SMALL FIRMS, INNOVATION AND REGIONAL DEVELOPMENT IN BRITAIN IN THE 1990S

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Abstract

This paper analyses regional variations in the growth, innovativeness and other performance characteristics during the 1990s of a sample of 1000 small and medium-sized manufacturing and service enterprises (SMEs) in Britain. Set within a theoretical context provided by Vaessen's critique of regional resource munificence theory, it shows that South East core region firms grew faster than those in Peripheral regions, and reported more original innovations, but that the latter had a better record of continuing innovation and higher R&D intensity. Significant regional differences in competitive environments and collaborative networking also carry implications for longterm competitiveness.

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Introduction

The role and contribution of small firms to regional economic development in Britain since the 1970s has attracted surprisingly limited attention from academic researchers, notwithstanding wide interest in such related issues as the widening or narrowing of the North-South economic divide (Lewis and Townsend, 1989: Martin, 1988, 1993: Barnes, 1992) and the impact of foreign direct investment on the regeneration of Britain's older industrial regions (Collis and Noon, 1994: Hill and Munday, 1994: Munday *et al*, 1995: Stone and Peck, 1996). While a number of studies have investigated the role of smaller firms in the powerful urban-rural shift of employment and business activity (Keeble et al, 1992: Smallbone *et al*, 1993: Keeble, 1993: North and Smallbone, 1995: Westhead, 1995), most regional analyses concerned with smaller firms have either addressed the specific issue of the formation of new firms (Mason 1992: Keeble and Walker, 1994: Danson, 1996) or presented local case studies or case study comparisons of small firm development (Turok and Richardson, 1991: Baker, 1993: Garnsey and Cannon-Brookes, 1993: Curran and Blackburn, 1994: Barkham *et al*, 1996). Only a few (Gallagher *et al*, 1993: Keeble and Vaessen, 1995: Keeble and Bryson, 1996) have attempted to assess broad patterns of regional small firm activity and the role of such firms in regional changes in employment or output, and none of these has been able to consider trends during the 1990s.

This is perhaps the more surprising given the substantial growth in the number of small firms in Britain since 1980, their major importance for national and regional employment change, and the policy attention devoted to them. Thus the total number of businesses in the UK is estimated to have grown by approximately 1.3 million or 54% between 1979 and 1994, notwithstanding the impact of two very severe recessions (Small Firms Statistics Unit, 1996): and over 99% of these are small businesses, employing less than 100 workers. Firms employing fewer than 500 workers, the traditional European Commission definition (Storey, 1994, 16) of a small or medium-sized enterprise (SME), in fact accounted for 66% and 63% of all UK non-government employment and turnover, respectively, in 1994 (Small Firms

Statistics Unit, 1996). These shares have undoubtedly grown since 1980. Thus the European Network for SME Research (1994) report estimates that SMEs accounted for no less than 94% of total UK net employment growth 1987-91, the largest positive component of UK job change being the expansion of existing SMEs (+2.68 million jobs), compared with (only) +1.39 million created by entirely new small businesses, and a net total change of 1.49 million. Despite significant losses during the early 1990s recession, numbers of small firms appear to have been rising again since 1992, fuelled by an increase in small firm births and a fall in firm deaths (Barclays Bank, 1996). Finally, post-1979 Conservative governments have devoted much rhetoric - and some policy reformulation - to the issue of encouraging small firm creation and growth at both national and regional levels (H.M.Government, 1983: DTI, 1994), while many local and regional agencies have attempted to foster indigenous enterprises within their localities as one answer to high unemployment or economic decline (Chisholm, 1990, chs 8-9).

Of course, one obvious reason for the dearth of nationwide studies of regional variations in small firm activity, performance and growth in the 1990s is the lack of comparable and authoritative data on which to base such assessments. This paper begins to address this gap by reporting and analysing some of the results of the 1995 Cambridge University ESRC Centre for Business Research survey of approximately 1000 small and medium-sized enterprises, all of which were also surveyed[1] in 1991. This enables accurate charting of trends in their performance between 1990 and 1995, a period involving both severe national recession and slow subsequent recovery. The impact of the former on Britain's small firm sector was traumatic, and possibly greater than in any other western European economy (Stanworth *et al*, 1993). It also varied regionally, one prevailing view being that the recession was particularly severe in its effect on South East England, where service industries (and small firms) were concentrated (Martin, 1993). Relative unemployment rates in London and the South East certainly rose very sharply to 1993 (see Figure 1), with a continuing and remarkable rise in the London case thereafter to 1995. In striking contrast, relative unemployment rates in Scotland and Wales fell to below the UK level in 1993[2], almost certainly for the first time since the second world war, and have remained broadly at this level since.

The latter trend undoubtedly reflects, in part at least, the marked concentration of new foreign inward manufacturing investment in these and other assisted regions since 1980 as a consequence of regional policy (Taylor, 1993). Thus Scotland and Wales alone accounted for 34% of all UK manufacturing FDI projects[3] and 65% of UK government expenditure on regional preferential assistance to industry, 1991-1995, compared with only 13% of all UK manufacturing employment in 1991 (Office for National Statistics, 1996, tables 13.6 and 13.7). But an improved unemployment position also raises the question as to whether it might also be associated with an improved performance by indigenous SMEs in these regions, given the national relationship between SMEs and job creation noted above. An improved performance by SMEs in Britain's 'peripheral' regions was indeed a significant feature of regional trends during the later 1980s, as demonstrated both by the 1991 SBRC survey (Vaessen and Keeble, 1995) and independent research on manufacturing small firms in Northern Ireland and Wearside (Barkham *et al,* 1996, ch. 7). However, other workers have suggested a reversal of these peripheral region small firm trends during the early 1990s recession, at least in the Northern England case, STANWORTH *et al* (1993) arguing that "the 'soft' growth generated under the greenhouse conditions of 1986-1989" in this region was subsequently "particularly exposed to the economic frosts that lay ahead". Is such a reversal true for Britain's peripheral regions and for the longer 1990-95 period as a whole?

