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SWP 54/89 THE NORTH-SOUTH DIVIDE IN PRODUCTION FIRM FORMATION DURING THE THATCHER YEARS, 1980 - 1987

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ABSTRACT

The growth in production business registration is charted over the Thatcher years. Theories explaining the growth in business start-ups and spatial variations in new firm formation are summarised. Results from bivariate correlation analyses suggest that a wide range of factors are associated with the formation process. The variable found to be most statistically associated with formation rates was the production business deregistration rate. This variable is generally associated with the 'recession-push' and 'large firm fragmentation' theories of the growth of small business start-ups and the 'structural theory' of new firm formation. 'Socio-cultural' explanations for the growth of new businesses in particular localities were also found to be of significance. At a broader level of analysis business registration rates are found to be markedly higher in 'southern' counties of Great Britain. Results from an exploratory discriminant analysis suggest that areas in the 'south' are associated with a synergism of favourable factors in contrast to counties in the 'north'. 'Southern' counties have increasing pools of potential entrepreneurs with high levels of disposable income and access to finance. In contrast, counties in the 'north' have a diminishing pool of potential entrepreneurs, a large proportion of individuals with limited entrepreneurial skills and training who have limited access to finance either from institutional or personal sources. The policy implications of the recent growth of new and small firms are discussed and it is suggested that if current trends continue small firms support measures risk being regionally divisive. It is concluded that there is still an urgent need for more informed and detailed research at a local labour market level of analysis in order to develop appropriate policy measures.

INTRODUCTION

Over the last decade, a growing volume of empirical evidence has indicated that there is an increased awareness of marked spatial differences and inequalities in Great Britain (see Lewis and Townsend, 1989). Areas in the 'south' of England (and in the South East of England in particular) having recorded higher levels of economic prosperity (Champion and Green 1987; Green, 1988) and have had a greater tendency to retain and create jobs (Department of Employment, 1987; Champion et al., 1987) with the result being that areas in the 'south' have generally been associated with lower levels of unemployment (Green, 1985; 1986; Green and Owen, 1987). The 'south' has also benefited from having average concentrations of high-technology employment (Keeble, 1987) and the South East of England has an above average concentration of employment in private as well as Government research and development establishments (Rothwell, 1982). Firms based in the 'south' have a greater ability to draw on a pool of better educated potential employees from higher social economic groups associated with higher order, non-manual occupations and process functions (Massey, 1984; Crum and Gudgin, 1987; Green and Owen, 1984; Hepworth, 1987).

Results from national (Whittington, 1984; Moyes and Westhead, 1990) and regional new firm studies (Gould and Keeble, 1984) show that the 'south' of Great Britain has a more developed small business sector, an apparently favourable and social economic milieu conducive not only to new firm formation but also to 'successful' small firm growth and performance (Mason, 1985; Barkham, 1987; Hitchins and O'Farrell, 1987; Birley and Westhead, 1989). This contrasts with 'northern' regions in which the small business sector appears less vibrant and the socio-economic composition and culture depress the level of entrepreneurship (Storey, 1982; Lloyd and Mason, 1984). As early as 1982 Storey compiled a Regional Entrepreneurship Index which showed that the 'southern' regions' of the South East, the South West and East Anglia in England recorded the highest scores. This view has been confirmed in recent studies of the spatial distribution of responses to four schemes to assist small firms (the Loan Guarantee Scheme, the Business Expansion Scheme, Small Engineering Firms Investment Scheme and the Enterprise Allowance Scheme) (Storey and Johnson, 1987a, p.170-171). Interestingly, Mason and Harrison (1989) have also indicated that the take-up of the Business Expansion Scheme has been markedly higher in 'southern' rather than 'northern' locations.

Storey (1982, p. 13-35; 1986, p.216) proposes eight reasons for the increased interest in the potential impact of new and small firms. First, the rise in oil prices in the early 1970s made energy-intensive (and hence capital-intensive) forms of production more expensive: it gave a comparative advantage to smaller scale units. Second, increased energy prices initially led to a relative increase in transport cost, so reducing the attractions of having single unit production. Instead it became more economic to have smaller production units spread more widely. Third, increased energy prices led to a slow-down in the rate of growth of world trade in the 1970s and the rise in protectionism. Since large enterprises are more likely to export, they were disproportionately affected by these developments. Fourth, the growth in competition from Japan, the E.E.C. and Third World countries was particularly severe in industries in the United Kingdom where large firms predominate such as motor cars, shipbuilding, textiles, and electrical goods. Fifth, increased incomes for those in work during the 1970s led to an increase in the demand for services and for 'one-off' rather than mass-produced good, demands more likely to be met by smaller firms. Sixth, during the 1960s British economic policy was diverted towards reaping scale economies at the plant level, but by the mid-1970s it became clear that the managerial diseconomies were arising in giant enterprises. Seventh, a minor role may also have been played by the Monopolies Commission in discouraging industrial concentration which was not viewed to be in the public interest. Eighth, technical change, and in particular the advent of the microprocessor, has enabled computer-based techniques to be developed and implemented by small firms. These circumstances conjoined with two events which were to heralded a public debate about job generation by new and small firms in the United Kingdom. One was the election of a Conservative administration which has since 1979 given priority to improving the 'supply side' of the economy rather than conventional demand management. The other was the publication of a report by Birch (1979) which claimed that no less than two-thirds of all net new jobs in the the USA were generated by small firms (those with 20 or fewer employees). Because of these events it has been widely espoused that new and small firms in the United Kingdom as elsewhere can play a major role in creating jobs and fostering healthy and self-sustained local economic development.

RESEARCH QUESTIONS

New production firms[1] (dominantly manufacturing firms) will be the focus of study in this paper because this activity is still regarded as being a 'basic' economic activity, upon which the rest of the economy depends (Cross, 1983, p.111; Harris, 1987). The multiplier effect of production activity is suggested to be greater and have greater export potential than say retail or wholesale sector activity (Fothergill and Gudgin, 1982). Indeed, the promotion of manufacturing firms has been seen as a part of the restructuring of the United Kingdom economy away from being heavily concentrated upon the fortunes of a hundred or so large firms.

The objectives of this paper are threefold. First, to chart the growth of production new firm formation (NFF) between 1980 and 1987. Second, identify factors during the Thatcher years which either promote or impede NFF at a county level of analysis. Third, factors found to be highly statistically associated with NFF rates are used to explore the differences in the entrepreneurial potential characteristics of counties in the 'north' and 'south' of Great Britain.

ALTERNATIVE THEORIES 'EXPLAINING' THE GROWTH IN BUSINESS START-UPS

A survey of the literature by Keeble and Wever (1986, p. 8 -16), Fischer (1988, p.85-86) and Mason (1989, p. 332-335) identified the following leading theories explaining the growth in new business start-ups.

Recession-Push Theory

The recession-induced theory suggests that a large number of new ventures have been established by individuals who have been 'pushed' into entrepreneurship after redundancy or unemployment (Shapero, 1983; Gudgin, 1984). However, the relationship between unemployment, redundancy and new business formations remains contentious. Binks and Jennings (1986) have suggested that the recession in the late 1970s and early 1980s may have contributed to the increase in NFF in other ways, for example, through the provision of cheap second-hand plant and machinery from business which had either closed or gone into liquidation. Second, by depressing local demand recession led to increased price competition and competitiveness particularly in mature industries which may have

led to increased opportunities for new businesses. Potential market niches may have been opened up by large firms withdrawing from peripheral and possibly less profitable activities and flexible and specialist new firms with lower overhead costs taking over these vacant market niches.

Large Firm Fragmentation Theory

Shutt and Whittington (1984; 1987, p.16-18) adopting a radical or marxist perspective have suggested that the small firm resurgence is largely illusory because many new independent businesses are a direct result of deliberate fragmentation policies by large firms under conditions of great demand and innovation, uncertainty and increasing difficulty of control over the labour process. The 'fragmentation methods' chosen include the decentralisation of production to smaller plants which remain in the ownership of the large firm; a shift in production to small firms from large ones through franchising and licensing; and the disintegration of production to independently-owned small firms through outsourcing, subcontracting, management and employee buyouts and corporate venturing. Related to this theory is Storey and Johnson's (1987b) 'Birmingham model' which interprets the increase in small businesses in the United Kingdom as a result of large firm restructuring, involving mass redundancies and increased contracting out of peripheral production and service functions.

Structural Theories

Keeble and Wever (1986) argue that the growth in business formation in recent years is a result of structural changes in the composition of the economy and in corporate organisations. Three key structural theories have been identified and they include the technological change, post-industrial change and income growth theories. It is claimed by Keeble and Wever (1986) that the growth in new business start-ups is related to the technological change interpretation which sees the growth in firm formation as being associated with the growth in new major technologies such as micro-electronics, computers, telecommunications and information technologies. Bursts of radical technological innovation (Freeman, 1984) are followed by longer periods of innovation exploitation and eventual decline through market swamping as a result of competitive imitation. Associated with this notion of long waves of economic development (Kondratiev cycles) it has been suggested that the new

technologies have created new production process and market opportunities to be exploited by technical entrepreneurs in small rather than large firms (Rothwell, 1984; Keeble and Kelly, 1986).

