

## ECONOMIC PERSPECTIVE

### WILL SCOTLAND'S OIL AND GAS CONTRACTING INDUSTRY SURVIVE THE ENDING OF THE PETROLEUM REVENUE TAX?

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In the March 1993 budget the Chancellor of the Exchequer proposed the phasing out of the Petroleum Revenue Tax. All fields receiving development assent after March 1993 will now pay no tax apart from Corporation Tax at 33%. PRT for existing fields is reduced from 75% to 50%. At the same time companies will no longer be able to offset exploration and appraisal expenditure in one field against tax liabilities accruing from other fields in the North Sea (some form of transitional relief will be available till 1995) (Glasgow Herald, 17 March 1993; a fuller analysis is provided by Kemp, 1993)

This dramatic change is the first major shift in the taxation system for the North Sea since 1983 - although changes of a similar nature have been advocated at various times in the past. Previously the ending of PRT had been presented as a way of ensuring the maximum extraction of oil from existing fields. Similarly the abolition of the tax offset for new exploration elsewhere in the North Sea, effectively a subsidy available only to established operators, had been considered as a way of encouraging the entry of new operators with no existing tax base (Rowland and Hahn, 1987).

Now in 1993 the changes are seen in general to be prejudicial to an industry already finding it difficult to cope with declining real oil prices in an ageing oil province with internationally high production costs (WoodMac quoted in Aberdeen Petroleum Review, 14 April 1993). The only voices welcoming the changes are those of the biggest operators, notably BP and Shell. These are companies with a large number of producing wells who already possess a portfolio of proven fields waiting to be brought into production. Sharp criticism has come from other operators who have a smaller share of fields in production as against

unexplored blocks. Equally critical have been representatives of the contracting firms which carry out the work of exploration, appraisal and development. The UK Oil Operators Association see the proposals as "a major disincentive to future exploration". Less exploration inevitably also means a longer-term decline in the development of new fields. So, while the tax changes may well encourage investment in prolonging the life of existing fields, this will not offset the overall decline in activity. It is likely that the established oil companies will seize the opportunity to shift an increasing proportion of their cash flow out of the North Sea for investment in more profitable oil provinces in the Far East and Central Asia. Less established players in the North Sea will look again at the risk of incurring irrecoverable exploration costs.

The specific focus of this article is the impact which any such decline will have on the contracting and supply industry which has grown up to service North Sea oil production. Employment offshore is around 30,000. Onshore oil-related employment is estimated to be around 300,000 in the UK - with up to 70,000 of these workers in Scotland (Macdonald and Wilson 1990). In total therefore the industry represents a very significant proportion of Scotland's industrial activity. How far, in face of the cuts in exploration and development (and the general ageing of the UK sector) will this employment be lost? Will we see the array of specialist firms, assembled over two decades, gradually (or not so gradually) closing down their Scottish operations and moving overseas to where the new investment is taking place? Or will Scotland remain the base and secure for itself, as government policy has always sought, a major new export industry in production and services?

Any answer to this question demands a knowledge of how the front-line section of the industry is owned and some assessment of whether the past two decades have seen the consolidation of an indigenous base that is sufficiently robust to meet the challenge of penetrating overseas markets. Unfortunately it is precisely on the question of ownership that there is least information available in the public domain. One major survey was undertaken in 1984 when the industry was just nearing the end of a decade of rapid expansion. Since then no comprehensive survey has been published. The object of this paper is to complement the 1984 materials with the results of a new survey undertaken between December 1992 and January 1993 together with a comparison of major contractors involved in construction work for fields coming on stream in between 1984 and 1987 and in 1992.

### 1. The 1984 and 1992-3 surveys compared

The 1984 survey was conducted by a group at Aberdeen University (Hallwood, 1990). Postal questionnaires went to approximately 340 companies drawn from listings of firms compiled by the North East Development Agency and the Manpower Services Commission. One hundred and sixty-eight responses were used. The 1992-3 survey was based on questionnaires sent to 330 firms drawn from listings by the Offshore Supplies Office, Noroil (UK Sector) and Grampian Regional Council. Usable responses were received from 152 firms. A check was applied to one in five of those firms who did not reply and it was found that the distribution between sectors and countries of ownership was approximately the same as the original respondents.

The two surveys are therefore broadly comparable. They represent the spectrum of contracting companies directly involved in the UK sector. What then do the surveys show?