Theoretical Issues

In addition to these empirical questions, analysis of SME trends in the 1990s is also of interest theoretically, in the context of recent debate over the impact of different regional environments on small firm growth. Orthodox regional theory, recently reinforced by Porter's (1990) localised competitive advantage theory of national growth, stresses the comparative advantages for small firm creation and growth of large, 'resource-munificent' core regions, where easy access to factors of production, information networks and markets create fertile conditions for indigenous small firms to flourish. In contrast, peripheral regions with small markets, limited numbers of businesses and networking opportunities, and often monolithic traditional industrial structures, are seen as 'hostile environments' for new and small firms, deficient in resources, entrepreneurial and workforce skills, and agglomeration economies (O'Farrell

and Hitchens, 1988, 1377-79). Successful, innovative and growth-orientated small firms are therefore concentrated in core regions, with few if any in peripheral environments. Some workers also argue that in addition to resource munificence, the greater openness and size of core region economies results in fiercer competition between small firms. This competition may result in high death rates, but also forces survivors to become more innovative and competitive than elsewhere, and particularly their counterparts in more sheltered and smaller peripheral markets (O'Farrell *et al*, 1992). Resource munificence theory is supported by empirical research on the geography of technological innovation by small firms in Britain (Harris, 1988: Smith *et al*, 1993: Phelps, 1995), including work taking up Storper's recent arguments about the importance of 'untraded interdependencies' in stimulating SME growth within particular 'innovative regional milieux' (Storper, 1995: Hansen, 1992: Henry *et al*, 1996).

In contrast to this traditional approach, however, Vaessen (1993: Vaessen and Wever, 1993) has recently drawn attention to the counterfactual case of the existence of some if not many successful and innovative small firms in peripheral regions, arguing that orthodox theory is inadequate to account for their growth. In particular, it fails to allow for active entrepreneurial efforts to overcome resource deficiencies. While such firms as they grow may encounter greater environmental constraints than their counterparts in core regions, these very constraints may, according to Vaessen, in fact stimulate greater pro-active entrepreneurial behaviour, via manipulation, immunization and adaptation mechanisms, which in turn renders the firm more competitive in wider markets. Entrepreneurial experience gained in incubator organisations outside the region may also play a valuable role here. In short, while fewer small firms may be successful in peripheral environments, those that are may even prove to be more competitive than the average small firm in core regions, which has not had to overcome environmental and resource constraints to the same degree. Vaessen supports this argument with detailed case study evidence from the Netherlands, while survey data for SMEs in South East and peripheral Britain during the later 1980s which appears to be consistent with it is presented in Keeble (1994) and Vaessen and Keeble (1995).

Aims, Data and Methodology

This paper therefore presents and attempts to evaluate original results from the 1995 CBR survey on regional variations in SME characteristics and performance in Britain between 1990 and 1995, in the light of the empirical and theoretical context set out above. Particular attention is devoted to variations in SME innovative behaviour, because of its central role in theoretical debates and the demonstrated empirical importance of innovation to longterm SME profitability and growth (Geroski *et al*, 1993: Cosh and Hughes, 1996). But the paper also of course analyses recent regional trends in SME employment, turnover, profitability and other performance-related characteristics.

Data were collected by post, telephone and fax from a sample of 998 firms, of whom 698 firms provided full postal questionnaire responses. The larger sample represents 50.4% of the original 1991 survey sample of 1980 SMEs, the balance reflecting deaths, relocations which could not be traced, and surviving but non-responding firms. The original 1991 sample of independent firms employing less than 500 workers was randomly-selected and stratified so as to yield an approximately equal balance between manufacturing, and professional and business service, SMEs, and to give greater relative weight to medium-sized rather than very small firms (SBRC, 1992, appendix: Keeble and Bryson, 1996). Its regional distribution closely replicated that of all VAT-registered businesses, most of which are small enterprises. Despite sample attrition, the 1995 postal survey sample reveals a close geographical similarity with its larger 1991 predecessor, in terms of the four broad groups of regions which are used for analysis in this paper (Table 1). Indeed, the only and slight differences are a small relative fall in the proportion from the South East, and a corresponding slight rise in that from the Outer Southern region. It is tempting to interpret these slight changes in terms of possibly higher-than-average death rates amongst South East small firms during the early-1990s recession, but lower-than-average death rates in Outer Southern regions, where SMEs in fact recorded the highest levels of innovative behaviour of all four groups during the late 1980s (Keeble and Bryson, 1996, 922-923).

As in Keeble and Bryson (1996), this study adopts the four regional groupings listed in Table 1 for ease of analysis. These groupings are based on a

combination of structural, locational and performance similarities, while preserving a broad north-south division along the Severn-Humber axis adopted by previous research (Martin, 1988). The grouping also yields reasonably sized sub-samples for comparison. In line with the national distribution of SMEs in these sectors, South East England accounts for 44% of the total survey sample, with a further 18% in the three Outer Southern standard regions (East Anglia, South West, and the East Midlands), 26% in the Industrial Heartland (West Midlands, North West and Yorkshire and Humberside), and 12% in the Periphery (Scotland, North, and Wales). Figure 2 plots the distribution in more detail by individual standard region.

It should also be noted that because of its longitudinal nature, the sample comprises relatively mature SMEs, the youngest being founded in 1990. The absence of newly established small firms is likely to yield lower average recent growth rates for the sample than were recorded for the 1991 survey, given the well established relationship between youthfulness and percentage growth rates (Storey, 1994, 139). This should also be born in mind in relation to regional performance variations, given the slightly higher proportion of SMEs founded during the 1980s in the South East sample compared with those in the Industrial Heartland (Table 2). Sectoral variations by region (Table 3), which reflect real differences in the location of manufacturing and service enterprises in Britain, centre on a preponderance of business and professional service SMEs in the South East (Keeble *et al*, 1991) but of manufacturing SMEs in the other three regions. These sectoral differences must be taken into account in interpreting subsequent results, which are therefore presented separately for the two sectors wherever possible.

SME Performance and Growth

Table 4 records four different indicators of recent SME performance, namely employment growth, turnover growth, profits as a proportion of turnover, and exports as a proportion of turnover. Turnover growth and profits are measured by medians, employment growth and exports (for which most medians are zero) by means. One important finding of the 1995 CBR survey which is not apparent from this table is that growth rates nationally between 1990 and 1995 for the SMEs surveyed were much lower than those for the same firms during the 1987-90 period, despite the longer period involved.

National median turnover change for all SMEs in the 1990s was only 20.0%, compared with 60.0% for the same firms 1987-90. More strikingly still, 53% of these SMEs reported declining or static employment in the 1990s, compared with the 69% of the same sample which reported employment growth, often rapid growth, in the late 1980s. These changes highlight the severe impact of the early-1990s recession upon Britain's small firm sector, and the slowness of recovery from it, at least with regard to surviving rather than new SMEs[4].

