

Changing Relationships between Multinational Companies and their Host Regions? A Case Study of Aberdeen and the International Oil Industry

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Abstract

There has been a revival of interest in recent years in the relationships between multinational corporations (hereafter MNCs) and the host regions in which they operate. The branch plant thesis which generally views inward investment by MNCs in a negative light – as reinforcing power relations between core and peripheral regions – has been challenged, with the suggestion that such developments can play a key role in linking up local economies to important flows of knowledge and information in a global economy. It has also been suggested that MNC branch plant activities are in practice often upgraded over time, leading to the development of important competitive advantages for host regions. In this paper, such claims are investigated through a case study of the Aberdeen oil region in the north east of Scotland. The changing position of Aberdeen within the oil industry's corporate division of labour is evaluated in terms of the wider theoretical debate.

Key words: multinational companies, host regions, learning regions, oil industry.

Introduction

There has been renewed interest in recent years in the relationships between multinational corporations (hereafter MNCs) and the host regions in which they operate. In contrast to a long tradition of critical analysis, which has viewed MNC inward investments rather pejoratively as 'branch plant' activities at the sharp end of the international division of labour (Massey, 1984), a number of recent commentators have been more sanguine about their contribution to local economic development, emphasising their role in upgrading the local labour market infrastructure and enhancing competitive advantage (Florida, 1995; Morgan, 1997). This more positive interpretation is framed within the context of globalisation, and in particular the widely held belief that endogenous economic development at local, regional or national scales is futile in a world of mobile capital and deregulated economies. In this world of 'limited possibilities' where local economic development options are increasingly restricted and prescribed, MNCs are seen as key resources for host regions, as conduits of important 'global' knowledge and best practice. In part, the inspiration behind this perspective comes from debates about the changing organisational characteristics of MNCs and their spatial implications (Dicken *et al.*, 1994). In particular, it is suggested that contemporary MNC restructuring, in response to competitive pressures brought about by globalisation, is resulting in the decentralisation of activity and greater decision-making autonomy for local units (Morgan, 1997). This in itself is seen

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as offering new possibilities for host regions to use MNC activities as the basis for sustainable economic growth, reviving the idea of branch plants as growth poles in economic development.

The changing relationships between MNCs and their host regions are explored here through a case study of Aberdeen and the international oil industry. For a generation of earlier commentators Aberdeen had become the archetypal branch plant economy as, with the build-up of oil developments in the 1970s, the city became host to some of the world's most powerful MNCs and their leading suppliers and contractors (Hallwood, 1988; Feagin, 1988; Harris *et al.*, 1988). This led to predictions of longer term decline, following the initial boom period, precipitated by a mass exodus of capital as oil reserves became depleted. Instead of economic decline, Aberdeen continued to experience strong economic growth throughout the 1990s, even as the North Sea oil region entered its mature phase. At the time of writing (August 1999) the local economy remains buoyant with unemployment rates of under 2%; well below the UK average. Rather than multinational exit, there was a degree of consolidation of oil operations in the Aberdeen region during the 1990s, suggesting a rather more complex relationship between the oil industry and Aberdeen than the standard branch plant stereotype. Indeed, it is our contention in this paper that Aberdeen has transcended its earlier position within the industry and is now more than just a local corporate outpost. However we question whether there has been a more significant shift in the underlying relationship between Aberdeen and the international oil industry.

The paper is divided into six parts. We begin by briefly reviewing the recent literature on the relationships between MNCs and host regions, which puts a more positive slant on such developments than more established regional development theory. We also consider the implications of this literature for extractive and resource-based host regions. In the second part we examine the evolution of the Aberdeen oil complex and past interpretations of it as a branch plant economy before presenting evidence which questions this thesis and suggests a more advanced role. In the third section we analyse this changing role in more detail, highlighting the influence of wider industry restructuring and technologically-driven change in strengthening Aberdeen's position as a key oil agglomeration. However, in parts four and five we question the extent of oil industry 'embeddedness' in Aberdeen and its implications for generating new rounds of growth as North Sea activities begin to decline. This leads us to conclude by questioning some of the broader assumptions made about the changing relationship between multinationals and host regions in the literature.

A changing relationship between MNCs and their host regions?

From branch plants to learning regions

There is a well established tradition of critical analysis in geography and the social sciences that is highly critical of the part played by externally controlled MNC activities in regional economic development (Hymer, 1972; Firm, 1975; Massey, 1984; Turok, 1993). Regions that become dominated by branch plants are doubly disadvantaged; first because they are subject to external control and

second because such activities are more often than not associated with low skill, low wage, assembly line work, reflecting their subordinate position within corporate spatial division of labour (Massey, 1984). Where branch plant activities replace traditional industries the net effect is often the general degradation of work in the local labour market (Cumbers, 1998). Because branch plants are enmeshed within a set of socio-spatial relations that are internal to particular corporations, they have been viewed as being disconnected from place; 'cathedrals in the desert' that are not firmly integrated into the host regions in which they operate. As such, it has been argued that they provide few positive spin-off effects for local economic development in the longer term (Turok, 1993).

In contrast to this branch plant tradition, a number of recent commentators have painted a rosier picture of the benefits of foreign multinational inward investment. This view stresses the potential role of MNCs as agents of regional economic renewal against a backdrop of the increasing global integration of the world economy (Munday *et al.*, 1995; Florida, 1995; Morgan, 1997; Mair, 1997). In what has come to be known as the 'Learning Region' thesis, the branch plants of MNCs are viewed as important conduits for the transmission of 'global' best practice to what are otherwise peripheral or less favoured regions in the process of capital accumulation. Used in support of this arguments are recent inward investment projects in the UK and US by Japanese and German companies, which are qualitatively different from past rounds of inward investment, in being geared towards the creation of locally integrated industrial complexes that are more firmly 'embedded' in place. In other words, such investments are less short term than in the past and are not purely concerned with the cost advantages associated with a particular location, but are also seeking to draw upon key 'social resources' deriving from local skills and 'know-how'.