Paul Hallwood has used the 1984 survey to argue for the dominance of American multinational firms in all high value sectors of the industry and the lack of a viable indigenously-based industry in the mid-1980s. Figure 1 compares countries of ownership by SIC sector for 1984 and 1992/33. The 1984 survey shows US-owned firms constituting 29% of the total. The biggest concentration of US firms, 17 in all, was in distribution. There was a proportionately high presence in well stimulation (all four), mechanical engineering equipment (seven

out of eleven), general exploration (two out of four) and drilling (two out of five).

Hallwood explains this dominance historically in terms of the organisational forms adopted by the American oil majors since the 1940s. With American dominance in the global production and distribution of oil already well established, the oil majors sponsored the growth of multinational-organised contracting firms who offered a reliable source of specialist skills and equipment in overseas environments where indigenous suppliers were either unavailable or unreliable. The character of the industry itself also made for the very early emergence of high levels of outsourcing. The phased and temporary utilisation of specialist equipment and skills in the preparatory and construction phases, together with the non-standard nature of many processes, meant that there were substantial economies of scale to be achieved by specialist firms operating on a global scale. Hallwood claims that the oil majors gave preference to American contractors firstly because it cuts costs in contract checking and secondly because it avoided the danger of what Hallwood calls "local rent appropriation" whereby, in a geographically constrained market, a small number of local firms could exploit a monopoly of specialist technology.

The competitive strength of the resulting array of American contracting firms meant that they took the bulk of work when the UK sector of the North Sea was opened up. The failure of UK firms to penetrate the technological core of the offshore oil industry over the following decade is attributed by Hallwood "at least in part ... to their failure to invest in research and development as well as their later start in the industry" (Hallwood, p. 90).

The more regionally focused study by Harris, Lloyd and Newlands (1988) also used the results of the 1984 survey to examine the impact on the Aberdeen economy. They confirmed Hallwood's claim that there had been very little technology transfer. Local Aberdeen firms made up only 11% of the total and were almost entirely confined to low value sectors: "local involvement was generally greatest in the less specialised areas such as retailing and transport" (Harris, Lloyd and Newlands, p26). Although at UK level as a whole there was a much greater involvement, 54% of all firms, these tended to be concentrated in finance and insurance, distribution and to a lesser extent construction (Figure 1).

How far, then, had the picture changed by 1992? The results of the new survey do show some significant shifts. Locally owned Aberdeen firms now make up 23% of the total (Figure 1 and Table 1). The proportion of American owned firms has fallen to 12% and the overall proportion of UK firms has reached 68%. Moreover, The American firms are no longer the main occupants of the high value sectors and within general exploration, drilling and diving they are now outnumbered by firms from elsewhere - at least partly no doubt because the big American firms have already started to evacuate the North Sea and give priority to new, more profitable exploration elsewhere.

However, the key question now posed by the budget tax changes is how far the local, Scottish and UK owned firms, which may in part have moved into specialist niches vacated by others, are sufficiently robust to survive any consequent cut in activity.

## 2. Has local agglomeration taken place since 1984?

The 1992 survey provided details on length of activity in the UK sector, the number of employees involved and the current number of contracts serviced.

Taking the 46 firms which have been in the UK sector for ten years or less we find only one American firm (out of the 16 in our survey), but 18 of the 30 Aberdeen-owned firms and seven of the fifteen Scottish-owned firms (Table 2). While it is clear that most of the new firms are small (63% have less than 50 employees - 67% in the case of the Aberdeen-owned firms alone), there are some signs of agglomeration.

The bulk of the new firms (37 out of the 46) are in the construction and distribution sectors. But there is now also a significant scatter in more specialist areas: general exploration (5), surveying and well-stimulation (4), drilling (6) and mechanical engineering (5). Turning to the market strength of these firms, in terms of the number currently active contracts, we find that in December 1992 some of the Aberdeen-owned firms were in a relatively strong position (Table 3). Twelve of the eighteen Aberdeen companies had in excess of 11 active contracts in the UK sector. This was a higher proportion than the "Rest of UK" (including Scotland) with eight firms out of 19 in this position

and the group as a whole. Looking more specifically at the Aberdeen firms with ten or more active contracts we find four in the area of non-destructive testing, two in the supply of equipment (pumping and welding), two in the supply of specialist engineering personnel, one in the supply and design of drilling equipment, one in surveying and one in the supply of cables.

