms)	Emp:14 Sales:17 Profits:19	Emp:10 Sales:10 Profits:7	Emp:24 Sales:27 Profits:26	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.129 S:1.230 P:0.163

TABLE A7.32:
GROWTH VS DEVELOPING NEW MARKETS WITH EXISTING SERVICES

GROWTH MEASURE (Employm./Sales/Profits)➡ DEVELOPING NEW MARKETS WITH EXISTING SERVICES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Yes(no. firms)	Emp:7 Sales:7 Profits:11	Emp:5 Sales:10 Profits:4	Emp:12 Sales:17 Profits:15	
*No(no. firms)	Emp:14 Sales:16 Profits:19	Emp:10 Sales:9 Profits:5	Emp:24 Sales:25 Profits:24	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.129 S:1.306 P:0.001

TABLE A7.33:
GROWTH VERSUS REORGANISING THE WAY WORK IS CARRIED OUT TO IMPROVE WORK EFFICIENCY

GROWTH MEASURE (Employm./Sales/Profits)➡ REORGANISING THE WAY WORK IS CARRIED OUT TO IMPROVE WORK EFFICIENCY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Yes(no. firms)	Emp:13 Sales:18 Profits:22	Emp:13 Sales:16 Profits:8	Emp:26 Sales:34 Profits:30	
*No(no. firms)	Emp:8 Sales:5 Profits:8	Emp:2 Sales:3 Profits:1	Emp:10 Sales:8 Profits:9	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:1.582 S:0.009 P:0.271

TABLE A7.34:
GROWTH VERSUS ACQUISITION OF OTHER FIRM/S

GROWTH MEASURE (Employm./Sales/Profits)➡ ACQUISITION OF OTHER FIRMS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*Yes(no. firms)	Emp:3 Sales:4 Profits:5	Emp:5 Sales:6 Profits:4	Emp:8 Sales:10 Profits:9	
*No(no. firms)	Emp:5 Sales:19 Profits:25	Emp:10 Sales:13 Profits:5	Emp:28 Sales:32 Profits:30	
*TOTAL (no. firms)	Emp:8 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.900 S:0.505 P:1.648

TABLE A7.35:
GROWTH VERSUS SOURCE OF DEVELOPMENT CAPITAL: INTERNAL FINANCIAL RESOURCES OF ESTABLISHMENT

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: FIRM'S INTERNAL FINANCIAL RESOURCES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100%(no. firms)	Emp:16 Sales:16 Profits:21	Emp:8 Sales:11 Profits:4	Emp:24 Sales:27 Profits:25	
*0-33%(no. firms)	Emp:2 Sales:4 Profits:5	Emp:5 Sales:5 Profits:5	Emp:7 Sales:9 Profits:10	
*TOTAL (no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:9	Emp:31 Sales:36 Profits:35	E:1.855 S:0.150 P:2.726

TABLE A7.36:
GROWTH VERSUS SOURCE OF DEVELOPMENT CAPITAL: EQUITY

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: EQUITY⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100%(no. firms)	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	
*0-33%(no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	
*TOTAL (no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	E:NA S:NA P:NA

TABLE A7.37:
GROWTH VERSUS SOURCE OF DEVELOPMENT CAPITAL: BANKS

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: BANKS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100%(no. firms)	Emp:2 Sales:2 Profits:2	Emp:2 Sales:2 Profits:2	Emp:4 Sales:4 Profits:4	
*0-33%(no. firms)	Emp:16 Sales:18 Profits:24	Emp:11 Sales:14 Profits:6	Emp:27 Sales:32 Profits:30	
*TOTAL (no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	E:0.037 S:0.088 P:0.492

TABLE A7.38:
GROWTH VERSUS SOURCE OF DEVELOPMENT CAPITAL: FINANCIAL INSTITUTIONS OTHER THAN BANKS

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: FINANC. INSTITUTIONS OTHER THAN BANKS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100%(no. firms)	Emp:0 Sales:1 Profits:1	Emp:0 Sales:0 Profits:0	Emp:0 Sales:1 Profits:1	
*0 33%(no. firms)	Emp:18 Sales:19 Profits:25	Emp:13 Sales:16 Profits:8	Emp:31 Sales:35 Profits:33	
*TOTAL (no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	E:NA S:0.013 P:0.401

TABLE A7.39:
GROWTH VERSUS SOURCE OF DEVELOPMENT CAPITAL: GRANTS

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: GRANTS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100%(no. firms)	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	
*0-33%(no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	
*TOTAL (no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	E:NA S:NA P:NA

TABLE A7.40:
GROWTH VERSUS SOURCE OF DEVELOPMENT CAPITAL: OTHER EXTERNAL FINANCIAL SOURCES

GROWTH MEASURE (Employm./Sales/Profits)➡ SOURCE OF DEVELOPMENT CAPITAL: OTHER EXTERNAL FINANCIAL SOURCES⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*34-100%(no. firms)	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	
*0-33%(no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	
*TOTAL (no. firms)	Emp:18 Sales:20 Profits:26	Emp:13 Sales:16 Profits:8	Emp:31 Sales:36 Profits:34	E:NA S:NA P:NA

TABLE A7.41:
GROWTH VERSUS USEFULNESS OF LOCATE IN SCOTLAND

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF ADVICE/ASSISTANCE: LOCATE IN SCOTLAND⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL(no. firms)	Emp:2 Sales:2 Profits:2	Emp:0 Sales:0 Profits:0	Emp:2 Sales:2 Profits:2	
*NO USE(no. firms)	Emp:19 Sales:21 Profits:28	Emp:15 Sales:19 Profits:9	Emp:34 Sales:40 Profits:37	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.242 S:0.347 P:0.004

TABLE A7.42:
GROWTH VERSUS USEFULNESS OF SCOTTISH OFFICE

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF ADVICE/ASSISTANCE: SCOTTISH OFFICE⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL(no. firms)	Emp:3 Sales:3 Profits:4	Emp:1 Sales:2 Profits:0	Emp:4 Sales:5 Profits:4	
*NO USE(no. firms)	Emp:18 Sales:20 Profits:26	Emp:14 Sales:17 Profits:9	Emp:32 Sales:37 Profits:35	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.032 S:0.052 P:0.281

TABLE A7.43:
GROWTH VERSUS USEFULNESS OF ENTERPRISE INTIATIVE

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF ADVICE/ASSISTANCE: ENTERPRISE INITIATIVE⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL(no. firms)	Emp:3 Sales:3 Profits:4	Emp:4 Sales:5 Profits:2	Emp:7 Sales:8 Profits:6	
*NO USE(no. firms)	Emp:18 Sales:20 Profits:26	Emp:11 Sales:14 Profits:7	Emp:29 Sales:34 Profits:33	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.248 S:0.484 P:0.015

TABLE A7.44:
GROWTH VERSUS USEFULNESS OF REGIONAL/DISTRICT COUNCIL/S

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF ADVICE/ASSISTANCE: REGIONAL/DISTRICT COUNCIL/S⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL(no. firms)	Emp:3 Sales:4 Profits:5	Emp:0 Sales:3 Profits:1	Emp:3 Sales:7 Profits:6	
*NO USE(no. firms)	Emp:18 Sales:19 Profits:25	Emp:15 Sales:16 Profits:8	Emp:33 Sales:35 Profits:33	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.842 S:0.077 P:0.015

TABLE A7.45:
GROWTH VERSUS USEFULNESS OF ACCOUNTANTS

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF ADVICE/ASSISTANCE: ACCOUNTANTS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL(no. firms)	Emp:4 Sales:6 Profits:9	Emp:5 Sales:6 Profits:2	Emp:9 Sales:12 Profits:11	
*NO USE(no. firms)	Emp:17 Sales:17 Profits:21	Emp:10 Sales:13 Profits:7	Emp:27 Sales:30 Profits:28	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.343 S:0.002 P:0.001

TABLE A7.46:
GROWTH VERSUS USEFULNESS OF MANAGEMENT CONSULTANTS

GROWTH MEASURE (Employm./Sales/Profits)➡ USEFULNESS OF ADVICE/ASSISTANCE: MANAGEMENT CONSULTANTS⬇	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*USEFUL(no. firms)	Emp:2 Sales:3 Profits:3	Emp:2 Sales:3 Profits:2	Emp:4 Sales:6 Profits:5	
*NO USE(no. firms)	Emp:19 Sales:20 Profits:27	Emp:13 Sales:16 Profits:7	Emp:32 Sales:36 Profits:34	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.032 S:0.036 P:0.155

TABLE A7.47:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS LABOUR FACTOR CONDITIONS

FACTOR CONDITION⬇Growth Measure➡ 1.Adequate supply of skilled labour	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:8 Sales:10 Profits:14	Emp:11 Sales:12 Profits:7	Emp:19 Sales:22 Profits:21	
*NO DIFFICULTY(firms)	Emp:11 Sales:9 Profits:14	Emp:2 Sales:6 Profits:2	Emp:13 Sales:15 Profits:16	
*TOTAL (no. firms)	Emp:19 Sales:19 Profits:28	Emp:13 Sales:18 Profits:9	Emp:32 Sales:37 Profits:37	E:4.155 S:0.285 P:1.159

TABLE A7.47 (CONTINUED)

CONTINUED: FACTOR CONDITION⬇Growth Measure➡ 2.Affordable unskilled and semi-skilled labour	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:2 Sales:3 Profits:5	Emp:3 Sales:5 Profits:2	Emp:5 Sales:8 Profits:7	
*NO DIFFICULTY(firms)	Emp:6 Sales:5 Profits:24	Emp:2 Sales:5 Profits:7	Emp:8 Sales:10 Profits:31	
*TOTAL (no. firms)	Emp:8 Sales:8 Profits:29	Emp:5 Sales:10 Profits:9	Emp:13 Sales:18 Profits:38	E:0.457 S:0.003 P:0.024
3.Poor training of local population				
*SOME DIFFICULTY(firms)	Emp:5 Sales:4 Profits:4	Emp:3 Sales:4 Profits:3	Emp:8 Sales:8 Profits:7	
*NO DIFFICULTY(firms)	Emp:9 Sales:10 Profits:25	Emp:4 Sales:8 Profits:6	Emp:13 Sales:18 Profits:31	
*TOTAL (no. firms)	Emp:14 Sales:14 Profits:29	Emp:7 Sales:12 Profits:9	Emp:21 Sales:26 Profits:38	E:0.025 S:0.027 P:0.687

TABLE A7.48:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS PHYSICAL RESOURCES FACTOR CONDITIONS

FACTOR CONDITION⬇Growth Measure➡ 1.Suitability of premises	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:2 Sales:5 Profits:6	Emp:3 Sales:3 Profits:2	Emp:5 Sales:8 Profits:8	
*NO DIFFICULTY(firms)	Emp:13 Sales:13 Profits:18	Emp:8 Sales:13 Profits:7	Emp:21 Sales:26 Profits:25	
*TOTAL (no. firms)	Emp:15 Sales:18 Profits:24	Emp:11 Sales:16 Profits:9	Emp:26 Sales:34 Profits:33	E:0.150 S:0.046 P:0.084
2.Attractiveness of local residential areas for current and prospective employees				
*SOME DIFFICULTY(firms)	Emp:1 Sales:2 Profits:1	Emp:1 Sales:1 Profits:1	Emp:2 Sales:3 Profits:2	
*NO DIFFICULTY(firms)	Emp:15 Sales:13 Profits:28	Emp:9 Sales:14 Profits:8	Emp:24 Sales:27 Profits:36	
*TOTAL (no. firms)	Emp:16 Sales:15 Profits:29	Emp:10 Sales:15 Profits:9	Emp:26 Sales:30 Profits:38	E:0.166 S:0.000 P:0.002