The first and perhaps most striking finding from Table 4 is of a marked regional difference in average employment growth rates between SMEs in South East England and Peripheral Britain, with the former also growing faster on average than any other regional group[5]. This particularly reflects exceptionally rapid recent service SME growth in the South East (+65%), but declining employment in peripheral service SMEs (by -6%). Figure 2 shows that Greater London SMEs performed particularly well, with the highest share of fast-growth firms, and lowest share of stable/declining firms, in the country, whereas Scotland and Wales possess the largest shares of stable/ declining SMEs. However, Table 4 also shows that Industrial Heartland SMEs performed better than either Outer Southern or Peripheral firms in all three sectoral categories. There is therefore no clear or simple north-south divide, Industrial Heartland manufacturing SMEs actually performing slightly better than their South East counterparts. But SMEs in the Periphery have apparently performed worst of all.

This is moreover also true for turnover growth, although differences here are less. Peripheral manufacturing SMEs performed especially badly. In this case, however, it is Industrial Heartland SMEs, not those in the South East, which performed best in all three sectoral categories, followed by Outer Southern firms. Turnover growth in South East firms was in fact relatively muted.

Regional differences in current SME profitability are very small, although median profitability amongst South East firms is slightly higher than elsewhere, thanks to higher profits by manufacturing SMEs. On this indicator, then, Peripheral SMEs are, by the mid-1990s, performing just as well as their counterparts elsewhere. Finally, the table reveals a marked and statistically significant north-south gradient in export-orientation, SMEs in the South East recording the highest level of exports as a proportion of

turnover, Peripheral firms the lowest. This is true for total, manufacturing and service SMEs, separately. These findings are exactly in line with previous studies of regional variations in small firm exporting behaviour (O'Farrell *et al*, 1992), and probably reflect the greater international openness and connections of the South East's economy, together perhaps with higher quality and competitive products, as argued by these workers.

In general, then, these findings, unlike those of the later 1980s, appear to provide some support for orthodox regional theory in terms of the somewhat more dynamic employment growth and greater export competitiveness exhibited by South East as compared with Peripheral region small firms, at least in terms of those which have survived since 1991. Empirically, peripheral firm employment appears to have been more severely affected by recessionary impacts than is the case with South East - or Industrial Heartland - SMEs, or has failed to benefit as much from subsequent recovery, especially in professional and business services where recent national demand growth has been rapid (Tett, 1994). The latter appears to have generated rapid growth in smaller firms in these sectors in London and the South East. That said, however, it is also true that regional differences in profitability and, perhaps, turnover growth are very small, suggesting that northern environments, including those of Scotland, Wales and Northern England, cannot really be viewed as intrinsically 'hostile' environments for the growth of mature SMEs. This view is reinforced by examination of SME innovativeness and technological intensity, to which discussion now turns.

Innovation Rates and Technological Intensity

Table 5 charts responses to a detailed survey question on whether or not the firm had introduced innovations in products (goods or services) or processes during the previous three years[6]. As noted earlier, past research has identified a marked tendency for technologically-inovative SMEs, and technological innovation generally, to be particularly concentrated in South East and Outer Southern England, relative to northern and especially peripheral Britain. However, when innovation is reported by SMEs themselves, and defined more widely in terms of service as well as manufacturing innovations, and process as well as product innovations, as here, this pattern is much less evident. The frequency of product innovations is indeed lowest among

Peripheral SMEs, in aggregate and for both manufacturing and services separately. The three lowest scoring individual regions (Figure 3) are the North, North West, and Scotland. But broader regional differences are in fact generally small and not statistically significant. Indeed, Wales, a classic Peripheral region, records the third highest product innovation rate of the eleven regions (Figure 3), while for both total and manufacturing SMEs, the South East's product innovation rate is lower than those for the Outer Southern and Industrial Heartland. There is admittedly a weak north-south gradient for product innovation in business and professional services, which is in line with traditional expectations. But the only statistically significant difference in Table 5 is for process innovations, between the Industrial Heartland (highest) and Outer Southern (lowest)[7]. This difference is moreover clearly evident for both manufacturing and business service SMEs considered separately. But it is of course the opposite of what might perhaps be expected on the crude assumption of greater innovative behaviour by SMEs in southern, as opposed to northern, regional environments. The Industrial Heartland's leadership in frequency of SME process innovation in both manufacturing and services is particularly noteworthy, but not easily explicable in terms of existing theory or empirical studies.

Even more interesting insights are provided by Table 6. This reports the incidence of original and continuing product innovation by SMEs in the four regional groups. Original innovation is defined in terms of the introduction by firms of product innovations which are new not just to the firm, but to the whole industry in which the firm operates. Continuing innovation is defined as occurring when the same firm reported the introduction of a product innovation in both the 1991 survey (relating to the five years 1986-91) and 1995 survey (relating to the three years 1992-95). It may be argued that firms engaged in original or continuing product innovation are of particular importance for regional economic development, with a greater potential for growth than other less innovatory firms. On the basis of traditional regional theory, such firms might be expected to be more common in South East England than in peripheral Britain. To what extent is this expectation born out by the evidence?

Table 6 shows that the pattern of variation in original innovation frequencies does indeed fit traditional theoretical expectations, in that South East firms

record the highest rates of original innovation for both total and manufacturing SMEs, and the second highest after the Outer Southern group for services, whereas Peripheral firms record the lowest rates in all three cases. This does seem to support the argument that core regions provide a more fertile and stimulating environment for original innovative activity by SMEs than do smaller peripheral regions traditionally dominated by older, more monolithic and declining industries. That said, however, it is also true that the regional differences recorded in Table 6 are not large enough to be statistically significant, while SMEs in northern Industrial Heartland regions do exhibit original innovation frequencies not far short of those in the South East. And the table also of course shows that Britain's peripheral regions do contain some SMEs capable of developing original innovations, as noted by Vaessen (1993) in his work on the Netherlands.

Continuing product innovation frequencies (Table 6) moreover present a different picture, in that here it is South East SMEs which record the lowest, and northern - Industrial Heartland - firms which record the highest frequencies. Firms with a record of sustained innovation over the whole 1986-95 period are in fact significantly more frequent in the North West, West Midlands and Yorkshire/Humberside than in South East England, in both the total and manufacturing cases. In services, it is Outer Southern SMEs in East Anglia, the South West and East Midlands which exhibit the highest rate of continuing product innovation, as they also do of original product innovation. And in all three cases, Peripheral region firms have a higher frequency of continuing innovation than do South East firms, although the difference is not statistically significant. Clearly, these results do not support traditional theoretical expectations, although they are fully consistent, for example, with the above-average recent employment and turnover growth in Industrial Heartland SMEs reported earlier, given the inevitable time-lag between innovation and SME growth documented in previous studies (Tether, 1995). Again, the reasons for an apparently significantly better record of continuing innovation amongst Industrial Heartland than amongst South East SMEs are not obvious, and warrant further research. But these results do indicate levels of sustained innovative activity by smaller firms in northern Britain which provide some support for Vaessen's criticisms of traditional theory noted earlier.