The development and introduction of new scaled-down production equipment suited to small-batch production and the emergence of a 'thoughtware economy' (Birch, 1984) have enabled new and small ventures to create as well as to take advantage of new opportunities. These new market niches have been created by increasingly lower capital barriers to entry and the absence of significant economies of scale in sectors such as computer software. These trends are associated with the transformation from an industrial to a post-industrial society with the development of a 'second industrial divide' (Piore and Sabel, 1984).

Brusco (1982) and Keeble and Wever (1986) have suggested that the growth in business start-ups is associated with a rise in real incomes during the past two decades. Rising incomes have led to life-style changes and changing consumer tastes. The break-up of the mass market has led to increased demand for more varied, short series, customised, better quality and more sophisticated products. As a result numerous potential market niches have appeared which require short production runs and flexible production processes which small firms have traditionally exploited better than large firms (Bollard, 1983).

The 'Enterprise Economy' Theory

An alternative theory often argued by politicians on the 'right' of the political spectrum in the United Kihgdom is that the increase in business start-ups reflects measures taken by Conservative administrations to create an 'enterprise economy' by freeing market imbalances which unfairly disfavour small businesses relative to large businesses, and directly encouraging individuals to become self-employed or to start their own business. Each Conservative administration since 1979 has stressed the importance of a dynamic and vibrant small business sector in the United Kingdom. Government in the late 1970s and 1980s has increasingly fostered the role of the individual and the development of economic wealth based on the self-help principle. Since 1979 successive Conservative Governments have been pledged to create a thriving private 'enterprise culture' with a steady stream of measures to assist the small firm sector turning into a torrent (Beesley and Wilson, 1982). New and small firms have been singled out for special help, and they have been made exempt

from some of the more arduous requirements placed on firms by various Government agencies (HM Government, 1985). The measures introduced since 1979 have addressed four main constraints on small business activity (Mason and Harrison, 1986). First the availability of finance for new and small firms. Second, the provision of inexpensive or free business information and advice enhanced by the expansion of the activities of the Small Firms Service and through the creation of local enterprise agencies. Third, legislative and administrative burdens on new and small firms have been reduced. Fourth, tax rates have been reduced for both individuals and for companies.

A wide variety of measures and support mechanisms have been introduced to assist the potential new firm founder as well as existing small firms. 'Hard' measures have been introduced through the provision of finance, premises, increased tax incentives and the reduction of legislative and administrative burdens. Others could be described as 'soft' measures which include support through management training and the provision of free or inexpensive advice, counselling and information associated with the 'Enterprise Initiative' organised by the newly created Department for Enterprise (HM Government, 1988). At the same time traditional regional economic policies have been supplemented, even supplanted by measures to popularise such an enterprise culture and encourage new business formation particularly in regions with the weakest economies (HM Government, 1988). Whichever of the six theories listed above is the most plausible in explanation of the small firm renaissance in Great Britain, it remains the case that a high rate of NFF in an area has been regarded as a yardstick of the growth of a vibrant 'enterprise culture'.

SPATIAL VARIATIONS IN NEW FIRM FORMATION: PREVIOUS RESEARCH

At a local level of analysis marked spatial differences have been recorded in terms of NFF. Various researchers have attempted to explain regional differences in production new firm formation on the basis of results from regional as well as national level studies. Keeble and Wever (1986, p. 17) drawing from information on the geography of recent NFF in European Community countries have made three deliberately broad generalisations. First, Europe's largest diversified cities and their surrounding metropolitan regions tend to exhibit high rates - and large volumes - of NFF, in both manufacturing and service industries. Second, high rates, though lower volumes, are characteristic of

a variety of previously unindustrialised rural regions. Third, the lowest rates - and smallest volumes - of manufacturing NFF are found in Europe's old specialised urban-industrial regions, as part of a syndrome of industrial decline in traditional heavy industries, high and rising unemployment, and net outmigration of population.

In order to explain these broad generalisations Keeble and Wever (1986, p. 18-23) proposed three theories for considering the theoretical causes of spatial variations observed. These structural, socio-cultural and economic theories are discussed below and the factors associated with each of the theories and NFF are detailed in the following section.

Structural Theory

Structural theory suggests that sectoral and plant size structures are leading influences on the geography of NFF. Traditional heavy industrial urban areas associated with high proportions of businesses with mature production technologies, high barriers to entry and low market growth will generate low numbers of new firms. A more important factor is, however, the effect of regional plant or firm structures. Fothergill and Gudgin (1982, p. 132) have argued that the chief single factor explaining variations in manufacturing NFF is the "extent to which local manufacturing employment is concentrated in large plants". Moreover, evidence from empirical research shows clearly that a larger proportion of new firm founders received far more appropriate experience and training for entrepreneurship in small establishments than in large, more hierarchical and occupationally-segmented establishments (Gudgin, 1978; Storey, 1982; Lloyd and Mason, 1984; Gudgin and Fothergill, 1984; Moyes and Westhead, 1990; Westhead, 1989).

Socio-Cultural Theory

This area of research views the rate of NFF as being strongly influenced by the existing socio-economic mix and characteristics of the resident population of a locality or labour market, through its impact on the supply of local potential founders. Two different socio-cultural explanations for spatial variations in NFF have been presented. The first suggests that the occupational structure of the local population, especially with regard to any relative concentration of non-manual, managerial or professional workers, possessing higher educational qualifications influence variations in NFF.

Founders with the latter characteristics are suggested not only to be more likely to establish new ventures (Whittington, 1984; Gould and Keeble, 1984; Keeble and Gould, 1985) but they will also have a greater tendency to establish viable enterprises with survival and growth potential. This formation process is most apparent in environmentally attractive previously unindustrialised rural locations which have benefited from environmentally-influenced migration.

The second socio-cultural explanation argues that high rates of NFF in other, more agriculturally-based, rural regions stems from a local tradition of self-employment, enterprise and indigenous economic initiative. For example, Westhead (1989, p.63) found in a study of new manufacturing firm formation in Wales over the 1979 to 1983 period that after the conducive influence of various aspects of rurality the second most important factor associated with high levels of NFF was an established tradition of entrepreneurship in a labour market indicated by high levels of self-employment. At the opposite end of the spectrum the dearth of NFF in industrial areas such as Glasgow (Checkland, 1981) and South Wales (Morgan and Sayer, 1984) is the legacy of externally-controlled nineteenth century industrial specialisation on coal, steel, shipbuilding and heavy engineering which has left the social structures of these two areas "overwhelmingly proletarian" and lacking any significant "indigenous 'business class" of managers, owners and local entrepreneurs (Morgan and Sayer, 1984, p. 6).

Economic Theory

Economic theory focuses on the local and regional availability of factors of production such as premises or venture capital. For the former Government and regional policy makers can play a significant role in developing an appropriate physical infrastructure for firm formation and growth in 'enterprise zones' and 'high technology complexes' located near to a major universities or concentrations of R and D activity (Oakey, 1984) and also through the development support mechanisms which are responsive to the financial needs of the new small firm. Interestingly, at a national level, Whittington (1984) has provided empirical evidence which suggests that areas with high access to capital (e.g home ownership) are generally associated with high rates of NFF. Moreover, economic theorists suggest that the demand for new firm products from particular geographical markets can influence the geography of NFF (Lloyd and Mason, 1984, p. 210). This

view is based upon the fact that many new small businesses tend initially at least to serve a restricted geographical market less than twenty-five miles from the businesses operational premises (Gudgin, 1978, p. 106; Lloyd and Mason, 1984, p. 216). Differences in the level, nature and growth of local and regional demand for goods and services are therefore viewed as of importance in promoting the formation, survival and growth of new firms in particular localities. Of course, regional market growth reflects a variety of processes including large firm restructuring, public sector spending (and Government defence procurement and equipment expenditure, particularly along the M4 corridor between London and Bristol) and population trends reflecting the 'livelihood principle' and environmentally influenced migration.

The above discussion indicates that a variety of factors influence NFF at a local level and they are all likely to be involved, but to a varying degree of importance and sometimes only in relation to particular cases. Consequently, there still remains considerable debate as to the reasons why the rate of NFF (or 'enterprise culture') in one area is higher than that recorded in another.

FACTORS ASSOCIATED WITH SPATIAL THEORIES OF NEW FIRM FORMATION

A survey of the new firms research literature identified sixteen factors associated with the theories stated above and each of them have been deemed important at the founder and macro-statistical level in promoting or impeding NFF (see Table 1). The factors listed in Table 1 have been inductively as well as deductively derived from the research literature and each factor is discussed in detail below.

Size of 'Incubator' Firm

It is suggested that employees working in small firms will be more likely to start their own businesses than those working in large firms due to the relevant work experience necessary for entrepreneurial training and encouragement (Cooper, 1971; Johnson and Cathcart, 1979; Storey, 1982; Gudgin and Fothergill, 1984; Gould and Keeble, 1984; O'Farrell and Crouchley, 1984; Westhead, 1989; Moyes and Westhead, 1990) (Factor 1 in Table 1).