Critical to the Learning Region argument is the idea that MNC organisation is itself changing in response to the pressures brought about by globalisation (Bartlett & Ghoshal, 1989) and in particular, the heightened uncertainty and the intensification of competitive conditions. In response, MNCs are having to be increasingly flexible and adaptable, able to capture and deploy information and resources on a worldwide basis in the pursuit of competitive advantage. As Dicken *et al.* put it (1994, 30):

The dilemma facing firms – especially large firms – in today's turbulent competitive environment is that, to succeed on a global scale, they must possess three capacities simultaneously. They need to be globally efficient, multinationally flexible and capable of capturing the benefits of worldwide learning all at the same time.

It has been argued that this is causing many MNCs to shift away from the highly centralised, hierarchical organisational structures of the post war era towards more dispersed and 'networked' forms (Powell, 1990; Yeung, 1994), which in turn has important implications for regions that are host to MNC branch plants. In the first place, relations between headquarters and branch plants are becoming less assymetrical with the latter playing a more autonomous role, particularly with regard to new product development and market testing, as MNCs attempt to become more sensitised to local market conditions. Secondly, it is suggested that in the more dynamic MNCs, branch plants are playing a

critical strategic role as 'listening posts' (Schoenberger, 1994) for ideas about new product development and, perhaps more significantly, product adaptation and improvement, which can be fed back into the organisation as a whole. In the process, branch plants become important repositories of knowledge in their own right, which the headquarters ignores 'at its peril' (Morgan, 1997: 495). In particular, through their position at the sharp end of production, branch plants and their regions are viewed as being at the heart of key 'learning-by-doing' and 'learning-by-using' processes (Lundvall, 1992).

The key point for host regions is that they become home to key forms of knowledge construction. Learning-by-doing and learning-by-using activities are in effect territorialised, through 'the everyday experiences of workers, production engineers and sales representatives' (Lundvall, 1992: 9), and locationally fixed (at least in the short term) in the sense that they 'remain tacit and cannot be removed from [their] human and social context' (Lundvall, 1994, cited in Morgan, 1997: 493).

Whilst this 'Learning Region' perspective (Morgan, 1997) raises some interesting issues about the changing relationship between MNCs and host regions, it is important not to overstate the implications for creating sustainable regional development. Recent closures of what were previously considered as new wave, higher quality branch plants in the UK (such as the Siemens plant on north Tyneside that was only opened as recently as 1995) remind us of the continuing, and perhaps heightened, vulnerability of branch plants to fluctuations in global markets. As such, it is doubtful whether the existence of tacit knowledge in itself is likely to be enough for most host regions to transcend their branch plant status. For, recent restructuring by MNCs – taken at face value – is all about 'tapping' into localised tacit knowledge, whilst simultaneously enhancing global mobility and reach. For host regions therefore, tacit knowledge may provide a short-term advantage, which quickly dissipates once it has been absorbed within the MNC network and re-deployed elsewhere (Hudson, 1999). In fact, following the logic of the argument, the greater the degree of MNC embeddedness, the more likely it is that tacit knowledge will be exported, once it has been effectively internalised within the MNC's own decentralised network. Arguably, if we accept the increased importance of knowledge creation in achieving competitive advantage, host regions will only be able to fix multinational capital in place for sustained periods if they can become more strategic centres of knowledge creation. In other words, clusters that are capable of generating new 'break-through' product and process innovations as well as the kind of 'day-today' improvements in productivity and performance associated with tacit knowledge (Amin & Cohendet, 1999).

The branch plant syndrome in extractive industries

Extractive or resource-based regions that are dominated by foreign multinationals may be thought of as representing a particular type of branch plant location. More specifically, locational advantages rest less on the usual factors of wage costs, availability of land, transportation costs, government grants, etc. (although these remain important), but more on the relationship between resource depletion and the level of extractive technologies that are available. Thus,

theoretically, a mature region, which is characterised by increasingly marginal reserves but highly advanced technology, may still yield a higher rate of return than a newer region with more accessible resources but a low level of technology. Additionally, where resources play a wider strategic role in the functioning of the economy (e.g. coal, oil), 'non-economic' factors (such as security of supply) may lead to MNCs being prepared to continue production in a location beyond what would normally be expected on economic grounds.

In the longer term, however, once a resource becomes depleted, or in most cases, as it becomes increasingly costly to extract relative to other locations, a region's locational attractiveness for MNCs vis-à-vis other regions becomes subject to the same considerations that apply more generally. In these circumstances, the ability to sustain economic growth hinges around the effectiveness of local agents in responding to the change in their economic circumstances. Typically, successful adjustment strategies involve either the shift into higher value added activities in resource related industries (e.g. a move from basic iron ore extraction to finished steel or metal goods) or diversification into new industries and markets using skills developed during the extraction phase. And, of course, economic history is replete with examples of resource-based regions that have failed to shift onto a new trajectory of economic growth as initial locational advantages have faded (Hudson, 1999; Pred, 1967). Of course, for regions that have been developed through external control, persuading MNCs to engage in local diversification strategies remains the main difficulty. This is where the Learning Region thesis becomes relevant. For, if we accept that resource-based regions, in common with other branch plant regions, become the site of critical tacit learning activities (resulting from technical advancement resulting from dealing with the novel problems encountered during resource extraction), then intuitively we would expect them to develop their own forms of knowledge-based advantages which MNCs would 'ignore at their peril'. In restating the earlier argument however, it remains doubtful that such advantages on their own will be enough to sustain regional prosperity. The underlying locational logic of extractive industries, under MNC control, remains the re-deployment of equipment and personnel from one region to another as cheaper supplies become available. Intuitively, we would expect the same logic to apply to the example of Aberdeen and its oil-related development.