So some slight signs of local agglomeration do appear to be present. Certainly we are faced with a significantly different picture to that derived from the 1984 sample. However, we need to balance this against our further comparison which focused on major contractors alone.

The base of this sample was taken from the Aberdeen Petroleum Annual's listings of firms with major contracts for construction and development work in fields coming on stream in the period 1984-7 (56 contracting companies) and in 1992 (67 contracting companies). Figure 2 shows that at this level there has been significantly more continuity. It confirms that UK-owned firms have quite sharply increased their share (notably Trafalgar House subsidiaries) but also shows that the decline in US owned firms has only been slight. Scottish and Aberdeen owned firms remain marginal.

## 3. What will survive?

From these results three things are clear. First, some limited agglomeration has taken place. Second, it is quite fragile: the market niches secured by the locally-owned Aberdeen and Scottish firms are largely at second level as subcontractors. Third the specific areas of specialism are divided about two-thirds to one third between construction and exploration.

In this context the PRT changes are likely to be quite severely damaging. The small and subcontract character of the local firms will make it difficult for them to move into new oil provinces outside the North Sea. Exploration will be hit immediately. Construction will suffer in the longer run. The proposal by Scottish Enterprise to establish a "strategic alliance" involving five small north-east oil firms reflects this dilemma (Glasgow Herald 4 May 1993). Unless some such device is tried there is little hope that locally-based specialist firms will be able to penetrate overseas markets. Nor is it possible to be too optimistic about the larger British firms which have emerged as major players in the construction market. Conglomerates like Trafalgar House and AMEC are likely to respond by phasing

out capacity used for the UK sector and expanding into more stable areas. Rig fabrication has already seen the loss of up to 12,000 jobs since Autumn 1992 (Financial Times 25 March 1993).

We are therefore faced with a situation of some historic irony. For two decades government policy has explicitly sought both to develop a British input to the industry and to encourage agglomeration and technology transfer in Scotland. Now at last, in the twilight of the UK sector's life cycle, some limited success has been achieved. Yet at just this point government policy itself is threatening to deprive precisely these firms of the stable home base they need to survive.

#### REFERENCES

Hallwood, Paul, **Transaction Costs and Trade between Multinational Corporations: A Study of Off-Shore Oil Production**, Unwin Hyman, Boston, 1990

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Kemp, A., Rose, D., Hovering, M., and Reading, D., "The Impact of the 1993 Budget Proposals on the UKCS", University of Aberdeen Department of Economics Occasional Paper, April 1993.

MacDonald B and Wilson, D., "Survey on North Sea Oil-Related Industry (1990) - Employment Aspects", **Scottish Economic Bulletin**, No 42, 1990

Rowland, C. and Hahn, D., **The Economics of North Sea Oil Taxation**, Macmillan, London, 1987

**TABLE 1 SPREAD OF FIRMS BROKEN DOWN BY ULTIMATE OWNERS ACROSS SIC SECTORS (1993)**

	Abdn	Scot	UK	Nway	Eur	US	Other	Total
1. Gen exploration	-	2	3	-	3	3	1	12
2. Oil Production	-	-	-	-	1	2	-	3
3. Drilling	1	-	4	3	3	3	3	14
4. Diving	-	1	-	-	-	2	-	3
5. Surveying	1	-	2	-	-	-	-	3
6. Well stimuln.	1	1	1	1	-	1	-	5
7. Misc metal.	-	-	1	-	-	-	1	0
8. Mech eng.	4	2	2	-	1	1	-	10
9. Misc mchn prodn.	2	1	-	-	-	-	-	3
10. Elec machinery	1	-	1	-	-	-	-	2
11. Marine eng.	1	-	1	-	-	-	-	2
12. Instrument eng.	1	-	2	-	-	1	-	4
13. Misc manf	-	-	-	-	-	-	-	0
14. Construction	7	3	14	1	1	1	-	27
15. Distribution	9	4	12	3	5	27	1	36
16. Retailing	-	-	-	-	-	-	-	0
17. Catering	2	1	-	-	1	-	-	4
18. Transport	-	-	-	-	-	-	-	-
19. Finance	-	-	-	-	-	-	-	0
20. Leasing	-	-	2	-	1	-	-	3
<b>TOTAL</b>	<b>30</b>	<b>15</b>	<b>44</b>	<b>8</b>	<b>16</b>	<b>16</b>	<b>2</b>	<b>131</b>
<b>PERCENTAGE</b>	<b>23</b>	<b>11</b>	<b>34</b>	<b>6</b>	<b>12</b>	<b>12</b>	<b>2</b>	<b>100</b>