Entry Into Industry and Industrial Specialisation

The role of an area's existing mix of industries in influencing subsequent industrial change is well recognised (Gudgin, 1978; Cross, 1981; Gould and Keeble, 1984) with founders often starting new businesses in the fields they already know (Mayer and Goldstein, 1961; Hoad and Rosko, 1964; Cooper, 1970; Gudgin, 1978; Johnson and Cathcart, 1979 Cooper and Dunkelberg, 1986, 1987; Cross, 1981; Storey, 1982). At a local level the combination of industrial structure, industrial specialisation and concentration and the varying propensity to generate new firms has an important bearing on local NFF rates (Factors 2 & 3). It has been found that areas dominated by heavy industries (such as shipbuilding and heavy engineering) rather than easy-entry industries has created a local milieu which is not conducive to enterprise formation because individuals in these areas have neither the opportunity and incentive nor do they develop the skills needed to set up new businesses (Chinitz, 1961; Checkland, 1981; Moyes and Westhead, 1990).

Degree of Local Autonomy

Incentives given by regional policy to encourage externally-owned branches to move to areas of traditional heavy industry may have further stunted indigenous enterprise (Johnson and Cathcart, 1979, p.278; O'Farrell and Crouchley, 1984, p.197; Westhead, 1989) (Factor 4).

Age of Investment

O'Farrell and Crouchley (1984, p.232) have also found that areas with a young manufacturing stock of establishments were associated with higher rates of NFF (Factor 5).

Occupational Experience

Results from the research literature indicate that individuals from managerial and professional backgrounds with problem solving skills and some responsibility for financial matters are better equipped for entrepreneurship than manual workers (Cross, 1981; Fothergill and Gudgin, 1982; Storey, 1982; Lloyd and Mason, 1983; Gould and Keeble, 1984; Westhead, 1989) (Factor 6).

Non-Production Entrepreneurship

It is generally regarded that outside the manufacturing sector itself, the greatest pool of production firm founders probably exists among the commercial and retailing business community (O'Farrell and

Crouchley, 1984, p. 232) (Factor 7) many of whom are economically active self-employed persons (O'Farrell and Crouchley, 1984; Pickles and O'Farrell, 1987; O'Farrell, 1986; Westhead, 1989; Moyes and Westhead, 1990) (Factor 6).

Education

Another promoting variable associated firm formation is a high level of educational attainment (Gudgin et al., 1979; Storey, 1982, p.107; Keeble and Gould, 1985, p.10; O'Farrell, 1986; Moyes and Westhead, 1990) (Factor 8).

Rurality

Previous empirical evidence has suggested that NFF rates are likely to be more vibrant in rural and small town communities than in cities (Gudgin, 1978; Fothergill and Gudgin, 1979; Cross, 1981; Mason, 1982; O'Farrell and Crouchley, 1984; Gould and Keeble, 1984; Westhead, 1988) (Factor 9). Undoubtedly, the residential attractiveness of particular rural areas play a significant role with rural areas tending disproportionately to attract managers and higher income workers for reasons of residential amenity and the perceived benefits of living in historic villages and attractive countryside. A rising local population (particularly in rural areas) will also increase the pool from which new firm founders are likely to emerge (Cross, 1981, p.263) and this trend has been found to be most apparent in rural East Anglia (Keeble and Gould, 1985) and Wales (Westhead, 1988) where over 55% of new manufacturing firms were started by 'immigrants' or 'non-locals'. The role of environment-related migration of potential entrepreneurs to attractive small-town and rural locations has been suggested to be a very important influence in the 1980s on the location of new technology based enterprises (Keeble and Kelly, 1986, p. 81) as well as explaining high rates of NFF in high-amenity areas as in south-western England, rural Wales and the Highlands of Scotland (Jones et al., 1984).

Contact Network

A major factor leading to higher rates of firm formation in particular localities is the development of social and formal business contacts and networks leading to the development of community entrepreneurship (Birley, 1985; Sweeney, 1987; Johannisson and Nilsson, 1989) (Factor 10). For technology-based new firms Keeble and Kelly (1986, p.80) suggest there are two related locational

mechanisms which lead to the development of 'technology-orientated complexes' such as in Cambridge, along the M4 corridor west of London, especially in Berkshire and the so-called 'Silicon Glen' of central Scotland. First, growth though the process of 'synergy', or intense interaction through a variety of mechanisms between new firms and entrepreneurs, research institutions, local banks and finance agencies and business service organisations. Second, the factor underpinning if not initiating the former is the impact of existing major scientific research institutions, such as large science-based universities or government research facilities, together with a high-quality local residential environment which attracts and retains the crucially important but intrinsically highly mobile research scientists and entrepreneurs whose activities create the complex.

Prevailing Political Ideology

Since 1979 successive Conservative Governments in the United Kingdom have tried to popularise the philosophy of self-help and personal initiative (Factor 11). In contrast, the more socially-orientated Labour and Scottish and Welsh nationalist parties have opposed attempts to trim back the degree of Government intervention in the economy in which they see the state playing a leading role not only in wealth creation but in its social and regional distribution. It is hypothesised that areas dominated by individuals who indicate strong support for the Conservative political philosophy will have a stronger 'enterprise culture' than say those areas in which there is considerable support for the Labour and nationalist parties.

Access to Capital

At a personal level accumulated adequate collateral as well as an awareness of outside sources of finance may enable more creditworthy individuals to overcome the financial barriers to business initiation (Cross, 1981; Storey, 1982; Whittington, 1984; Moyes and Westhead, 1990) (Factor 12).

Market Demand

It is appreciated that most new firms serve local and regional market areas (Johnson and Cathcart, 1979; Storey, 1982; Lloyd and Mason, 1984; O'Farrell and Crouchley, 1984; Westhead, 1988) (Factor 13). Therefore, the rate of NFF and subsequent survival and growth will be significantly influenced by the level of final and intermediate demand in the local and regional economy with a

number of individuals 'pulled' into entrepreneurship due to the identification of lucrative market opportunities and niches (Westhead, 1989; Moyes and Westhead, 1990). The expansion of an areas total and production bases and increased local population demand may lead to the opening up of new markets and expand existing ones thereby providing opportunities for new firms.

Turbulence

The supply of potential firm founders may be increased due to large scale contraction and redundancy of manufacturing employees, a number of which may be unable to find an alternative source of employment, other than self-employment by founding a business for themselves (Cross, 1981; Beesley and Hamilton, 1984, 1986; Storey and Jones, 1987; Westhead, 1989; Moyes and Westhead, 1990) related to this 'turbulence' factor a number of individuals may be 'pushed' into entrepreneurship (Shapero and Sokol, 1982; Fothergill and Gudgin, 1982; Atkin et al., 1983; Binks and Coyne, 1983; Vesper, 1983; Hamilton, 1986) due to the 'livelihood principle' (Oxenfeldt, 1943; Dahmen, 1970) (Factor 14).

Unemployment

The relationship between the level of unemployment and NFF remains unclear (Factor 15). Recent surveys have indicated that the threat of unemployment or actually being unemployed may stimulate new firm formation (Johnson and Darnell, 1976; Fothergill and Gudgin, 1982; Storey, 1982; Atkin et al., 1983; Binks and Coyne, 1983; Harrison and Hart, 1983; Westhead, 1988; Mason, 1989) with potential founders comparing actual incomes with expected incomes resulting in the establishment of a new business (Creedy and Johnson, 1983). Binks and Jennings (1986), in contrast, have presented an econometric analysis which adjusted for time-serie autocorrelation and this analysis showed that higher levels of unemployment have tended to discourage new company registrations in Britain between 1971 and 1981. However, Hamilton's (1989) research into new-company registrations in Scotland has recently indicated that "...business formation rates rise with unemployment" (p.253) but "beyond the 'critical' unemployment level (estimated to be around 20%), further rises in unemployment will be associated with falling formation rates" (p.254).

Premises

Another conditioning variable generally associated with high rates of firm formation is the availability and low cost of premises (Fothergill and Gudgin, 1982) (Factor 16). In recent years local authorities and development agencies have made strenuous efforts to remove this potential barrier to NFF, but the continuing pressure of these agencies to maintain this effort suggests that premises availability is still an important 'hard' support measure.

ANALYTICAL FRAMEWORK

Research Methodology

Because a wide range of factors and 'surrogate' variables are considered to be associated with spatial variations in NFF univariate correlation analysis is used as a means of guidance to delineate possibly important factors in the new firm formation process[2]. The factors and 'surrogate' variables found to be highly statistically associated with spatial variations in NFF at a county level will then be used in a discriminant analysis to identify the main factors which lead to differences in entrepreneurial potential in the 'north' and 'south' of Great Britain.