Multinational-host region dynamics in Aberdeen

In October 1997 the US oil tools specialist Baker Perkins announced the establishment of a new manufacturing facility in Scotland to produce components for oil-wellhead completion systems. Within the context of past inward investment projects, the impact upon the local economy was relatively small; £18 million worth of investment and around 240 jobs being created. However, in regional development terms the qualitative significance of the project was considerable for several reasons. First, it involved the creation of 40 highly skilled management, technical and engineering staff based in Aberdeen, where the company already had an established presence. Second, it represented an example of a successful 'spin-off' operation, with the main manufacturing facility and 195 jobs being created not in Aberdeen, but at Bellshill in Lanarkshire, an area suffering

considerable economic and social deprivation. Finally, and unlike many such activities in the past, the new Scottish production facility was not established solely to supply the local North Sea market, but was intended to be the company's main global production facility. As such, the decision to locate in Scotland was made in preference to other established oil regions such as Oklahoma and Egypt.

This anecdotal example raises some interesting questions about the nature of the changing relationship between the Aberdeen (and wider Scottish) oil region and the MNCs that have come to dominate it in recent years. If anything, one would expect to see considerable evidence of capital flight from the city by now. The North Sea has reached maturity as an energy province and it is widely accepted that most of the 'big finds' have been discovered and are now under development. Yet, there is little sign (as yet) of a mass exodus occurring. Indeed, as we go on to document, there has been some evidence of a consolidation of MNC operations in the city. In this sense it is worth asking, in what sense has Aberdeen evolved away from the branch plant stereotype of the 1970s and 1980s? To what extent has it developed local learning characteristics? And, if so what do these imply for the underlying relationships between Aberdeen and its multinational tenants?

Up until the mid 1980s, there were few signs that the oil industry was laying down roots in Scotland. Most oil companies and their main contractors continued to manage North Sea operations from offices in established headquarter locations such as London, Houston and Paris, whilst Aberdeen-based operations were largely restricted to non-specialist lower value-added activities such as construction and the provision of basic services (Hallwood, 1988). More recently however, there are grounds to suggest that the Baker Perkins example may be symbolic of a wider trend in which Aberdeen is undergoing a transformation within the international oil industry's division of labour. Recent export surveys reveal that a growing proportion of oil-related activity within Aberdeen is now being exported, rather than being completely dedicated to supplying the North Sea, with an increase in the export share of turnover from 5% in 1985 to over 20% by 1995 (AC/ACC, 1997). While the two most significant export destinations remain the other two North Sea oil and gas producing countries, Norway and the Netherlands, there is nevertheless evidence that a growing number of both indigenous and foreign-owned firms are exporting to more 'global' markets with the former Soviet Union, West Africa and even the Middle East being particularly important (Cumbers, 2000). Further evidence of the city's changing status within the oil industry's division of labour is provided by a survey of oil-related supply and contracting firms undertaken between September-December 1996.¹ This reveals that, despite relatively depressed oil prices, the great majority of foreign MNCs actually increased employment in the city over the period (see Table 1). Indeed, the performance of foreign MNCs was actually better in this respect than that of 'Other UK' based capital.

In interpreting these developments, we would argue that two themes are relevant: first, the geographical implications of wider industry restructuring, which has resulted in the strengthening of Aberdeen's oil cluster, and second, its emergence within the industry as a centre of considerable technical expertise and know-how, based upon tacit forms of knowledge.

Table 1. Employment change in Aberdeen by nationality of firm 1991-1996.

Employment change (1991-1996)	Nationality of firm				
	Scottish	Other UK	US	Other	Total
Remained the same	14 (23.0)	8 (50.0)	2 (8.7)	2 (14.3)	26 (22.8)
Increase	37 (60.6)	7 (43.7)	18 (78.3)	8 (57.1)	70 (61.4)
Decrease	10 (16.4)	1 (6.3)	3 (13.0)	4 (28.6)	18 (15.8)
Total no. responses	61 (100)	16 (100)	23 (100)	14 (100)	114 (100)

Source: authors' survey.

International corporate restructuring and the consolidation of the Aberdeen oil cluster

Restructuring the global oil industry for a new competitive era

The period since 1986 has been one of considerable restructuring within the oil industry worldwide in response to a dramatic decline in oil prices and the lack of a subsequent recovery (Fig. 1).² Restructuring has taken place both within companies, through downsizing and job-shedding (Table 2), and between companies with a major phase of merger and acquisition activity taking place in the period since 1997 (Table 3). Whilst the extent of restructuring has varied between firms depending upon specific geographical and sectoral orientations, for the larger MNCs in particular there does appear to have been a generalised attempt to both streamline corporate bureaucracies and re-focus upon 'core' oil and gas activities (UN, 1995). The merger wave reflects both the imperative to reduce costs through rationalisation and the desire to create corporations with a truly global reach. The BP-Amoco merger is a case in point, fusing BP's Eurasian orientation with Amoco's predominantly US interests (the latter was still dependent upon US based resources for 60% of its total revenue prior to merger). Alongside this merger activity, joint venture activity has also been on the increase, although it should be stressed that few alliances between rivals are formed on anything more than a temporary or partial basis and overall the pattern is one of what Crump describes as: '... the knack of petroleum companies to range easily among shifting alliances. A competitor today is an ally tomorrow. A strategic partner in one market is an adversary in another' (Crump, 1997: 59).