Innovation as defined above is of course a broader concept than purely technological innovation, the focus of most previous studies of the geography of innovation by small firms in Britain (Harris, 1988: Smith et al, 1993: Tether, 1995: Harris and Trainor, 1995). This is evident, for example, from Table 7, which shows that while technology-intensive SMEs, defined using Butchart's (1987) definition of high-technology activities, are very significantly more innovative than less-technologically-intensive SMEs, the latter in fact accounted for four-fifths of all innovating firms in the 1995 survey. To the degree that technological innovation is the product of organised and sustained research and development (R&D) activity, however, Table 8 may throw some light on regional variations in SME potential for technological innovation, via two separate R&D input measures. It must be stressed that there are many problems in measuring R&D activity by small firms, since such firms may well not have separate R&D units or even full-time dedicated personnel. Table 8 nonetheless records the proportion of firms reporting that they carry out R&D ("basic research, applied research and experimental development") "on a continuous (as opposed to an occasional) basis", and the median proportion of staff (full or part-time) engaged on such R&D activity within the total workforce.

The main finding on the incidence of continuous R&D is that regional variations are very small and not statistically significant. In particular, there is virtually no difference between South East and Peripheral firms, in aggregate, manufacturing or services, in the proportion of firms claiming to be engaged in sustained research and development activity. Indeed, the Peripheral group actually record the highest frequency of all regional groups for continuous R&D by manufacturing firms. Technological intensity as measured by the median R&D workforce measure does appear to vary more inter-regionally, although with a high proportion of zeros, differences are not statistically significant. Nonetheless, the interesting feature here is that in all three cases (rows), it is Peripheral SMEs which record the highest R&D workforce values, but South East firms which record the lowest (with the exception of services, where they are second lowest). These findings thus echo those of the earlier 1991 survey (Keeble and Bryson, 1996, 924) in suggesting that traditional views of a simple north-south divide in SME technological intensity and R&D orientation are misplaced, with similar proportions of the admittedly much smaller total population of SMEs in

Peripheral Britain displaying levels of technological intensity equal to or greater than their counterparts in the South East[8]. Again, this empirical evidence is in line with Vaessen's (1993) argument that firms in peripheral regions may actively try to compensate for and overcome environmental handicaps by pro-active engagement in research and development to an even greater degree than their counterparts in core regions.

Competition, Competitiveness and Collaboration

A final set of SME characteristics investigated by the 1995 CBR survey which may help towards understanding regional variations in SME performance and innovativeness concerns levels of competition experienced by SMEs, the nature of their competitive advantages, and the degree of their collaborative activity with other organisations.

As noted earlier, some workers have argued that core region SMEs face a much more competitive regional environment than their counterparts in smaller and possibly more sheltered peripheral regions. For business and professional services at least, this view is strikingly supported by Table 9, which shows that South East service firms report an average number of "serious" competitors which is ten times larger than that reported by service firms in both Peripheral Britain and the Outer South East. Given that the South East sample contains a majority of service firms, this also carries through to the total SME values. This result thus supports the contention that in services at least, small firms in core regions such as South East England are confronted by much more intense competition than is the case elsewhere. In O'Farrell *et al*'s view (1992), this forces surviving small firms to achieve higher quality and competitiveness, thereby enhancing their performance and success. The results reported earlier on regional performance differences, especially for service SMEs, are in line with this argument. That said, however, Table 9 also shows that in manufacturing, there are no differences whatever in the intensity of the competitive environment reported by SMEs in the South East and Peripheral Britain. Differences here between the four groups generally are also not statistically significant. The O'Farrell thesis is therefore not supported in the manufacturing case.

Table 10 provides further information on the competitive environment in which small firms operate, by recording their ratings, on a scale from 1 (insignificant) to 5 (crucial), of the importance to them of different potential competitive advantages. As noted in Keeble and Bryson (1996, 921), the most highly rated SME competitive advantages, with their clear stress on quality, customisation, speed of service, and specialisation, are precisely those suggested by theoretical arguments over the growth of 'flexible specialisation' and customised market demand as the key to understanding contemporary small business development in advanced economies such as the UK (Sabel, 1989: Keeble, 1990). While responses for the top three competitive advantages are not regionally differentiated, there are significant regional variations in the ratings for the importance of 'speed of service', 'specialised expertise or product', 'price', 'product design' and 'cost advantages'. Interestingly, moreover, it is Peripheral and South East SMEs which record the extreme (highest or lowest) ratings for most of these five competitive attributes, with Peripheral firms rating price and speed of service highest, but specialised expertise and product design lowest, and South East firms rating specialised expertise highest, but speed, price and cost lowest. These differences partly reflect the sectoral differences between regional samples, with the Peripheral stress on the importance of price advantages being confined to service firms, for example. But there are also some consistencies across the two sectors, notably with regard to speed of service (rated highly by all Peripheral firms, but low by all South East firms), and product design and specialised expertise (both rated low by all Peripheral firms but high by all South East firms). This suggests that there may be systematic differences in the regional competitive environment confronting SMEs in these two regional groups, business success in the more open and competitive South East being more dependent on specialisation, niche marketing and attention to product design, whereas Peripheral firms try to compete by the more traditional small firm method of offering a rapid service and, in the service sector, on lower price and cost advantages.

One of the most intriguing aspects of the evolution of the small firm sector in advanced economies such as Britain in recent years is the way in which increasing competition has been accompanied by increasing inter-firm collaboration and networking. The latter is very important for smaller firms in business services (BRYSON *et al*, 1993), but also in manufacturing, as

Table 11 shows. Collaboration with other firms and organisations enables greater flexibility and access to a wider range of specialist expertise in meeting customer needs, as well as a sharing of risk and cost. Regionally, however, the most interesting finding from Table 11 is that there is once again a clear and significant difference in this respect between SMEs in the South East and the Periphery, especially in services. Over twice as many South East service firms report collaborative arrangements as do their counterparts in Peripheral regions, while Peripheral manufacturing firms also record a lower level of collaborative activity than other regional groups. This clear finding almost certainly reflects lower levels of specialisation by Peripheral firms (Table 10), as well perhaps as more restricted opportunities for collaboration within smaller regional economies. Again, then, South East firms are revealed to be more open to external influences, whether of competition or through collaboration, than their counterparts in Peripheral regions, a characteristic which may well be important for longterm competitive performance.