The Environment

Whilst the notion of an environment may be conceptualised it cannot be easily operationalised (McDermott and Taylor, 1982). Translation of the concept of the 'environment' into a form appropriate to the regional scale is not easy because some potential founders may spend much of their lives in one area and move to another deliberately to set up a new business (Keeble and Gould, 1986; Westhead, 1988). However, most new firms are conceived where founders were living at the time (Scott, 1976; Gudgin, 1978; Hakim, 1988) and locational choice restricted very much to founders' local areas, certainly the areas within which they would be expected to search for employment. Labour market areas or Travel-to-Work Areas (TTWAs) have been defined by the Department of Employment to isolate areas within which most people both live and work. Whilst they have a strong rationale, they will not be used as the spatial unit of analysis here for the following reasons. Most importantly, the key surrogate data on new business formation were not available on a TTWA basis at

the time of writing. Secondly, recent work has shown that for the West Midlands of England at least, white-collar and blue-collar TTWAs differ considerably indicating that the TTWAs are not 'self-contained' labour market areas for individuals at different ends of the occupational spectrum (Coombes et al., 1988). Third, the new production business registration data has traditionally been published at the broad national and regional levels but more recently at the more disaggregated county level. Given these problems and the objectives of this paper, counties of Great Britain (with the exception that the Highlands and Islands of Scotland have been aggregated to form a single unit) were the most convenient - and not inappropriate - spatial framework.

Data

The analysis is based on production business registration data for Valued Added Tax (VAT) purposes between 1980 and 1987 (Department of Employment, 1989). As in a previous national analysis (Moyes and Westhead, 1990) the recording of a new production business for VAT purposes was treated as equivalent of the formation of a new manufacturing firm by an individual or a partnership, not the reformulation of existing corporations. This is not a wholly satisfactory measure of NFF but it is the best available for present purposes[3]. Variations in the number of VAT 'starts' standardised to a rate per thousand production workers per county, 1981 is the dependent variable to be analysed[4]. This measure is used throughout the study since it reflects the process by which the population of industrial employees is the relevant indicator of the number of potential entrepreneurs (Gudgin, 1978; O'Farrell and Crouchley, 1984, p.227-28). A base measured in terms of the stock of VAT businesses fails to take into account the size of the latter.

Unfortunately, it is not possible to obtain data for all factors listed in Table 1 at the county level of analysis and so a series of 'surrogate' variables closely associated with defined factors have been abstracted from published statistical sources. The 'surrogate' variables corresponding to factors associated with NFF are also listed in Table 3 and they are means of capturing the importance of a factor in a numerical manner. These variables will be used in the following correlation analyses and apply to a variety of time-periods. However, as far as possible they relate logically to the 1980-1987 period to which the published dependent variable applies. The main data sources were the 1981

Population Censuses of England, Wales and Scotland, particularly the County reports, County Monitors and Economic Activity Leaflets; the Census of Production (Business Monitor, PA1003, 1979); the Municipal Year Book, 1982; and the Central Statistical Office publication Regional Trends. It was not possible to match all of the variables suggested in Table 1 and data on employment loss in manufacturing closures, levels of local ownership, social and business network development and age of investment were particularly scarce. Nevertheless, sixty-three variables were extracted covering the following themes: plant size; socio-economic and occupational structures; educational qualifications; personal income and increasing access to capital; industrial structure and industrial specialisation (pointing towards barriers-to-entry in activities characteristics of each county); market demand (mass) variables; 'push' factors concerned with employment decline and unemployment; availability of premises; 'rurality' (population density and change); and dominant political culture. In some cases, information for the same characteristic but for different dates could be included, since there was no a priori case to prefer data for one date rather than another. Because the same data sources, definitions and survey techniques have been used for the collection of the new firm as well as the the independent variable data it can be reseasonably be suggested that the data were appropriate for the task of identifying the leading factors 'explaining' spatial variations in NFF at a county level and discriminating betwen locations in the 'north' compared to the 'south'.

BUSINESS REGISTRATIONS, DEREGISTRATIONS AND STOCKS

Due to the dearth of published data it was not possible to present any time-series analyses of trends in registration and deregistration. However, the number of production businesses registered for VAT in the United Kingdom has increased consistently from 121,183 in 1979 to 146,195 in 1987 (Figure 1). Each increase is the net result of much larger numbers of registrations rather than deregistrations (Figure 2). The number of production businesses registrations increased substantially from 14,582 in 1980 to 19,667 in 1985. A noticeable fall in registrations was recorded in 1986 (19,285 registrations) but this was followed by an increase in the registration rate in 1987 (19,409 registrations). In 1987 the number of registrations of businesses was 19,409 compared to 15,880 deregistrations. The number

of deregistrations has remained stable in recent years but a noticeable fall in deregistrations was recorded between 1986 (16,724 deregistrations) and 1987 (15,880 deregistrations).

SPATIAL DIFFERENCES IN NEW FIRM FORMATION, 1980-1987

Evidence presented in Table 2 for production business registrations over the 1980 to 1987 period at a standard region level reaffirms the view that there are marked 'north-south' differences in NFF formation environments within the United Kingdom. Table 2 reveals that in the Thatcher Years, the geography of new production firm formation has been dominated by the South East of England, together with adjacent East Anglia and South West England (broadly regarded as the pressurised heart of the 'south'[5] - a definition adopted by a variety of researchers including Harrison and Mason, 1988; Cambridge Econometrics and the Northern Ireland Economic Research Centre, 1987, p.6; Leyshon and Thrift, 1989; Watts, 1989). The lowest regional rates have been recorded by locations in the 'north'[5] such the North of England, Scotland, Yorkshire and Humberside and the North West of England. The level of NFF in the 'south' is nearly twice that recorded in the 'north' of Great Britain. Interestingly, Table 2 shows that at the standard region scale Storey's (1982) 'Regional Entrepreneurship Index' was significantly positively associated with the pattern of new firm formation (NFF) rates over the 1980 to 1987 period (Spearman Rank Correlation= +0.77, significance= 0.05).

RESULTS OF THE CORRELATION ANALYSES

Table 3 shows the relationship between the dependent variable and each of the sixty-three independent variables, across sixty-three counties; they are grouped into twelve headings consonant with new firm literature proposals[6]. They were obtained using the statistical analysis package SPSSx, and show the strength (pearson correlation: r), direction (+ or -), the regression parameter (slope: b), significance of association (F value) and the standard error of the estimate associated with the regression equation (S.E.E.). Most of the correlation coefficients were in the direction hypothesised in Table 2 and very similar to the results presented for an earlier and shorter time period of analysis (Moyes and Westhead, 1990). Interestingly over the 1980-87 period rather than the 1980-83 period the importance of a whole range of factors have become more pronounced.

Forty of the independent variables were associated with the dependent variable at the 0.05 level of significance or better. The most clearly-related variable was a county's deregistration or 'stop' rate: the number of production businesses ceasing to be registered for VAT purposes during 1980-87 per thousand production workers, 1981 (X57 in Table 3). Inclusion of this variable is perhaps contentious: high 'birth' rates often accompanied (and perhaps stimulated) high 'death' rates but since deaths may provide the basis for new businesses from the remains of the old, this 'turbulence' variable would be difficult to ignore (Beesley and Hamilton, 1984; Moyes and Westhead, 1990). 'Structural theory' as well as 'large firm fragmentation theory' appear to have some credibility with more new firms being established in 'turbulent' than in less-turbulent local economies. Related to the first 'socio-cultural theory', the occupational structure of a county was the second most important influence. Counties with high proportions of individuals associated with manual occupations were associated with markedly lower NFF rates (X22 in Table 3). The 'enhancing' effect of a high percentage of managers and professionals (X20 & X21 in Table 3) detected by Gould and Keeble (1984) at a regional scale was found to be highly important at a national scale. Employment in small plants (X1 in Table 3) supporting the 'structural theory' was found to be highly associated with firm formation. The second 'socio-cultural theory' relating to the tradition of self-employment (X23 in Table 3) and non-production entrepreneurship (X25 in Table 3) have some general applicability. Moreover, empirical evidence in Table 3 suggests that 'economic theory' explanations in terms of access to finance (X38, X39, X41 & X46 in Table 3) are of less importance than 'structural' or 'socio-cultural' theories in explaining spatial differences in firm formation. Interestingly, there is evidence to support the 'enterprise economy theory' for the formation of new firms. In counties were there is an established 'enterprise culture' (measured through support for the Conservative rather than the Labour and Scottish and Welsh nationalist parties) a higher level of NFF is apparent (X37 in Table 3).

It can also be inferred from the results presented in Table 3 that counties with a strong specialisation and tradition in production activities (X18 in Table 3) generally do not spin-out a large number of new production firms, whilst at the other extreme those areas which have been able to attract an increasing pool of potential founders (X34 in Table 3) are associated with favourable rates of NFF. Moreover, the direction of X54 and X56 helps to clarify the role of unemployment in NFF. Counties with longstanding high rates of unemployment showed low NFF rates, whereas those with

sudden large rises from low bases demonstrated what might be termed a 'push' effect into NFF, supporting the evidence of Hamilton (1989) and Moyes and Westhead (1990).

