the company and was to prove to be one of the most difficult issues that the IDA had to deal with in relation to the Raybestos Manhattan case.

For these oppositon groups May 1978 was to prove the turning point in their campaign to stop Raybestos Manhattan disposing of its waste in the locality. In May, violence broke out on the picket line that these residence associatins were mounting in Ringaskiddy, a violence that erupted when the police tried to force their way through the picket and open up the dump site. Attitudes in these groups hardened after this event, which received nation-wide coverage. Blaming the IDA for calling in the police on Raybestos Manhattan's behalf, the Ovens group mounted a picket on the IDA's offices in Cork. This was a source of great embarrassment to the IDA, who had previously tried to stay in the background. They were now forced into the open, both as owners of the proposed dump site and, from the opposition's point of view, as the body responsible for the violence at Ringaskiddy. The opposition groups saw the IDA as determined to impose a dumpsite on the area, despite the wishes of its residents, and as being willing to resort to the use of the police in order to impose their wishes on others. After this event there was little mood for compromise with the IDA and hostility towards Raybestos Manhattan also increased.

After this, a long series of negotiations ensued during which Raybestos Manhattan argeed that it would no longer dump untreated asbestos in the Ringaskiddy area, but would instead pelitise the asbestos dust, a process they argued would render the asbestos less likely to infiltrate the air and water. The residence associations were not entirely pleased with this compromise, for they saw asbestos as a dangerous product no matter what form it was dumped in. They nontheless agreed on this compromise and the IDA thought that the issue had finally been dealt with.

But, by the begining of April 1980 the situation, as far as the IDA was concerned, had got out of hand once again. The residence associations, through their monitoring of the dump, had found untreated asbestos and began an injunction against Raybestos Manhattan for violation of the dumping laws (17). The residence associations blocked access to the dump and by the end of April the IDA advised Raybestos Manhattan to stop dumping in Ringaskiddy as they could no longer contain the opposition (18). But the IDA's attempt to find an alternative dump site was proving extremely difficult. Nohoval, an alternaive site proposed, had already an opposition group which had taken a court case in 1979 to prohibit even a survey of the area and by April has effectively barred all access (19). Rylane, another proposed site, met with fierce opposition, taking the form of destruction of survey equipment and local people burning the forest area in order to prevent the IDA

from hiding its toxic dump in the extensive undergrowth of that mountainous area. Events eventually came to a head for the IDA when the Cork County Council, whom the IDA had hoped would,through its monitoring of the Ringaskiddy dump, allay local fears, actually took legal proceedings against Raybestos Manhattan in June 1980 (20). From the IDA's point of view its whole industrial plans for the area were being threatened by these events.

To begin with the IDA argued that this opposition to the toxic dump could have repercussions for overall industrial development. Mr. Killen, the Managing Director of the IDA, in May,while speaking in Cork argued that:

> "The lack of an industrial dump in the Cork region is a serious obstacle to the industrial development of the area "(21).

This response of the IDA bears very directly on what we said earlier about the IDA, i.e. that it seeks its legitimacy by reference to the overall industrial policy of the State. The IDA states again and again in reference to the opposition to Raybestos Manhattan that this opposition threatens industrial development as a whole and this, I will argue, is an ideological argument. It is an ideological argument in so far as it is a selection of the available facts (i.e. the lack of a dump) that seeks to defend through reference to legitimized aims (industrialization) the actions of the IDA (locating dump) and operates through a denial of the justification of other possible interpretations.

Rather than deal with the areas of concern that the opposition groups were raising, namely the health and environmental problems generated by a plant's use of a toxic substance and the subsequent necessary disposal of the toxic waste generated in that production, Killen goes on to argue:

> "It is unrealistic to think that heavy industries, including heavy chemical industries, will establish in Ringaskiddy unless there is provision for companies to dump their toxic waste " (22).

It is interesting that the IDA did not take up this health and environmental problem but, rather, spoke of it in terms of the economic and industrial problems that could be generated by the failure to have a toxic dump. The argument is that this opposition, by virtue of the fact that it will not allow the establishment of facilities for companies to dump their toxic waste, is blocking the establishment of industries in the Cork harbour area and thus its general industrial development. The assumption of course is that the opposition groups would approve of heavy industries in Cork Harbour in the first place, an

assumption that is not entirely without foundation among the groups predominant at that stage of the opposition's campaign.

Further to its argument that the opposition to Raybestos Manhattan was threatening the implementation of the industrial strategy of the IDA for the Cork region, the IDA argued that the behaviour of the opposition was frightening off potential investors in the region. Thus, for example, Mr.Pat Barry, the press spokesman for the IDA, stated:

> "... potential investors in the Cork region are being frightened off because of the strong environmental lobby. ... While [I] could not specify how many companies had not come to the region because of the environmental issue, potential investors are obviously aware of the unique situation in Cork "(23).

It is interesting that the IDA uses the word 'unique' here, for it is difficult to see how it could apply given the already existing opposition to a number of companies in other regions in Ireland, to, e.g. uranium mining companies in Donegal, to Asahi in Mayo, to NET in Arklow, to the proposal to build a Schering Plough Corporation factory in Clonmel, to name just a few.

Another level of argumentation used by the IDA with regard to the toxic dump problem was that unless a toxic dump could be found jobs loss would result. Comenting on this

> "An IDA spokesman warned that the job creation programme could be endangered if a properly controlled toxic dump was not established "(24).

In its argumentation the IDA moves beyond arguments of a purely economic nature and sought instead to relate the issues involved to wider political questions. Thus we find the argument that

> "The IDA considered that the provision of a dump for the disposal of toxic waste was a matter of urgent national importance "(25).

We find in this argument an interesting appeal to that ideological argument made regarding Ireland's industrialization, namely, that it was a national task, an endeavour requiring the participation of all the citizens of the nation and through the recourse to arguments that a toxic dump was of urgent impotrance to the nation we find again that IDA recourse to that ideology for its legitimization.

In phase one then, we find recourse to arguments about jobs, industrial development and national interest in an attempt by the

IDA to show the opposition that they threatened the national good, as defined by the interpretation of economic nation building introduced after 1958. These arguments were directed at the opposition groups who had not, at least at that stage, an ideological/political basis for their opposition. The IDA appealed to them on the basis of their commonly held belief in the value and worth of the industrialization process that was taking place in Ireland. In phase two, however, the political/ideological groups come to the fore. With this the possibility of appeal on the basic of the existence of a commonly held orientation towards the industrialization process diminishes. The IDA responds in a very direct and uncompromising manner to their arguments.The IDA's response to the opposition at phase two then was thus far less accomodating than it had been in phase one. The discourse changes with that change in composition of the opposition, for the IDA can no longer appeal to the legitimacy of State industrialization policy, nor indeed on the basis of its own legitimacy, because neither are held to be so by the groups that dominate phase two of the Raybestos Manhattan campaign.

Phase two opposition took the form of opposition to the actual plant itself. It focused attention on the health hazards facing the workforce in a plant that used asbestos in its production process.The argument of this opposition was that Raybestos Manhattan could not be made safe because any level of exposure to asbestos presented unjustifiable dangers to the workers. Thus the factory should be closed and Raybestos Manhattan forced to leave Ireland. This opposition intensified between April and November 1980, when groups picketed, leafleted and demonstrated outside the Raybestos Manhattan factory.

Two important events took place during this period. The first in May was a spillage of asbestos inside the plant. This was followed by a workers' strike in demand for better safety precautions and a series of negotiations between the workers, the union and Raybestos Manhattan management. During this time a series of meetings also took place between the opposition groups and the workforce. But when the second event, i.e. a larger spillage took place in June, another strike and series of investigations began. These events are important because they linked the concerns of the groups involved in the second phase with those of the workers, a linkage that had not occured during phase one. If the workers became involved and listened to the analysis of the opposition groups then so too could the union of which they were members (The Irish Transport and General Workers Union, ITGWU). The ITGWU is the largest and most powerful union in Ireland. Having such a union take up the question of toxicity in the work-place, especially in the light of the IDA's plan of zoning Cork Harbour for chemical and pharmaceutical production

would present an even more problematic opposition for the IDA to have to deal with.