Additionally, there has been a recasting of the relationship with contractors and suppliers. Traditionally oil companies have out-sourced much of the work in the upstream segment of the industry using vertical disintegration strategies to deal with a situation of 'asset specificity'; *i.e.* each individual field development is unique and therefore requires a different mix of services and products to develop it. Up until the late 1980s the oil companies managed their upstream supply operations through a system of multiple sourcing, in which they themselves were heavily involved in the supervision of contracts (Fig. 2). Following the slump in oil prices and the greater pressures to reduce costs, this governance system has been reorganised. The result has been an increase in contracting out and a shift towards more integrated contracts, where the management (and risk) of entire projects are devolved to one larger contractor, who acts as the focus

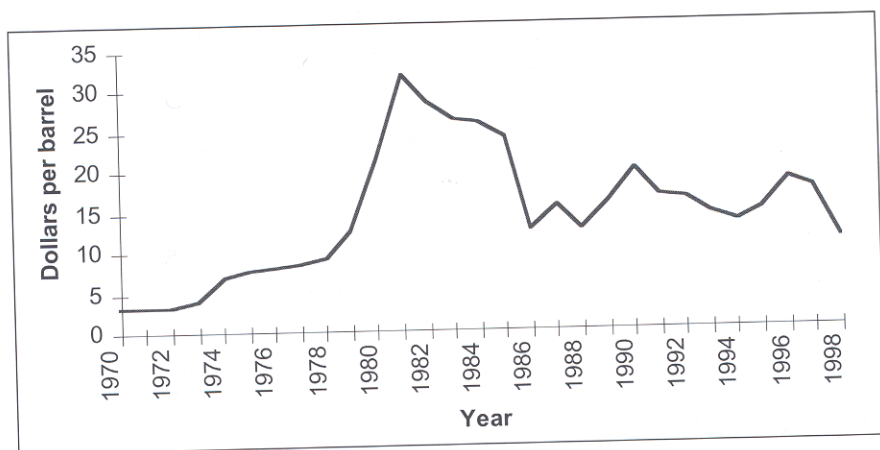


Fig. 1. World Oil Prices 1970-1998 (annual average). Source: BP's Annual Statistical Review of World Energy, based on price for Saudi Arabian light crude.

Table 2. Employment change in the ten largest integrated oil companies (measured by sales turnover) 1991-1998.

Company	1993	1998	% change
Shell	117,000	102,000	-12.8
Exxon	91,000	79,000	-13.2
Elf	94,300	58,300	-38.2
Mobil	61,900	41,500	-33.0
BP	84,500	96,650	+14.4*
ENI	93,076	78,906	-15.2
Chevron	47,576	39,191	-17.6
Texaco	32,514	24,628	-24.3
Amoco	46,317	—	—
Total	49,772	48,831	-1.9
Total	717,955	573,586	-20.1

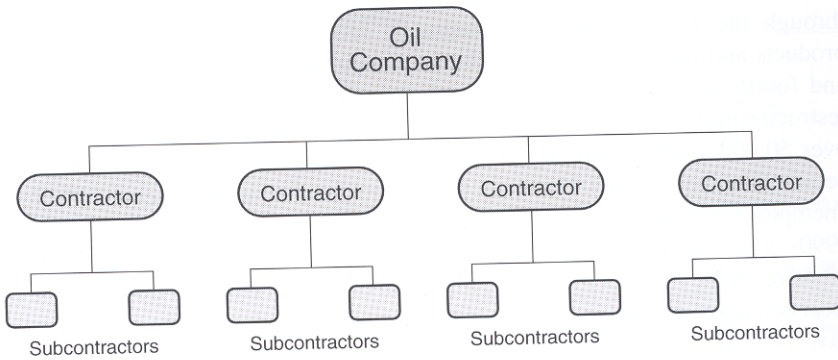
*Figure for merged BP Amoco group.

Table 3. Key oil and gas mergers and acquisitions in period since 1997.

Date of deal	Companies involved		Value \$billion
February 1999	BP Amoco	Atlantic Richfield	26.8
December 1998	Total	PetroFina	7.0
December 1998	Exxon	Mobil	75.3
October 1998	Kerr-McGee	Oryx Energy	3.1
August 1998	BP	Amoco	48.2
May 1998	Atlantic Richfield	Union Texas	2.7
October 1997	Occidental	Elk Hills Petrol	3.7

Source: BP Amoco website <http://www.bpamoco.com/>, *Financial Times* 21.12.98, p. 22.

(i) Traditional governance structure (i.e. pre 1986) : □
oil company management and multiple sourcing



(ii) Governance structure under new competitive conditions (i.e. post 1986) : □
integrated contracts, devolved management and 'alliancing'

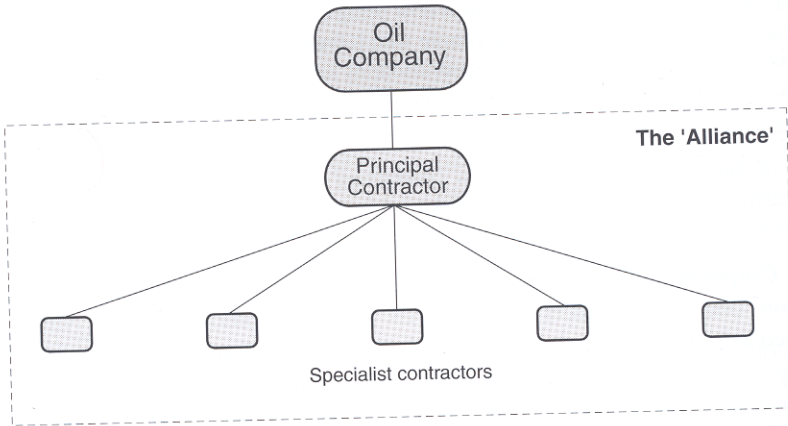


Fig. 2.

