

STUDENTS BRIEF

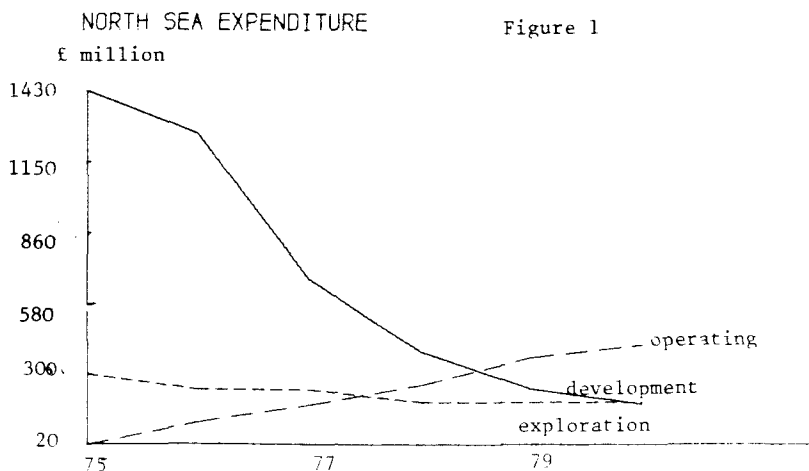
NORTH SEA OIL - A BRIEF OUTLINE

The growth of the North Sea Oil industry, along with its various supply and servicing sectors, dates back to the early 1970's. Prior to this time the main exploration activities had been concentrated in the southern waters of the North Sea, but only natural gas had been found. The first oil discoveries in the northern waters (i.e. north of 56°N) were actually made in the Norwegian sector. However, these were quickly followed in 1969 with the announcement of the Montrose field and by the Forties, Argyll, Brent, Auk and the Frigg gas fields over the following two years. Scotland developed as the main base for servicing the needs of the offshore industry, with the main centres of oil related activity concentrated around Aberdeen, Peterhead, Nigg Bay and the Shetlands.

By mid 1978 there were a total of 41 fields in Scottish waters with at least a small chance of attaining development status as commercially exploitable. Of these, 12 oil fields are currently in production (plus the Frigg gas field), 10 others are under development and a further one has its development plan under consideration by the Department of Energy. Current production is approximately 1.5 million barrels/day (75 million tonnes per year).

Reserves

Current estimates of North Sea Oil reserves are estimated by the Department of Energy at approximately 3,000 - 4,500 million tonnes. However, total recoverable reserves may only represent around 30 - 45% of these total reserves. The exact proportion will, of course, depend on the geological condition of each oil field, improvements in the recovery technology, and the impact of increases in the real price of oil, which may make some fields viable that are at present considered marginal. The oil companies themselves tend to be conservative in their public announcements. There is no sense, after all, in inviting higher taxation. Estimates of reserves are given in the 'Brown Book' published annually by the Department of Energy.



Expenditure

Bringing these discoveries 'on stream' has required massive expenditures on exploration drilling, installation of production platforms and back-up services both on-shore and offshore, plus the operating costs once in production. Fig. 1 illustrates the expected trend in the main categories of expenditure, and reflects the changing emphasis away from exploration and development into the predominantly production phase of offshore operations. Exploration will continue as new areas are offered to the oil companies. However it is generally felt that the major discoveries have been made already. This is reflected in the decline in both the numbers and success rate of wells drilled.

TABLE 1

	69	70	71	72	73	74	75	76	77	78
Exploration Wells Drilled	8	10	17	25	34	59	75	51	58	32
'Significant' Oil Discoveries	1	1	3	2	8	12	22	12	5	2

Source : *Scottish Economic Bulletin No. 17 Spring 1979*

Employment

The bulk of the employment creation from North Sea Oil, over 70%, accrues to Scotland. Official statistics classify this employment by the types of firms involved and their main activity ; either 'wholly involved' or 'partly involved' and 'manufacturing' or 'non-manufacturing'. The 1978 situation is summarised in Table 2 from an SEPD survey.

TABLE 2

	Wholly involved	Partly involved	Total
Manufacturing	10,350	8,150	18,450
Non-manufacturing	20,550	2,400	23,000
Total Survey	30,900	10,550	41,450

Source : *Scottish Economic Bulletin No. 17 Spring 1979*

Analysing these figures on a regional basis we find that of the 'wholly involved' firms 17,550 employees from 'non-manufacturing' firms are located in Grampian, reflecting the concentration of specialist supply and servicing firms establishing themselves in areas nearest to the offshore oil-fields. Strathclyde on the other hand has become established as a manufacturing base, with many employees in 'partly involved' firms. The skills required to produce the vast range of equipment were readily available from the ship building and heavy engineering industries

Until now the employment opportunities have been involved largely with the development phase of offshore activities. As the industry moves into the

OIL RELATED EMPLOYMENT IN SCOTLAND

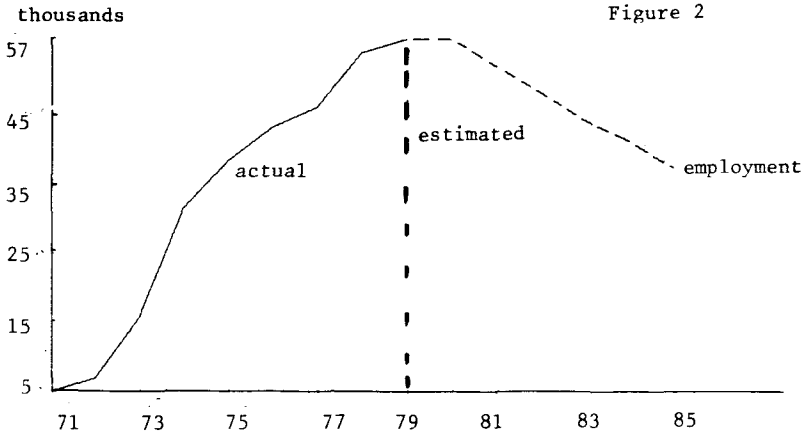


Figure 2

Source: Gaskin & Mackay (eds.) op cit.