Summary and Conclusions

The preceding analysis, the first to analyse in reasonable depth inter-regional trends in SME performance and innovation in Britain during the 1990s, suggests that there has indeed been a reversal in regional SME performance during the 1990s compared with the later 1980s. While SME growth rates generally have been far lower than in the 1980s, SME employment and turnover have grown faster in the South East and especially London than in Scotland, Wales and Northern England, the group of regions in which SME employment and turnover grew fastest in the late 1980s. Profitability is highest in the South East, while South East SMEs are also far more export-orientated than Peripheral SMEs. Smaller firms in the Peripheral regions thus appear to have been more severely affected by the recession, and/or have failed to benefit from subsequent recovery especially in demand for business services, than their South Eastern counterparts. These findings are in line with traditional theoretical expectations rooted in resource-munificence and regional competitiveness theory.

This said, the survey results also suggest that northern regions cannot be crudely categorised as 'hostile environments' for successful SME growth, both because of a good 1990s employment, turnover and innovation

performance by Industrial Heartland SMEs, and because Peripheral firms do exhibit recent innovation rates and levels of technological intensity which are not significantly poorer - and are sometimes better - than those for South East firms. South East SMEs do have higher original product innovation rates, suggesting that parts of this region, at least, constitute 'innovative regional milieux' (Hansen, 1992: Henry *et al*, 1996), but Peripheral SMEs in fact have a better record in continuing innovativeness. And if anything, the latter exhibit higher levels of technological intensity, as measured by R&D input measures. These findings are in line with Vaessen's (1993) argument that small firms in peripheral regions may actively try to overcome environmental constraints by conscious strategies, perhaps involving greater R&D effort and continuing innovation. It is also possible that such firms may have benefitted more from government regional policy initiatives and technology transfer schemes, via agencies such as Scottish Enterprise and the Welsh Development Agency.

Finally, the survey results indicate that South East service - but not manufacturing - SMEs operate in a much more competitive and open regional environment than their counterparts in Peripheral Britain, and that they are much more likely to be engaged in collaborative partnerships and networks with other firms and organisations. South East firms also rate more highly competitive advantages associated with specialised expertise and product design, whereas Peripheral firms stress different competitive advantages such as speed of service, low price and costs. These findings lend support to the view that smaller firms in these different regions are strongly influenced by historic and structural differences in their regional competitive environments, and that in services if not in manufacturing, it is South East SMEs which more frequently exhibit progressive behavioural characteristics likely to sustain longterm competitive performance.

Notes

1. By the former Small Business Research Centre of Cambridge University, now subsumed within the ESRC Centre for Business Research. The results of the 1991 survey were published in summary form in 1992 (Small Business Research Centre, 1992), as also have been those of the 1995 survey (Cosh and Hughes, 1996).

2. Although of course rising in absolute terms because of the national recession.

3. And an even higher proportion of recent large projects, such as those by Shin Etsu Handotai (Japan) and Chungwa (Taiwan) in Scotland, and by QPL (Hong Kong) and LG (Korea) in Wales, all since 1995. The £1.66 billion 1996 LG electronics and semiconductor project will be Europe's largest-ever inward investment, with an employment potential of 6100 jobs.

4. They may also reflect to some degree the increased age and maturity of the SMEs concerned, given the relationship between youthfulness and percentage growth rates noted earlier. But the mean annual differences are so great that the recession explanation is almost certainly much the more important.

5. Perhaps because of the large number of zero or negative values, however, results of between-group F tests on Table 4 are not statistically significant at the 0.05 level, with the important exception of the export indicator. There is however a significant difference at the 0.1 level between South East and Peripheral groups and 0.02 level between Greater London and Peripheral groups in the frequency of fast, moderate or stable/declining growth firms using the Chi Square test, and in median turnover growth at the 0.05 level between Industrial Heartland and Peripheral SMEs, using the Mann-Whitney U test. Subsequent reference to statistical tests in this paper refer either to F tests or to non-parametric Mann-Whitney U or Chi Square tests.

6. Firms were given a lengthy written definition of what constitutes product and process innovation, based on the latest European Commission (Oslo Manual) definition, and excluding cosmetic and limited product differentiation changes.

7. Significant at the 0.05 level using the Chi Square test.

8. Keeble (1994) shows that there were actually more winners, in absolute let alone relative terms, of DTI SMART awards (Small Firms Merit Awards for Research and Technology) from Scotland, Wales, Northern England and Northern Ireland between 1990 and 1992 than there were from South East England despite the latter's far larger small firm population.