for a contractual 'alliance'.³ The shift towards new integrated contracts has encouraged a similar process of acquisition, merger and joint venture activity among contractors as that taking place between the oil companies themselves (see Foster *et al.*, 1994 for details). This has led to an increased degree of concentration within the supply industry and the consolidation of some of the larger players into major combines capable of providing a fully integrated range of services.⁴

The impact of MNC restructuring on Aberdeen

Industry restructuring has been particularly acute in the UK sector of the North Sea where developments are now extending into smaller and less accessible oil fields. Industry restructuring has been supported by the government's CRINE initiative (Cost Reduction in the New Era), launched in 1993 with the stated aim

of achieving cost reductions on the United Kingdom Continental Shelf of 30% over a three year period. Cost cutting has involved four main components (Foster *et al.*, 1994: 12-15): first, the reduction in administration and overhead costs through the standardisation of contracts; second, an attempt to standardise products and reduce R&D costs; third, the rationalisation of supplier networks; and fourth a systematic assault on labour costs. Within the Aberdeen region, restructuring has resulted in a fall in employment in oil-related activities from over 50,000 at the beginning of the 1990s to around 40,000 at the end of the decade (Cumbers, 2000). However, this has not resulted in an increase in the local unemployment rate, which has stayed constant at between 2-3% since the early 1990s. One reason for this is that many of the jobs lost have been in activities offshore on the rigs where a large proportion of the workforce is from outside the local economy. In addition, many of those made redundant by the oil companies have been re-employed as contractors or self-employed workers, who are not picked up in official surveys. In this sense, oil company restructuring is resulting in a re-drawing of labour market boundaries, slimming down the core workforce and expanding the periphery. This is supported by the following comments:

Some of the work formerly done by us is now being done by the likes of AMEC and Brown & Root [contractors]. Some of the people who left us have found jobs the next day with the Wood Group or John Brown. The boundaries have shifted – an increased amount of work is done by contractors, but as a consequence you don't see unemployment levels rising.
(Interview with manager of US oil MNC, 13.12.96)

One of the consequences of the new contracting relationships is that a lot of people formerly working for Shell are now working for us. It doesn't mean that there are a lot of redundancies.
(Interview with manager, UK drilling contractor, 4/12/96)

Corporate restructuring has also resulted in considerable spatial reorganisation, one of the effects of which has been the consolidation of North Sea related activities in Aberdeen. In 1993 the government transferred part of the DTI energy division from London to Aberdeen. The motivation behind this appears to have been driven more by the global interests of BP and Shell and their desire to rationalise UK operations than by concern with the local economic development implications (Woolfson *et al.*, 1997). Nevertheless, it does appear to have provided a significant stimulus to firm relocation to Aberdeen. Subsequently, five of the major oil companies decided to transfer key management personnel and operations to the city (see Table 4). In turn, several major suppliers and contracting firms moved additional parts of their operations up to Aberdeen in order to be able to provide a 'one-stop-shop service' for the North Sea producing area. Whilst this phase of relocation activity largely came to a close in the period after 1996 as oil prices fell, and subsequently there have been further job losses in Aberdeen, there have as yet (August 1999) been no major withdrawals of either oil companies or contractors from the city.

The consolidation of supplier and contractor activity in Aberdeen has in part been achieved by localised joint venture activities between some of the major oil supply companies. Some large and fairly significant integrated contractor alliances have emerged as a result (Foster *et al.*, 1994). For example, the merger of US firm Brown & Root's Aberdeen operation with an existing UK joint

Table 4. Selected examples of recent relocation activities to Aberdeen.

Firm/type of firm	Nationality	Date of relocation	Nature of relocation
<i>Government</i>			
Department of Trade and Industry	UK	1993-6	Transferral of 60 jobs from Petroleum Engineering Division in London
<i>Oil companies</i>			
Amoco	US	1996	Relocating UK operational HQ from London to purpose-built office block
Texaco	US	1994	Relocation of project management team for Strathspey field development from London
Total Oil Marine	France	1993	Relocation and centralisation of exploration and production staff from London to Aberdeen
BP Exploration (Europe)	UK	1993	Transfer of European decision-making functions from London and Glasgow to Aberdeen. Relocation of 300 staff
Conoco	US	1993	UK oil HQ moved from London to Aberdeen
<i>Oil supply companies</i>			
Rotortech (helicopter engineering)	UK	1995	Investing £1m in new corporate HQ at Aberdeen. Relocating from Cambridge = 30 jobs
Aker Engineering	Norwegian	1995	Rundown of London activities and redeployment of staff in Aberdeen and Newcastle offices
Baker Perkins (oil services)	UK	1995	Relocation of 'eastern hemisphere' HQ to Aberdeen
Foster Wheeler (engineering)	US	1994	Transferring offshore design activities from London to its joint venture with local firm Wood Group to provide 'life of field service'

Sources: press reports, company interviews, Woolfson *et al.*, 1997.

venture AOCI/OGC has created a Grampian-based onshore workforce of over 4000. Similarly, the joint venture between the largest indigenous supplier, Wood Group, and US firm Foster Wheeler has created a local complex of over 2000 employees. Other collaborative ventures that have consolidated operations in Aberdeen include the French-Luxembourg-Norwegian alliance Stolt-Comex-Seaway which has also relocated its corporate headquarters from Marseilles to Aberdeen, and the merger of offshore interests between French supply firm Cofflexip and Norwegian subsea contractor Stena Offshore, creating an oilfield services group with a workforce of 800 in the city (*Aberdeen Press and Journal*, 1995).