TABLE A7.49:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS EDUCATIONAL RESOURCES FACTOR CONDITIONS

FACTOR CONDITION⬇Growth Measure➡ 1.Adequacy of primary and secondary education facilities	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:1 Sales:1 Profits:0	Emp:2 Sales:2 Profits:1	Emp:3 Sales:3 Profits:1	
*NO DIFFICULTY(firms)	Emp:13 Sales:12 Profits:29	Emp:9 Sales:14 Profits:8	Emp:22 Sales:26 Profits:37	
*TOTAL (no. firms)	Emp:14 Sales:13 Profits:29	Emp:11 Sales:16 Profits:9	Emp:25 Sales:29 Profits:38	E:0.050 S:0.036 P:0.393
2.Adequacy of higher education facilities				
*SOME DIFFICULTY(firms)	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	
*NO DIFFICULTY(firms)	Emp:14 Sales:13 Profits:29	Emp:11 Sales:16 Profits:9	Emp:25 Sales:29 Profits:38	
*TOTAL (no. firms)	Emp:14 Sales:13 Profits:29	Emp:11 Sales:16 Profits:9	Emp:25 Sales:29 Profits:38	E:NA S:NA P:NA

TABLE A7.50:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS CAPITAL RESOURCES FACTOR CONDITIONS

FACTOR CONDITION⬇Growth Measure➡ 1.Finance through bank loans	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:4 Sales:5 Profits:8	Emp:2 Sales:2 Profits:0	Emp:6 Sales:7 Profits:8	
*NO DIFFICULTY(firms)	Emp:6 Sales:8 Profits:20	Emp:8 Sales:8 Profits:9	Emp:14 Sales:16 Profits:29	
*TOTAL (no. firms)	Emp:10 Sales:13 Profits:28	Emp:10 Sales:10 Profits:9	Emp:20 Sales:23 Profits:37	E:0.238 S:0.247 P:1.811
2.External finance through building societies/insurance companies/merchant banks				
*SOME DIFFICULTY(firms)	Emp:2 Sales:2 Profits:2	Emp:0 Sales:0 Profits:0	Emp:2 Sales:2 Profits:2	
*NO DIFFICULTY(firms)	Emp:2 Sales:1 Profits:26	Emp:0 Sales:1 Profits:9	Emp:2 Sales:2 Profits:35	
*TOTAL (no. firms)	Emp:4 Sales:3 Profits:28	Emp:0 Sales:1 Profits:9	Emp:4 Sales:4 Profits:37	E:NA S:0.000 P:0.001
3.External finance through venture capitalists				
*SOME DIFFICULTY(firms)	Emp:0 Sales:0 Profits:1	Emp:1 Sales:1 Profits:0	Emp:1 Sales:1 Profits:1	
*NO DIFFICULTY(firms)	Emp:3 Sales:2 Profits:27	Emp:0 Sales:2 Profits:9	Emp:3 Sales:4 Profits:36	
*TOTAL (no. firms)	Emp:3 Sales:2 Profits:28	Emp:1 Sales:3 Profits:9	Emp:4 Sales:5 Profits:37	E:0.444 S:0.052 P:0.368

TABLE A7.50 (CONTINUED)

CONTINUED: FACTOR CONDITION⬇Growth Measure➡ 4.Raising equity finance	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:1 Sales:1 Profits:1	Emp:0 Sales:0 Profits:0	Emp:1 Sales:1 Profits:1	
*NO DIFFICULTY(firms)	Emp:2 Sales:1 Profits:27	Emp:0 Sales:1 Profits:9	Emp:2 Sales:2 Profits:36	
*TOTAL (no. firms)	Emp:3 Sales:2 Profits:28	Emp:0 Sales:1 Profits:9	Emp:3 Sales:3 Profits:37	E:NA S:0.188 P:0.368
5.Securing government grants				
*SOME DIFFICULTY(firms)	Emp:1 Sales:2 Profits:3	Emp:0 Sales:1 Profits:0	Emp:1 Sales:3 Profits:3	
*NO DIFFICULTY(firms)	Emp:4 Sales:5 Profits:25	Emp:1 Sales:2 Profits:9	Emp:5 Sales:7 Profits:34	
*TOTAL (no. firms)	Emp:5 Sales:7 Profits:28	Emp:1 Sales:3 Profits:9	Emp:6 Sales:10 Profits:37	E:0.960 S:0.363 P:0.104

TABLE A7.51:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS INFRASTRUCTURE PROVISION FACTOR CONDTIONS

FACTOR CONDITION⬇Growth Measure➡ 1.Suitability of service infrastructure and services	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:1 Sales:1 Profits:1	Emp:2 Sales:2 Profits:2	Emp:3 Sales:3 Profits:3	
*NO DIFFICULTY(firms)	Emp:15 Sales:15 Profits:28	Emp:9 Sales:14 Profits:7	Emp:24 Sales:29 Profits:35	
*TOTAL (no. firms)	Emp:16 Sales:16 Profits:29	Emp:11 Sales:16 Profits:9	Emp:27 Sales:32 Profits:38	E:0.120 S:0.000 P:1.248
2.Adequacy of local road infrastructure serving the City of Glasgow				
*SOME DIFFICULTY(firms)	Emp:5 Sales:4 Profits:4	Emp:4 Sales:4 Profits:3	Emp:9 Sales:8 Profits:7	
*NO DIFFICULTY(firms)	Emp:13 Sales:15 Profits:25	Emp:8 Sales:13 Profits:6	Emp:21 Sales:28 Profits:31	
*TOTAL (no. firms)	Emp:18 Sales:19 Profits:29	Emp:12 Sales:17 Profits:9	Emp:30 Sales:36 Profits:38	E:0.007 S:0.050 P:0.687
3.Adequacy of main road network serving Glasgow				
*SOME DIFFICULTY(firms)	Emp:4 Sales:3 Profits:3	Emp:4 Sales:4 Profits:3	Emp:8 Sales:7 Profits:6	
*NO DIFFICULTY(firms)	Emp:14 Sales:16 Profits:26	Emp:8 Sales:13 Profits:6	Emp:22 Sales:29 Profits:32	
*TOTAL (no. firms)	Emp:18 Sales:19 Profits:29	Emp:12 Sales:17 Profits:9	Emp:30 Sales:36 Profits:38	E:0.064 S:0.027 P:1.275

TABLE A7.51 (CONTINUED)

CONTINUED: FACTOR CONDITION⬇Growth Measure➡	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
4.Adequacy of public transport network serving City of Glasgow				
*SOME DIFFICULTY(firms)	Emp:5 Sales:4 Profits:3	Emp:5 Sales:5 Profits:4	Emp:10 Sales:9 Profits:7	
*NO DIFFICULTY(firms)	Emp:11 Sales:13 Profits:25	Emp:6 Sales:11 Profits:5	Emp:17 Sales:24 Profits:30	
*TOTAL (no. firms)	Emp:16 Sales:17 Profits:28	Emp:11 Sales:16 Profits:9	Emp:27 Sales:33 Profits:37	E:0.119 S:0.011 P:3.092
5.Adequacy of telecommunications infrastructure				
*SOME DIFFICULTY(firms)	Emp:2 Sales:4 Profits:3	Emp:1 Sales:2 Profits:2	Emp:3 Sales:6 Profits:5	
*NO DIFFICULTY(firms)	Emp:19 Sales:18 Profits:26	Emp:13 Sales:17 Profits:7	Emp:32 Sales:35 Profits:33	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:29	Emp:14 Sales:19 Profits:9	Emp:35 Sales:41 Profits:38	E:0.137 S:0.062 P:0.127
6.Adequacy of community services and facilities for employees				
*SOME DIFFICULTY(firms)	Emp:0 Sales:0 Profits:0	Emp:2 Sales:2 Profits:0	Emp:2 Sales:2 Profits:0	
*NO DIFFICULTY(firms)	Emp:15 Sales:14 Profits:29	Emp:9 Sales:14 Profits:9	Emp:24 Sales:28 Profits:38	
*TOTAL (no. firms)	Emp:15 Sales:14 Profits:29	Emp:11 Sales:16 Profits:9	Emp:26 Sales:30 Profits:38	E:0.945 S:0.404 P:NA
7.Adequacy of recreational amenities for employees				
*SOME DIFFICULTY(firms)	Emp:1 Sales:1 Profits:1	Emp:1 Sales:1 Profits:0	Emp:2 Sales:2 Profits:1	
*NO DIFFICULTY(firms)	Emp:14 Sales:13 Profits:28	Emp:11 Sales:16 Profits:9	Emp:25 Sales:29 Profits:37	
*TOTAL (no. firms)	Emp:15 Sales:14 Profits:29	Emp:12 Sales:17 Profits:9	Emp:27 Sales:31 Profits:38	E:0.331 S:0.351 P:0.393
8.Adequacy of cultural facilities				
*SOME DIFFICULTY(firms)	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	
*NO DIFFICULTY(firms)	Emp:16 Sales:16 Profits:28	Emp:11 Sales:15 Profits:9	Emp:27 Sales:31 Profits:37	
*TOTAL (no. firms)	Emp:16 Sales:16 Profits:28	Emp:11 Sales:15 Profits:9	Emp:27 Sales:31 Profits:37	E:NA S:NA P:NA

TABLE A7.52:
CHISQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS DEMAND CONDITIONS

DEMAND CONDITIONS⬇Growth Measure➡ 1.Finding sufficient market demand	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:10 Sales:11 Profits:16	Emp:9 Sales:11 Profits:3	Emp:19 Sales:22 Profits:19	
*NO DIFFICULTY(firms)	Emp:10 Sales:8 Profits:12	Emp:5 Sales:8 Profits:6	Emp:15 Sales:16 Profits:18	
*TOTAL (no. firms)	Emp:20 Sales:19 Profits:28	Emp:14 Sales:19 Profits:9	Emp:34 Sales:38 Profits:37	E:0.225 S:0.108 P:0.739
2.Finding suitable market niche for services/s				
*SOME DIFFICULTY(firms)	Emp:9 Sales:9 Profits:10	Emp:4 Sales:5 Profits:2	Emp:13 Sales:14 Profits:12	
*NO DIFFICULTY(firms)	Emp:10 Sales:9 Profits:18	Emp:8 Sales:13 Profits:7	Emp:18 Sales:22 Profits:25	
*TOTAL (no. firms)	Emp:19 Sales:18 Profits:28	Emp:12 Sales:18 Profits:9	Emp:31 Sales:36 Profits:37	E:0.158 S:1.052 P:0.118
3.Finding new geographic markets				
*SOME DIFFICULTY(firms)	Emp:7 Sales:5 Profits:9	Emp:3 Sales:6 Profits:1	Emp:10 Sales:11 Profits:10	
*NO DIFFICULTY(firms)	Emp:5 Sales:5 Profits:19	Emp:2 Sales:3 Profits:8	Emp:7 Sales:8 Profits:27	
*TOTAL (no. firms)	Emp:12 Sales:10 Profits:28	Emp:5 Sales:9 Profits:9	Emp:17 Sales:19 Profits:37	E:0.228 S:0.073 P:0.647
4.Strong demand from Scottish market				
*SOME DIFFICULTY(firms)	Emp:7 Sales:9 Profits:11	Emp:5 Sales:6 Profits:2	Emp:12 Sales:15 Profits:13	
*NO DIFFICULTY(firms)	Emp:9 Sales:8 Profits:15	Emp:7 Sales:10 Profits:7	Emp:16 Sales:18 Profits:22	
*TOTAL (no. firms)	Emp:16 Sales:17 Profits:26	Emp:12 Sales:16 Profits:9	Emp:28 Sales:33 Profits:35	E:0.076 S:0.292 P:0.455
5.Strong demand from UK market excluding Scotland				
*SOME DIFFICULTY(firms)	Emp:4 Sales:4 Profits:5	Emp:2 Sales:4 Profits:1	Emp:6 Sales:8 Profits:6	
*NO DIFFICULTY(firms)	Emp:6 Sales:7 Profits:23	Emp:5 Sales:8 Profits:8	Emp:11 Sales:15 Profits:31	
*TOTAL (no. firms)	Emp:10 Sales:11 Profits:28	Emp:7 Sales:12 Profits:9	Emp:17 Sales:23 Profits:37	E:0.001 S:0.082 P:0.002