The opposition groups, especially those I have called ideological/political groups, were quick to connect these events and the response by Raybestos Manhattan to the IDA's policy and strategy. One group, DNIAG, argued that:

> "The Industrial Development Authority is the primary organisation involved in the planning and implementation of the industrial strategy of successive goverments over the past twenty years. ..... The IDA has been at the front line in a number of major clashes over toxic capital. .... They are directly responsible for the pressure exerted on local people to accept any jobs no matter what the dangers to their health. They spent 10,000 pounds alone on newspaper ads. to convince the people of Cork that asbestos was safe. .... The IDA and the interests which it represents have been the key agency in the lobby to rationalize the planning regulations in this country. They want to prevent local people successfully contesting the plans of toxic capitial. The IDA stood on the side of the Raybestos Manhattan plant against the communities of Ringaskiddy and Ovens and against the interests of workers involved "(26).

These groups extended their analysis of the issues involved, going on to argue that:

> "Raybestos Manhattan is but one of the many noxious industries that are beng dumped on Ireland with the collaboration of the State, through the IDA "(27).

They saw Raybestos Manhattan as but one example of a trend in the exportation of toxic industries by multinational companies away from regulations in the developed centre to less developed countries where regulations are weak or are ill-inforced (28).They argued that the role of the IDA in the process of facilitating that exportation was paramount:

> "Many toxic industries have and continue to establish plants in Ireland -- courtesy of the IDA. They come to Ireland where they can extract an extremely high rate of profit, particularly the US chemical pharmaceutical and electronics industry and to a lesser extent the textile companies "(29).

They argued that this fight against Raybestos Manhattan was a fight against all toxic industries and against the IDA who invited them in and argued that:

"Industries that kill and maim our children in the womb should not be alowed into Ireland and that we should oppose, by what ever means necessary, their attempts to come here " (30).

This is a direct attack on the strategy and policy of the IDA. It is not too difficult to see why. In 1978, The Cork Land Use and Transportation Survey (31) was published by local bodies and the IDA. This survey provides the framework for the IDA's industrial development of Cork Harbour. This development would begin:

"...in attracting high technology to Cork, such as producing electronic, pharmaceutical, chemical and electrical goods" (32).

These are precisely the industries under attack from the political/opposition groups that involved themselves in the Raybestos Manhattan issue, an issue that emerged just when the IDA was implementing this plan.

To have an opposition effectively blocking the establishment of a toxic dump for Raybestos Manhattan's waste and hence the waste that would be generated by other established and by future industries in the harbour area was a grave obstacle to the IDA's plans. But to have what it termed "a volatile enviromental lobby in Cork"(33) opposing its entire strategy and plans for the region left little room for compromise by the IDA.

In phase two the IDA was faced with an opposition that had a radically different position from it on industrial and economic issues. Furthermore, a large part of that opposition consisted of groups that opposed the IDA and the State, of which the IDA was an apparatus. There was no possibility, then, of the IDA appealing to these groups because little ground for dialogue existed between them. There was no commonly held belief in the value of the industrialization process that Ireland was undergoing, and of which The Cork Land Use and Transportation Survey was an expression. These groups did not accept the legitimacy of the IDA, seeing it as a mere pawn in the hands of international economic forces. Further to this, they did not accept the ideological argumentation of the Irish State regarding the interpretation of Irish nationalism, found after 1958. They saw the opening of the economy to foreign direct investment as a major indicator of the dependent postion of Ireland and as a continuation of that position of dependency and not as a further step along the road to independence.

If such opposition was allowed to continue and develop then the whole hitherto unchallenged position and monopoly of the IDA on industrial policy could be threatened. The discourse of the IDA at

this phase was therefore very different from that which we found at phase one.

The IDA made very little recourse to any use of ideology or ideological argumentation directed at this political/ideological opposition. Why was this the case? It might be argued that this lack of argumentation indicates that the IDA saw this political/ideological opposition as irrelevant. However this argument is not sustainable. To begin with the very fact that the IDA made any response, irrespective of whether or not it was ideological, is itself important. As I have previously argued, the IDA normally keeps well hidden, out of the range of political discussion. For it to come into the political arena, as it did in in the Raybestos Manhattan case, is an indication of the importance and relevance which the IDA attached to that campaign.Furthermore, the IDA stated at this time that it would establish a special team to deal with community relations and especially questions raised concerning the environment and base this team in Cork, where it could deal directly with these questions (34).

We can begin to answer this question by starting with the political climate within which the IDA had to make a response. As we have argued, the IDA was faced in phase two with a political/ideological opposition with which it shared no common ground for dialogue. Thus the political/ideological groups involved in phase two were not a receptive target at which the ideological arguments previously used by the IDA could be directed. The chances that such ideological argumentation could succeed in defending and justifying the IDA's industrial policy to these groups was slim. These groups already had a well developed position on that industrial policy and the IDA's role in relation to it. They were likely to be highly skeptical of any IDA attempt (whether modified of not) to defend and justify its action.

This leads us to an understanding that there are constraints on the conditions under which ideology can be used politically. The political use of ideology only extends to the situation in which there is a target audience which is receptive to that ideological argumentation. That audience is receptive because they find in that ideological discourse elements of a shared common sense understanding which they accept. Incorporated into any ideological argumentation are the elements of that understanding, flexibly used so that the political and social action of those who control that tool of ideology are explained, defended and justified. These conditions were not present at phase two of the opposition to Raybestos Manhattan becasue the political/ideological groups that dominated that phase had their own set of understandings that stood in sharp contrast to that of the IDA and the State. That is why the IDA responded differently at phase two.

Having come to an understanding as to why the IDA responded differently at phase two, we have to examine the significence of the response it did actually make to the political/ideological opposition. The IDA's major response was made after Raybestos Manhattan left Ireland in November 1980. Much debate exists as to why Raybestos Manhattan left and closed its plant at Ovens. Raybestos Manhattan's argument is that it left because of a down swing in the market for disc-break pads. But to accept this argument leaves more unanswered questions than answered ones (35). I would argue that Raybestos Manhattan left for three reasons, and that the market conditions, insofar as they have any significance, acted only as a catalyist. These are the presence of an ever growing opposition; the IDA's failure to contain and to deal with that opposition; and finally it left because it had come to Ireland to excape opposition at home, but this opposition had followed it to its new location. Raybestos Manhattan could not afford, financially or politically, a repeat of the opposition, class action suits and stringent regulations that had plagued its production in the USA and that now seemed more and more likely to continue to develop in Ireland.

With Raybestos Manhattan gone, the IDA's dealings with the political/ideological opposition took three forms. Firstly, it made clear that "the IDA was not playing games.."(36) and that given the extent of the capital commitment earmarked for the Cork Harbour area it intended to go ahead with its plans. Further it did not intend to tolerate this opposition and that:

> "The IDA would not be willing to enter into advanced negotiations with potential investors only to find that objections to its proposed industries had arisen" (37).

Secondly it received help from the police, but this time from the Special Branch, the Irish political police. The Special Branch are that section of the police that deal with "subversives", mostly concentrating their attention on the IRA and other Republican groups. The Special Branch were called in, even though there is some question as to who actually did this, to investigate the composition and activities of the opposition groups. Irrespective of who actually called them in, it is obvious that some alliance of the IDA and the Department of Justice believed that this opposition did, or could, constitute a subversive grouping and that they, therefore, needed policing.

Thirdly, the IDA tried to build a counter-base, to gather support for itself in the face of the opposition. It did so by appealing to those who had not got such ideological opposition to its policies to support it. It thus directed its discourse to those, both within and outside the Raybestos Manhattan campaign, that were receptive in the hope that this would counter-balance

the influence of that part of the opposition who did not share their beliefs. Thus we find White appealing:

> "If we introduce industries into the area ... even if there is opposition from a small group or groups, those who recognise the value of what we are doing should come out and support us "(38).

and that:

> "... The IDA expects the full support of all interested bodies "(39).

Thus the IDA's third response was that of seeking to by-pass the opposition with which it could not deal by strengthening and mobilizing a support-base for itself so that its monopoly on formulation and implementation of industrial policy could continue.

Conclusion:

When Raybestos Manhattan had left the country by November 1980 it left behind the unresolved problem of the asbestos disposal and an attempted class action suit by the workers. Already the opposition to another company, Eli Lilly (ELenco), was attracting considerable support, three or four other cases were springing up around the country and the enviromental lobby, instead of disappearing with Raybestos Manhattan, were beginning to consolidate themselves in "The Alliance For Safety and Health"(ASH) to 'nationalize' the campaign against toxic industries (40). The failure of the IDA to win over fully the opposition can be seen in this development, for had it succeded in even reaching a compromise with that opposition this strengthing and consolidation of the opposition into ASH may not have taken place. The opposition groups to Raybestos Manhattan won their major success when Raybestos Manhattan left Ireland. Irrespective of the reasons for that departure, the opposition, both the ad hoc and the political/ideological groups, saw this closure of Raybestos Manhattan as their victory over the IDA.