Production

The first production started in 1975 - from the Argyll and Forties fields, and will peak in the mid to late 1980's at around 150-180 million tonnes per annum. Fig. 3 presents the expected production profile up to 1985. Production in 1978 at only 53 million tonnes, failed to reach the estimated 60 million tonnes. If in the future similar shortfalls occur then the profile of the stream of benefits may be different from that predicted in Fig. 3.

OIL PRODUCTION IN SCOTLAND

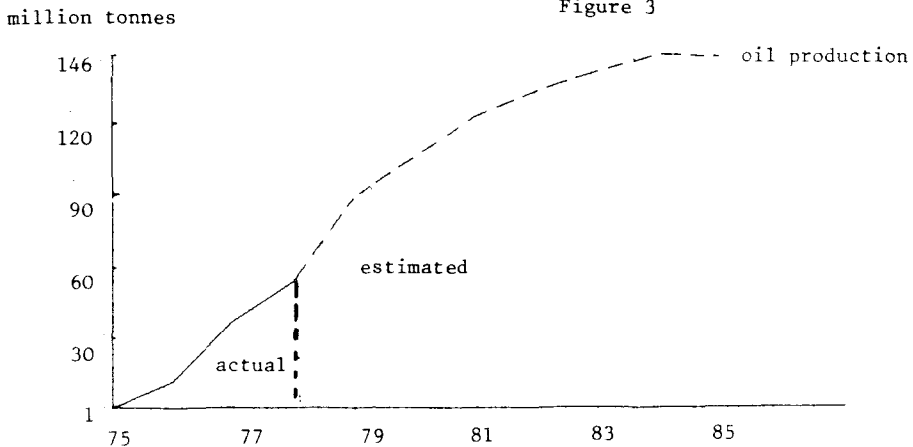


Figure 3

Source: National Institute Economic Review No. 82
November 1977

Benefits

The main benefits of North Sea oil accrue largely to the UK economy as a whole... (text is partially obscured and faint)

TABLE 3

Summary of Benefits

Net Balance of Payments benefits	£5.7 - £8.0 bill/an
Taxation revenue (Oil and Gas)	£6.0 - £7.0 bill/an
Oil related industrial opportunities (Domestic and export)	£1.2 - £1.8 bill/an
Oil related employment opportunities (Direct and indirect)	£0.15 - £0.25 bill/an

Source : *Scottish Council: United Kingdom Oil and Gas: situation revenue
February, 1978 (1977 prices)*

Affecting this range of benefits however are factors influencing the profitability of particular fields. Recent evidence reports sharp rises in operating costs, and if proposals for tax changes are implemented (higher PRT) then some marginal fields may not obtain development status. On the other hand the prospect for these fields will be enhanced by the rising price of oil on the world market.

Downstream Activities

Apart from the benefits arising out of the production of North Sea oil there exist various downstream processing possibilities. Domestic processing has the advantage of maximising the added value component, however constraining expansion in the petro-chemicals industry is the existing European surplus of refining capacity.

Statistics and References for North Sea Oil

This brief article has outlined only some of the broad issues relating to North Sea Oil. The industry has attracted a wide spectrum of interests ranging from government monitoring, academic research in the form of books and reports, private consultants reports, and newspaper coverage.

The Scottish Economic Bulletin publishes a regular series of statistics covering employment, exploration drilling, and production plus numerous special articles, reporting on specific aspects in more detail (e.g. skill requirements of the offshore industry, surveys of oil related employment etc.)

The Scottish Economic Planning Department publish a North Sea Oil Information Sheet summarising the main developments in the industry and including a useful map showing the main oil related facilities. From time to time the Scottish Council, the Royal Bank of Scotland and others produce short pamphlets. The oil industry is well covered by specialist magazines such as Offshore Services, Petroleum Review, Offshore Engineer etc. The Scotsman and Financial Times have periodic surveys of oil matters and most newspapers report on current developments.

Some Useful Measures

Crude oil	1 barrel/day	=	50 tonnes/year
	1 tonne	=	7.4 barrels

Further Readings

- K Chapman, North Sea Oil and Gas: A geographical perspective. David & Charles, 1976
- M Gaskin & D I MacKay; The Economic Impact of North Sea Oil on Scotland. HMSO, 1978
- M Lovegrove: Our Islands' Oil. Witherby & Co., 1975
- J R Morgan & C Robinson: North Sea Oil and the British Economy. Staniland Hall, 1977
- T M Lewis & I H McNicoll: North Sea Oil and Scotland's Economic Prospects. Croom Helm, 1978
- D I MacKay & G A MacKay: Political Economy of North Sea Oil. Martin Robertson, 1975