FACTORS DISCRIMINATING THE ENTREPRENEURIAL POTENTIAL OF THE 'NORTH' AND 'SOUTH' OF GREAT BRITAIN

In this section the twenty-three hard core variables (or 'discriminating variables') found to be highly statistically associated with NFF rates at a county level over the 1980 to 1987 period (indicated by the symbol (†) in Table 3) will be used to see whether the entrepreneurial potential characteristics of counties in the 'north' and 'south' of Great Britain are systematically different. The multivariate technique used to identify the main factors characterising firm formation in the two 'broad' environments will be a stepwise discriminant analysis (variables included in the model based on the smallest Wilks' lambda). Discriminant analysis is a fairly robust statistical technique (Klecka, 1980, p.61) for examining differences between two or more groups of objects with respect to several variables (nominal and ordinal variables) simultaneously (Norusis, 1985, p.73 and p.109). The purpose of stepwise selection is to locate a more parsimonious subset of variables which can discriminate nearly as well as, if not better than, the full set (Klecka, 1980, p. 60). Discriminant analysis allows differences between the 'north' and 'south' groups of counties to be identifiedand the results from the analysis will provide a means to assign (and classify) any county into the group which it most closely resembles. For a detailed discussion of the discriminant analysis technique the reader is referred to Klecka (1980).

Table 4 indicates the final stepwise solution arrived at after step 9 and the calculated Wilks' lambda value (0.4202) for the final model is statistically significant indicating that the null hypothesis that the population means are equal can be rejected. The eigenvalue (3.9628) and the canonical correlation value (0.8936) for the discriminant function indicate that the substantive utility of the function is very high. A strong relationship exists among the two groups and the discriminant function indicates that there is much more between-groups variability than within-groups variability. Another indicator of the effectiveness of the discriminant function is the degree of predictive accuracy measured by the percentage of cases (or counties) classified correctly. On the basis of the discriminant score, it is possible using the Bayes' rule for classifying counties in to one of the two

groups ('north' and 'south'). A county is classified, based on its discriminant score into the group for which the posterior probability is largest. That is, it is assigned to the most likely group based on its discriminant score (Norusis, 1985, p.82-83). Table 4 shows that the overall percentage of counties classified correctly is 100% (40 out of 40 counties in the 'north' and 23 out of 23 counties in the 'south').

The standardised canonical coefficients in Table 4 indicate the relative importance of the variable whilst the structure matrix shows how closely a variable and a discriminant function are related. Naming of the discriminant function is derived on the basis of the structure components by noting the variables having the highest coefficients. A high positive discriminant score is associated with counties in the 'north' of Great Britain, whilst a negative discriminant score is associated with counties in the 'south'. The leading discriminating variables associated with counties in the 'north' were found to be a high proportion of manual workers, a reduced pool of potential entrepreneurs associated with population decline and limited access to finance either from institutional or personal sources. In marked contrast, in the 'south' there is shown to a socio-economic milieu which favours enterprise development because it has a smaller proportion of individuals whose main form of work experience was a manual one, a factor which has been shown to 'inhibit' new firm formation. Territorial environments in the 'south' are associated with an increasing pool of potential 'immigrant' firm founders attracted to southern locations because of their greater economic prosperity and wider market opportunities and potential market niches. A number of potential firm founders moving to the 'south' may have been attracted to certain aspects of its high residential amenity. Locations and individuals in the 'south' are also found to high personal income as well as greater access to institutional wealth located in Greater London which reduces a significant financial barrier to firm formation.

CONCLUSION AND IMPLICATIONS

The empirical evidence presented above indicates that the level of production business registration has increased substantially over the 'revolutionary' Thatcher years (Worcester, 1989) with the total stock of VAT registered businesses also increasing quite dramatically. Results of the correlation

analyses indicate that a wide range of factors 'explain' why there are marked spatial differences in NFF rates. The variable found to be most statistically associated with formation rates was the deregistration rate (X57). This variable is generally associated with the 'recession-push' and the 'large firm fragmentation' theories of the growth of small business start-ups and the 'structural theory' of new firm location. It can be inferred that areas where there is considerable 'churning' and 'turbulence' have a high proportion of firms established by individuals 'pushed' into entrepreneurship. This level of analysis also found that the two 'socio-cultural' theories regarding the geography of new firms did have a high level of applicability. Counties with weak proletarian traditions with low proportions of manual workers and relatively high percentages of managers and professionals as well as a strong self-employment and non-production entrepreneurship tradition were found to be highly conducive to NFF. A certain level of support can be given to 'economic theories' relating to the geography of NFF. Rates of NFF were found to be significantly positively associated with those areas in which there was not only access to finance but considerable levels of local and regional market demand for the goods and services of new production firms. Moreover, from the correlation results there is empirical evidence to support the 'enterprise economy theory' for the growth of small business start-ups though this theory is obviously not the most important for explaining spatial variations in rates of NFF. High NFF rates were recorded in counties with strong Local Government support for the Conservative party and by implication faith with the self-help and personal initiative philosophy. However, the causal mechanisms relating to this theory and the geography of NFF can only realistically be identified at a more refined micro-level of analysis.

The 'north-south' definition adopted is crude and it is a criticism which the author accepts. There are clearly inner-city pockets of deprivation in the 'south', and areas of high economic activity and affluence in the 'north'. Nevertheless, at this crude spatial level of analysis it was found that there was a marked 'north-south' contrast in formation rates with areas in the 'north' recording' markedly lower levels of enterprise formation. In order to unravel the factors associated with difference an exploratory discriminant analysis was used to identify and establish the most important 'environmental' and 'incubator' characteristics which clearly distinguish themselves among the the two pre-defined groups. The leading discriminating variables associated with counties in the 'north' were found to be a high proportion of manual workers, a reduced pool of potential entrepreneurs and limited access to

finance either from institutional or personal sources. In the 'south' a 'synergism' of favourable factors (Goddard, 1983, p.21) were shown to be the reverse with counties in the 'south' benefiting from a smaller proportion of individuals whose main form of work experience was a manual one. Areas in the 'south' have experienced an increase in the pool of potential entrepreneurs due to high levels of 'in-migration' attracted by employment opportunities and greater potential disposable income. Also, in the 'south' potential entrepreneurs have greater access to finance unlike their counterparts in the 'north' to establish new businesses.

Results from the analyses detailed above indicate that the Thatcher years have been associated with a considerable upsurge in personal initiative and enterprise as measured by NFF. However, the spatial pattern of the take-up of the 'enterprise culture' has been spatially uneven and in the future it will widen further due to the considerable range of factors which favour NFF in counties in the 'south rather than in the 'north' (Storey, 1982; Shutt and Whittington, 1984, p. 23; Jones, 1987). Firm formation in the future will be higher in the 'south' due to its favourable socio-economic structure, plant size structure and market opportunities. Government must appreciate that a nationally applied new and small firm policies will have marked 'north-south' contrasts in take-up rates and policy therefore risks be regionally divisive unless a spatial dimension is included. As early as 1983 Goddard (p.21) suggested that the problems of lagging regions should be tackled by "...generating industrial growth in manufacturing plants already located in particular areas and the birth of new enterprises rather than relying on the transfer of investment from elsewhere". Through a policy of mobilising indigenous potential and stimulating the small firm sector it is suggested that in the long term the objective of achieving self-sustaining or self-reliant growth can be achieved. Segal (1979, p.219) has claimed that a new and small firms policy should show deliberate bias in favour of lagging regions (or regions with a poor 'enterprise culture') and positive discrimination in the delivery of new and small firm support is advocated (Jones, 1987, p.32). Both Segal (1979) and Storey (1982) claim that policy should not solely be concerned with 'national efficiency'. These researchers strongly support the view that due to the uneven take-up of the 'enterprise culture' at a local level, particularly in the 'north', there is a need for a new and small firms policy which increasingly incorporates a regional dimension and which is concerned with the objectives of 'geographical welfare' and 'regional equity'. If the objective of government policy is 'geographical welfare' new and small firms policies will have to be

targetted to the needs of specific localities in the 'north' as well a number of deprived localities in the 'south' (such as inner-city London). Unless this is done aspatial small firms policy will increasingly have regionally divisive implications.

In the present political climate, discrimination of this kind seems remote. Currently, new and small firms policies are operated non-spatially in the furtherance of national objectives of economic regeneration and growth with little detailed consideration of possible adverse, regional consequences (Jones, 1987, p. 32). At present it is the belief of Government that these inequalities and regional variations in new firm formation and small firm growth will be overcome by stimulating local economic efficiency, indigenous innovative enterprise and greater labour market flexibility. Governments view is that the best way to help the 'north' is to 'help the region to help itself' through a combination of macro-economic policies and selective policies that create conditions under which competition and enterprise can flourish (Martin, 1989, p.54). It has also been suggested that the "...the aim of any initiative should be to encourage and enhance the self-sustaining process of venture creation at the local level. Policy-makers should not interfere in the process, but rather facilitate it" (Manning et al., 1989).