This campaign against Raybestos Manhattan took place only four years ago and while the opposition has been successful, both over the closure of the factory and in its further campaign to extend its opposition to toxic companies throughout Ireland, the position of the IDA is not so clear.

It is still too soon to know what repercussions this will have on the IDA, but the significance of the Raybestos Manhattan campaign was that it signified the first challenge from inside the

Republic to a body that had hitherto an unchallenged position on industrial formulation and implementation. In thus presenting a challenge to the IDA it brought that body out into the political arena and the shield that protected it from direct political pressures was broken. Through our examination of its response in that arena we were afforded an insight into it as a body that is political, that uses political tools, such as that of ideology, and makes recourse, when that ideology is not, or cannot be, sucessful, to State appartuses of repression, like the police and the Special Branch, or to what Gramsci calls the last refuge of the State in times of crisis. The outcome of a recently begun (February 1985) class action suit against another company, Merck-Sharpe and Dohme in Clonmel (41), hopefully will provide us with some of these answers.

FOOTNOTES.

(1) Programme for Economic Expansion, (Dublin: Government Stationery Office, 1958), Prl.4796.

(2) Whitaker was, at the time, Secretary to the Department of Finance, and produced a report later published as Economic Development, (Dublin: Government Stationary Office, 1958), that formed the basis of the First Programme.

(3) James Wickham, "Dependency and State Structures: Foreign Firms and Industrial Policy in the Republic of Ireland." in Otmar Holl, (ed.), Small States in Europe and Dependence, The Laxemburg Papers, (Austria: Austrian Institute for International Affairs, 1983), pp. 164-183.

Prior to the 1969 Industrial Development Act, it should be remembered, the IDA worked in conjunction with An Foras Tionseal, but in 1969 this was rationalised and the Foras Tionseal merged into a new IDA with greater grant and incentive giving powers.

(4) see Martin Seliger, Ideology and Politics, (London: Allen and Unwin,1976).

(5) The Irish Press, 24.6.1959.

(6) ibid.

(7) for a good introduction to the literature on dependency and dependent development see P. Evans, Dependent Development: The Alliance of Multinational, State and Local Capital in Brazil, (New Jersey, Princeton University Press, 1979).

(8) cf. Industrial Policy and Development: A Survey of Literature from the Early 1970's, (Dublin: The National Economic and Social Council, no.56, December 1980).
and
Dermot McAleese, A Profile of Grant-aided Industry in Ireland, (Dublin: The IDA, Publication Series Paper no.5).

(9) T.S.O'Neill, "Industrial Development in Ireland" in Administration: Journal of The Institute of Public Administration, Special issue on the IDA, Vol.20, no.1, Spring 1982: p.39.

(10) M.J. Killen, "Economic Growth Through Industrial Development" in ibid, p.11.

(11) O'Neill, op cit. ibid, p.47.

(12) R.J.McLoughlin, "The Industrial Development Process" in ibid, pp.30-32.

(13) ibid, p.30.

(14) Ibid.

(15) Ibid. emphasis mine

(16) The Irish Times, 23.10.1980.

(17) Rebel: Newspaper of Revolutionary Strugle, (Dublin: Revolutionary Struggle), N0.25, April 20, 1980, p.5.

(18) The Irish Times, 29.5.1980.

(19) The Irish Times, 16.4.1980.

(20) The Irish Times, 29.5.1980, and 26.10.1980, and Rebel, no.25-26.

(21) The Irish Times, 12.5.1980.

(22) The Irish Times, 12.5.1980.

(23) The Irish Times, 13.11.1980.

(24) The Irish Times, 29.8.1980.

(25) IDA Statement of 20 June in The Irish Times, 21.7.1980.

(26) Toxic Times, (Dublin: Dublin Toxic Action Group), Vol.1, no.2., p.4.

(27) Cork Noxious Industry Action Group, But, Who Cares?, Leaflet no.2, (Cork: Cork Noxious Industry Action Group, Late 1979).

(28) Rebel, no.28, 1980, p.6.

(29) "Toxic Industry Kills" in Rebel, nd.

(30) Cork Noxious Industry Action Group, op cit.

(31) cf. The Irish Times, Special Report, "Cork: Industry, Business" 26.3.1980.

(32) ibid.

(33) The Irish Times, 21.11.1980.

(34) The Irish Times, 21.11.1981.

(35) for example.

(36) The Irish Times, 21.11.1980.

(37) ibid.

(38) ibid, my emphasis.

(39) ibid.

(40) cf. Alliance For Safety and Health, Alliance for Safety and Health Conference paper, (Cork: ASH, 1980).
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Alliance For Safety and Health, Toxic Ireland, (Dublin: ASH, 1982).

(41) cf.Sheila Harty, "The Multinationals' Squeeze on Ireland", in Multinational Monitor, Vol.5, no. 6, June 1984.

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SUBSIDIZED AGRICULTURE: STRENGTH OF AGRICULTURAL LOBBIES OR FEAR OF STARVATION. IMPACTS OF POLICY CHANGE IN THE DANISH CASE

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1. Introduction

Virtually all advanced countries operate some form of support policy for their agricultural sectors. A fair array of reasons exist for this support, and methods of implementing agricultural support policies are numerous. However, the "agricultural problem" is one of the most perplexing problems facing policy makers, and due to certain characteristics of agriculture it is more difficult to govern than many industries. Thus, until now no social or economic system has succeeded in managing agriculture perfectly.

Referring to the socalled "cobweb theorems" many economists have demonstrated that, although the market structure of agriculture ostensibly approaches the theoretical ideal of perfect competition, farmers responding rationally to the price level can produce alternately huge surpluses and drastic shortages (see e.g. Martin 1958; Waugh 1964; Metcalf 1969; Lipsey 1974; stabler 1975; Ritson 1979). A free market for farm products can produce extremely undesirable results, especially for some of the farmers, but also for consumers and society in general, and indeed very few, if any, economists have taken a purist free market approach to agriculture.

But the problem is that whenever the central authorities intervene to help farmers by supporting prices, output soars and the granaries and store-houses of the country show an increasing tendency to bulge with unsold agricultural surpluses. Furthermore, while the problems of overproduction loom large, in many countries the average level of income in agriculture is substantially lower than that of other sections of the economy. It thus becomes a major dilemma in agricultural policy that to increase farm incomes by means of support policies will create a more or less continuous tendency for agricultural supply to outrun demand, and consequently a tendency for free market prices to be depressed to the disadvantage of the farmers.

Thus, the economic rationale for agricultural subsidies is very complex and difficult to establish as an unambiguous concept. Still, intervention on economic grounds may be justified by the contribution of agriculture to economic growth, the improvement in the balance of payments, and furthermore, in meeting the demand for food in the future because of rising population and for strategic reasons in times of war. If social and political reasons based on welfare and equity, such as cheap food policies, the preservation of rural life and protection of minority groups, are added to this list, it is obvious that analyses of agricultural policies become extremely complex as the number of objectives and their supportive measures multiply.

But why does agriculture occupy this special position in the social, economic, and political context in most countries?

The nearly universal agricultural subsidies are justified by all kinds of motives, some of which may even be suspect, and therefore studies of agricultural policy have been primarily focusing on the strength of agricultural lobbies or on certain characteristics of the electoral systems, which force politicians to appeal to smaller interest groups such as farmers (Wilson 1977; Pennock 1962). However, the explanation for the special attention, which policy makers have paid to agriculture may also be of a much more fundamental nature.

Experiences with food shortages and the old "Malthusian" argument that the world's population will tend to rise more rapidly than the food supply, thereby causing a more or less permanent state of starvation for major parts of the population, may be of decisive importance to policy makers, when they first decide to intervene in the agricultural sector. But because of special characteristics of the production process and the slow transformation of money capital in agriculture, government intervention in this sector of the economy tends to have a strong self-perpetuating effect - perhaps much stronger than in other industries. Furthermore, once political regulations have been introduced, the regulatory authorities and their policies are likely to be "captured" by the organized interests of the sector (Mitnick 1980; Wilson 1980). Thus, agricultural subsidies and support policies may form the basis of the strength and influence of agricultural lobbies rather than being the result of this. Consequently, differences in objectives for and types of agricultural supportive policies may create different conditions to agricultural interests, and policy changes may alter these conditions.

