BRIEFING PAPER

THE ECONOMIC IMPACT OF MULTINATIONAL ENTERPRISES IN TAYSIDE

by Xiaming Liu, University of Abertay Dundee

1. Introduction

The economic impact of multinational enterprises on a host economy is usually discussed under the following headings: resource transfer effects, employment effects, and trade and balance of payments effects (see, for instance, Hood & Young, 1979; Neale & Pass, 1990). A considerable number of theoretical and empirical studies have been carried out in this field in recent years. Some suggest that inward foreign direct investment provides a number of benefits such as the creation of well paid employment, the improvement of R & D, and innovations (e.g. HMSO, 1991). Others argue that multinational enterprises often involve branch plant production which has little spin-off in high technology production (Gripaios, 1984, 1993), and that MNEs have few linkages with local economies and higher closure rates than local business (Harris, 1990).

It is not a surprise that no consensus has so far been reached on whether the economic impact is positive or negative, since different cases have been investigated, and/or different methodologies adopted.

This study involves an interview survey of the resource transfer, employment and trade and balance-of-payment effects of MNEs in Tayside, Scotland. When the investigation started in August 1993, there were thirty four multinational enterprises operating in Tayside. Twenty eight of these firms participated in the survey. The foreign investors in seventeen of these twenty eight firms were from the USA, three from Holland, and the rest from France, Hong Kong, Japan, Sweden, and Switzerland. Eighteen of these firms were located in Dundee, and the rest in Arbroath, Montrose, Forfar, Brechin, and Perth. Twenty three out of the twenty eight companies were wholly-owned subsidiaries and the remaining were joint ventures. The sectors in which these companies were involved included: chemical and oil products; clothing and knitwear; electrical and instrument engineering; electronics and microprocessor based equipment; food and drink; mechanical engineering and metal goods; oil and engineering; paper, board and products packaging; rubber and plastic products; and textile products (natural and synthetic).

This short paper is based on the information provided by the above twenty eight firms. Section 2 discusses the impact these firms had on local capital formation, and technology and managerial skill transfer. Employment and international trade effects will be reported in sections 3 & 4 respectively. Section 5 provides conclusions.

2. Resource Transfer Effects

(1) Capital

Resource transfer mainly refers to the transfer of capital, technology and managerial skills. Capital transfer may be helpful for economic growth, because it may fill the gap between desired investment and domestic savings. It is specially true for a capital-scarce host country. But, if MNEs raise most of their capital within the host country, the effect will depend on whether these local savings would have been idle, or used in less or more productive activities than employed in MNEs. In the first two cases, MNEs are likely to make a positive contribution to growth.

As a region of the UK, Tayside is not capital-scarce. Though the local authorities may have not paid special attention to the original financial sources of the multinational enterprises in Tayside, evidence tends to suggests that these enterprises aid the formation and expansion of productive facilities in the region.

Among the twenty eight surveyed firms, the initial investments of nineteen firms were financed in the investing countries, two in other areas, one in both the investing country and the UK, and only six were financed wholly in the UK. We therefore could conclude that MNEs made a positive contribution to capital formation in Tayside since most of the initial investing capital was financed outside the UK. However, it would be very difficult, if not impossible, to judge the effect of

FDI projects initially financed in the UK, because it is extremely difficult to identify if the local capital was, when mobilised by foreign businesses, idle, or less or more productive than utilised in the MNEs.

(2) Technology

Technology is a very important element in the international competitiveness of a region's companies. Technology transfer may give rise to new production activities, new products, or new processes leading to a reduction in costs. To study the technology transfer effects, we need to know if technologies used by foreign-invested firms are advanced and how these advanced technologies were acquired.

In the surveyed enterprises, nineteen firms claimed that they were using advanced technologies. Only five regarded their technologies as standard. The remaining four claimed that they had advanced technologies in some aspects, and standard ones in others. Here David Forsyth's definitions are adopted (Forsyth, 1972): advanced technologies are technologies which are similar to, or better than, those used by the most advanced sector of the industry; and standard technologies are technologies which are at the same level as the methods used by the majority of firms in the industry.

The enterprises acquired advanced technologies by various means. According to table 1 the most common way was by "purchasing (or getting) information and assistance from the parent". This was normally true for these foreign companies which were involved in horizontal expansion in Tayside.