TABLE A7.52 (CONTINUED)

CONTINUED: DEMAND CONDITIONS⬇Growth Measure➡ 6.Strong demand from export markets	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:1 Sales:1 Profits:1	Emp:0 Sales:0 Profits:0	Emp:1 Sales:1 Profits:1	
*NO DIFFICULTY(firms)	Emp:3 Sales:3 Profits:27	Emp:3 Sales:7 Profits:9	Emp:6 Sales:10 Profits:36	
*TOTAL (no. firms)	Emp:4 Sales:4 Profits:28	Emp:3 Sales:7 Profits:9	Emp:7 Sales:11 Profits:37	E:0.024 S:0.088 P:0.368

TABLE A7.53: CHISQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS MANAGEMENT ISSUES

MANAGEMENT ISSUES⬇Growth Measure➡ 1.Surplus management time to plan growth	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:14 Sales:17 Profits:23	Emp:13 Sales:16 Profits:1	Emp:27 Sales:33 Profits:24	
*NO DIFFICULTY(firms)	Emp:4 Sales:5 Profits:5	Emp:2 Sales:2 Profits:8	Emp:6 Sales:7 Profits:13	
*TOTAL (no. firms)	Emp:18 Sales:22 Profits:28	Emp:15 Sales:18 Profits:9	Emp:33 Sales:40 Profits:37	E:0.042 S:0.296 P:12.123
2.Sufficient management skills to plan, organize and manage growth	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:10 Sales:12 Profits:18	Emp:8 Sales:12 Profits:2	Emp:18 Sales:24 Profits:20	
*NO DIFFICULTY(firms)	Emp:7 Sales:8 Profits:8	Emp:6 Sales:7 Profits:7	Emp:13 Sales:15 Profits:15	
*TOTAL (no. firms)	Emp:17 Sales:20 Profits:26	Emp:14 Sales:19 Profits:9	Emp:31 Sales:39 Profits:35	E:0.074 S:0.016 P:4.266

TABLE A7.54: CHISQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS SUPPLY ISSUES

SUPPLY ISSUES⬇Growth Measure➡ 1.Premises of sufficient size	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:4 Sales:7 Profits:9	Emp:7 Sales:8 Profits:4	Emp:11 Sales:15 Profits:13	
*NO DIFFICULTY(firms)	Emp:14 Sales:14 Profits:18	Emp:8 Sales:10 Profits:5	Emp:22 Sales:24 Profits:23	
*TOTAL (no. firms)	Emp:18 Sales:21 Profits:27	Emp:15 Sales:18 Profits:9	Emp:33 Sales:39 Profits:36	E:1.238 S:0.145 P:0.040

TABLE A7.54 (CONTINUED)

CONTINUED: SUPPLY ISSUES⬇Growth Measure➡ 2.Producing innovative, market leading services	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:9 Sales:8 Profits:7	Emp:3 Sales:6 Profits:4	Emp:12 Sales:14 Profits:11	
*NO DIFFICULTY(firms)	Emp:8 Sales:8 Profits:20	Emp:8 Sales:12 Profits:5	Emp:16 Sales:20 Profits:25	
*TOTAL (no. firms)	Emp:17 Sales:16 Profits:27	Emp:11 Sales:18 Profits:9	Emp:28 Sales:34 Profits:36	E:0.902 S:0.405 P:0.393
3.Obtaining suitable information processing technology				
*SOME DIFFICULTY(firms)	Emp:6 Sales:8 Profits:11	Emp:6 Sales:4 Profits:2	Emp:12 Sales:12 Profits:13	
*NO DIFFICULTY(firms)	Emp:14 Sales:13 Profits:17	Emp:7 Sales:14 Profits:7	Emp:21 Sales:27 Profits:24	
*TOTAL (no. firms)	Emp:20 Sales:21 Profits:28	Emp:13 Sales:18 Profits:9	Emp:33 Sales:39 Profits:37	E:0.328 S:0.522 P:0.282
4.High quality of services relative to similar services of competitors				
*SOME DIFFICULTY(firms)	Emp:4 Sales:5 Profits:6	Emp:5 Sales:3 Profits:3	Emp:9 Sales:8 Profits:9	
*NO DIFFICULTY(firms)	Emp:15 Sales:15 Profits:21	Emp:9 Sales:16 Profits:6	Emp:24 Sales:31 Profits:27	
*TOTAL (no. firms)	Emp:19 Sales:20 Profits:27	Emp:14 Sales:19 Profits:9	Emp:33 Sales:39 Profits:36	E:0.291 S:0.100 P:0.049
5.Sufficient training capability for staff needs				
*SOME DIFFICULTY(firms)	Emp:7 Sales:5 Profits:11	Emp:9 Sales:12 Profits:3	Emp:16 Sales:17 Profits:14	
*NO DIFFICULTY(firms)	Emp:13 Sales:16 Profits:17	Emp:4 Sales:6 Profits:6	Emp:17 Sales:22 Profits:23	
*TOTAL (no. firms)	Emp:20 Sales:21 Profits:28	Emp:13 Sales:18 Profits:9	Emp:33 Sales:39 Profits:37	E:2.453 S:5.602 P:0.006
6.High level of efficiency amongst employees				
*SOME DIFFICULTY(firms)	Emp:7 Sales:10 Profits:13	Emp:11 Sales:11 Profits:6	Emp:18 Sales:21 Profits:19	
*NO DIFFICULTY(firms)	Emp:13 Sales:12 Profits:15	Emp:4 Sales:7 Profits:3	Emp:17 Sales:19 Profits:18	
*TOTAL (no. firms)	Emp:20 Sales:22 Profits:28	Emp:15 Sales:18 Profits:9	Emp:35 Sales:40 Profits:37	E:3.624 S:0.447 P:0.453

TABLE A7.55:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY FINANCIAL ISSUES

COMPANY FINANCIAL ISSUES⬇ Growth Measure➡ 1.Maintaining sufficient cash flow	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:10 Sales:13 Profits:17	Emp:9 Sales:10 Profits:5	Emp:19 Sales:23 Profits:22	
*NO DIFFICULTY(firms)	Emp:7 Sales:7 Profits:11	Emp:4 Sales:7 Profits:4	Emp:11 Sales:14 Profits:15	
*TOTAL (no. firms)	Emp:17 Sales:20 Profits:28	Emp:13 Sales:17 Profits:9	Emp:30 Sales:37 Profits:37	E:0.042 S:0.002 P:0.013
2.Achieving a high sales turnover				
*SOME DIFFICULTY(firms)	Emp:13 Sales:14 Profits:17	Emp:9 Sales:10 Profits:4	Emp:22 Sales:24 Profits:21	
*NO DIFFICULTY(firms)	Emp:7 Sales:6 Profits:11	Emp:6 Sales:9 Profits:5	Emp:13 Sales:15 Profits:16	
*TOTAL (no. firms)	Emp:20 Sales:20 Profits:28	Emp:15 Sales:19 Profits:9	Emp:35 Sales:39 Profits:37	E:0.003 S:0.616 P:0.221
3.Attaining satisfactory overall profitability				
*SOME DIFFICULTY(firms)	Emp:12 Sales:17 Profits:22	Emp:11 Sales:13 Profits:5	Emp:23 Sales:30 Profits:27	
*NO DIFFICULTY(firms)	Emp:7 Sales:5 Profits:6	Emp:3 Sales:5 Profits:4	Emp:10 Sales:10 Profits:10	
*TOTAL (no. firms)	Emp:19 Sales:22 Profits:28	Emp:14 Sales:18 Profits:9	Emp:33 Sales:40 Profits:37	E:0.324 S:0.000 P:0.848
4.Raising finance from firm's internal financial resources				
*SOME DIFFICULTY(firms)	Emp:5 Sales:5 Profits:7	Emp:4 Sales:5 Profits:3	Emp:9 Sales:10 Profits:10	
*NO DIFFICULTY(firms)	Emp:9 Sales:10 Profits:21	Emp:8 Sales:10 Profits:6	Emp:17 Sales:20 Profits:27	
*TOTAL (no. firms)	Emp:14 Sales:15 Profits:28	Emp:12 Sales:15 Profits:9	Emp:26 Sales:30 Profits:37	E:0.082 S:0.150 P:0.003

TABLE A7.56:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY LABOUR ISSUES

COMPANY LABOUR ISSUES⬇Growth Measure➡ 1.Good work ethic amongst employees	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:5 Sales:5 Profits:8	Emp:7 Sales:9 Profits:5	Emp:12 Sales:14 Profits:13	
*NO DIFFICULTY(firms)	Emp:15 Sales:16 Profits:21	Emp:8 Sales:10 Profits:4	Emp:23 Sales:26 Profits:25	
*TOTAL (no. firms)	Emp:20 Sales:21 Profits:29	Emp:15 Sales:19 Profits:9	Emp:35 Sales:40 Profits:38	E:0.954 S:1.508 P:1.306
2.Good labour relations between employees and management				
*SOME DIFFICULTY(firms)	Emp:2 Sales:2 Profits:3	Emp:5 Sales:5 Profits:3	Emp:7 Sales:7 Profits:6	
*NO DIFFICULTY(firms)	Emp:18 Sales:19 Profits:26	Emp:10 Sales:13 Profits:6	Emp:28 Sales:32 Profits:32	
*TOTAL (no. firms)	Emp:20 Sales:21 Profits:29	Emp:15 Sales:18 Profits:9	Emp:35 Sales:39 Profits:38	E:1.641 S:1.129 P:1.275
3.Influence of trade unions in company business				
*SOME DIFFICULTY(firms)	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	Emp:0 Sales:0 Profits:0	
*NO DIFFICULTY(firms)	Emp:5 Sales:4 Profits:28	Emp:0 Sales:2 Profits:9	Emp:5 Sales:6 Profits:37	
*TOTAL (no. firms)	Emp:5 Sales:4 Profits:28	Emp:0 Sales:2 Profits:9	Emp:5 Sales:6 Profits:37	E:NA S:NA P:NA

TABLE A7.57:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS COMPANY RIVALRY ISSUES

COMPANY RIVALRY ISSUES⬇ Growth Measure➡ 1.Strong competition from other Scottish firms	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:16 Sales:18 Profits:23	Emp:12 Sales:14 Profits:6	Emp:28 Sales:32 Profits:29	
*NO DIFFICULTY(firms)	Emp:5 Sales:4 Profits:3	Emp:2 Sales:4 Profits:3	Emp:7 Sales:8 Profits:6	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:26	Emp:14 Sales:18 Profits:9	Emp:35 Sales:40 Profits:35	E:0.067 S:0.006 P:0.965

TABLE A7.57 (CONTINUED)