Against the background of these consideratons, it is the purpose of this paper to discuss the consequences of policy differences and policy changes in agricultural policies in relation to the strength and position of agricultural lobbies. First, the different policy mechanisms and methods of agricultural support will be categorized according to their objectives and the economic variables upon which they operate. Next, the concern will be with the different types of policies and the consequences of different objectives to the distributional conflicts, which accompany any kind of support policy. In the subsequent part the development in the Danish case since 1960 is used as an illustration of the consequences of policy changes to policy making processes and the position of organized sectoral interests.

2. Methods and Objectives of Agricultural Support

Two of the effects of the First World War seem to have imprinted themselves on the minds of farmers and governments. First, the acute shortages during the war, and second, the wild fluctuations in prices immediately after the war, followed by price collapse as production recovered. In the light of this experience support was readily agreed upon after the Second World War, largely for strategic and economic reasons, and with the objective of stabilizing prices, raising incomes and encouraging expansion of production. Since then, governments have intervened in agriculture for many reasons, but there is little doubt that the tendency for farm incomes to fail to keep pace with rising incomes elsewhere in the economy has been a major factor in determining the manner in which agricultural policies have developed in most advanced countries (OECD 1961; Stabler 1975: 57; Ritson 1979: 349).

Thus, the aim to improve farm incomes is either explicitly set out in the legislation, or is implicit in the agricultural support policies of most countries. However, an important distinction must be made between those support measures which attempt to raise agricultural incomes by improving the profitability of farming, and those which do not. Among the latter, there are three main categories: Government expenditure directed towards rural areas, development of farm-based, non-farm occupations, and direct income supplementation (Ritson 1979: 353-354). But most of the measures adopted by governments with the aim of raising the standard of living of the agricultural population operate by attempting to increase income from farming. These measures can broadly be classified according to whether they are directed principally towards reducing farm costs, increasing farm revenue, or reducing the size of the agricultural population (Metcalf 1969: 122-134; Ritson 1979: 356-384).

Farm costs may be reduced through the payment of subsidies for a specific input or to a specific activity, or more generally by providing farmers with access to money capital at preferential rates. Farm revenue may be increased by policy measures that raise farm output, subsidize farm product prices, exercise control over imported supplies, or exercise control over domestic supplies. Finally, since the origin of low incomes in agriculture is usually explained by the failure of the agricultural population to decline with sufficient rapidity in response to pressures of increased productivity and overall rising living standards, a structural policy has been introduced, which is directed towards reducing the number of farmers and towards increasing farm size - so far, however, only with limited success.

Increasing farm incomes appears to be the one, major objective for agricultural support policies in advanced countries, and therefore it is striking that direct income payments generally play only a very modest role. Supporting agricultural incomes directly would make it less likely for the policy to be in conflict with other goals of agricultural policy, although it should be emphasized that it would be impossible entirely to escape all impact upon farm production. However, a direct support scheme, where the full transfer to farming is clearly visible to the tax payers, may be politically more difficult for government to apply than a method which operates via income from farming. Furthermore, direct income supplementation may be psychologically associated with charity, and therefore less likely to be accepted by most farmers. Thus, the organized agricultural interests usually press for market support, and governments regard it as expedient to acquiesce (Ritson 1979: 355).

But the fundamental causes of violent fluctuations in agricultural product prices are similar to the causes of the relatively low incomes. Therefore, part of the overall objective to raise the level of farm incomes is to reduce the wide fluctuations in agricultural prices, and consequently most countries operate some sort of agricultural stabilization programme (Metcalf 1969: 119; Lipsey 1974: 142f). Governments may not be willing to accept all the social consequences of leaving the sector to fend for itself, and in a wealthy community, where real incomes are expanding year by year, the general consensus would be that the agricultural sector ought to share in this prosperity.

However, agricultural support to improve efficiency and increase production can be justified by other reasons than just the raising of farm incomes. Agricultural subsidies may be used to protect urban consumers against very high prices caused by scarcity, for instance in times of war. Agricultural support policies may also be used as effective measures to improve the balance of payments, either by expanding home agriculture and cutting down on imports, or by increasing exports of agricultural products. But in this respect the problem is, that the export revenue depends not only upon the quantity sold, but also upon the world price, which may be falling if the world supply is increasing rapidly. This represents a vital problem to countries that are net exporters of agricultural products, and consequently the organization and regulation of international trade will play an important role, especially to small net exporting countries, who are vitally dependent upon the international market conditions for agricultural commodities.

The role of agriculture varies from country to country both socially, economically, and politically. Nevertheless, in the majority of countries the markets of

most, if not all, of the major agricultural commodities are subject to some form of official intervention (OECD 1967, 1983a, 1983b). However, the scope and objectives of the supportive policies and especially the price policy vary tremendously, and due to these variations the same kind of policy schemes may in fact represent different policy types in different countries. Thus, agricultural lobbies will maintain a special position in most countries, but the political conflict structures related to agricultural policy may vary a great deal.

These underlying conflict structures have been brought out by the sharply reduced economic growth in most countries since 1974/75. Changes have occurred in the pattern of demand, in the supply of labour, in technology, in relative prices and costs, and in comparative advantage between countries, calling for a continuous re-allocation of productive resources despite certain rigidities. The policy context has changed dramatically and the tendency to postpone the necessary structural adjustments has increased under the unfavourable economic conditions of slow growth and high unemployment (OECD 1983b: 7). Thus, agricultural policy has been put under increasing pressure in recent years, and the related political conflict structures have become clearly visible or even changed.

3. Policy Types and Distributional Conflicts

Any kind of support policy or political regulation is connected to some kind of conflict of interests, according to how costs and benefits of the particular support scheme or regulation are distributed in society. Therefore it has been argued that policy proposals, especially those involving economic stakes, can be classified in terms of the perceived distribution of the costs and benefits (Wilson 1980: 366).

Costs and benefits may be widely distributed or narrowly concentrated, and their actual distribution determines the concrete distributional conflict and thereby its political significance. In this respect two assumptions have been made: Individuals and groups are more sensitivt to decreases than to increases in their net benefits, and political action is more likely to occur when costs or benefits are concentrated on a relatively small, homogeneous group, rather than diffused over a large, diverse one (Mitnick 1960: 86).

Considering all combinations of the dichotomous cases of the distribution of costs and benefits four political situations can be distinguished (Wilson 1980: 367-370). However, focusing on public subsidies and supportive policies only two of these are relevant, because by nature benefits are concentrated on a specific group or industry.

First, a subsidy or regulation may benefit a relatively small or well-defined group at the expense of another group. In this situation each side has a strong incentive to organize and exercise political influence, and therefore, when both costs and benefits are narrowly concentrated, conditions are ripe for interest-group politics (Wilson 1980: 368). Policy-making is characterized by a struggle between the two organized groups or the two sets of interests, a struggle which may lead to a formalized imposition of costs and recognition of benefits, and even an overall agreement defining the rights and obligations of each side (Mitnick 1980: 86).

In the second situation, the costs of the benefit are distributed over a large number of people, and hence these have little incentive to organize an opposition. Thus, when the benefits of a policy are concentrated, but the costs widely distributed, client politics are likely to develop (Wilson 1980: 369). In this situation the benefited groups may successfully introduce and maintain the policy. Client politics produce regulatory policy-making in which the benefited group keeps a dominant position. The regulatory authorities are entirely dependent upon support from their client groups, and consequently most likely "captured" by these (Wilson 1980: 369f; Mitnick 1980: 89f; Anderson 1981: 19f).

Agricultural policy in most advanced countries seems to approach the ideal of client politics, leaving agricultural lobbies in a prominent position as supportive policies are introduced. However, depending upon the role of agriculture in the overall economy and on the objectives and measures of agricultural support the characteristic features of client politics may be more or less dominant, and sometimes even elements of interest-groups politics may be apparent. Client politics are strongest when the distributional process is not a zero-sum game, i.e. when support for a specific group increases benefit for society as a whole. If distribution takes place in a zero-sum game, client politics may be weakened, and the elements of interest-group politics will increase with the increasing visibility and concentration of the costs.