TABLES AND FIGURES

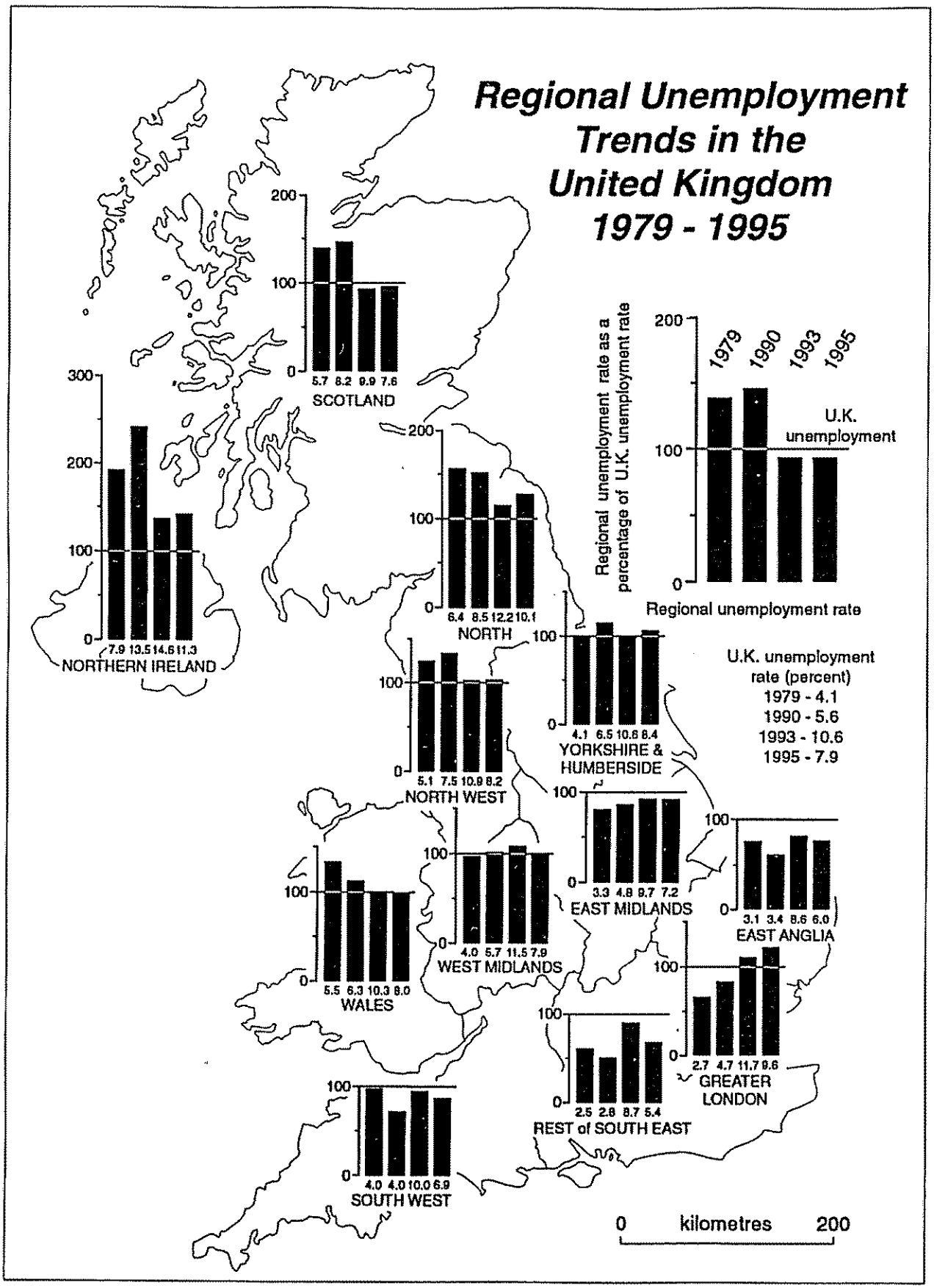
FIGURE CAPTIONS

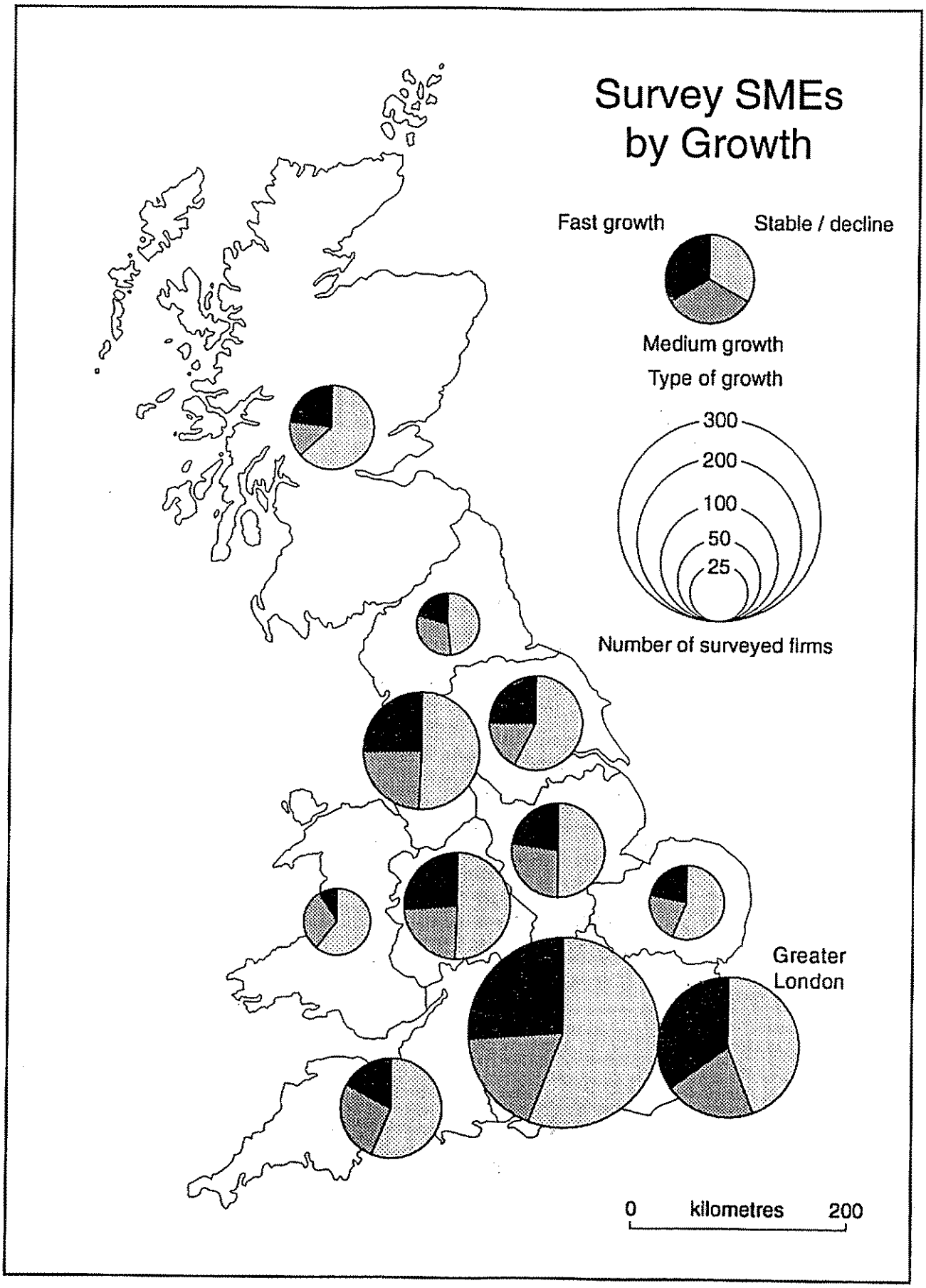
Fig. 1. *Regional unemployment trends in the UK, 1979-1995*

Fig. 2. *Regional variations in frequencies of fast-growth, moderate-growth, and stable or declining SMEs, by employment growth 1990-1995*

Note: *fast-growth = over 35%, medium-growth = 0.1-35%*

Fig. 3. *Regional variations in frequencies of SMEs introducing product innovations 1992-1995*