CONTINUED: COMPANY RIVALRY ISSUES⬇ Growth Measure➡ 2.Strong competition from other UK firms	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:10 Sales:10 Profits:10	Emp:6 Sales:9 Profits:4	Emp:16 Sales:19 Profits:14	
*NO DIFFICULTY(firms)	Emp:6 Sales:5 Profits:19	Emp:5 Sales:8 Profits:5	Emp:11 Sales:13 Profits:24	
*TOTAL (no. firms)	Emp:16 Sales:15 Profits:29	Emp:11 Sales:17 Profits:9	Emp:27 Sales:32 Profits:38	E:0.000 S:0.183 P:0.021
3.Strong competition from foreign firms				
*SOME DIFFICULTY(firms)	Emp:5 Sales:4 Profits:6	Emp:1 Sales:2 Profits:0	Emp:6 Sales:6 Profits:6	
*NO DIFFICULTY(firms)	Emp:6 Sales:5 Profits:23	Emp:5 Sales:11 Profits:9	Emp:11 Sales:16 Profits:32	
*TOTAL (no. firms)	Emp:11 Sales:9 Profits:29	Emp:6 Sales:13 Profits:9	Emp:17 Sales:22 Profits:38	E:0.430 S:1.036 P:0.929

TABLE A7.58: CHISQUARED TESTS FOR SIGNIFICANCE: GROWTH VERSUS TAXATION ISSUES

TAXATION ISSUES⬇Growth Measure➡ 1.Rate of company taxation	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:2 Sales:3 Profits:5	Emp:6 Sales:7 Profits:3	Emp:8 Sales:10 Profits:8	
*NO DIFFICULTY(firms)	Emp:9 Sales:9 Profits:23	Emp:4 Sales:7 Profits:6	Emp:13 Sales:16 Profits:29	
*TOTAL (no. firms)	Emp:11 Sales:12 Profits:28	Emp:10 Sales:14 Profits:9	Emp:21 Sales:26 Profits:37	E:2.313 S:0.813 P:0.266
2.Lack of tax exemptions for company expenses				
*SOME DIFFICULTY(firms)	Emp:8 Sales:11 Profits:10	Emp:5 Sales:5 Profits:4	Emp:13 Sales:16 Profits:14	
*NO DIFFICULTY(firms)	Emp:6 Sales:4 Profits:19	Emp:5 Sales:7 Profits:5	Emp:11 Sales:11 Profits:24	
*TOTAL (no. firms)	Emp:14 Sales:15 Profits:29	Emp:10 Sales:12 Profits:9	Emp:24 Sales:27 Profits:38	E:0.005 S:1.613 P:0.021

TABLE A7.59:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS ECONOMIC CLIMATE ISSUES

ECONOMIC CLIMATE ISSUES⬇ Growth Measure➡ 1.Depressed local economic conditions in Glasgow area	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:10 Sales:12 Profits:19	Emp:13 Sales:13 Profits:4	Emp:23 Sales:25 Profits:23	
*NO DIFFICULTY(firms)	Emp:8 Sales:7 Profits:10	Emp:2 Sales:5 Profits:5	Emp:10 Sales:12 Profits:15	
*TOTAL (no. firms)	Emp:18 Sales:19 Profits:29	Emp:15 Sales:18 Profits:9	Emp:33 Sales:37 Profits:38	E:2.421 S:0.056 P:0.547
2.Depressed national economic conditions				
*SOME DIFFICULTY(firms)	Emp:15 Sales:17 Profits:23	Emp:12 Sales:14 Profits:6	Emp:27 Sales:31 Profits:29	
*NO DIFFICULTY(firms)	Emp:5 Sales:3 Profits:6	Emp:3 Sales:5 Profits:3	Emp:8 Sales:8 Profits:9	
*TOTAL (no. firms)	Emp:20 Sales:20 Profits:29	Emp:15 Sales:19 Profits:9	Emp:35 Sales:39 Profits:38	E:0.003 S:0.229 P:0.109
3.High interest rates				
*SOME DIFFICULTY(firms)	Emp:18 Sales:18 Profits:26	Emp:12 Sales:16 Profits:6	Emp:30 Sales:34 Profits:32	
*NO DIFFICULTY(firms)	Emp:3 Sales:4 Profits:3	Emp:3 Sales:3 Profits:3	Emp:6 Sales:7 Profits:6	
*TOTAL (no. firms)	Emp:21 Sales:22 Profits:29	Emp:15 Sales:19 Profits:9	Emp:36 Sales:41 Profits:38	E:0.000 S:0.045 P:1.275

TABLE A7.60:
CHISQUARED TESTS FOR SIGNIFICANCE:
GROWTH VERSUS UTILITY OF GOVERNMENT AGENCIES

UTILITY OF GOVERNMENT AGENCIES⬇ Growth Measure➡ 1. Useful general business advice on conducting business in Glasgow	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
*SOME DIFFICULTY(firms)	Emp:2 Sales:3 Profits:3	Emp:2 Sales:3 Profits:3	Emp:4 Sales:6 Profits:6	
*NO DIFFICULTY(firms)	Emp:8 Sales:8 Profits:26	Emp:5 Sales:6 Profits:6	Emp:13 Sales:14 Profits:32	
*TOTAL (no. firms)	Emp:10 Sales:11 Profits:29	Emp:7 Sales:9 Profits:9	Emp:17 Sales:20 Profits:38	E:0.029 S:0.038 P:1.275

TABLE A7.60 (CONTINUED)

CONTINUED: UTILITY OF GOVERNMENT AGENCIES⬇ Growth Measure➡	STAGNANT/ DECLINE (no. firms)	GROWING >25% (no. firms)	TOTAL (no. firms)	CHISQUARE
2.SDA/SCOTTISH ENTERPRISE				
*USEFUL(no. firms)	Emp:5 Sales:6 Profits:5	Emp:2 Sales:2 Profits:7	Emp:7 Sales:8 Profits:12	
*NO USE(no. firms)	Emp:16 Sales:17 Profits:25	Emp:13 Sales:17 Profits:2	Emp:29 Sales:34 Profits:27	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.127 S:0.781 P:9.438
3.LOCATE IN SCOTLAND				
*USEFUL(no. firms)	Emp:2 Sales:2 Profits:2	Emp:0 Sales:0 Profits:0	Emp:2 Sales:2 Profits:2	
*NO USE(no. firms)	Emp:19 Sales:21 Profits:28	Emp:15 Sales:19 Profits:9	Emp:34 Sales:40 Profits:37	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.242 S:0.347 P:0.004
4.SCOTTISH OFFICE				
*USEFUL(no. firms)	Emp:3 Sales:3 Profits:4	Emp:1 Sales:2 Profits:0	Emp:4 Sales:5 Profits:4	
*NO USE(no. firms)	Emp:18 Sales:20 Profits:26	Emp:14 Sales:17 Profits:9	Emp:32 Sales:37 Profits:35	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.032 S:0.052 P:0.281
5.ENTERPRISE INITIATIVE				
*USEFUL(no. firms)	Emp:3 Sales:3 Profits:4	Emp:4 Sales:5 Profits:2	Emp:7 Sales:8 Profits:6	
*NO USE(no. firms)	Emp:18 Sales:20 Profits:26	Emp:11 Sales:14 Profits:7	Emp:29 Sales:34 Profits:33	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.248 S:0.484 P:0.015
6 REGIONAL/DISTRICT COUNCIL/S				
*USEFUL(no. firms)	Emp:3 Sales:4 Profits:5	Emp:0 Sales:3 Profits:1	Emp:3 Sales:7 Profits:6	
*NO USE(no. firms)	Emp:18 Sales:19 Profits:25	Emp:15 Sales:16 Profits:8	Emp:33 Sales:35 Profits:33	
*TOTAL (no. firms)	Emp:21 Sales:23 Profits:30	Emp:15 Sales:19 Profits:9	Emp:36 Sales:42 Profits:39	E:0.842 S:0.077 P:0.015

APPENDIX A7B:
CHARACTERISTICS OF FIRMS IN POSTAL QUESTIONNAIRE SURVEY OF GLASGOW'S FINANCIAL SERVICES SECTOR

A7B.1 Age of Firms

Firms in the financial services are well established, mature businesses. Amongst the 46 firms examined in the postal survey, the average age was found to be 43.5 years. Firm ages ranged from a minimum of 2 years up to a maximum of 165 years, with the mode at 25 years. More than 90% of firms were 5 or more years old.

A7B.2 Legal Form of Firms

Although there was a wide range of legal forms amongst the surveyed firms, the dominant form of company was that of a private partnership company (*50% of firms*). Private limited companies accounted for a further 23.9% of firms. Other legal forms of firms included 3 public limited companies (6.5%); a public limited company without shares being available to the public (2.2%); a friendly society (2.2%); 2 subsidiaries of a public limited company (4.3%); and a private sole trader company (2.2%).

A7B.3 Ownership of Firms by Country

A very high proportion of firms (67%) were subsidiaries of a company based elsewhere in a country outside the UK (*usually the United States, but the survey did not investigate which country ownership was based in*). About 11% of firms were found to be subsidiaries of companies based elsewhere in the UK outside Scotland. 22% of the firms were Scottish companies, but only one was a completely independent entity indigenous to Glasgow. Interestingly, all of the UK firms claimed that their Glasgow operations were run as independent Scottish companies serving the Glasgow area. The lack of indigenous firms in this sector is some what surprising, given that nearly all of the firms were primarily serving the local Glasgow market.

A7B.4 Employment

The postal survey investigated the structure of employment in 1988 and 1991. The results are detailed below in table A7B.1. During this period, the average firm's full-time employment increased by 26.6% from 60.6 employees to 76.7 employees, whilst part-time employment decreased by 18% from 2.2 employees to 1.8 employees. As a proportion of total employment however, part-time employment

TABLE A7B.1:
OCCUPATIONAL STRUCTURE OF EMPLOYMENT FOR 1988-1991

EMPLOYMENT CATEGORY	AVERAGE NO. EMPLOYEES/FIRM			
	1988		1991	
	Part-time	Full-time	Part-time	Full-time
Managerial & Executive	0.0 0%	6.5 10.7%	0.0 0%	8.5 11.1%
Professional (other than managerial & executive)	1.2 54.5%	18.9 31.2%	0.3 16.7%	22.4 29.2%
Clerical/Administrative	1.0 45.5%	29.3 48.3%	1.5 83.3%	37.6 49.0%
Skilled Technical	0.0 0%	5.3 8.7%	0.0 0%	7.5 9.8%
Unskilled Manual Work	0.0 0%	0.6 1.0%	0.0 0%	0.7 0.9%
TOTAL	2.2 100.0%	60.6 100.0%	1.8 100.0%	76.7 100.0%

NOTES:
1.Missing observations for 1988 are 9 (22% of respondents)
2.Missing observations for 1991 are 3 (9% of respondents)
3.Totals may not necessarily reflect aggregate of stated employment categories due to missing observations and respondents who did not consider categories to reflect all of the occupations within their firm.
4.Some respondents, particularly those from small firms, stated that their employees fulfilled multiple occupational roles, which the survey could not accurately take into account.
5.Total of 46 firms in survey sample.

appears to have been negligible in both 1988 and 1991, accounting for 3.5% and 2.3% of total employment respectively.

What is particularly distinctive about the occupational structure of this sector's firms compared with the plastics supply and oil & gas related sectors, is the complete dominance by the clerical/administrative category (*49% in 1991*) and the almost complete absence of the unskilled manual work category. This compares with 5.0% in the plastics supply sector and 11.4% in the oil & gas related sector. However, there is some similarity in the occupational structure of the oil & gas related sector with the financial services sector in that both have approximately the same share devoted to the managerial & executive occupational group (10%) and the professional and skilled technical occupational groups are both strongly represented (*50% in the oil & gas related sector compared with about 40% in the financial services sector*).

In 1988, the average occupational structure was dominated by the clerical/administrative category (*with a 48.3% share*); followed by the professional category (*with 31.2%*); then the managerial and executive category (*with 10.7%*); the skilled technical category (*with 8.7%*); and finally, the unskilled manual work category (*with 1.0%*). In 1991, the average occupational structure remained broadly similar, although there were minor shifts experienced with the occupational categories of "managerial and executive", "clerical and administrative" and "skilled technical"

increasing their share of occupational employment by 0.4, 0.7 and 1.1 percentage points respectively, while the categories of "professional" and "unskilled manual work" decreased their share by 2.0 and 0.1 percentage points respectively. In absolute terms however, every occupational category experienced real gains in employment ranging from 17% up to 42% due to substantial employment growth in the surveyed firms.