Whereas most studies of agricultural policy have stressed the benefit aspect of agricultural support, a recent comparative study of state support of agriculture in Norway, Sweden, and the UK has focused on the burdens imposed by the support schemes and the way in which they affect the interests of other groups, in particular consumers and wage-earners (Steen 1985). The main point is that such burdens may determine the level of political conflict and thereby become a determining factor in coalition transactions between various political parties as well as in the role played by organized interests in agricultural policy-making.

Resource distribution and redistribution concern both priorities and costs. The extent to which distribution and redistribution is based on explicit policy objectives concerning transfers and equalization, and the extent to which political decisions determine where the burden of these costs will be placed, comprise two central dimensions of policy-making in relation to agricultural supportive policies. The burden of farm support may be indirect or direct, and the political structure may integrate agricultural interests in policy-making or be dominated by dichotomous conflicts of interest. Dependent upon the character of the burden and the political structure different kinds of policies may occur (Steen 1985).

Corresponding to the above-mentioned classification of regulatory policies in general, client politics, or as it is named in this connection: clientelistic policies, will occur when the burden of farm support is indirect and the political structure is not dichotomous, i.e. integrates the farmers across party lines in policy-making. Farmers are regarded as clients rather than as a pressure group, and there will be few obstacles to increased farm support. When the burden is direct and the political structure is dichotomous, the outcome may be defined as redistributional policies, which corresponds to interest-group politics. In this case agricultural support may be linked directly to consumer interests and consequently defined in redistributional terms. The level of conflict will be high and the advantages for the agricultural sector modest (Steen 1985).

Thus, if the costs or burden of agricultural supportive policies are made more visible and narrowly concentrated, the policy type is changed, and with it the nature of the related distributional conflict changes. The level of conflict rises and the position of agricultural lobbies is weakened or changed. The "iron triangles" of agriculture are put under heavy pressures and perhaps even demolished, and the element of pressure group activity by the "clients" are increased.

The following is an attempt to illustrate this development with reference to the Danish case.

4. Support to Danish Agriculture: Adjustments in an Exporting Industry

Agriculture has always played a prominent role in the Danish economy. Immediately before World War II, over 25 per cent of the labour force was engaged in agriculture, and it contributed about 20 per cent of the gross factor income of the country. Furthermore, over 50 per cent of the income in the current accounts of the balance of payments derived from agriculture. After the war, however, the relative importance of agriculture in the Danish economy has decreased. Since the beginning of the 1980s, the sector has engaged only approximately 6 per cent of the

labour force, and it has contributed about 5 per cent of the gross factor income. Nevertheless, inasmuch as over two-thirds of agricultural production is exported and the value of agricultural exports represents approximately 30 per cent of all Danish exports, the sector remains an important one. Since Denmark joined the EC, agriculture has in fact assumed an increasingly prominent position in Danish economy, particularly because of its export value to the Danish balance of payments, which since 1963 has been chronically in deficit.

Because of the very large export quota, Danish agriculture during the last one hundred years has been extremely dependent upon developments in the international market conditions and on regulations of the trade with agricultural commodities. Under changing, domestic economic conditions, necessary adjustments have been made to secure or improve the efficiency and competitive ability of Danish agriculture as an exporting business and a major instrument for improving the balance of payments. Therefore, agricultural policies in Denmark have always been clearly motivated by economic considerations, and the importance of agriculture to the economic growth of the Danish society as a whole has been underlined. Agriculture in the Danish context is primarily regarded as an economic business and not as a social arrangement. Thus, until the late 1950s the domestic market was protected to some extent against cheap imports by quantitative import restrictions, but, by and large, prices on the home market were allowed to follow closely the trends in world market prices. It was maintained that increases in agricultural incomes should be brought about mainly by greater efficiency.

During the entire period since 1945 the most serious problem for the Danish economy has been the apparently inevitable connection between increasing economic activity and increasing balance of payments deficit. As this connection determines the possibilities for obtaining full employment and social welfare, Danish politics in the last decades may be seen as one long struggle against the balance problem: how to obtain full employment and economic growth, and, at the same time, equilibrium or surplus in the balance of payments. Experience has shown, however, that the problem may be solved, or at least reduced, through an increase of Danish exports.

By the end of the 1950s, when this dilemma was clearly realized, increasing export of industrial goods implied a transformation of productive resources from agriculture to industry. This would be a long term process, however, while the value of agricultural exports could be increased from one day to the next, if Denmark secured a favourable position in relation to the emerging European market arrangements. Consequently, from 1961 it became the official Danish policy to try to obtain membership of the European Communities (EC).

Thus, the export orientation and the economic importance in regard to the balance of payments placed agriculture in a key position in relation to the overall economic policy. Denmark wanted to enter the EC primarily to improve the revenue of Danish agriculture for the benefit of Danish economy as a whole, and therefore in a waiting period until 1973 a large variety of supportive measures were introduced to maintain the production capacity of Danish agriculture. Otherwise agriculture would decline and thereby reduce the expected growth in economic revenue, and this in turn would weaken the possibilities of solving the fundamental Danish balance problem.

Furthermore, at the same time that Danish agriculture was facing increasing international protectionism, domestic costs were rising because of the economic growth in other sectors of the Danish economy. Agriculture was caught in an income trap, and step by step the Government took measures to subsidize agriculture. From a support level in 1961 of approximately 3 per cent of the net factor income of agriculture, the support rose to a level of approximately 33 per cent of the net factor income in 1970, or around 8,000 Dkr. per farm (1964-prices) (Mogensen 1983: 83). See figure 1.

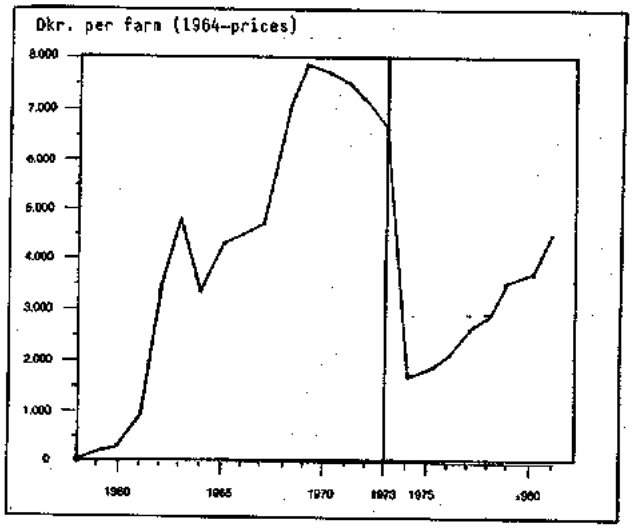

Figure 1. Development of total Danish support to agriculture before and after the entry into the EC in 1973. Dkr. per farm, 1964-prices

More than 60 per cent of the support consisted of state subsidies to specific inputs or activities, or took the form of tax relief or measures aimed at improving the efficiency of production and marketing. Only about 40 per cent of the support derived from price regulations, and compared to other OECD countries the scope for price support in Denmark was relatively limited (OECD 1967: 14).

The close link between agricultural support and Danish market policy was underlined by a debate that followed the second French veto against the enlargement of the EC in the autumn of 1967. As Danish EC membership suddenly became doubtful, prominent economists began to question the supportive policies. They argued, that it was no longer possible to find sufficiently weighty economic or non-economic arguments for not making drastic adjustments of agricultural production capacity and structure to the external market conditions. Productive resources had to be moved to other, more profitable sectors of the economy (Vibe-Pedersen 1967). On the same basis the supportive measures were criticized by the leading economists of the Economic Council, who recommended a cut in the total agricultural production and fundamental changes in agricultural support (DØR 1968). Finally, a public committee was appointed in 1969 to examine the effects of the whole supportive "system" (Bet. 561/1970). Thus, agricultural support was put under heavy pressure, when Danish EC membership was pushed out in the distant future. However, the critique stopped at once by the end of 1969, when the enlargement negotiations were re-opened. The economic philosophy behind the supportive policies became valid again.

With the Danish entry into the EC the expected rapid and extensive improvement of the economic revenue of Danish agriculture was achieved. The value of Danish agricultural exports was increased by around 50 per cent from 1972 to 1973, and the immediate gain amounted to approximately 2.5 billion Dkr., which exceeded the support to Danish agriculture in the years immediately preceding the entry. Thus, the supportive policies turned out to be successful in this respect, and in accordance with the basic, underlying economic philosophy most of the national support was cancelled, when EC membership had become reality. Consequently, Danish agricultural subsidies in 1973 were reduced to less than 2 per cent of the net factor income of agriculture, or around 1,500 Dkr. per farm (1964-prices) (Mogensen 1983: 72). See figure 1.