Regional Unemployment Trends in the United Kingdom 1979 - 1995
SCOTLAND
5.7 8.2 9.9 7.6
NORTHERN IRELAND
7.9 13.5 14.6 11.3
NORTH
6.4 8.5 12.2 10.1
NORTH WEST
5.1 7.5 10.9 8.2
YORKSHIRE & HUMBERSIDE
4.1 6.5 10.6 8.4
WEST MIDLANDS
4.0 5.7 11.5 7.9
EAST MIDLANDS
3.3 4.8 9.7 7.2
EAST ANGLIA
3.1 3.4 8.6 6.0
WALES
5.5 6.3 10.3 8.0
GREATER LONDON
2.7 4.7 11.7 9.6
REST of SOUTH EAST
2.5 2.8 8.7 5.4
SOUTH WEST
4.0 4.0 10.0 6.9
Regional unemployment rate as a percentage of U.K. unemployment rate
1979
1990
1993
1995
U.K. unemployment
Regional unemployment rate
U.K. unemployment rate (percent)
1979 - 4.1
1990 - 5.6
1993 - 10.6
1995 - 7.9
0 kilometres 200


Survey SMEs by Growth
Fast growth
Stable / decline
Medium growth
Type of growth
300
200
100
50
25
Number of surveyed firms
Greater London
0
kilometres
200

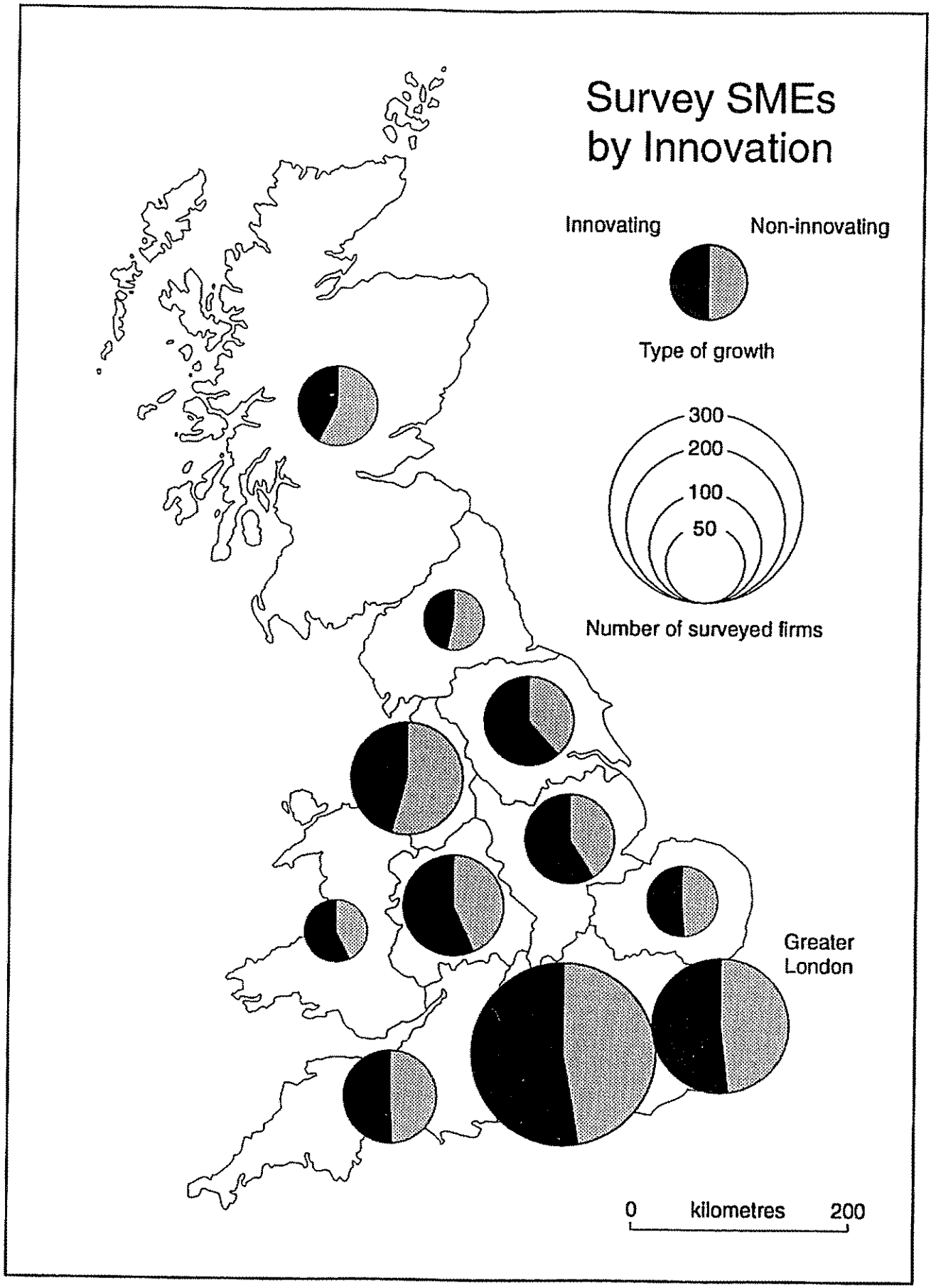

Survey SMEs by Innovation
Innovating
Non-innovating
Type of growth
300
200
100
50
Number of surveyed firms
Greater London
0
kilometres
200

Table 1. The geographical distribution of SMEs in the 1991 and 1995 samples

	% of sample firms			
	South East	Outer Southern	Industrial Heartland	Periphery
1991	44.9	17.0	26.4	11.7
1995	43.6	18.4	26.1	11.9
Total Responses, 1995 (No.)	316	134	180	68

Source: SBRC and CBR surveys, 1991 and 1995

Table 2. Regional variations in SME age, 1995 sample

	% of sample firms			
	South East	Outer Southern	Industrial Heartland	Periphery
Founded 1979 and earlier	50.0	51.5	59.4	56.7
Founded 1980-1990	50.0	48.5	40.6	43.3
Total Responses (No.)	310	134	175	67

Source: CBR survey, 1995

Table 3. Regional variations in SME sectoral structure, 1995 sample

	% of sample firms			
	South East	Outer Southern	Industrial Heartland	Periphery
Manufacturing	41.6	60.4	64.8	60.3
Business and Professional Services	58.4	39.6	35.2	39.7
Total Responses (No.)	315	134	179	68

Note: leading manufacturing sectors by number of sample SMEs are mechanical engineering, paper, printing and publishing, metal goods, timber and furniture, and electrical and electronic engineering. Leading service sectors are computer services, management and marketing consultancy, professional and technical services, and design and market research.