However, the extent to which the subsidiaries acquired their advanced technologies from their parents depends partially on the entry mode. As revealed by the survey a subsidiary formed by greenfield or brownfield investment usually regarded "getting information from parent" as the main way of acquiring advanced technologies. On the other hand, a subsidiary formed by acquisition was generally associated with a lower degree of technology transfer in this way. This phenomenon is easy to understand: to operate any business a firm requires a set of well-organised factors of production. Horizontal acquisition provides an access to certain readily-organised resources (including technology) in the same industry abroad. It therefore involves relatively less resource transfer from the parent. Furthermore, in some cases, the main purposes of horizontal acquisition itself is to acquire, and complement the existing technology used in a host firm, rather than replace it completely with that used in the parent.

The second most common way to acquire advanced technologies was by investing in in-house R&D. Though sixteen firms regarded this as one way of acquiring technologies, two of them admitted that their R&D expenditures were very limited. As a result, only about half of the surveyed MNEs in Tayside carried out in-house R&D.

There were fourteen MNEs which did R&D. While eleven of them provided absolute R&D expenditures, the remaining three willing to disclose their relative figures (see table 2). One of these three companies claimed that its R&D expenditure was "significant" compared with all other expenditures since it was a high-technology firm. The other two thought that their R&D expenditures accounted for "5-6% of the total revenue" and "10% of the total costs" respectively.

It would be more meaningful if R&D intensity (such as the ratio of R&D to sales) had been used as a single criteria to measure R&D activities in these MNCs, but the data collected were not enough. Generally speaking, however, significant R&D in both absolute and relative terms was found to be carried out mainly in the firms falling in the categories of electronics and microprocessor based equipment, chemical and oil products, oil and engineering, and electrical and instrument engineering. It may be not surprising since in these industries technological opportunities are high.

The third most common way to acquire advanced technology was by the technical assistance from the suppliers of their products. This was then followed by buying a competitor's product and analysing it, by purchasing a licence from a non-UK firm, and by the technical assistance from the purchasers of the MNEs' products.

In addition, some MNEs also mentioned other ways. These include: buying the competitor's business; using the parent and its affiliates as training bases; sharing R&D and costs with sister plants in the investing country; and hiring local academics as consultants. Some of these methods do not depend on a firm being a multinational.

In short, about 82% of the MNEs in Tayside claimed that they applied advanced technologies to a greater or less extent. These advanced

technologies were acquired in many different ways, and the main ways were by getting information and assistance from the parent, by investing in in-house R&D, and by the technical assistance from suppliers of their products.

However, it was found through the interviews that technology transfer between a parent and its subsidiary was often two-way. This two-way transfer was made through two means. Firstly, the parent provided information and supported in-house R&D in the subsidiary, and the subsidiary fed back both new needs and new developments to the parent. Secondly, as described in the present author's other report (Liu, 1993), some foreign businessmen took over existing local British firms in order to obtain access to the existing advanced technologies owned by these local firms.

(3) Managerial skills

As for managerial skills, sixteen MNEs claimed that theirs were advanced, and the rest regarded theirs as standard. Firms acquired advanced managerial expertise through various ways. Transferring expertise and hiring key managers from the parent were identified as two ways of enhancing management skills of the MNEs in Tayside. Other means of acquiring advanced managerial skills were also regarded as more important (see table 3). These include: in-house development through education, training, seminars, conferences; hiring local specialists; seeking advice from both private and public consultants (such as Scottish Enterprise Tayside); and learning by doing.

As in the case of technology diffusion, the transfer of managerial expertise was two-way: managerial expertise was often exchanged between parents and their subsidiaries. An example was the case of a local British firm taken over by a foreign firm, only to have its advanced managerial techniques copied by the foreign firm.

3. Employment Effects

Multinational enterprises are usually considered to be positive contributors to employment in a host country. However, the real effect of multinational enterprises on job creation depends on the entry mode and the nature of technology. The survey indicates that greenfield and brownfield investments were as a rule positive job creators, while take-over was not.

In the twenty eight surveyed firms, seventeen were formed through green/brown field investments and eleven through take-overs. In 1992, employees in the firms formed by green/brown field investments were 5,114. In contrast, among eleven take-overs only one firm increased employment after acquisition. Four of them had little change, and six reduced their employment. Net reduction in employment in these six firms was 308 (see table 4).