The market policies and price mechanisms of the Common Agricultural Policy (CAP) constitute the major cause for the growing revenue of Danish agriculture, and as expected the Danish EC profit was relatively constant in the beginning. However, the CAP was facing increasing surplus production and by the end of the

1970s also a sharp fall in agricultural income in real terms. CAP expenditures increasingly became a threat to the overall EC budget, and therefore cuts had to be made and the annual price increases minimized.

As the CAP came under growing budgetary pressure, the economic benefits to Danish agriculture decreased. Furthermore, in 1979/80 Danish domestic economic conditions deteriorated dramatically, particularly because of very high intrest rates. Thus, Danish agriculture was hit by severe income problems, and once again national supportive policies were introduced. The balance of payments argument still had a prominent position, but this time the support was further justified by reference to the employment effect of agriculture (Bet. 795/1977; Bet. 941/1981; Bet. 993/1983).

In order to relieve the specific economic problems of agriculture, Government grants to reduce the interest expenditure on mortgage loans became a major part of the national support. Other parts consisted in tax reductions and even subsidies through a negative income tax aimed at aiding farmers with low or negative incomes (OECD 1983a: 97). Finally, support was given through measures aimed at improving efficiency and increasing research into agricultural methods of production (Mogensen 1983: 82). As a consequence of these supportive policies the national support to Danish agriculture rose from a very low level in 1973 to a level in the mid-1980s which corresponded with the average support level of the 1960s (see figure 1). However, it should be noticed, that the supportive elements in the Danish measures are relatively smaller than in most of the other EC member states.

The situation in the 1980s was, however, of a quite different character than that of the 1960s. The international agricultural markets in general were characterized by surplus and decreasing prices for most products. As a net agricultural exporter the Danish dependency on the CAP was increased, but because of the budgetary problems facing the EC, common prices were fixed, and measures to reduce production were introduced - for instance a system of quotation for milk production was implemented. The burdens of the agricultural support had become more visible to consumers and tax payers, and as the system could not afford an expansion of production the traditional export strategy of Danish agriculture became problematic. The general economic recession and the increased productivity of agriculture gave rise to agricultural supportive policies including reforms and cuts in the CAP, which in the Danish case were completely different from the policies of the 1960s. The policy type was different, and this affected the policy-making process and the position of the agricultural interests in this.

5. Policy Change and Strength of Organized Interests

Because of the historically strong position of agriculture in Denmark and the importance of agricultural exports to the total economy, Danish agricultural organizations have always had a strong and influential position in the Danish political system, in the political decision-making process in general and in agricultural matters in particular.

From the beginning of the 1930s agricultural organizations have been more or less integrated in the political and administrative processes; and during the critical years of the 1960s and the beginning of the 1970s agricultural organizations developed a dominant role both in the formulation and in the implementation of agricultural policy in Denmark. They held a very strong position in relation to the supportive policies, and they administered large economic funds, assigned by the state, without much public control. To a large extent they had "captured" the policies.

The Danish agricultural policy in the 1960s seems to fulfil the basic conditions of "capture". All the supportive measures were brought about by specific agricultural problems, and while benefits were narrowly concentrated on and visible to the farmers, costs were widely spread among consumers and tax payers. Those measures which did not fit into this picture turned out to be failures. Farmers were regarded as clients to the policies, and as the support was justified by the contribution of agricultural exports to the total economic growth, the distributional conflict was not dichotomous. Finally, the agricultural organizations had developed an efficient structure which enabled them "to run" most of the supportive policies. Thus, policies as well as administration were to a large extent transferred to the organizations, and they got an almost sovereign authority over the various policy measures, prices and marketing, as well as a monopoly on pertinent information about conditions within agriculture - an almost ideal situation for any interest organization.

Danish agricultural support in the period before the entry into the EC was motivated by overall economic policy considerations, i.e. the balance of payments impact, economic growth and social welfare. But there is little doubt that the agricultural organizations through this "capture" have been largely responsible for the development and actual function of the supportive policies.

Denmark's entry into the EC changed this picture. In particular, the linkage structure beween the Ministry of Agriculture and the agricultural organizations was affected. The ministry now became the dominant actor, and the autonomous position of the organizations could not be maintained. Yet, in establishing the

administrative structures and procedures necessitated by the membership of the EC, the ministry and the organizations acted together to defend the interests of the agricultural sector. The agricultural organizations remain integrated in the policy-making process at the national level, although their formal powers have been eroded. Thus, the EC membership caused fundamental changes in Danish agricultural policy, and these changes demolished the "capture" situation. Nonetheless, precisely because of the impact of agriculture in general and the CAP in particular on Danish economy, the importance of agriculture as a political and economic sector within the Danish society has been on the rise in recent years (Buksti 1983: 267).

When the severe economic problems of drastic cost increases and stagnating prices hit Danish agriculture in 1979/1980, the fundamental basis for supportive policies was changed compared to the 1960s. Through the CAP price and market regulations had been transferred to the EC level, and due to the budgetary pressure the segmentation and thereby the autonomy of the agricultural interests in relation to the CAP were weakened. CAP expenditures became visible to tax payers and consumers, and in the light of the general economic recession the distributional conflict began to be more dichotomous. Farmers were not the only clients to the policy and the element of interest-group policy was increasing. Thus, the influence of exclusively agricultural interests in relation to the CAP has become more complicated, and compared to the situation a decade ago, the agricultural interest organizations find themselves in a less secure position in relation to Community policy-making.

On the domestic level the causes for national supportive measures were not specific agricultural problems, but rather problems related to the overall economic situation. The economic crisis perspective stood out and employment arguments played a prominent part. Therefore, although the agricultural organizations still held a strong position, non-agricultural interests became involved, and the strength of the agricultural lobby with relation to policy-making was weakened. The situation was not ripe for "capture", and the level of conflict increased both between agricultural interests and non-agricultural interests and within the agricultural lobby itself.

Those parts of the supportive measures which were best fit for "caputre" seem to be the price and market regulations. However, these had been transferred through the CAP to the EC level, and here the agricultural interests turned out to be very heterogeneous when put under increasing budgetary pressure. Although the various national agricultural organizations work together through the agricultural

Euroorganization COPA (The Committee of Professional Agricultural Organizations in the EC) they have not been able to maintain a transnational "capture" in relation to the CAP. In the light of economic recession, agricultural interests in the EC are less unified than a decade ago. Consequently, COPA finds itself in a rather problematic position in relation to both the EC authorities and to its national member organizations (Buksti 1983).

Agricultural interests have been weakened at the EC level, and the CAP has contributed to their weakening at the domestic level, too. As surplus of almost all agricultural commodities emerged both in the EC and on the international markets an expansive strategy to solve the farm income problem and to justify agricultural support was no longer realistic. The situation was increasingly a zero-sum game and began to have strong characteristics of redistribution, i.e. the costs and burdens of agricultural support were more visible. Conflicts between agricultural interests on one side, and public budgetary interests, tax payers' interests, and consumers' interests on the other, were more dichotomous, and this also left its mark on the public debat in the EC and in the various member states.

The policy type of the agricultural supportive policies changed in character, and this had a great impact on the strength and position of the agricultural lobbies in relation to policy-making. This development may be observed in all EC countries, but in a small, net exporting country like Denmark, the effects of the change seem rather dramatic. From a situation characterized by almost total "capture" and expansive strategy, Danish agricultural interests have been pushed more and more into the defensive. Efficiency of production and marketing is still a label of major importance in Danish agriculture, but while efficiency a decade ago was the basis of strength and influence, it seems to represent an increasing problem today, as expenditure cuts and production reductions characterize the CAP. Thus, a main problem for Danish agricultural interests appears to be that the high efficiency of Danish agriculture under the present circumstances is problematic as an instrument for political influence.

Thus, agricultural supportive policies and the strength of agricultural lobbies have to be looked upon as parts of a dynamic development, and consequently in permanent interaction with the surrounding conditions. Agricultural support may be justified by a lot of reasons, but mainly they are related to the special character of the production process and market structure of agriculture. Usually policy-makers are not forced by agricultural organizations to introduce supportive measures, but when they introduce these measures, they simultaneously create the basis for the special position and strength of agricultural interests in relation to policy-making.