While the imperative to reduce costs and provide a full range of services close to market can be seen as the main drivers behind these developments, the net effect has been to give greater coherence to the oil-related cluster in the city. There are a number of large integrated contractors that operate within the city that are capable of providing a full range of services in different aspects of oil development. The local economy has been considerably upgraded as a result, benefiting from the influx of highly skilled labour. For example, BP and four of its largest contractors; AMEC, Trafalgar House, Wood Group and Brown & Root; have agreed to maintain a minimum number of chartered engineers in Aberdeen to be readily available for new project work (Foster *et al.*, 1994); a move which was motivated by the desire to reduce the costs involved in using agency personnel, the side-effect of which is to further strengthen the local pool of specialist skills.

Aberdeen as a centre of accumulated knowledge and expertise

Whilst cost-cutting and rationalisation have been important motivations behind the build-up of higher level functions, Aberdeen had already acquired some key technology-based advantages from being at the heart of North Sea developments. The difficulties involved in extracting oil and gas from a hazardous environment like the North Sea and the subsequent need to reduce costs in relation to other oil regions have been significant drivers in encouraging innovation. By the mid-1990s, there were tangible signs that this was beginning to bear fruit. For example, a UN report noted that the average success rate for finding commercially viable resources had been increased from one in six exploration wells to one in four in less than a decade (UN, 1995). Improvements in oil extraction techniques have meant that many fields that were previously uneconomic are now profitable, even with oil prices as low as \$10 per barrel (UN, 1995). Moreover, many of the techniques that have been pioneered in the North Sea have subsequently been applied as standardised technologies in other offshore regions such as the Caspian Sea, South China Sea, Gulf of Mexico and the Campos Basin off the coast of Brazil and even in some of the longer established onshore regions such as the Middle East.⁵

Aberdeen has, through these activities, clearly been at the heart of some important 'localised learning' experiences. At the same time, it is important for regional development purposes to be clear about the nature of these learning activities and the forms of knowledge that are being created. Aberdeen has not become a production centre for oil and gas equipment. In our firm-based survey, which included both domestic and foreign firms we found that very little direct production takes place in Aberdeen (see Cumbers & Martin, 1997). This is largely due to high labour costs relative to other parts of the UK. Furthermore, what data there is on sourcing patterns suggest that for the vast majority of firms in the Aberdeen oil complex, the more specialised materials and products are purchased outside the region and indeed outside the UK (Cumbers, 2000). Whatever can be said about the oil cluster in Aberdeen therefore, it is not an agglomeration based around material linkages. It is also the case that the development of core technologies still tends to take place elsewhere, within established R&D centres, usually in the south of England.⁶ As we have reported

elsewhere, the 'pure research component in Aberdeen's oil complex is low' (Cumbers, 2000: 376). However, survey evidence does point to Aberdeen operations playing a role within the oil industry's innovation process. A surprisingly high percentage of external MNCs (around 25%) were found to be undertaking some type of research and development activity in Aberdeen (Cumbers & Martin, 1997) with the figure being higher among European MNCs than their US counterparts. Interviews with firm managers have tended to confirm that this role has been as a centre for product development, adaptation and market testing; *i.e.* 'learning-by-doing' and 'learning-by-using activities' (Lundvall & Johnson, 1994). This role was best encapsulated in remarks made by a manager of a US oil company during an interview:

Aberdeen has become a centre for 'functional excellence' where technologies from the rest of the UK and Europe become concentrated. Aberdeen is not developing the technology but it is using it and the more you use it, the more local people get more familiar with it than anywhere else, and the more you establish a niche. (Cumbers, 2000: 378)

In effect, we would argue that the combined effect of industry consolidation and market driven innovation has been to confer upon Aberdeen considerable place-based advantages as a high level market testing and servicing centre outwith the North Sea. These advantages are not associated with the agglomeration of material advantages or scale economies but are instead about the development of a set of collective skills – local know-how – regarding oil and gas extraction from one of the world's most hazardous and difficult environments.

Between global hub and local outpost: the changing position of Aberdeen within the multinational oil industry

The evidence presented above suggests that the position of Aberdeen within what we might term the corporate global oil network has been upgraded considerably over time, as it has developed experience and capability in the process of oil and gas extraction. It is clearly no longer a 'glorified branch plant' with 'impulses flowing into' it as one observer once described it (Hallwood, 1986: 3) and dedicated to serving the needs of a local market. Aberdeen now plays a much wider role within the global oil industry with locally-based know-how flowing out from it to other oil and gas regions. As one of our interviewees put it:

We have a lot of oil company people coming through Aberdeen that have respect for guys here that worked for them before and ask for these personnel to be flown out to solve a problem for them. Before, the converse happened – everybody phoned Houston to get the experts. Now those guys are in their 70s and 80s. We've got 30 to 50 year old people in Aberdeen who are the experts now ... Some Shell guys came through here a couple of years ago and developed a lot of respect for the guys ... they were going off to somewhere else and were needing that same level of expertise ... so they requested the guys come out of Aberdeen. (Interview, manager of US drilling services company, 10.12.1996)

Such remarks are backed up by survey evidence which indicates that Aberdeen operations are now playing a wider, more 'global role' within some MNC networks. Figures from the survey referred to earlier, for a subset of non-Scottish owned contracting firms, indicate that the geographical scope of decision-making operations is much greater than would normally be expected

Table 5. Level of decision-making taking place in Aberdeen among non-Scottish owned MNCs.