This paper has been concerned with absolute and relative levels of firm formation but it increasingly realised that a key issue is not only the rate of firm formation but the 'types' of firms established and their survival, growth, job and wealth creation prospects (Storey and Johnson, 1987c). A small firms policy of 'picking winners' has been suggested as a way of using scarce resources more efficiently (Storey and Johnson, 1987b; Storey et al, 1987) but this policy may not be a practical strategy in a complex real world (Hakim, 1989). However, the objective of picking 'types' of firm founders or new firms which have considerable job generation and wealth creation potential remains an important area for future research. Interestingly, Wever (1986) in a recent study of NFF in the Netherlands has suggested that urban and regional policy makers concerned with local job generation should intervene and promote the viability and growth of existing small businesses rather than to stimulate increased NFF rates - even though the former poses major policy problems of instruments, targetting and effectiveness. These areas of concern and debate would benefit from a still wider and more refined understanding of the various structural, socio-economic and economic factors which lead to markedly different expressions of the enterprise culture within bounded territorial

'environments' at a national level of analysis. The statistical findings presented above are highly suggestive, but in themselves they do not necessarily reveal the underlying 'causal mechanisms' behind the differential formation of new enterprises in the 'north' and 'south' of Great Britain (Shutt and Whittington, 1987, p.14). A more detailed micro-level analysis of various new firm theories throughout Great Britain at a labour market level of analysis using similar definitions and new firm surveys for the same time period would potentially unravel at a more refined level the factors and processes leading to spatial variations in NFF and the 'enterprise culture' during the remaining Thatcher years. This future research would enable appropriate policy measures and support mechanisms to be developed. Finally, in the words of Johnson (1986, p.162) "There can be little doubt that government policies (and pronouncements) have played an important part in making the 'own account' option more feasible and more attractive to a wider range of people, and in generating a much more supportive environment - and 'enterprise culture' - for self-employment. These changes, however - whatever their scale - do not of themselves answer the question of whether the economic benefits of the different policies exceed their cost".

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Notes:

1. The public sector includes public utilities (gas, electricity and water) and mining and quarrying in addition to manufacturing. However, virtually all new private companies among registrations occur in manufacturing (Gudgin et al., 1989, p.60).
2. In the absence of any strong theoretical arguments in favour of a specific functional form between NFF and the independent factor(s) associated with it, a linear relationship has usually been tested (Gudgin, 1979; Johnson and Cathcart, 1979; Gudgin and Fothergill, 1984; O'Farrell and Crouchley, 1984).
3. Many businesses are not registered for Value Added Tax (VAT), either because they have turnover below the threshold (£22, 100 in 1988) or because they trade only or mainly in exempt or zero-rated goods and services that are exempt from VAT. Although the number of such firms is not known, it is clearly large. Apart from the fact that many businesses never enter the VAT system at all, a firm may well register some time after starting depending, for example, on how long it takes for its turnover to build up to the national threshold level. This threshold has been raised over the years from £10,000 (March 1980) to £21,300 (March 1987) and £22,100 (March 1988). Although changes since 1981 have been set so as to balance the effect of inflationary increases in turnover, bringing some firms into scope. The database excludes group and divisional registrations and it is still possible for two or more VAT registrations to relate to the same 'enterprise group', where two firms are in fact under common ownership even though they are separately assessed for VAT.

   A related but distinct point is that a VAT registration or deregistration is not synonymous with the birth or death of a business. More importantly, there are a number of reasons why a firm may deregister without closing. One of four codes is assigned in the Employment Department database: trader goes out of business; trader goes out of business, buyer already registered; trader changes legal identity; and trader falls below exemption limit (is no longer taxable; makes only zero-rated supplies and requests exemption; or accepts invitation to deregister). Only the first code unequivocally relates a closure and should be noted that closure is not necessarily synonymous with 'failure'. On the other hand, a business may register for VAT in advance of starting to trade, and deregister after ceasing to trade. But these are thought to be less important factors.
4. I am aware of the argument (Gudgin and Fothergill, 1984) that this type of 'raw' rate of new manufacturing firm formation may be misleading. As in an earlier paper (Moyes and Westhead, 1990) I propose that since new manufacturing firms may arise from non-manufacturing businesses, rates of NFF should be calculated per thousand manufacturing workers plus a percentage of non-manufacturing workers per area. "The correct measure is probably...10%..." (ibid., p.205). In principle, this suggestion is attractive. But it would be surprising if a flat-rate integer percentage applied across Great Britain and we would have no idea as to how time-specific such a figure might be. Equally, having allowed for some kind of 'leakage' <u>into</u> the manufacturing sector, it could be argued that the pool of potential new production firm founders in an area could be reduced by an opposite but equally unclear amount of leakage <u>out</u> into non-production sectors by those with a background in production firms. Hence we prefer the rate referred to above
5. The 'south' is the standard regions of the South East of England, East Anglia and the South West of England, whilst the East and West Midlands, the North West, Yorkshire and Humberside and the North of England as well as Scotland and Wales are regarded as the 'north'.
6. Floorspace coefficients refer to 54 sub-areas: data for Scotland were not available. These variables were therefore omitted from the multivariate analysis.

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Table 1 Factors Identified by the New Firm Research Literature Hypothesised as Associated with Either Promoting or Impeding New Firm Formation

	Factor	Surrogate Variables	Hypothesised as Promoting / Impeding
1.	Size of 'incubator firm	High % of total employment in plants employing <10 persons	Promoting
		High % of total employment in plants employing >500 persons	Impeding
2.	Entry into industry	High % of population in industries with low entry barriers	Promoting
		High % of population in heavy industries	Impeding
		High % of population in mining and quarrying industries	Impeding
3.	Industrial specialisation	High Entropy specialisation statistic	Promoting
4.	Degree of local autonomy	High % of total manufacturing employment in indigenous plants	Promoting
5.	Age of investment	High % of total employment in 'young' plants	Promoting
6.	Occupational experience	High % of population in managerial and professional groupings	Promoting
		High % of population in manual groupings	Impeding
		High % of population being self-employed	Promoting
7.	Non-production entrepreneurship	High % of total employment in services	Promoting
		High % of total employment in commerce, retailing and wholesaling	Promoting
8.	Education	High % of population with higher degrees	Promoting
9.	Rurality	High % of population living in towns of over 5,000 population	Impeding
10.	Contact Network	Large number of clubs, societies and enterprise and development agencies	Promoting
11.	Political ideology	High of individuals voting for the Labour, Scottish and Welsh nationalist parties	Impeding
12.	Access to capital	High savings per head of population	Promoting
		High house-owning population	Promoting
		High local-authority renting population	Impeding
13.	Market demand	High regional income distribution	Promoting
		Increase in production employment	Promoting
		Increase in total employment	Promoting
14.	Turbulence	High rate of employment loss in manufacturing establishment closures	Promoting
15.	Unemployment	High % level of unemployment	Equivocal:
		High % increase in the rate of unemployment	see text
16.	Premises	Availability and low cost of premises	Promoting

Sources: adapted from Cross (1981); Storey (1982); Gould and Keeble (1984); Keeble and Wever (1986); Lloyd and Mason (1984); O'Farrell and Crouchley (1984); Beesley and Hamilton (1986); Storey and Jones (1987).

Detailed discussion of the hypotheses can be found in Westhead (1989).

Table 2 New Firm Formation Rates in the Production Industries, 1980-1987 by Region

Region	New Firms 1980-87	Business Formation Rate[1]	Rank on Storey's Regional Entrepreneurship Index[2]
'South'	72,421	30.24	
1. South East	56,973	32.16	1
2. East Anglia	4,940	25.40	3
3. South West	10,508	24.49	2
'North'	67,565	15.91	
4. East Midlands	11,238	18.30	5
5. West Midlands	15,387	18.24	6
6. Wales	5,120	17.52	10
7. Northern Ireland	2,240	17.40	9
8. North West	14,366	16.87	4
9. Yorkshire and Humberside	10,070	14.77	8
10. Scotland	7,025	12.49	7
11. North	4,359	10.88	11
Great Britain	139,986	21.08	
United Kingdom	142,226	21.01	

Notes: 1. New production businesses per 1,000 production industry employees 1981.
2. Rank on Regional Entrepreneurship Index (Storey, 1982, p.196).

Sources: Employment Department, HMSO, 1989 and unpublished Census of Employment Statistics.