A7B.5 Sales Turnover

The average sales turnover of firms in 1991 was £50.8million based on information from 30 firms, ranging from a maximum of £928million down to a minimum of £100,000. The modal value of £680,000 indicates that the maximum value considerably skewed the results. The average sales generated per employee of £134,686 was about 82% of firms in the oil & gas related sector but more than 3.5 times that of firms in the plastics supply sector. Amongst the 29 firms that provided data, there was quite a range of firm performances, with one firm generating an impressive £1.0 million in annual sales per employee while at the other extreme, one firm posted sales of a mere £11,400 per employee. The modal value was £30,769 per employee.

A7B.6 Profitability

The average annual profits of firms in 1991 was found to be £618,318 amongst the 22 firms that provided this information. Profits ranged from a maximum of £4million down to a minimum of 0. The modal value was £100,000. In terms of average profits generated per employee in 1991, these ranged from a minima of 0 up to a maximum of £400,000, while the mode was £5,323 per employee. The average annual profitability of £9,309 per employee per firm was 40% higher than that achieved in the plastics supply sector, but about 8% less than that achieved by oil & gas related companies.

A7B.7 Functions of Firms

Table A7B.2 details the functions that firms in the financial services were found to have from the postal survey. Firms that did not have the functions investigated in the survey seemed reluctant to indicate how these functions were provided or whether these functions were necessarily within their company. For example, 29% of firms did not seem to have a personnel management function; 13% did not have a sales function and 22% did not have a marketing function. The most common functions provided within the respective firms were: (1) management of

firm's finances (*89% of firms*); (2) sales (87%); and a capacity for training staff (80%). The least common functions provided within the respective firms were: (1) systems development (*1 firm or 2% of firms*); information technology services (7%); and research and development of new services (65%). The function that was contracted out to other companies the most was "research and development of new services" (*7% of firms*). The function of "capacity for training staff" was both contracted out and provided by the firm in 9% of cases. These findings suggest that most firms tend to be self-reliant in respect of their key functions. However, the significant proportions of firms apparently lacking in key functions, implies either that those firms contract out the functions concerned or that they genuinely do not have them.

TABLE A7B.2:
FUNCTIONS OF FIRMS

FUNCTION	PROVIDED WITHIN FIRM	PROVIDED BY PARENT COMPANY	CONTRACTED OUT TO OTHER COMPANIES	PROVIDED BY FIRM AND CONTRACTED OUT
Personnel Management	67%	0	2%	2%
Financial control	89%	2%	0	0
Sales	87%	0	0	0
Marketing	76%	0	0	2%
Research & Development of new services	65%	2%	7%	0
Capacity for training staff	80%	0	4%	9%
Information technology services	7%	0	2%	0
System development	2%	0	0	0

NOTES:
1.Survey population of 46 firms=100%
2.Non response rate of 0
3.Percentages for each function may not add up to 100%. This is because some firms do not consider some functions as being applicable to their circumstances. The proportion of firms in this category can be determined from the difference obtained by subtracting the aggregate of percentages for each function from 100%.

A7B.8 Location of Competitors

Respondents indicated that on average, the majority of their competitors are based in Scotland (78.6%), while the "rest of UK" accounted for 20.0% of competitors, and " the rest of world" a mere 1.4% of competitors. It would seem from these findings then that Glasgow's financial services sector is highly localised, especially when compared with the plastics supply sector, (*with 31% of competitors perceived to be in Scotland*). Competition from outside the UK seemed to be negligible, which is interesting given that 67% of firms were found to be subsidiaries of firms based outside the UK. This may be because the Glasgow subsidiaries of these overseas firms have been long established in Scotland's financial services sector.

A7B.9 Location of Markets

Between 1988 and 1991, there was negligible change in the location of firm's markets. In 1990/91, the firms perceived their markets to be overwhelmingly concentrated in Scotland (*averaging 84.1% of firm's markets*). The rest of UK accounted for 13.9% of firms' markets. Foreign markets were fairly insignificant for most firms, averaging a mere 1.9%. Comparison between the sectors of the extent of reliance on the Scottish market presents a stark contrast (*54% for the plastics supply sector and 63% for the oil & gas related sector*), strongly indicating that Glasgow's financial services sector is highly dependent on the Scottish market.

A7B.10 Assessment of Agencies Providing Advice and Assistance

Apart from banks, financial services sector firms tend not to turn to external agencies for advice or assistance, being largely self-reliant in their activities. Banks were sought out for advice or assistance by 58.7% of the surveyed firms. A small but significant proportion of firms sought advice/assistance from accountants (34.8%); Scottish Enterprise (30.4%); and the Enterprise Initiative (26.1%), but contact with other government bodies such as "Locate in Scotland" (10.9%), the Scottish Office (15.2%) and Regional/District Council/s (21.7%) was low by comparison. Only 10.9% of firms sought out Universities and Colleges for advice/ assistance and firms that did only found them to be "somewhat useful". Management consultants (*contacted by 17.4% of firms*) were not particularly sought after by firms. Banks and accountants were found to be the most useful sources of advice/assistance with 47.8% and 28.3% respectively of the surveyed firms deriving some utility to their firm's development. Amongst public sector organisations, Scottish Enterprise and the Enterprise Initiative were the most significant sources of advice/assistance, with both attracting a "useful" rating of 17.4%. Although Scottish Enterprise was of some use to a significant proportion of firms, it seemed that it also attracted the most dissatisfaction as a source of advice/assistance, with almost half of the firms seeking advice/assistance from Scottish Enterprise rating it as being unhelpful.

A7B.11 Sources of Development Capital

The dominant source of development capital for the surveyed firms was the firm's internal financial resources, with an average of 74.2% of development capital derived from this source. The other two important sources of development capital were the owner's personal financial resources (*an average of 11.7% of development capital was from this source*) and bank loans (*an average of 9.4% of*

development capital). Other sources of development capital such as equity, financial institutions other than banks, grants and other external financial sources were not utilised to any significant extent.

A7B.12 Characteristics of Management

Amongst the surveyed firms, ownership and management were found to be closely intertwined. In 61% of firms, the owner/s managed the firm directly compared with only 33% of firms managed by professional managers employed by the firm. Two firms were managed both by the owners and managers employed by the firm. And one firm was managed through trustees appointed by the owners. The close intertwining of ownership and management was also reflected by the extent of involvement by owners in operational and strategic management decisions, with 85% of firms stating this to be the case. Given that the legal structure of three quarters of the surveyed firms was that of a partnership or private limited company, the extent of ownership involvement in management's decision-making is perhaps not surprising.

Many of the surveyed firms were accountancy based professional practices which generally tend to be characterised by a partnership legal structure. The legal requirements governing partnerships are set out in the Partnership Act of 1890. Its main provisions are: (1) all partners contribute capital equally; (2) all partners share profits and losses equally; (3) no partner shall have interest paid on his capital; (4) no partner shall be paid a salary; and (5) all partners have an equal say in the management of the business.

With the exception of one firm, all of the surveyed firms had male managers, most in the 36-55 year age old group (72%). About 15% of firms had managers in the 26-35 year old age group, but none were under 26 years of age. The most dominant age group was the 46-55 year category, accounting for 43% of managers. Most managers had well established tenures in their respective firms. For example, almost a quarter of managers had been manager of their respective firms for more than 10 years and another 46% of managers had tenures ranging from 4 to 10 years. Approximately 20% of managers had from 1 to 3 years tenure, while only 7% had less than a year's tenure. The long tenures of managers of firms in this sector would seem to be associated with the large proportion of partnership ownership amongst the surveyed firms (50%) and the well established nature of these firms (*average age of 43.5 years and a modal age of 25 years*).

Managers in this sector appear to be well educated, with 78% holding some form of tertiary qualification. 28% of managers led a diploma; 37% held a bachelor degree; and 13% held a postgraduate degree. Managers with education to 'A' level or 'Highers' were in the minority at 17%. Managers of firms in Glasgow's financial services sector are much more highly educated compared to their counterparts in the plastics supply and oil & gas related sector.

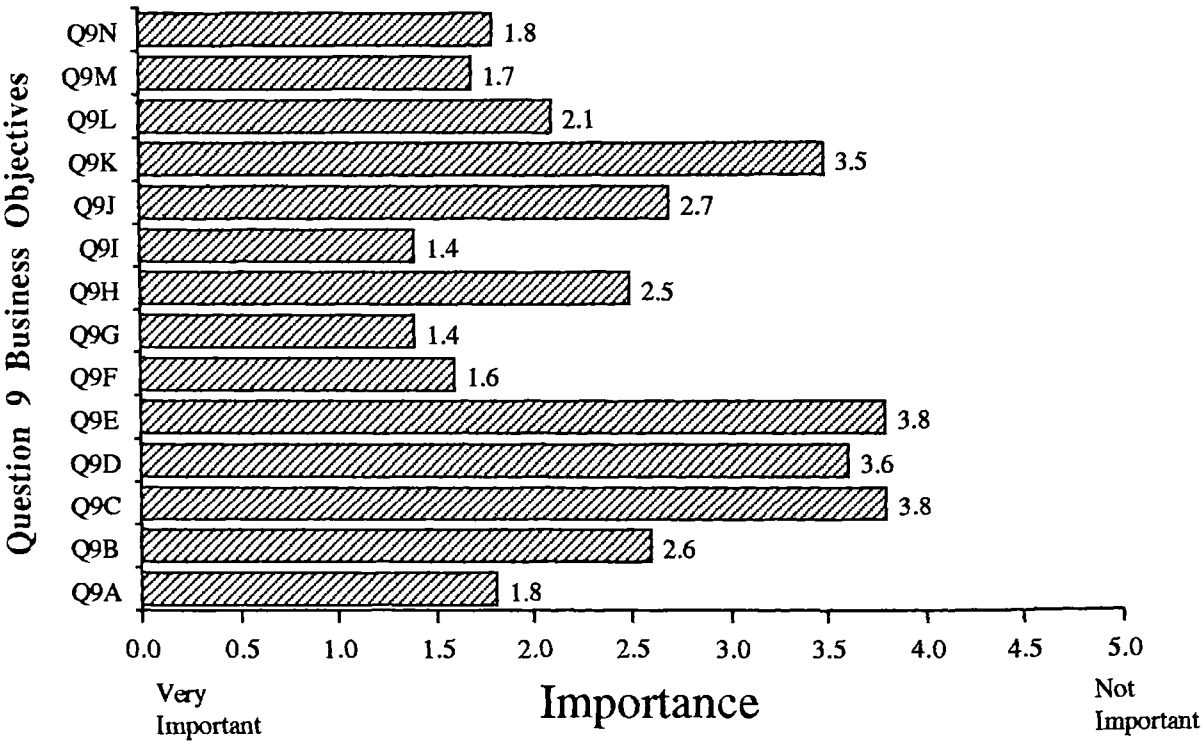
A7B.13 Objectives of Management

Respondents were asked to rank the importance of 14 business objectives according to a continuous five point scale representing degrees of increasing importance ranging from a value of 1 (*maximum importance*) to a value of 5 (*minimum importance*). An indifferent response would be a value of 3. The survey results are illustrated in the bar chart in figure A7B.1.