Source: CBR survey, 1995

Table 4. Regional variations in SME performance, 1990-1995

	South East	Outer Southern	Industrial Heartland	Periphery
Total SMEs				
Employment growth 1990-95 (%)	44.0	8.8	21.6	2.4
Turnover growth 1990-95 (%)	15.4	19.5	25.0	11.3
Profits 1994-95 (% of turnover)	8.8	7.7	7.6	7.8
Exports 1994-95(% of turnover)	15.9	13.1	11.8	6.0
Manufacturing SMEs				
Employment growth 1990-95 (%)	14.5	6.0	18.2	7.9
Turnover growth 1990-95 (%)	13.0	19.8	21.3	8.8
Profits 1994-95 (% of turnover)	8.6	6.7	6.9	6.9
Exports 1994-95 (% of turnover)	19.4	13.2	13.6	9.8
Service SMEs				
Employment growth 1990-95 (%)	64.9	13.2	28.3	–6.2
Turnover growth 1990-95 (%)	18.0	19.3	42.7	19.8
Profits 1994-95 (% of turnover)	9.0	9.1	10.0	11.9
Exports 1994-95 (% of turnover)	13.5	13.0	8.5	0.1
Total Responses (No.)	305	132	176	65

Note: figures are median values for turnover growth and profits, but mean values for employment growth and exports (median values for which are generally 0.0%)

Source: CBR surveys, 1991 and 1995

Table 5. Regional variations in SME innovation rates, 1992-1995

	South East	Outer Southern	Industrial Heartland	Periphery
	% firms	*% firms*	*% firms*	*% firms*
Total SMEs				
Product innovations	52.7	53.9	53.5	48.3
Process innovations	43.3	39.9	50.8	44.1
Total Responses (No.)	425	178	256	118
Manufacturing SMEs				
Product innovations	55.7	58.3	58.9	53.1
Process innovations	42.0	40.7	52.1	45.3
Total Responses (No.)	176	108	163	64
Service SMEs				
Product innovations	50.6	47.1	44.1	42.6
Process innovations	44.2	38.6	48.4	42.6
Total Responses (No.)	249	70	93	54

Source: CBR survey, 1995

Table 6. Regional variations in SME original and continuing product innovation rates

	South East	Outer Southern	Industrial Heartland	Periphery
Firms introducing product innovations not already in use in own industry, 1992-95	*% firms*	*% firms*	*% firms*	*% firms*
Total SMEs	23.0	19.2	21.6	16.4
Manufacturing SMEs	29.6	17.9	24.5	17.5
Service SMEs	18.8	20.8	16.9	14.8
Total Responses (No.)	291	120	167	67
Firms introducing product innovations in both 1986-91 and 1992-95 periods				
Total SMEs	37.8	45.4	50.9	43.7
Manufacturing SMEs	40.1	44.3	53.9	46.9
Service SMEs	36.0	47.7	45.0	39.5
Total Responses (No.)	320	132	177	87

Note: differences in continuing product innovation frequencies between SE and IH groups for total and manufacturing SMEs are significant at 0.01 and 0.05 levels, respectively, using the Chi Square test

Source: SBRC and CBR surveys, 1991 and 1995

Table 7. SME innovative activity and technological intensity

	Technology-intensive SMEs		Other SMEs	
	Number	%	Number	%
Firms reporting product innovations 1992-95	101	77.7	413	48.8
Firms reporting no product innovations 1992-95	29	22.3	434	51.2

Note: differences statistically significant at the 0.0001 level using the Chi Square test. Technology-intensive sectors as defined by BUTCHART (1987)

Source: CBR survey, 1995

Table 8. Regional variations in SME technological intensity

	South East	Outer Southern	Industrial Heartland	Periphery
% of firms carrying out R & D on a continuous basis				
Total SMEs	37.1	34.4	32.5	36.1
Manufacturing SMEs	39.8	31.5	33.9	40.5
Service SMEs	34.7	38.8	30.5	33.9
Total Responses (No.)	294	122	169	61
R & D staff as % of total workforce (medians)				
Total SMEs	1.67	2.80	2.08	4.08
Manufacturing SMEs	2.11	3.00	2.40	4.17
Service SMEs	0.58	2.11	0.00	3.55
Total Responses (No.)	379	159	237	106

Source: CBR survey, 1995

Table 9. Regional variations in intensity of SME competitive environments

	South East	Outer Southern	Industrial Heartland	Periphery
Mean number of serious competitors				
Total SMEs	94.4	17.2	20.8	26.9
Manufacturing SMEs	33.8	19.8	16.0	36.7
Service SMEs	136.1	13.0	29.7	11.9
Total Responses (No.)	288	123	170	60

Note: differences between SE and OS sample values for total and service SMEs are statistically significant at 0.10 and 0.05 levels, respectively, using the Mann-Whitney U test

Source: CBR survey, 1995

Table 10. Regional variations in SME assessment of competitive advantages

	Regional mean score			
	South East	Outer Southern	Industrial Heartland	Periphery
Personal attention and responsiveness to client needs	4.41	4.44	4.47	4.42
Established reputation	4.14	4.21	4.19	4.28
Product quality	4.06	4.16	4.22	4.15
Speed of service	3.85	3.99	4.09	4.17
Specialised expertise or product	4.05	3.80	3.88	3.76
Range expertise or products	3.63	3.54	3.54	3.55
Price	3.29	3.31	3.52	3.53
Flair and creativity	3.44	3.29	3.30	3.25
Product design	3.20	3.33	3.31	2.76
Marketing and promotion skills	3.15	3.06	3.14	2.79
Cost advantages	2.91	2.94	3.25	3.00
Total Responses (No.)	306	132	178	65

Note: differences between regional groups are statistically significant for speed of service and cost (0.05 level), and for specialised expertise, price and product design (0.10 level), using the between-group F test.

Source: CBR survey, 1995

Table 11. Regional variations in SME collaborative activity

	South East	Outer Southern	Industrial Heartland	Periphery
% firms with formal or informal collaborative or partnership arrangements with other organisations in last three years				
Total SMEs	42.1	37.9	40.8	23.5
Manufacturing SMEs	32.8	36.1	40.2	24.4
Service SMEs	48.1	38.9	41.8	22.2
Total Responses (No.)	311	126	174	68

Note: difference between SE and Periphery frequencies for total and service SMEs are statistically significant at 0.01 and 0.02 levels, respectively, using the Chi Square test.

Source: CBR survey, 1995

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