Type of decision making	Number of firms	(%)
	(Firms could list more than one option)	
Day-to-day decisions regarding North Sea activities	4	(9.1)
Strategic investment decisions about North Sea	10	(22.7)
Strategic decisions about UK operations	9	(20.5)
Strategic decisions about European operations	9	(20.5)
Strategic decisions about global operations	10	(22.7)
Total number of responses	44	(100)

Source: authors' survey.

from a branch plant region (Table 5). A more 'international' if not global role for Aberdeen operations was also picked up during interviews. For some US firms, there was a tendency to describe Aberdeen as their 'eastern hemisphere' headquarters, reflecting the fact that the city had over time developed a managerial role for oil regions such as West Africa or the former Soviet Union. For some European contractors, the North Sea represents the home market, for which Aberdeen, as the main operations base, has subsequently developed an important role in the testing out of new products and services.

However, it is important not to overstate Aberdeen's changing status within the global oil network. Notably, in terms of key control and decision-making functions Aberdeen is a poor second to London even within the UK; only 14 out of the 38 oil companies that are registered as operators on the UK Continental Shelf have permanent offices in Aberdeen (Leitch, 1997). Only two foreign multinational oil companies have an Aberdeen address registered as their UK headquarters or main office, whilst none of the smaller UK oil companies have their headquarters in the city. Whilst the situation is slightly different for some of the foreign contracting firms, few have made the kind of long term strategic investments in the region similar to Baker Perkins. In this sense, there is still little evidence that the multinational community has become locally embedded in any meaningful sense of the term. Rather the contrary; such activities are purposefully footloose so that they can be re-deployed rapidly to other parts of the corporate empire as and when the need arises.

Conclusions

In this paper, we have argued – in contradistinction to earlier analyses – that the Aberdeen oil complex has transcended its position as a 'glorified branch plant region' to assume a more strategic role within the international oil industry. The basis for this argument is that the major oil MNCs and their suppliers have upgraded their operations in Aberdeen over time, reflecting both short term cost-cutting considerations and the attraction of the city as a centre of considerable accumulated knowledge as a result of its role at the heart of North Sea operations.

However, we would argue that this enhanced role remains a fragile one and any competitive advantage that the city and its surrounding region currently hold could prove to be fleeting as the focus of oil industry attention shifts elsewhere. With the odd exception, there is little evidence that either oil companies or their major contractors are laying down deeper roots in Aberdeen. It should also be remembered that the restructuring taking place in many oil-related MNCs is geared first and foremost towards developing more truly 'global' operations. A key element of this is being spatially dextrous, having the ability to redeploy resources from one part of the world to another to take advantage of new opportunities with the minimum delay. Part of the rationale behind the CRINE initiative in the UK was a rationalisation of the industry in the UK to allow BP and Shell to free up resources for new oil and gas ventures in South America, West Africa and the former Soviet Union. Thus, whilst the streamlining of industry organisation that resulted had the short term effect of consolidating many firm operations in Aberdeen, the underlying effect has been to make many MNC activities more footloose.

The case study of Aberdeen and the oil industry clearly has a number of industry specific circumstances that are characteristic of resource-based industries – not least of which is the ephemeral nature of territorially-based industrial complexes in the first place. Nevertheless, we would suggest that aspects of the experience reported here do have a wider resonance. More especially, the view that some of the organisational decentralisation taking place in MNCs as a result of globalisation processes provides opportunities for longer term upgrading within more peripheral regions should be treated with caution. Whilst the example of Aberdeen resonates with empirical examples elsewhere (*e.g.* Florida, 1995; Morgan, 1997; Murphy, 1998), where branch plant activities have seen considerable value added to their operations in recent years, this does not necessarily mean that the balance of power between the centre and periphery within large multinationals is being fundamentally altered. In particular, it is likely that the ownership and control of technology, information and ideas continues to reside within corporations usually in ways that do not become meaningfully localised in a host region for any significant length of time (Hudson, 1998).

In the current political climate, in which strategic regional policy intervention appears to be anathema to government decision-makers, the future for Aberdeen – and indeed the wider Scottish economy – remain largely in the hands of external multinational capital. Aberdeen's ability to sustain its oil-related success will therefore be contingent upon continuing to generate place-based advantages that stimulate further MNC investment. In this sense, we would argue that Aberdeen's current advantages, based upon some admittedly impressive localised learning activities, might prove to be short-lived, given that multinational oil capital by its very nature aims at the transfer of those learnt experiences elsewhere. Once this has occurred, Aberdeen will become increasingly vulnerable to capital exit and longer term decline, particularly if it lacks the strategic resources (on the part of either its indigenous business community or its public policy makers), which are needed to reinvent itself through the development of new products and markets.

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Notes

1. The empirical evidence used from this point onwards is drawn from a questionnaire survey of 119 firms and semi-structured interviews with a further 20 firms. Further methodological details are given in Cumbers (2000).
2. In the period since this paper was written, oil prices have increased to around \$30 per barrel (January 2001) which has made the North Sea more attractive in the short term. However, prices remain extremely volatile with the threat of a severe downward adjustment if the US economy enters a recession.
3. Crump estimates that between 1990 and 1994 the worldwide market for outsourcing increased from \$9 billion to \$28bn, with estimated savings to oil companies of 9% on average.
4. It should be noted that a number of the major contracting companies including Kvaerner, US firms Haliburton, McDermott International and Dresser, and Swedish-Swiss conglomerate ABB are larger in terms of numbers employed and geographical orientation than most of the oil companies they supply.
5. Within the international oil industry there are a whole generation of generic 'North Sea technologies' which include new geophysical exploration techniques; floating and sub-sea production systems; drilling and production ships; multilateral and directional drilling techniques; the development of more resistant construction materials; and offshore satellite data management and control systems.
6. In this vein it is also worth noting that the oil companies have used the more prestigious UK universities with established reputations in science and technology, such as Cambridge and Imperial College, London, for their core research while the local universities Aberdeen and Robert Gordon's have with a few exceptions been primarily restricted to providing education and training.