**TABLE 2 NEW FIRMS IN THE SUPPLY INDUSTRY BY NUMBER OF EMPLOYEES AND ULTIMATE OWNER (1992-93)**

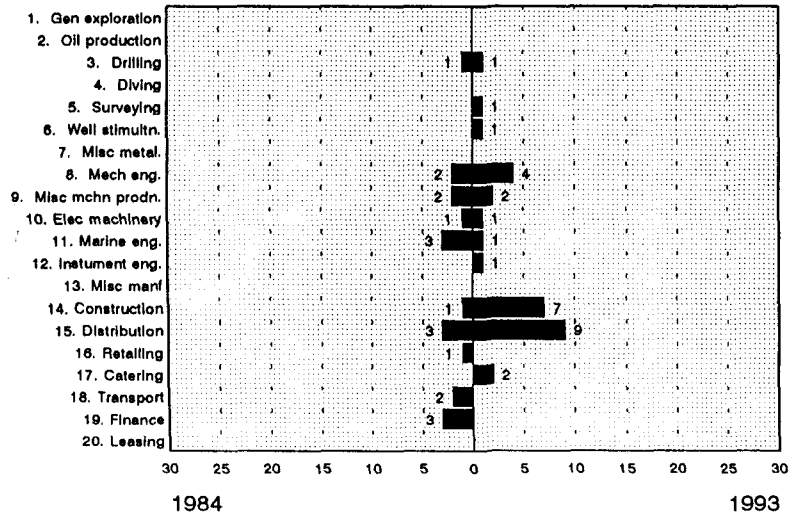
	<50	51-100	101-200	>200	TOTAL
Aberdeen	12	4	1	1	18
Scottish	5	0	1	1	7
Rest of Britain	8	1	1	3	13
Norway	3	-	1	-	4
Rest of Europe	1	1	-	1	3
North American	-	-	-	1	1
Other	-	-	-	-	-
<b>Total</b>	<b>29</b>	<b>6</b>	<b>4</b>	<b>7</b>	<b>46</b>

**TABLE 3 NEW SUPPLY FIRMS AND NUMBERS OF CONTRACTS THEY SUPPLY (1992-93)**

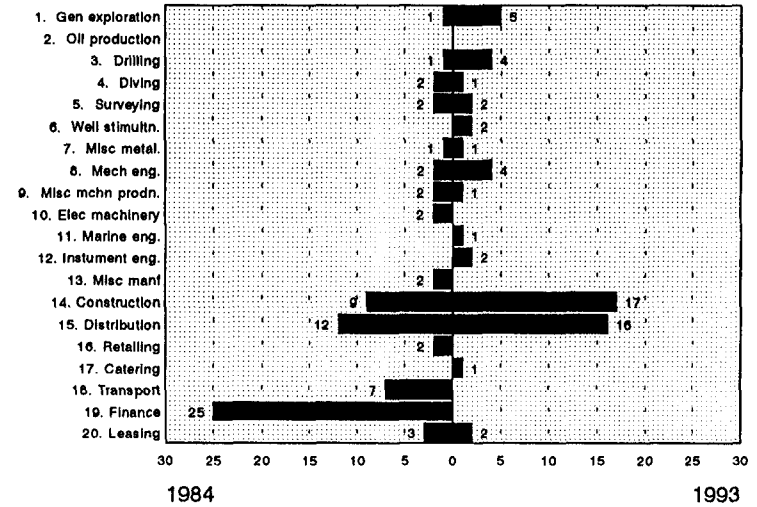
	<5	6-10	11-20	>20	TOTAL
Aberdeen	2	4	3	9	18
Scottish	4	4	-	-	8
Rest of Britain	-	3	3	5	11
Norway	1	2	-	1	4
Rest of Europe	-	-	2	1	3
North American	-	-	1	-	1
Other	-	-	-	-	-
<b>Total</b>	<b>7</b>	<b>13</b>	<b>9</b>	<b>16</b>	<b>45</b>