Table 3 Correlation Coefficients Between the Start[1] Production Firm Formation Rate, 1980-1987 and Selected Independent Variables (n= 63)

		Pearson correlation	Adjusted R^2	Slope (b)	'F' value	Signif-icance of 'F'	S.E.E.[2]
Independent variables (x):							
(a)	Size of Incubator Firm						
†1.	% of manufacturing employment in establish-ments, 1979 with 11-19 employees	0.70	0.48	3.34	57.33	0.0000	6.42
2.	% of manufacturing employment in establish-ments, 1979 with 11-50 employees	0.63	0.39	1.20	40.52	0.0000	6.93
†3.	% of manufacturing employment in establish-ments, 1979 with >500 employees (LP500)	-0.46	0.20	-0.31	16.55	0.0001	7.93
(b)	Industrial Structure						
4.	% of total employees employed in easy-entry industries, 1981 (SICs 46, 47 & 49)	0.13	0.02	0.95	1.11	0.2957	8.86
5.	% of total employees employed in easy-entry industries, 1981 (SICs 31, 32, 46, 47 & 49)	-0.04	0.00	-0.11	0.08	0.7833	8.94
†6.	% of total employees employed in heavy industries, 1981 (SICs 11, 14, 21, 22, 23, 24 & 25)	-0.58	0.33	-1.08	31.12	0.0000	7.28
7.	% of total employees employed in heavy industries, 1981 (SICs 14, 21, 22, 23, 24 & 25)	-0.42	0.16	-1.08	12.99	0.0006	8.12
†8.	% of total employees employed in Commerce, Retailing & Wholesaling, 1981 (SICs 61, 64/65, 81, 82, 83 & 84)	0.52	0.26	1.66	23.08	0.0000	7.62
†9.	% of total employees employed in mining and quarrying, 1981 (SICs 11, 21 & 23) (MINING)	-0.43	0.17	-1.40	13.61	0.0005	8.09
10.	% of total manufacturing employees employed in easy entry industries, 1981 (SICs 46, 47 & 49)	-0.05	0.00	-0.00	0.14	0.7048	8.93
11.	% of total manufacturing employees employed in easy entry industries, 1981 (SICs 31,32,46,47 & 49)	-0.03	0.00	-0.00	0.04	0.8330	8.94
12.	% of total manufacturing employees employed (excluding SIC 11) employed in heavy industries, 1981 (SICs 14, 21, 22, 23, 24, & 25)	0.02	0.00	0.00	0.02	0.8915	8.94
13.	% of production employees employed in easy entry industries, 1981 (SICs 46, 47 & 49)	0.12	0.00	0.03	0.83	0.3634	8.88
14.	% of production employees employed in easy entry industries, 1981 (SICs 31, 32, 46, 47 & 49)	0.17	0.01	0.02	1.76	0.1894	8.82
15.	% of production employees employed in heavy industries, 1981 (SICs 11, 14, 21, 22, 23, 24, & 25)	0.02	0.00	0.00	0.02	0.8846	8.94
(c)	Industrial Specialisation						
16.	% of total employment in manufacturing, 1978	-0.52	0.26	-0.60	22.86	0.0000	7.63
17.	% of total employment in manufacturing, 1981	-0.46	0.20	-0.61	16.41	0.0001	7.94
†18.	% of total employment in production, 1978 (PROD78)	-0.63	0.39	-0.66	39.84	0.0000	6.95
19.	% of total employment in production, 1981	-0.62	0.38	-0.73	38.82	0.0000	6.99

		Pearson correlation	Adjusted R^2	Slope (b)	'F' value	Signif-icance of 'F'	S.E.E.[2]
(d)	Socio-Economic Structure / Occupational Structure						
20.	% of total employees in employment in S.E.G.s 1 & 2 (managerial & professional, 1981)	0.61	0.36	2.53	35.48	0.0000	7.11
†21.	% of total employees in employment in S.E.G.s 1, 2 & 13 (managerial, professional & farmers, 1981 (MANAGERS)	0.62	0.37	2.45	38.14	0.0000	7.01
†22.	% of total employees in S.E.G.s 9, 10 & 11 (manual), 1981 (MANUAL)	-0.76	0.57	-1.13	84.35	0.0000	5.79
†23.	% of total economically active people self-employed, 1981 (SELF)	0.69	0.47	1.61	56.80	0.0000	6.43
24.	% of total employed who are self-employed, 1981	0.66	0.43	1.48	48.10	0.0000	6.69
(e)	Non-Production Entrepreneurship						
†25.	% of total employment in services, 1978	0.65	0.42	0.77	45.05	0.0000	6.78
(f)	Educational Qualifications						
†26.	% of school leavers with no graded results, 1981	-0.36	0.11	-0.44	9.00	0.0039	8.35
27.	% of pupils >16 years old staying at school, 1979	0.21	0.03	0.26	2.77	0.1010	8.75
28.	% school leavers with 1 or more 'A' levels, 1981	-0.08	0.00	-0.12	0.39	0.5323	8.91
†29.	% of male employees with higher educational qualifications, 1981	0.29	0.07	0.91	5.46	0.0228	8.57
†30.	% female employees with higher educational qualifications, 1981 (FEMHIGHED)	0.35	0.11	1.91	8.75	0.0044	8.36
(g)	Rurality / Agglomeration						
31.	1981 Population density	0.04	0.00	0.04	0.08	0.7789	8.94
32.	% of total employment in agriculture, 1978	0.24	0.04	0.74	3.87	0.0537	8.67
33.	% of total employment in agriculture, 1981	0.25	0.05	0.79	3.98	0.0505	8.66
†34.	1981-1986 population change (POPCH)	0.62	0.38	2.20	38.20	0.0000	7.01
35.	Total employment, 1978 as a proportion of total land area (h.a.)	0.07	0.00	0.15	0.26	0.6120	8.92
36.	Total production employment, 1978 as a proportion of total land area (h.a.)	-0.08	0.00	-0.55	0.38	0.5373	8.91
(h)	Political Ideology						
†37.	% labour and nationalist councillors in local government elections, 1981	-0.65	0.41	-0.25	44.87	0.0000	6.79
(i)	Access to Capital						
†38.	% owner occupiers, 1981	0.49	0.22	0.43	18.95	0.0001	7.81
†39.	% of dwellings rented from local authority, 1979	-0.66	0.43	-0.65	47.76	0.0000	6.70
40.	Domestic average rateable value, 1979	0.19	0.02	0.04	2.41	0.1258	8.77
†41.	Average domestic rates per hereditament, 1979 per person, 1981 (AVDOMRATE)	0.28	0.06	0.07	5.10	0.0276	8.59
42.	Average male weekly earnings per male in employment, 1979	-0.29	0.07	-0.39	5.69	0.0202	8.55
43.	Average female weekly earnings per female in employment, 1979	0.25	0.05	0.73	3.99	0.0502	8.66
44.	GDP per head 1979 per employee in employment, 1978	-0.06	0.00	-0.05	0.25	0.6197	8.92
45.	Change in average domestic rates per hereditament, 1979-1987	-0.43	0.17	-0.11	14.14	0.0004	9.23
†46.	% change in average male weekly earnings per male in employment, 1979-1987 (EARNM7987)	0.53	0.27	0.39	23.75	0.0000	7.59
47.	% change in average female weekly earnings per female in employment, 1979-1987	0.11	0.00	0.08	0.80	0.3742	8.88

		Pearson correlation	Adjusted R^2	Slope (b)	'F' value	Signif-icance of 'F'	S.E.E.[2]
(j)	Market Demand						
48.	% change in total employment, 1978-1981	0.43	0.18	0.75	14.18	0.0004	8.05
†49.	% change in total employment, 1978-1984	0.58	0.32	0.54	30.72	0.0000	7.29
50.	% change in total employment, 1981-1984	0.58	0.33	0.88	31.43	0.0000	7.26
51.	% change in manufacturing & utilities employment, 1978-1981	0.35	0.11	0.39	8.36	0.0053	8.39
†52.	% change in manufacturing & utilities employment, 1978-1984 (PROD7884)	0.47	0.21	0.37	17.67	0.0001	7.87
53.	% change in manufacturing & utilities employment, 1981-1984	0.44	0.18	0.50	14.55	0.0003	8.04
(k)	'Push' Factors / Unemployment						
†54.	% unemployed, July 1979	-0.40	0.15	-1.61	11.76	0.0011	8.19
55.	% unemployed, October 1987	-0.43	0.18	-1.05	14.22	0.0004	8.05
56.	Change in % unemployed between 1979-1987	0.15	0.01	9.55	1.35	0.2505	8.84
†57.	Deregistration rate, 1980-87 per 1,000 production employees, 1981 (STOP)	0.93	0.85	1.15	364.48	0.0000	3.39
(l)	Premises (n= 54)						
58.	Total floorspace, 1979 per resident	-0.42	0.16	-1.71	11.30	0.0015	7.88
59.	Total floorspace, 1979 per hectare	-0.06	0.00	-0.01	0.22	0.6421	8.68
60.	Total floorspace, 1979 per production employee, 1981	0.41	0.15	0.23	10.35	0.0022	7.94
61.	Total industrial floorspace, 1979 per resident	-0.58	0.32	-2.77	26.08	0.0000	7.10
62.	Total industrial floorspace, 1979 per hectare	-0.18	0.01	-0.03	1.65	0.2053	8.56
63.	Total industrial floorspace, 1979 per production employee, 1981	-0.32	0.08	-0.31	5.77	0.0199	8.25

Notes: 1. New production businesses per 1,000 production industry employees 1981; and
2. Standard Error of the Estimate.

Sources: Population Census, 1981; Central Statistics Office; Census of Production; Employment Department, HMSO, 1989; Municipal Year Book, 1982; and unpublished Census of Employment Statistics.