The results obtained for this sector were very similar to those for the plastics supply and oil & gas related sectors. The business objectives where there were significant divergences from the results obtained for the other sectors are: (1) maximising business efficiency (*more important in financial services*); (2) maximising market share (*less important in financial services*); (3) improving the quality of services provided (*more important in financial services compared to the plastics supply sector*); and creating the most innovative services for the market segment (*less important in financial services*).

The key objectives of management in this sector appear to be maximising business efficiency and improving the quality of services provided (*both rated 1.4*). Other business objectives considered to be very important , attracting ratings ranging from 1.6 to 2.1 were: maximising productivity (1.6); having a good rapport between management and employees (1.7); high profits (1.8); high job satisfaction for employees (1.7); and good working conditions for employees (2.1). Objectives of moderate importance were: high sales turnover (2.6); maximised market share (2.5); and creating the most innovative services for the market segment (2.7). Objectives of negligible importance were: creation of jobs (3.5); and attaining large firm size in terms of turnover, employment or capital assets (3.6-3.8).

FIGURE A7B.1:
AVERAGE IMPORTANCE RATINGS FOR BUSINESS OBJECTIVES



KEY:	
Q9A: High profits	Q9H: Maximised market share
Q9B:High sales turnover	Q9I: Improved quality of services provided
Q9C: Large firm size in terms of physical size (*e.g.capital assets*)	Q9J: Creation of the most innovative services for the market
Q9D: Large firm size in terms of turnover	Q9K: Creation of jobs
Q9E: Large firm size in terms of employment	Q9L: Good working conditions for employees
Q9F: Maximisation of productivity	Q9M: Good rapport between management&employ.
Q9G: Maximised business efficiency	Q9N: High job satisfaction for employees

APPENDIX A7C:

CASE STUDIES OF SELECTED GROWTH FIRMS

This appendix provides a detailed account of the case studies of growth firms discussed in section 7.4.2. The six case studies (*aliases are used*) examined are: Alpha, a UK private partnership firm of Chartered Accountants; Beta Investment Services, a Scottish public limited company dealing in life insurance and pension broking and financial investment advice; Howard & Company, an Edinburgh private partnership accountancy practice; Carlton Scott, a Glasgow based private partnership firm of Chartered Accountants; Nova Omega, a Scottish private partnership firm of Chartered Accountants; and Eternal Life, an English owned private limited company that deals in life assurance, pension plans and investment management.

A7C.1 Alpha Chartered Accountants (an alias)

Alpha is a private partnership firm of Chartered Accountants. Its Glasgow office, which was established in 1979, is part of a large UK practice. The types of services that it provides are business services such as accounting and auditing, taxation advice, Companies Act Compliance service, business start-up advice, preparation of VAT returns, Law Society audits and advice on business growth, business restructuring, acquisitions, transferring businesses and retirement.

Being a professional partnership form of business, the owners also manage the business and are therefore very closely involved in decisions relating to both the operational and strategic management of the firm. The company is largely self-reliant in its business dealings and therefore does not turn to subcontractors to help carry out its activities. Its main functions such as personnel management, financial management, sales, marketing, research and development of new services, capacity for training staff and information technology services, are all conducted "in-house".

The managing partner of the firm is male, in the 36-45 year old age group and educated to university degree level. His tenure as manager of the Glasgow partnership has been between 4 and 10 years. The managing partner viewed the Glasgow's office main source of competition in 1991 as being from within Scotland (90%) with the "rest of UK" accounting for the firm's remaining competitors (10%). In 1987/1988, the Glasgow office concentrated exclusively on the UK market, with Scotland accounting for 80% of sales and the "rest of UK" the remaining 20% of sales. However, in 1990/1991, while 80% of sales remained in Scotland, 5% of the

sales were derived from foreign markets. This growth in international sales was achieved at the expense of the UK market, whose share of the company's share declined to 15% from 20% in 1987/1988. In absolute terms, all markets experienced large increases in annual sales during the period 1988-1991, with the Scottish market increasing from approximately £620,000 to £2.2million; "the rest of UK" increasing from £150,000 to £400,000; and "the rest of world" market increasing from nothing to £140,000.

The main sources of development capital for the firm come from within the firm and include the owner's personal financial resources (50%) and the firm's internal financial resources (10%). Bank loans and financial institutions (*other than banks*) are sources for 30% and 10% respectively of development capital.

The partnership's growth performance during the period 1988-1991 has been impressive. Employment increased by 72% from 61 to 105 full-time employees. All of the partnership's occupational categories benefited from this growth with managerial & executive staff increasing from 6 to 10 (*a 40% increase*); professional staff increasing from 6 to 17 (*a 183% increase*); and clerical/administrative staff increasing from 49 to 78 (*a 59% increase*). According to the various business performance measures, the partnership's growth was similarly impressive. For example, annual sales turnover increased in the range of 201-300% to £2.7million in 1991 (*£25,714 per employee*); total assets increased by more than 300% to £1.5million (*£14,286 per employee*); and annual capital employed increased in the range of 201 to 300% to £650,000 (*£6,190 per employee*). The partnership declined to divulge their firm's relative change in profitability for the period 1988-1991, but it seemed quite respectable in 1991, with annual profits of £400,000 (*£3,810 per employee*).

The firm did not expand by any particular method during the period 1988-1991. It employed more staff, introduced new services into its existing and new markets; it developed new markets with existing services; it reorganised the way work is carried out to improve work efficiency; expanded its office floorspace; and it engaged in firm acquisition.

The main reasons behind the growth of the partnership during the period 1988-1991 was deemed to be due to the strong growth in demand of Glasgow's financial services market. The expansion into overseas markets helped

facilitate this growth, but it was a minor contributory factor. The partners' own resources also contributed significantly to growth as a source of development capital. Primary management objectives stressed by the partnership that were given as strong underlying reasons for its success are threefold: (1) stressing the importance of achieving high profits; (2) maximising staff productivity (*up by almost 50% over 1988 levels*); and (3) maximising business efficiency. Secondary management objectives that appear to have contributed to the partnership's growth are: (1) an aim to maximise local market share; (2) always striving to improve upon the quality of services provided; and (3) a strong emphasis on employees in terms of their working conditions, having a good rapport between management and employees and high job satisfaction amongst employees. The management also stressed how useful general business advice on conducting business in Glasgow from the Scottish Office and the Enterprise Initiative had been. Minor contributing factors to the firm's success mentioned by the firm's management included the suitability of premises, information processing technology, a better quality of services compared to competitors, accessible bank finance, and the positive features of Glasgow' environs such as its standard of service infrastructure, telecommunications, higher education, cultural and recreational amenities.

The main constraint to growth alluded to by the firm's management was that of strong competition from other Scottish firms. Moderate management constraints to growth included difficulty in finding surplus management time to plan growth; and sufficient management skills to plan, organize and manage growth. Despite the high gains achieved during the period 1988-1991 in employee efficiency, a lack of efficiency amongst employees was still mentioned as a constraint to growth, albeit a moderate one. Achieving a high sales turnover, while maintaining a satisfactory level of profitability was mentioned as a moderate constraint to growth.

The management considered that in terms of sales, employment and its capacity to provide services, the firm has grown quickly in a controlled manner during the period 1988-1991. Their prediction for the company's growth over the period 1991-1994 was for slow, steady growth by the measure of sales and capacity to provide services, and slight contraction by the measure of employment.

The partnership's outlook is for it to consolidate its rapid growth during the period 1988-1991. Future growth was expected to be slow and cautious, especially in light of the current recession that the UK economy is undergoing.

A7C.2 Beta Investment Services (an alias)

Beta Investment Services was established in 1978. It is a subsidiary of a Scottish public limited company with shares available to the public, which is also based in Glasgow and serves as a holding company. The company is managed by managers employed by the firm, although the owners of the company (*i.e. the management of the holding company*), does have some input into the operational and strategic management decisions of the firm.

The services that the company provides include life insurance broking, pension broking and investment advice on unit trusts. The company is self-reliant in its functions such as managing its finances, sales, marketing, research & development of new services and capacity for training staff. However, being a life insurance and pensions broker and investment adviser, it relies on other larger companies to provide the actual services. In otherwords, Beta Investment Services plays an intermediary function between customers and the major pension, life insurance fund and investment trust companies.

The manager of the firm is male, in the 46-55 year old age category and educated to University degree level. The current manager is a relatively recent newcomer to the firm with between 1 and 3 years tenure. The firm is wholly dependent on Scotland for its business, in particular the Glasgow area. Markets in the rest of the UK and the rest of the world are therefore insignificant.

All of the development capital of the firm was sourced from within the firm's own resources. The company did not have to resort to equity, bank loans, financial institutions other than banks or grants for development capital during the period 1988-1991.

This firm's growth was modest during the period 1988-1991. The reason it was selected was because it was representative of small investment brokerage businesses that are an important feature of the financial services sector. In terms of employment growth, the firm increased from 14 to 16 employees (*an increase of 14%*). The managerial & executive occupational category declined from 4 to 3 employees, while the professional occupational category increased from 2 to 3 employees and the clerical/administrative category increased from 8 to 10 employees. The company's annual sales turnover increased slightly in the range of 1-25% to

£500,000 in 1991 (*to a fairly impressive output of £31,250 per employee per annum*). Profitability decreased slightly in the range of 1-25% during the same period to £25,000 in 1991 (*£1,563 per employee per annum*). Total assets of the firm remained unchanged at £200,000 in 1991 (*£12,500 per employee per annum*). The company declined to declare the extent of annual capital employed or how it may have changed during the period 1988-1991.

The main forms of growth employed by this firm have been threefold. It has expanded by employing more staff; reorganising the way work has been carried out to improve work efficiency; and through the acquisition of a smaller firm.

Reasons given by the firm's management for its success stressed above all the importance of maintaining high profits, maximising productivity, maximising business efficiency and improving the quality of services provided. Secondary objectives stressed by the firm's management as contributing to its growth included: maximising its market share; creating the most innovative services for its market segments; and valuing its employees in terms of having good working conditions, a good rapport between management and employees and high job satisfaction for its employees.

Management also suggested that its capacity to rely on its own resources both in terms of finance and business advice/assistance during its development helped it to grow. Accountants were the only source of external advice/assistance that were indicated to have been of some utility in helping the business to grow.

Other factors that the firm's management believed to have had some role in its success, albeit to a limited extent, were: (1) having a high quality of services relative to similar services of competitors; (2) an acceptable rate of company taxation; (3) good telecommunications infrastructure in Glasgow; (4) useful general business advice on conducting business in Glasgow at the time of start-up; and (5) being strongly competitive against other UK firms in providing financial services in the local Scottish context.

The key constraints to growth that the company faced were: obtaining an adequate supply of suitably skilled labour; depressed national economic conditions; and high interest rates (*at the end of 1991*).

Moderate constraints to growth covered a number of management, staff, financial performance and market related issues. A lack of surplus management time to plan growth; and insufficient management skills to plan, organize and manage growth constituted the management constraints. Insufficient training capability for staff needs was mentioned because of the difficulties involved for a small company in having its own training programmes. Financial performance issues such as maintaining sufficient cash flow and achieving a high sales turnover were indicated to be moderate growth constraints. The demand related issues constraining growth included difficulties: in finding sufficient market demand; finding a suitable market niche for its services; and in finding new geographic markets. Like many financial services companies in Glasgow, this company is highly dependent on local demand within the Strathclyde region and Scotland more generally.

The firm's management would not characterise their firm has having been a growth firm during the period 1988-1991, although they did feel confident of slow steady growth over the period 1991-1994, in spite of some pessimism about the national economic climate. They did feel however, that while by the measure of employment and sales, there had not been significant growth to speak of, they had grown slowly but steadily in terms of their capacity to provide services.

The outlook for the company seemed to be one of cautious optimism. The management envisaged slow but steady growth in employment, sales and a capacity to provide services to be a realistic possibility.