Thus, strength of agricultural lobbies is mainly caused by the supportive policies and not the other way round. But from this special position agricultural lobbies may very well be responsible for the manner in which these policies have developed after having been introduced. However, the overall economic conditions may put agricultural supportive policies under pressure. As the support becomes too costly, cuts and reforms have to be made, and depending on the economic conditions this may change the policy type of the support and thereby the position of agricultural lobbies. Agricultural support is not cancelled, but changed, and although the situation varies from country to country the conditions for agricultural interests to influence policy-making are affected everywhere.

As surplus of almost all agricultural commodities soars, the fear of starvation looses its strength, and arguments in favour of reinforcing the market mechanisms in the agricultural markets are gaining more power. Under these conditions the influence of agricultural interests in the future is increasingly dependent on non-agricultural interests.

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REGIONAL AID POLICIES IN A RECESSION

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The Politics of Industrial Subsidies

1. Introduction

The recent Government review of UK regional assistance prompts the question as to whether traditional sssumptions underlying regional aid are as efficacious as they once were. Changed economic circumstances combined with the visible effects of policy over a twenty year period challenge the idea of simply moving work to the problem areas.

The paper examines the traditional arguments for a regional policy of industrial subsidies at a general level. The respective roles of the EEC, national government and local authorities are analysed, together with some discussion of the implications of the recent Government pronouncement.

Using data from the Devon and Cornwall Establishment Survey, the issue of regional aid is examined in the South-West of England. The paper argues for a greater emphasis upon self-sustained growth in the local economy through a more integrated strategy designed to enhance local linkages in both materials and services. The overall value of subsidiary branch plants is questioned given their under-developed local linkage. A policy based upon the small firm is discussed as a possibility for producing a more coherent and integrated pattern of regional industrial development that could ensure a more effective use of reduced subsidies.

2. Regional Policy Assumptions

The central aim of policies of industrial subsidy and industrial location centred, until comparatively recently, on the idea that the economic conditions of depressed areas could be enhanced by moving work to such areas. In this sense, mobile plant was seen as a key to improving employment prospects. Attitudes, though, have changed to the extent that current thinking suggests that growth can be achieved through the mobilization of indigenous potential. In both cases, there is clearly an overt regional policy.

In favour of traditional policy lies a range of arguments. It has been felt that over-populated urban areas could constrain growth because of the high costs of various factors of production such as land, labour and transport. Certainly, policy in the 1960s was concerned to move industrial investment away from urban centres for this reason. The peripheral or problem areas benefited from such policy. The received wisdom has been that faster national growth derives from a comprehensive regional policy.

Compared with many other European countries Britain has suffered because of constraints in its labour supply; there has not been a rural labour surplus on a large scale that could supply growth industries. In the peripheral problem areas the far higher levels of unemployment have meant that this issue has not been such a problem. The argument has therefore been forwarded that a regional development policy could use these labour reserves and that national economic growth would ensue.

A further argument is favour of regional policy has been that labour restraints in in the urban areas - especially in the South-East - had a tendency to raise wage levels that had a knock-on effect for the rest of the economy. The argument went that if firms and jobs could be geographically dispersed the demand for labour would be reduced, the demand for higher wages would be eased and, in turn, inflation would be reduced. The ultimate effect would be to enhance growth prospects.

Against these arguments can be seen the claims that production costs would tend to be high with new plants, that efficiency would be impaired and that capital accumulation would be constrained because of the controls on industrial location in the more prosperous areas.

The fact is that in Britain there was a strong and relatively coherent regional policy operating between 1963 and the mid-1970s. Evidence of this can be seen from the development controls introduced in the more prosperous areas, the encouragement of factory building in the problem areas and the existence of a wide range of schemes providing subsidies for capital and labour. In the last decade, however, the policy has been considerably weakened. For example, the Regional Employment Premium has been abolished and there has been a significant reduction in the number and size of assisted areas. Other schemes do remain in operation such as the Office and Service Industries Scheme, the In-Plant Training Scheme, aid for the tourist industry and loans from the British Technology Group for innovative ventures.

The Government's review of regional development policy announced in November 1984 has made further changes by attempting to up-date the structure of assistance by making more effective use of scarce resources. A two-tier system of assisted areas has been proposed comprising development areas which would be eligible for regional development grants at 15 per cent and for selective assistance and intermediate areas which would be eligible for selective assistance only. Whereas regional spending in 1983 amounted to some £643m it is the government's aims to be spending around £300m a year by 1987-88. Capital grants will be limited to a cost per job of £10,000 or companies can opt for a jobs grant of £3,000 per job. This contrasts sharply with the position in the 1970s when regional spending produced a cost of £35,000 for each job created.

It is clear from the review that the Government believes that moving jobs from one area to another has resulted in few real benefits. The shift, then, is

towards providing assistance for those projects involving new productive capacity, those increasing existing capacity and those producing a change in the product or service. Investment that is unlikely to produce no increased output would not qualify for grants. The upshot is greater emphasis on selective assistance rather than development grants, more money for job creating projects, increasing the number of services within the definition of assistance and, most controversially, changing the assisted area map.

It has not simply been the policy-makers who have had a change of heart over regional policies as economic conditions have changed. Academics have questioned the nature of policy as well. As already suggested, the policy assumes national growth. In current economic circumstances this assumption is questionable and consequently raises doubts about the nature of regional policy. Although there is some evidence of Government support being associated with rising employment levels it is debateable whether this is a causal relationship. Indeed, regional policy, if anything, appears to have influenced other kinds of business decision. D'Abbs (1974) and Spooner (1972) have shown the link between regional aid and locational decisions for example. Nevertheless, the traditional approach does seem to have had some success in relation to national growth (Marquand 1980). Yet when demand is flat at both national and international levels and when there is substantial unemployment in the once prosperous areas, the argument for regional policy is clearly less tenable.

What is seen then is a position whereby regional policy is still required but where the real benefits are in doubt and where the long term effects are problematic. It would appear that with national and international recession local economies may not be capable of regeneration by injecting more of the same traditional practices.

3. Regional Policy in Devon and Cornwall

3.1 The Role of the EEC

One of the stated objectives of the EEC is to redress the imbalance between the more prosperous and less prosperous regions. It aims to improve communications between the Community's regions, to promote the use of indigenous energy sources and to expand and improve the environment generally. The assisted areas of the UK have, since 1973, qualified for a range of European assistance from the Regional and Social Funds, the European Agricultural Guidance and Guarantee Fund and the European Investment Bank. Between 1975 and 1982 some £109m was received from such bodies. In the South-West of England such monies have been used to extend Exeter Airport, improve facilities for British Rail rolling stock and provide better facilities for the Plymouth-Roscoff Ferry link.

Devon County Council still benefits from the existence of such grants and loans and has taken advantage of the Social Fund to boost employment potential directly. Between 1976 and 1983 the county received grants of £2.5m for infrastructure works; a further £1.35m has been approved and a grant of £1m has been received for the first phase of the Roseter Conference Centre in Torquay. Between 1980 and 1984 Plymouth City Council received grants from the EEC of some £3m.

Substantial grants have therefore been made available for the South-West from the EEC, aid that has largely been concerned with infrastructure programmes. Such aid is perhaps relevant to encouraging indigenous growth in a recession. But EEC aid is dependent upon aided status from national Government and from 1 April 1985 following the Ministerial statement in November 1984 virtually the whole of Devon and Mid-Cornwall will no longer qualify for Government regional assistance. The effects in terms of EEC of this change in policy have still to be fully worked out but there are serious doubts about certain projects such as the Torquay Conference Centre that was expecting a further £2.1m of EEC funds.

3.2 Local Authority Initiatives

Both County and District Councils have intervened on the issue of industrial subsidies in Devon and Cornwall although the only major joint initiatives have been the formation of the Devon and Cornwall Development Bureau and the body known as Information Technology South-West (ITSW). Development programmes have been largely initiated independently even though the growth objectives of the two counties have been similar. For this reason, it is necessary to consider the two counties separately.