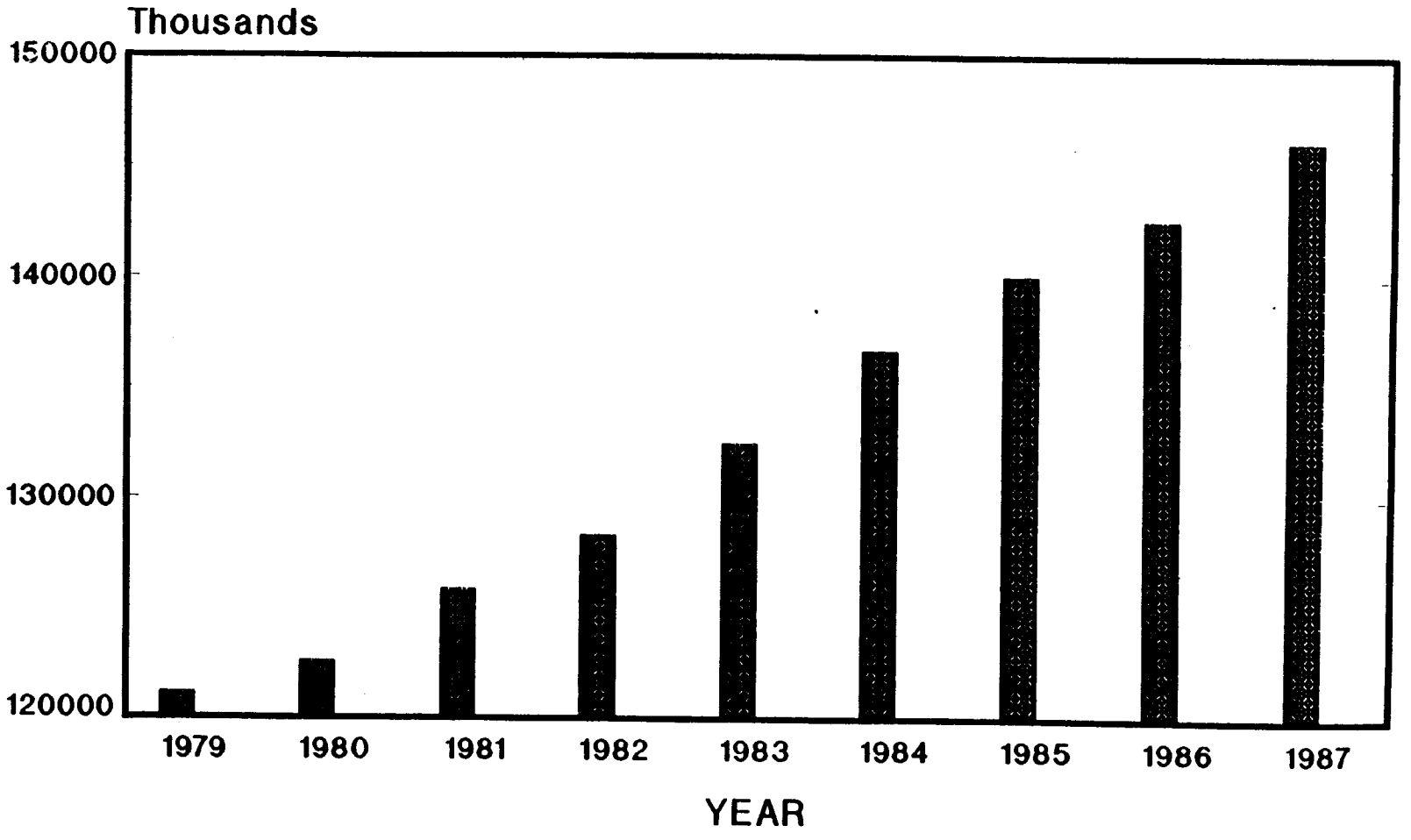
Table 4 Discriminant Groups for New Firm Formation Environments in the 'North' and 'South' of Great Britain

Variable	Unstandardised Canonical Discriminant Function Coefficients	Standardised Canonical Discriminant Function Coefficients	Pooled Within Groups Correlations (Structure Matrix)	Wilks Lambda	Significance Level
POPCH	-0.38	-0.75	-0.41	0.30	0.0000
MINING	-0.16	-0.41	0.21	0.21	0.0000
LP500	-0.03	-0.33	0.01	0.20	0.0000
MANAGERS	0.29	0.52	-0.36	0.27	0.0000
MANUAL	0.34	1.46	0.51	0.49	0.0000
PROD7884	0.04	0.47	-0.20	0.23	0.0000
AVDOMRATE	-0.02	-0.52	-0.38	0.32	0.0000
EARNM7987	-0.05	-0.52	-0.35	0.25	0.0000
FEMHIGHED	0.53	0.87	-0.06	0.38	0.0000
(CONSTANT)	-10.85				

Notes Eigenvalue for function 1= 3.9628 Canonical correlation= 0.8936 Wilks' Lambda= 0.2015
Chi-Squared= 90.51 d.f.= 9 Significance= 0.0000
Percent of grouped counties correctly classified= 100%.

Figure 1

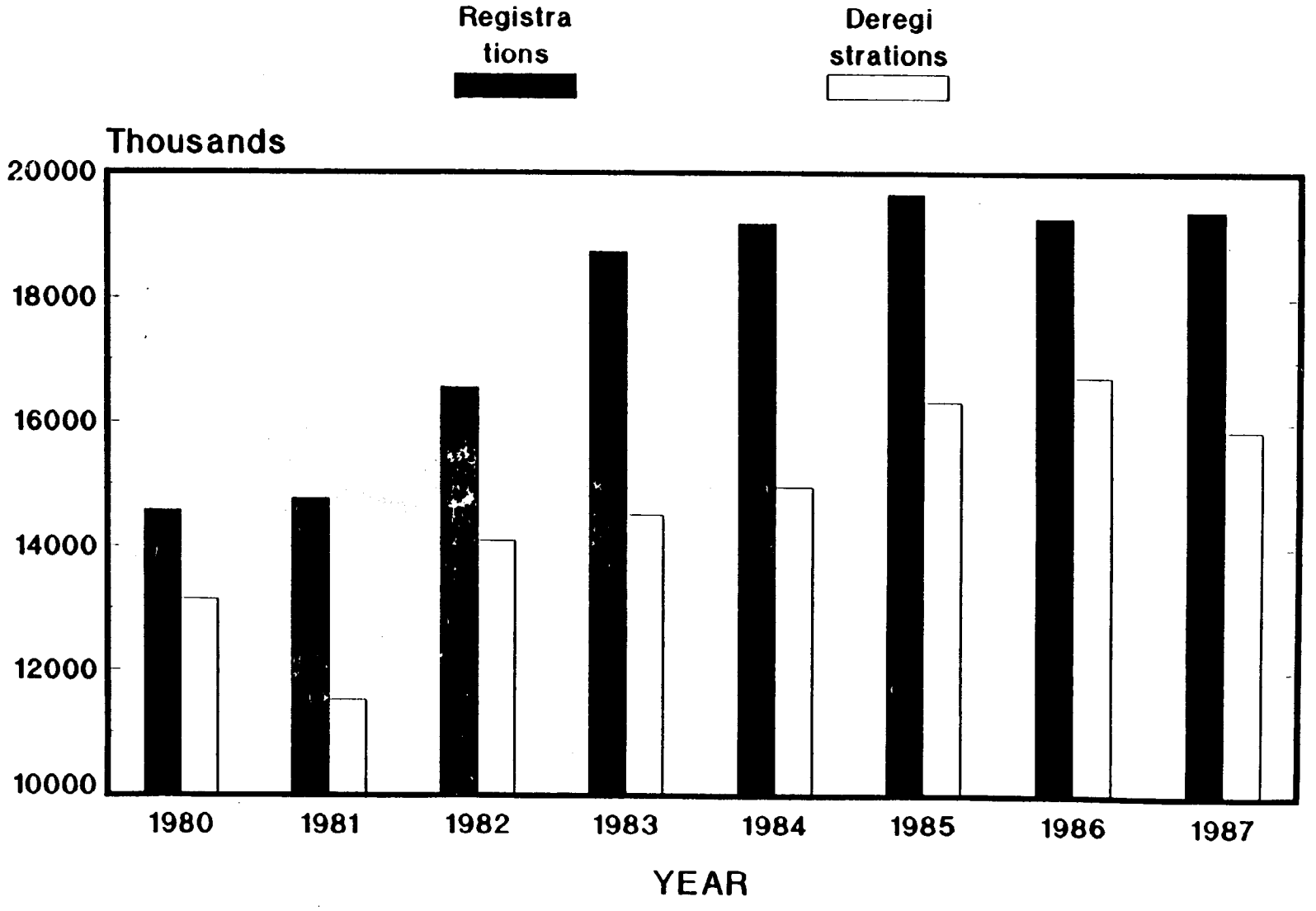
UK STOCK OF PRODUCTION BUSINESSES REGISTERED FOR VAT AT END OF YEAR 1979 - 1987 (Thousands)



Source: Employment Department, HMSO, 1989

Figure 2

PRODUCTION BUSINESS VAT REGISTRATIONS AND DEREGISTRATIONS IN THE UK 1980 - 1987 (THOUSANDS)



Source: Employment Department, HMSO, 1989