A7C.3 Howard & Company Accountancy Practice (an alias)

Howard & Company is an accountancy practice that was established in 1986. It is a private partnership company managed by the owner, that is an office of a Scottish company based elsewhere in Scotland (*i.e. outwith Glasgow*). The owners of the company are involved in decisions concerned with operational and strategic management.

The services provided by this company include: audits; accountancy; tax advice and assistance; and computer accountancy. The functions within the firm include: personnel management; management of the firm's finances; sales; marketing; research and development of new services; and a capacity for training new staff. None

of the firm's necessary functions are contracted out to other companies, suggesting that this firm is largely self-reliant in its activities.

The company perceives the market for financial services to be highly localised within Scotland, with no competitors outwith Scotland and almost all its markets being sourced within Scotland (99%), although in 1991, 1% of its sales (£5,000) were derived from the rest of the UK.

The manager of the company is male, in the 36-45 year age group and educated up to degree level. His tenure as manager of the Glasgow office has been between 4 and 10 years inclusive.

The company relies on its own resources for development capital, with 25% of its development capital derived from the company's internal financial resources, and 75% sourced from the owner's personal financial resources.

Howard & Company's Glasgow office is not a large business concern, employing only 16 employees in 1991. However, during the period 1988-1991, it has grown strongly. For example, in employment terms, it increased from 9 to 16 employees (*a 78% increase*); its annual sales turnover increased by more than 300% to £500,000 (*£31,250 per employee per annum*); and its annual profitability increased in the range of 201 to 300% (*actual profits were not divulged*). It had moderate growth in its assets, increasing in the range of 26-50% to £100,000 in 1991 (*£6,250 per employee*). Growth in the amount of annual capital employed has increased strongly, in the range of 51-100% to £350,000 in 1991 (*£21,875 per employee per annum*).

All of the occupational groups benefited from the firm's growth during the period 1988-1991, although in proportionate terms the largest increase was in the professional category. The managerial & executive category increased from 2 to 3 employees; the professional category increased from 1 to 4 employees; the clerical and administrative category increased from 1 to 2 employees; and the skilled technical category increased from 5 to 7 employees.

The nature of growth in the company has been by four methods: (1) employing more staff; (2) introducing new services into the firm's existing markets; (3) developing new markets with existing services; and (4) reorganising the way work is carried out to improve work efficiency.

The most important reasons stressed for the company's growth are: aiming for high profits; maximising productivity; maximising business efficiency; and improving the quality of services provided. Secondary reasons given for the company's growth were: aiming to maximise market share; having a good rapport between management and employees; and aiming for high job satisfaction amongst employees. The significant financial resources of the firm's owners seems to have contributed to the firm's growth spurt in its early years. Two sources that were rated as being "very useful" as providers of advice/assistance during the company's growth were banks and solicitor contacts, although banks were not approached for the purposes of providing development capital, but rather to help as a clearing facility for its funds.

Ease of procuring finance during the mid-1980s was mentioned as facilitating growth during the company's start-up phase, particularly from banks and venture capitalists. Cheap unskilled and semi-skilled labour was also mentioned as a contributing factor to the company's growth.

Also stressed as a determining factor of growth was its strong local advantage resulting in it having a competitive advantage against foreign firms.

Location issues also figured prominently as contributing factors to the firm's success although not determining factors in their own right. The sort of location issues deemed to have contributed to growth were Glasgow's good telecommunications infrastructure; education facilities ranging from primary through to tertiary; community services and facilities for employees; cultural and recreational amenities; and attractive local residential areas.

Four constraints to growth were mentioned. These were: (1) premises being far too restricted in terms of floorspace; (2) finding surplus management time to plan growth; (3) lack of a good work ethic amongst employees; and (4) problems with the adequacy of the local road infrastructure serving the City of Glasgow.

When the manager was asked for a subjective assessment about how the firm had changed during the period 1988-1991, the manager considered it to have grown quickly in a controlled manner in terms of sales and its capacity to provide services, and slowly but steadily in terms of employment. The manager's view of the

firm's growth prospects for the next three years (1991-1994), was that it would maintain its current rate of growth, that is quick controlled growth in terms of sales and its capacity to provide services, and slow steady employment growth. This would imply that by 1994, there would be and increase in sales to £1.5million and employment would expand from 16 to 28 employees.

The outlook for Howard & Co., which is currently a small financial services firm, is promising if the optimism of its manager can be translated into the increased employment and sales that he predicts.

A7C.4 Carlton Scott Chartered Accountants (an alias)

Carlton Scott is a Glasgow based firm of Chartered Accountants that was established in 1971. It is a private partnership company managed by its owner. The firm is an independent Scottish company operating only out of its Glasgow office. The owners of the company are involved in decisions concerned with the firm's operational and strategic management.

The main services provided by the company are general accountancy services, company auditing and tax advice. The company is largely autonomous in its dealings, in the sense that it does not rely on subcontractors to help provide its range of services. The company is fairly restricted in its range of functions, having only the functions of managing its own finances and a capacity for training its staff. Hence, there are no specific functions within the firm dealing exclusively with personnel management, sales, marketing and the research & development of new services.

The firm's manager is male, in the 46-55 year age category and educated to 'A' levels or 'Highers'. The manager's tenure as manager of the company was in the range of 4 to 10 years, which means that he was not involved in directing the firm's early development. As with many Chartered Accountancy firms, partnerships are granted to likeminded professionals who have the capital to purchase equity into the business; who are socially congenial to the existing partners; and who are most likely to generate extra business for the practice (*which would be based on their past work record*).

The perception of the partners was that competition was exclusively local, with 100% of its identified competitors being based in Scotland. This would include competitors with ownership outwith Scotland. The structure of ownership in

these types of companies is such that the branches of major UK and international Accountancy firms in Scotland operate largely as autonomous Scottish businesses.

The company's markets are exclusively restricted to the UK, with 95% of sales originating from Scotland and the remaining 5% of sales coming from the rest of the UK. The breakdown of sales by destination remained unchanged during the period 1988-1991. In 1991, sales from the Scottish market amounted to £1.71million while the "rest of UK" market amounted to £90,000.

The growth performance of Carlton Scott CA has been significant during the period 1988-1991 in terms of employment, annual sales turnover, annual profitability, total assets and annual capital employed. In employment terms, the company increased from 40 to 60 full-time employees in 1991 (*an increase of 52.5%*). Every occupational group benefited from this growth, with managerial & executive employees increasing from 3 to 7 employees (*an increase of 133%*), professional employees increasing from 27 to 39 employees (*an increase of 44%*), and clerical/administrative employees increasing from 10 to 15 employees (*an increase of 33%*) and 2 part-time employees. Annual sales turnover increased in the range of 51-100% to £1.8million in 1991 (*£29,508 per employee per annum*); and annual profitability increased in the range of 26-50% to £350,000 in 1991 (*£5,737 per employee per annum*). Total assets increased in the range of 201-300% to £430,000 in 1991 (*£7,049 per employee per annum*); and annual capital employed increased in the range of 26-50% to £310,000 in 1991 (*£5,081 per employee per annum*).

Four main methods were employed during the company's growth. These were: employing more staff; reorganising the way work is carried out to improve work efficiency; expanding office floorspace; and acquiring another firm. The primary source of development capital for the company was bank loans (75%) followed by the company's internal financial resources (25%). Banks were the only source of advice/assistance sought out by the company in assisting it to develop during the period 1988-1991, and then they were only rated as having been "somewhat useful". No government agencies appeared to have had any direct role in the company's development.

The primary reasons suggested by the company's management for its growth stressed the importance of maximising productivity; maximising business efficiency; improving the quality of services provided; and employee related objectives

such as having good working conditions for employees, a good rapport between management and employees, and high job satisfaction for employees. Management stressing high profits and achieving a high sales turnover were considered to have had a secondary influence on the firm's growth performance.

Other important contributing factors to the firm's growth performance were: having sufficient management skills to plan, organize and manage growth; having suitable premises; having suitable information processing technology; there being sufficient training capability for staff needs; the ease of achieving a high sales turnover; and the ease of obtaining bank finance. Strong demand from the Scottish market for its services also greatly helped to facilitate the firm's growth. Locality related issues that were viewed as a precondition to growth taking place but necessarily a determinant of it occurring were: suitable service infrastructure; and adequate local and main road infrastructure; and adequate public transport network serving Glasgow; adequate telecommunications infrastructure; adequate primary, secondary and tertiary education facilities; adequate community services and facilities; and attractive local residential areas for current and prospective employees.

There were four main constraints to growth. These were a lack of surplus management time to plan growth; the difficulty in maintaining sufficient cash flow; the difficulty in raising finance from the firm's internal financial resources; and high interest rates (*back in 1991*).

Management's subjective assessment of the company's growth during the past three years, was that in terms of employment and sales, growth had been quick and controlled. In terms of the company's capacity to provide services, the company was judged to have had slow steady growth. Management's expectation for the next three years (*1991-1994*) was for slow steady growth in terms of the company's capacity to provide services and sales, while employment was expected to remain stable. This implies that further growth in sales is expected to come from increased efficiency, in other words, getting more productivity from the workforce.

The future outlook for the firm given by management was one of cautious optimism. This would imply that sales may increase to around £2.4million (*£39,344 per employee*) by 1994 from £1.8million (*£29,508 per employee*) in 1991, with employment remaining relatively stable at 60-65 employees.

A7C.5 Nova Omega Chartered Accountants (an alias)

Nova Omega is a Scottish group of Chartered Accountants that was established in 1927 operating out of a single office located in Glasgow's city centre. The company is in the form of a private partnership and is managed by its partners (*i.e. its owners*). The owners of the firm are involved in decisions concerned with the operational and strategic management of the firm.

The main services that Nova Omega provides include company audits, taxation advice, financial services, company insolvencies and corporate recovery. The company is largely self-sufficient in its activities in that all its functions are provided "in-house". These functions are: personnel management, management of the firm's finances, sales, marketing, research & development of new services and capacity for training staff.

The manager of the firm is male, in the 46-55 year old age group and educated to degree level. He has had 4-10 years tenure with the firm and is a senior partner. He can reasonably be credited with being responsible for the company's 50% increase in employment during the period 1988-1991.

Competitors of the company are seen as being predominantly concentrated in Scotland (*accounting for 80% of competitors*), while the remaining 20% of competitors are located in the rest of the UK.

The market for Nova Omega is highly localised in Scotland, with 98% of customers located in Scotland and only 2% of customers sourced from the rest of the UK. Over the period 1988-1991, this breakdown of markets remained unchanged.

The growth performance of Nova Omega during the period 1988-1991 has been quite impressive. Employment increased from 79 to 118 employees, a 49% increase. All of the occupational groups represented benefited from this growth. For example, the managerial & executive occupational grouping increased from 14 to 18 employees (*an increase of 29%*); the professional category increased from 55 to 80 employees (*an increase of 45%*); and the clerical/administrative category increased from 10 to 20 employees (*an increase of 100%*). Nova Omega would not divulge any figures regarding its financial performance for 1991, however, it did indicate relative changes in its financial performance for the period 1988-1991. Annual sales turnover increased in the range of 101 to 200%. Annual profitability, total assets and annual

capital employed all increased in the range of 201 to 300%. Using the postal survey information for average turnover and profitability figures for accountancy practices, it would seem that a rough estimate of the company's annual turnover would be £4.1million (*based on an average annual turnover per employee of £35,000*), £1.1million for its profits based on average annual profits per employee of £9,000.

The company completely relied on its own internal financial resources for development capital. Its growth over the past three years was facilitated by various methods such as: employing more staff; introducing new services into the firm's new and existing markets; developing new markets with its existing services; reorganising the way work is carried out to improve work efficiency; expanding office floorspace; and acquiring another firm.