# Figure 1: Comparisons of Patterns of Ownership 1984 and 1992/3

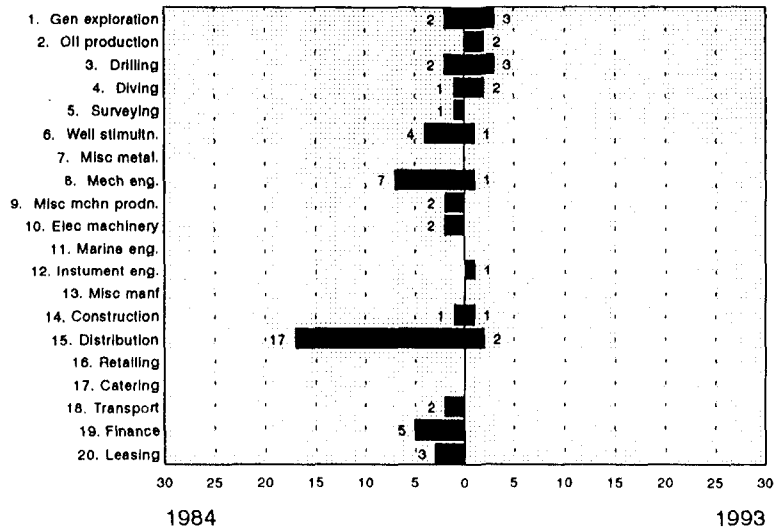
## Ownership by SIC - Aberdeen



## Ownership by SIC - UK (Not Aberdeen)



## Ownership by SIC - North American



## Ownership by SIC Europe, Norway and Other

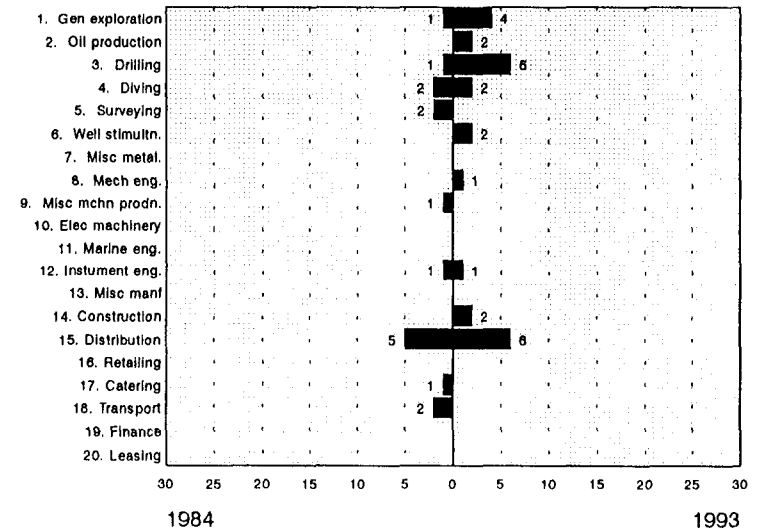
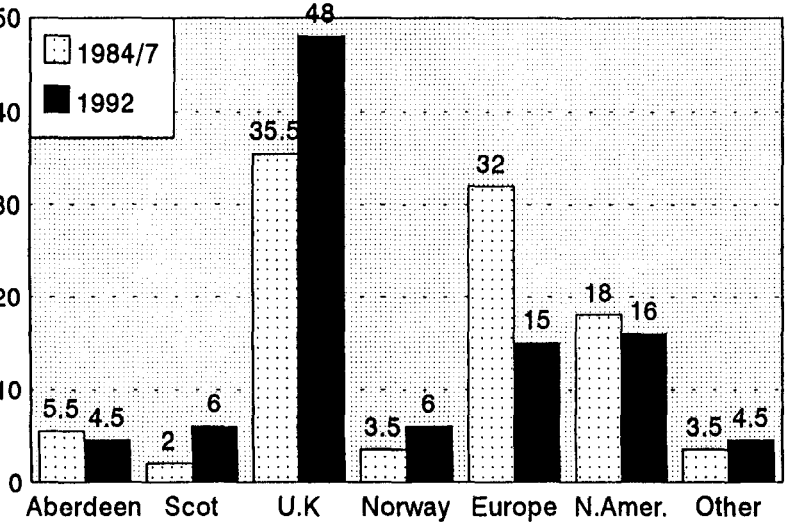


Figure 2: Major Contractors 1984/7 and 1992  
Geographical Location of Ultimate Owners



Figures as percentage of series totals

Contactors 1984/7 = 56; 1992 = 67