However, not all the job losses in these take-over firms were caused by after-acquisition rationalisation. As a matter of fact, in most cases this was caused by changes in technology and market situation, and by efficiency improvement. Many of these changes would have happened without acquisition, and did happen in the MNEs formed through green- and brown- field investments. The key point here was that a foreign take-over merely transferred employment from a local employer to a foreign employer, and therefore no new jobs were created in the region.

It should be noted that the figures provided in the table can merely be used for a very rough estimate of the employment effect of the multinational enterprises. This is because it is extremely difficult to do some other investigations which are necessary for a precise estimate. For instance, if foreign businesses had not undertaken greenfield and brownfield investments in Tayside, would indigenous firms have done at least some of them instead? If the answer was "yes", then the role of the MNEs in job creation in Tayside would be reduced.

It is even more difficult to estimate the indirect employment effects of multinational enterprises. Because of activities of multinational enterprises, secondary jobs could be generated in local suppliers and customer industries, and through multiplier effects of multinational enterprise. On the other hand, jobs could be lost as a result of the new competition.

The survey revealed that no local suppliers, manufacturers, distributors or sales organisations came into being as a result of the multinational enterprises' activities, but the existing suppliers, manufacturers and distributors did expand to varying degrees. Thus we have every reason to believe there should be an increase in secondary jobs in both Tayside and the rest of the UK. However, no information was available for us to assess the job losses caused by the new competition.

It should be noticed that this survey was conducted in August 1993 when one of the major MNC in the region was closing (Timex), and another was planning a large scale redundancy. These two companies were not included in the survey since they refused to co-operate when they were making disinvestment.

Disinvestment reduces employment. Though a number of political and economic factors were attributed by the press to the above multinational withdrawal, one fundamental economic reason identified by the present author (Liu, 1993) was that most MNCs in the Tayside were "footloose". They were not closely integrated with local firms: they did not rely much on the Tayside (or Scotland) local input and output markets. Whenever something important happened, e.g., a change in world market situations required a world-wide structural rationalisation of global firms, these subsidiaries would be the first to be affected.

4. International Trade Effects

When multinational enterprises enter a host country, the capital account of the country's balance-of-payments normally benefits from the initial foreign-exchange inflow. But it may be a once-and-for-all effect. Later or contemporaneous operations of multinational enterprises may involve imports of raw materials and components from abroad, involving repatriated dividends, profits, interest, royalties and administration fees to their parent companies. The import and repatriation effects are adverse on the host country's trade and balance-of-payments. On the other hand, MNEs may lead to exports or import-substitutions and therefore exert a positive impact on the host country's trade and balance-of-payments.

Import and export activities of the multinational enterprises were investigated in the present survey. It was found that 43% of the firms imported more than half of raw materials and services, 39% of the firms imported 11-50%, and only 18% of the firms imported less than 10% (see table 5). Therefore it could be concluded that the multinational enterprises in Tayside were highly import-oriented.

One relevant point was that though certain amounts of materials and services were obtained by firms located in the UK, a number of those surveyed indicated that they obtained their required materials and services mainly from England, rather than from Scotland, let alone from Tayside.

On the other hand, 16 out of 28 firms sold more than half of their products in the rest of the UK, while only 6 firms did so in the EC and none did so in the other countries (see table 6). Thus the majority of the firms were actually UK market oriented. It is difficult to judge whether the multinational enterprises in Tayside provided import substitution for the UK due to lack of information. However, it is safe to say that the multinational enterprises in Tayside as a whole were not clearly export-oriented.

If merely the import and export activities were taken into account, it may be concluded that the multinational enterprises in Tayside may have had negative trade and balance-of-payments effects on the UK economy.

This survey also revealed that few multinational enterprises serviced the Tayside local market, since only 2 firms sold more than 26% of their products in the region. Tayside's attractions as an investment site were not its input and output markets.

5. Conclusions

MNEs may have positive capital-formation effects on the Tayside economy. The majority of these MNEs used advanced technology to a greater or less extent. MNEs formed by greenfield (brownfield) investments gained more technical assistance from their parents than those by acquisition. Only half of the surveyed MNEs carried out in-house R&D, and they operated mainly in such industries as electronics, chemical and oil engineering and products. More than half of the MNEs regarded their management methods as advanced. They acquired advanced managerial expertise mainly by in-house development. Technology and managerial skill transfers were often, if not always, two-way.