References

- Aberdeen Press and Journal* (1995). 'Coflexip Stena moves to cut costs', 28 December.
- AC/ACC (1997). *Oil and the North East: the Developing Impact* (Report by Aberdeen City Council and Aberdeenshire Council, Aberdeen).
- Amin, A. & Cohendet, P. (1999). Learning and adaptation in decentralised business networks. *Environment and Planning D: Society and Space* 17, 87-104.
- Bartlett, C.A. & Ghoshal, S. (1989). *Managing across Borders: the Transnational Solution*. Cambridge, MA: Harvard Business School Press.
- Cavoulacos, P. & Deffarges, E. (1997). Achieving profitable growth in E & P: new strategies, business model. *Oil and Gas Journal* 26 May, 42-46.
- Crump, J. (1997). Strategic alliances fit pattern of industry innovation. *Oil and Gas Journal* 31 March 59-63.
- Cumbers, A. (1998). The transformation of employment relations in the UK's old industrial regions? The experience of Japanisation in South Wales and the North East of England. *Asia Pacific Business Review* 5(2) 184-201.
- Cumbers, A. (2000). Globalisation, local economic development and the branch

- plant region: the case of the Aberdeen oil complex. *Regional Studies* **34**(4) 371-382.
- Cumbers, A. & Martin, S. (1997). *Creating competitive advantage in the Aberdeen economy: building innovative capacity from North Sea oil and gas development*. Working Paper, Department of Geography, University of Aberdeen.
- Dicken, P., Forsgren, M. & Malmberg, A. (1994). The local embeddedness of transnational corporations, in Amin, A. & Thrift, N. (eds), *Globalization, Institutions and Regional Development in Europe*. Oxford: Oxford University Press.
- Feagin, J. (1988). Extractive regions in developed countries: a comparative analysis of the 'Oil Capitals', Houston and Aberdeen. *Urban Affairs Quarterly* **25**(4) 591-619.
- Firm, J. (1975). External control and regional development: the case of Scotland. *Environment and Planning A* **7**, 393-414.
- Florida, R. (1995). Toward the learning region. *Futures* **27**, 527-536.
- Foster, J., Lipka, J., Maguiness, H. & Munro, A. (1994). Competition and Cooperation in the UK Offshore Oil Industry. Working Paper, Department of Applied Social Sciences University of Paisley.
- Gertler, M. (1995). 'Being there': proximity, organisation and culture in the development and adoption of advanced manufacturing technologies. *Economic Geography* **71**, 1-26.
- Hallwood, P. (1986). The offshore oil supply industry in Aberdeen. *North Sea Study Occasional Paper No. 23*. Department of Political Economy, University of Aberdeen.
- Hallwood, P. (1988). Host regions and the globalization of the offshore supply industry. *International Regional Science Review* **11**, 75-91.
- Harris, A., Lloyd, M.G., McGuire, A. & Newlands, D. (1988). *The Impact of Oil on the Aberdeen Economy*. Aldershot: Avebury.
- Harvey, D. (1982). *The Limits to Capital*. Oxford: Basil Blackwell.
- Hudson, R. (1998). The learning economy, the learning firm and the learning region: a sympathetic critique, paper presented at RGS/IBG Annual Conference, Kingston, January.
- Hymer, S. (1972). The multinational corporation and the law of uneven development, in Bhagwati, J. (ed.), *Economics and World Order*. London: Macmillan
- Leitch, M. (1997). *FT Guide to North Sea Operator*. London: Financial Times Energy Publishing.
- Lundvall, B-A. (1992). Introduction, in Lundvall, B-A. (ed.), *National Systems of Innovation*. London: Pinter, 1-19.
- Lundvall, B-A. & Johnson, B. (1994). The Learning Economy, *Journal of Industry Studies* **1**(2), 23-42.
- Mair, A. (1997). Strategic localization: the myth of the postnational enterprise, in Cox, K. (ed.), *Spaces of Globalization: Reasserting the Power of the Local*. New York: Guilford.
- Massey, D. (1984). *Spatial Divisions of Labour*. Basingstoke: Macmillan.
- Morgan, K. (1997). The Learning Region: institutions, innovation and regional

- development. *Regional Studies* **31**(5), 491-504.
- Munday, M., Morris, J. & Wilkinson, B. (1995). Factories or Warehouses? A Welsh Perspective on Japanese Transplant Manufacturing. *Regional Studies* **29**(1), 1-17.
- Murphy, L. (1998). Financial engine or glorified back office? Dublin's international financial services centre goes global. *Area* **30**(2), 157-165.
- Powell, W. (1990). Neither market nor hierarchy: network forms of organization. *Research in Organizational Behaviour* **13**, 35-42.
- Pred, A. (1967). Behaviour and location, part 1. *Lund Studies in Geography Series B* 27.
- Schoenberger, E. (1994). The firm in the region and the region in the firm. Paper presented at Regions, Institutions and Technology Conference, September, Toronto.
- Schoenberger, E. (1997). *The Cultural Crisis of the Firm*. Oxford: Blackwell.
- Storper, M. (1995). The resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies. *European Urban and Regional Studies* **2**(3), 191-221.
- Storper, M. (1997). *The Regional World*. New York: Guilford.
- Turok, I (1993). Inward investment and local linkages: how deeply embedded is Silicon Glen? *Regional Studies* **27**, 401-417.
- UN (1995). *World Economic and Social Survey*. New York: United Nations.
- Woolfson, C., Foster, J. & Beck, M. (1997). *Paying for the Piper: Capital and Labour in Britain's Offshore Oil Industry*. London: Mansell.
- Yeung, H. (1994). Critical reviews of geographical perspectives on business organizations and the organization of production: towards a network approach. *Progress in Human Geography* **18**(4), 460-490.