A wide range of reasons were given by management for the firm's growth. These included stressing the importance of: high profits; maximised productivity; maximised business efficiency; improving the quality of services provided; creating the most innovative services for the market segment; and employee related issues such as having good working conditions for employees; a good rapport between management and employees; and high job satisfaction for employees. Secondary business objectives that management believed had contributed to the success of the firm, included: stressing the importance of high sales turnover; aiming for a large firm in terms of physical size (*i.e. capital assets*); and maximising market share.

Contributing factors to the firm's growth included issues such as management, supply, finance, labour, demand, competition, taxation, government advice and locality attributes.

The management factor that contributed to growth was that there were sufficient management skills in the company to plan, organize and manage growth.

Supply issues that contributed to the firm's growth were that the firm had no difficulty in producing innovative, market leading services; that its services were highly competitive; that it had suitable information processing technology; and that it had sufficient training capability for staff needs.

The company's ability to finance it own expansion undoubtedly contributed to its rapid expansion. Indeed, its expansion was 100% funded out of the firm's own resources.

Good relations between employees and management was also cited as being important to the firm's growth.

Demand issues that contributed to the firm's growth included there being strong demand from the Scottish market and the ability of the firm to find a suitable market niche for its services. The company's management indicated that its ability to be highly competitive in serving the Scottish market against UK and foreign firms, contributed to its growth to a moderate extent.

Tax issues such as the rate of company taxation and tax exemptions for company expenses were not viewed as constraints to growth, although they did not facilitate growth to any great extent. The Enterprise Initiative was deemed to have been "somewhat useful" in helping the firm to develop.

Location attributes that management considered to have helped in facilitating the company's growth included: suitable premises; adequate primary, secondary and tertiary education facilities; and adequate recreational amenities, cultural facilities, community services and facilities.

Few constraints to growth were cited by the firm's management, and those that were mentioned were judged to have been only of a moderate nature. These were: a lack of surplus management time to plan growth; difficulty in procuring an adequate supply of skilled labour; and an inadequate local road infrastructure serving the City of Glasgow.

The manager's assessment of the firm's growth during the period 1988-1991 was that it had grown quickly in terms of sales, employment and its capacity to provide services. The expectation by management of the company's fortunes for the period 1991-1994 was that it would maintain its rapid growth in sales and its capacity to provide services, but only have slow steady growth in employment. This implies that the company's management was expecting growth through greater productivity efficiency.

The optimism of management in this company would seem to indicate that the company has a promising and prosperous future ahead of it, particularly if its past growth performance of increasing sales in the range of 101-200% and employment by 50% can be maintained over the period 1991-1994.

A7C.6 Eternal Life Insurance and investment (an alias)

Eternal Life is an English based company that was established in 1899. Until 1988, it was a non-profit organisation. The services that it provides include life assurance, pension plans, unit trusts and investment management. It is a private limited company that employs a professional management team to manage its Glasgow subsidiary. The owners of the company do not particularly concern themselves with the operational management of the firm, but do involve themselves with strategic management decisions.

The company is largely self-reliant in its activities. It does not subcontract out its basic functions to other firms. The types of functions that it has are: personnel management; management of the firm's finances; sales; marketing; research & development of new services; a capacity for training staff; systems development; and an investment management service department.

The chief executive of the Glasgow branch of the company is male, in the 36-45 year age group and educated to degree level. His tenure as manager of the firm has been less than a year, so it is unlikely that he was responsible for the firm's growth performance during the period 1988-1991.

Because the company is a UK concern, the management of the Glasgow branch views its competitors as being predominantly from the rest of the UK (80%), rather than from Scotland (20%). The same would seem to be true for its markets, with 10% of sales coming from Scotland and 90% coming from the rest of the UK. It would seem that the Scottish market has actually declined in importance for Eternal Life, since Scotland's share of the Glasgow branch of the company's market has declined from 20% in 1988 to 10% in 1991, while the rest of the UK increased its share from 80% to 90%.

The company was unable to say how much employment growth had occurred, except that it was in the range of 1-25%. In 1991 it employed 370 full-time employees and 10 part-time employees. The occupational structure for the company in

1991 was: 60 employees in the managerial & executive category; 40 employees in the professional category; 10 part-time employees and 220 full-time employees in the clerical/administrative category; and 50 employees in the skilled technical category. During the period 1988-1991, the company increased its annual sales turnover in the range of 1-25% to £35million (*£94,600 per employee per annum*). Annual profits increased in the range of 26-50% to £2million in 1991 (*£5,400 per employee per annum*). Total assets, which includes policyholders funds and unit trusts, increased in the range of 1-25% to £250million (*£675,700 per employee*). The amount of capital employed increased from nothing in 1988 (*when the company was still a non-profit organisation*) to £15million in 1991 (*£40,500 per employee*).

The company expanded through a wide range of measures, which included: employing more staff; introducing new services into the firm's existing markets; developing new markets with existing services; reorganising the way work is carried out to improve work efficiency; expansion of floorspace; and acquiring other firms. The main source of development capital was the owner's personal financial resources (75%) and the firm's internal financial resources (25%).

There were not any clear determining reasons for growth cited by management. A variety of reasons were given for why the firm had been successful. Because it had been a non-profit organisation up until 1988, normal commercial criteria such as stressing maximised profitability, turnover and large firm size were not emphasized as being key determinants for the company's success. Rather, the company's success was seen to be due to a combination of labour related factors, being able to maintain sufficient cash flow, having a favourable rate of company taxation, obtaining useful business advice on conducting business in Glasgow, certain locality attributes, buoyant local economic conditions in Glasgow in 1991, having competitive advantage against foreign firms in the UK market and having strong demand for its services in both the Scottish market and the UK market generally.

The labour related issues that were seen by management to have contributed to the company's success were: affordable unskilled and semi-skilled labour; having a good work ethic amongst employees; having good labour relations between employees and management; and having minimal influence of trade unions in the firm's activities.

Scottish Enterprise and management consultants were rated as having offered "very useful" business advice on conducting business in Glasgow. Strathclyde Regional Council and accountants were rated as having been "somewhat useful" as sources of advice or assistance.

Locality attributes that were rated as having been an important contributing factor to growth but not a determining factor were: suitable services and service infrastructure; an adequate local and main road infrastructure; a good public transport network; good education facilities from primary through to tertiary education; adequate community services and facilities; adequate recreational amenities; and good cultural facilities.

Only one major constraint was indicated to have been a problem by the firm's management and that was achieving a high sales turnover. Moderate constraints to growth included: difficulty in finding surplus management time to plan growth; having sufficient management skills to plan, organize and manage growth; difficulty in producing innovative, market leading services; difficulty in having a high quality of services relative to similar services of competitors; getting a high level of efficiency amongst employees; difficulty in finding a suitable market niche for its services; not having premises entirely suited to its needs; and depressed national economic conditions.

The manager's assessment of the firm's growth during the period 1988-1991 was that in terms of employment and sales, the company had grown quickly in a controlled manner. In terms of its capacity to provide services, there had only been slow steady growth, suggesting that increased employment had been at the expense of the company's production efficiency, which would seem to be backed up by the finding that a constraint to growth during that period had been a difficulty in having a high level of efficiency amongst employees. The management's expectation of growth for the period 1991-1994 was that sales would continue to grow quickly in a controlled manner, but that employment and the firm's capacity to provide services would experience slow, steady growth. This implies that productivity amongst employees is not expected to rise significantly, but that extra sales will be generated from increasing the price of its services to its customers.

If Eternal Life can increase its sales further with only moderate increases in employment, it will be performing well in financial efficiency terms, since

it already generates sales of almost £95,000 per employee. It does however, seem to have very high overheads because it generated profits of only £5,400 per employee on those sales, which suggests that a growth strategy may be difficult to achieve if extra sales are not forthcoming. Nevertheless, if local Scottish demand for its services continues to increase, it should be well placed to expand further in future, especially since its management seems optimistic of strong growth in sales over the coming three years.

APPENDIX A7D:
LIST OF FIRMS THAT PARTICIPATED IN POSTAL QUESTIONNAIRE SURVEY OF GLASGOW'S FINANCIAL SERVICES SECTOR

J McInroy, CA, Partner, MARTIN AITKEN &CO

Mr B G P Swinburne, Manager, BARCLAY LIFE INSURANCE CO LTD

Mr Cruickshank, Partner, THOMAS BARRIE & CO

Mr Kevin McDaid, Manager, BENEFICIAL BANK PLC

C C Reedie, Partner, D L BLOOMER & PARTNERS

Ms Lynda Somerville, Manager (Marketing) BRITANNIA LIFE LIMITED

Mr Ian McDickom, Branch Manager, CANADA LIFE ASSURANCE COMPANY

T Churchill, Partner, CHURCHILL & CO

A Taggart, Partner, CLEMENT, R A & CO

Mr Bob Glen, Partner in charge, COOPERS & LYBRAND DELOITTE

Mr Andrew S McCormick CA, DAVIDSON AND WORKMAN

Mr K Ross, Proprietor, ROSS FALCONER & CO

J Dowds, Managing Director, FINESCO FINANCIAL SERVICES LTD

Mr John Docherty, Director,
JAMES FINLAY INVESTMENT MANAGEMENT LTD

Mr Kerr, Partner, FRENCH AND COWAN

Mr David Russell, Managing Director, GAELIC INVOICE FACTORS LTD

J G Wylie, Managing Partner, STOY HAYWARD

C M Watson, Managing Director, HUTCHISON & CRAFT LIMITED

D L Hill, Director/Company Secretary, CA INDUSTRIAL FINANCE LTD

N Robinson, Managing Partner, KIDSONS IMPEY CA

C Douglas Laing, Managing Director, G DOUGLAS LAING ASSOCIATES LTD

Mr T Lenehan, Partner, LENEHAN SCOTT & CO

B A McKenna, Managing Director, McKENNA GLADSTONE WALKER LIMITED

J Hunter, Partner, McLAY, McALISTER AND McGIBBON, CA

Mr D Moore, Manager, MANULIFE FINANCIAL

Mr James F Miller, J F MILLER & COMPANY

Ms Valerie White, Partner, MONEY MANAGEMENT UK

Mr Dan O'Sullivan, Regional Manager, MUNICIPAL MUTUAL INSURANCE LTD

Mr R P Maclean, Divisional Manager,
HILL SAMUEL INVESTMENT SERVICES LTD

J C Mitchell, General Manager,
SCOTTISH AMICABLE LIFE ASSURANCE SOCIETY

Mr Morris Aitchison, Secretary,
THE SCOTTISH LEGAL LIFE ASSURANCE SOCIETY
L J Gray, General Manager, THE SCOTTISH MUTUAL ASSURANCE SOCIETY
Mr Tom Arbuckle, Partner, SCOTT OSWALD & CO
L M S Shields, Managing Director, SHIELDS FINANCIAL SERVICES LIMITED
G Toner, Partner, STIRLING, TONER & CO
Mr John Nicholson, Divisional Director, ALEXANDER STENHOUSE UK LTD
Mr A Ronald, Director, STIRLING HENDRY & CO
P Calikes, Regional Services Manager, SUN ALLIANCE INSURANCE GROUP
T McGuire, Partner, TAYLOR & IRELAND CA
Mr Alan Thompson, Partner, THE THOMPSON PARTNERSHIP
Mr W G Watt, Local Director, 3i PLC
Mr Tom O'Connell, Partner, GRANT THORNTON
Mr W McLoughlin, WALKER, F L & COMPANY
R C S Scott, Managing Partner, DOWNIE WILSON CA
Mr M D Sheppard, Managing Partner, WYLIE AND BISSET
Mr George Hecht, Partner, HACKER YOUNG CHARTERED ACCOUNTANTS

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