MNEs formed by greenfield (brownfield) investments made a positive contribution to employment, while MNEs by acquisition did not. MNEs in Tayside were highly import-oriented. On the other hand they were not export-oriented. They may have had a negative impact on UK external trade and balance of payments.

Though MNEs by greenfield (brownfield) investments seemed to play a more positive role than those by acquisition in inward resource transfers and in job creation, we have no reason to discourage foreign acquisition. MNEs by acquisition can at least help maintain existing employment.

References

Forsyth D. (1972), **U.S. Investment in Scotland**, Praeger Publishers.

Gripaios P. (1984), **Manufacturing Industry in Devon and Cornwall: An Analysis of Decision Taking, Industrial Linkages and Locational Perception**, South West Economic Research Centre, Plymouth Business School.

Gripaios P. & Gripaios R. (1993), "The Costs and Benefits of Inward Investment: The Case of Plymouth", **Local Economy**, Vol. 8, No. 3, pp 209-229.

Harris I. D. (1990), "External Ownership of Industry and Government Policy: Some Further Evidence from Northern Ireland", **Regional Studies**, Vol 25, pp 45-62.

HMSO (1991), **A Study of the Knock-on Effects of Inward Investment in the English Regions**.

Hood N. and Young S. (1979), **The Economics of Multinational Enterprise**, London: Longman Group.

Hood N. and Young S. (1984) (eds), **Industry, Policy and the Scottish Economy**, Edinburgh University Press.

Liu X. (1993), "Determinants of the Multinational Enterprises in Tayside", presented at **The Scottish Economists' Conference**, Burn, Scotland, September.

Neale, B and Pass C. (1990), "Foreign Direct Investment: Potential Costs and Benefits for Host and Source Countries", **Management Accounting**, Feb., pp. 32-34.

Pass C and Neale B. (1990), "The Multinational Corporation in the U K Economy", **Management Accounting**, Jan., pp. 30-32.

Patterson C. (1991), **Inward Investment**, Coventry Polytechnic.

Young S. Hood N. & Hamill J. (1988), **Foreign Multinationals and the British Economy: Impact and Policy**, Croom Helm.

Table 1 Means of Acquiring Advanced Technology (n = 23)

Means:	No. of firms	%
By investing in in-house R&D	16	70
By purchasing (getting) information and assistance from the parent	17	74
By purchasing a licence from a non-UK firm	6	26
By hiring key employees from the parent	8	35
By buying a competitor's product and analysing it	9	39
By technical assistance from the suppliers of their products	12	52
By technical assistance from the purchasers of your product	6	26

Table 2 In-House R&D Expenditure (n = 28)

R & D expenditure (pounds)	No. of firms	%
Over 5m	1	4
1m - 4.9m	2	7
0.5m - 0.9m	2	7
0.1m - 0.49m	4	14
10,000 - 90,000	1	4
5,000 - 9,900	1	4
Significant	1	4
5-6% of the total revenue	1	4
10% of the total costs	1	4
Very limited	2	7
None	12	43

Table 3 Means of Acquiring Advanced Managerial Skill (n = 16)

Means:	No. of firms	%
By transferring from the parent	6	38
By hiring key manages from the parent	6	38
By other means	12	75

Table 4 Employment in the MNEs

Employment	No. of green/brown field investments	No. of acquisitions	Change in employment after acquisition
11 - 25	3		
26 - 50	3		
51 - 100	2	5	-36
101 - 200	3	3	-119
201 - 500	3	3	-153
501+	3		
Total	17 (5114 people)	11 (1907 people)	-308 people

Table 5 Sources of the Value of Total Requirements of Raw Materials & Services (Percentage) (n=28)

From abroad	No. of firms	% of total firms
0 - 10%	5	18
11 - 50%	11	39
51-100%	12	43
Total	28	100

Table 6 MNEs' Product Destination

Destination/No. of firms/Product sold	0-5%	6-25%	26-50%	51-100%
in Tayside	5	3	1	1
in the Rest of UK	1	3	6	16
in the EC	1	9	5	6
in other countries	3	9	7	0