In the case of Cornwall, by 1980 policies were specifically aimed at boosting employment prospects through publicity of the attractions of and opportunities for new industry in the county, especially with regard to overseas companies. An Industrial Development Service was initiated to supply information and coordinate development. Site development was given a priority. Intensive representation to central Government to encourage and ensure full use of available assistance has been made. What exists, therefore, is a combination of policies typical of many local areas with an emphasis on promoting investment from outside the area, providing advance factories, allocating development land and setting low rates as an incentive.

Devon also recognises the importance of creating a favourable climate for investment in order to stimulate employment through encouraging existing firms and attracting new firms. Land-use policies are also seen as a major factor in enabling infrastructure provision and to exploit local advantages. All agencies operate within the framework of the County Structure Plan. The important contribution that small units of industry can make to rural areas is recognised. Advance factories are also a feature of county policy.

The establishment of ITSW has been a recent development in the belief that information technology is where future growth is likely to spring from. ITSW is seen as providing a way forward from the present impasse in employing modern

telecommunications to avoid the problems of remoteness from the centre. In this way self-sustaining growth is encouraged, especially in the service sector. Also, the aim is to exploit the potential of undertaking such jobs in small communities, in office parks, cottage offices and in the home.

The Council for Small Industries in Rural Areas (COSIRA) also plays a key role. It has argued for the creation of an Employment Forum in which District and County Councils consider future employment opportunities and levels of investment. Many other agencies are also involved such as Community Councils, the East Devon Small Industries Group and the Dartington Trust.

What can be seen from the above is that intervention largely comprises the consolidation of traditional practices such as the provision of advanced factories and employment land, tax and rates allowances and the like. What perhaps is required given changed circumstances is a more integrated strategy with regard to planning future employment development. Information technology is considered crucial. Self-sustaining growth is therefore perceived as the primary objective. Yet, surprisingly, there is little reference as to how such growth might be achieved except through the provision of traditional interventions as outlined above. An important missing dimension is that of industrial linkage. This particular dimension is obviously central and yet the results of empirical research on manufacturing organizations in Devon and Cornwall reported below shows that the potential for manufacturing linkage is greatest in relatively small and independent firms. Perhaps, then, policy should be geared towards encouraging growth and technical change in this sector given that new firm formation may follow as should employment growth. It will be argued that a policy stressing the local area's indigenous potential should be given serious consideration.

4. A Small Firms Policy?

The decline in the UK of the manufacturing sector in recent years must raise questions about the assumptions underlying traditional regional policy. The decline, of course, is not simply in the so-called heavy industries suchas steel production or ship-building. It is the case that such industries have been most hard hit with areas such as Tyne and Wear losing half their manufacturing jobs in four years (Storey 1983) or a third of steel-making and motor-car manufacture jobs disappearing. But the position is that relative decline is evident throughout manufacturing industry. The outlook continues to be bleak and as such the rationale for maintaining a traditional regional policy should perhaps be questioned. The argument for such policy outlined above - labour constraint, inflation and the moving of work to the workers - is certainly less relevant now and therefore suggests that a different approach should be adopted. One such approach might argue in favour of a policy that recognises the need to use local initiatives for indigenous local economies. This would require an innovation-oriented policy that would promote development in those sectors having the growth potential.

Increasingly, both central and local government have recognised the need to assist the small firm. Indeed, the recently announced alterations to the development aid programme are partly designed to help the growth of small firms offering alternative employment, both directly through the provision of special assistance and indirectly through improvements to infrastructure. The particular characteristics of a local economy of the kind found in Devon and Cornwall with a high dependence on small businesses and self employment is reflected in the focus on the provision of small premises by local authorities. Further, there is a tendency to aid the small firm because of being able directly to intervene. A local authority can have a relatively small influence, if any, on the national or international economic climate. Thus, a closure decision taken by a national or multinational enterprise is taken outside the local context with the effect that the local authority can do little besides accept the decision even though

the local effects could be significant.

Local authorities are clearly attracted by a small firms policy. In the first instance, small manufacturing firms continue to provide a large proportion of total manufacturing employment (Storey 1983). Small businesses are often owned by local voters with obvious electoral implications. The problem is the long-term viability of such enterprises given that around a third of small businesses collapse within the first four years.

Centrally, it is the Department of Trade and Industry that has responsibility for a small firms policy. Such policy aims to develop a more positive attitude towards self-employment together with a clearer understanding of existing opportunities. Finance is also promoted for small firms and t x incentives are made available.

A major problem arising from the adoption of a small firms policy is that such firms tend to have a narrow market area. Any increase in small firm activity in selected areas is likely to displace other small firm activity within a fairly narrow area. Thus, encouraging small firms may stimulate activity at the expense of other small firms (Lloyd & Dicken 1982).

But if small firms have a role to play, how great is this role? Research in different parts of the UK casts doubt on the job creating potential of the small firm (Gould and Keeble 1984, Lloyd and Mason 1984, O'Farrel and Crouchley 1984). Much of the evidence suggests that new small firms can only offer prospects of significant employment gains in the medium to long term, if, of course, they survive that long. For such firms, the provision of premises in the local economy may prove a highly cost-effective way of raising employment levels.

Information does exist on the type of small firm using the advance factories. Typically, these units are occupied by established manufacturing firms employing

around six workers and that have moved from another part of the country (Perry and Chalkley 1984). Advance factories do not seem to have been too successful in creating new businesses. A study of Cornish industrial estates by Shaw and Williams (1984) has shown that over a third of firms considered their present location to have problems of poor accessibility.

In the short term, then, there are doubts about the job creating potential of small independent firms. It can be argued, though, that it is perhaps not a small firms policy itself that is the problem. Rather, the type of activities that the policy has sought to promote may be at fault. In particular, there may have been a failure to encourage technical advance and local linkages.

In most 'problem' areas there is an apparent inability of the manufacturing sector to create and maintain sufficient jobs to occupy all those actively seeking employment. The supply and demand for labour cannot be brought into equilibrium at a socially acceptable level. Public assistance has sought to establish such an equilibrium. Interestingly, remarkably little attention has been given by the public authorities to the possibility that pre-production costs associated with technical development are higher in peripheral areas and are therefore a key factor in inhibiting growth.

It is not unreasonable to argue that employment prospects depend, inter alia, on equal opportunities for firms to participate in technological advance. Within manufacturing, technical change does not progress equally in all industries (Freeman 1974) and the ability to produce and to adopt new technology varies between firms (Le Heron 1973). Since the rate of technological advance varies between nations, it is not unreasonable to argue that it may also vary between regions simply because of spatial variations in industrial structure and/or entrepreneurship. Technological advance by firms in the local economy can induce benefits in terms of local income and output, an increased ability to trade and an improvement in the competitive position of firms (Goddard 1983). Failing to

produce or adopt new products could mean losing out on increased product demand, with consequent losses of revenue, potential profit and employment. Over a longer period, such lags may result in a lower standard of output, employment and social conditions for the indigenous population, thereby increasing the dependence on transfer payments from central government. Lagging areas therefore become threatened as the market of indigenous establishments are eroded by technologically based competition.

It is argued, then, that technological change has a fundamental role to play in the future development of a local economy and for indigenous employment prospects. This is especially relevant when policy to aid peripheral areas by traditional means is hampered by recession. Public spending is constrained and mobile plants do not act as a major source of new jobs or potential entrepreneurs. The responsibility for growth, therefore, falls upon manufacuring plants already in operation.

The Devon and Cornwall Establishment Survey

In order to explore at first hand some of the above ideas relating to a small firms policy, reference will be made to the Devon and Cornwall Establishment Survey conducted by Plymouth Polytechnic for the Manpower Services Commission in 1983. Relevant data are available on 571 firms in the two counties. The survey comprised part of a wider study of local manufacturing firms and clearly only a small part of the overall study is extracted for illustrative purposes here. More detailed analysis can be found in Dobson (1984) and Gripaios(1984) from whence the tables listed below are derived. The wider study was concerned with producing a directory of aids and incentives for businesses in Devon and Cornwall, a directory of firms' inputs and outputs in order to improve matching in the local economy and to produce a capacity register of firms so that unused capacity could be hired out to existing entrepreneurs.

Just over 60 per cent of the surveyed plants had been established for more than twenty five years; the newer plants being based in those areas that have been most favoured by regional policy. Taking number of employees as a measure of size, the emphasis is very much upon the small plant. In fact, 65 per cent of the plants employed fewer than 24 employees and only 14 per cent employed in excess of 100 employees. It is clear that the typical unit of production in the two counties is small and indeed further analysis has shown that the large plants tend to be concentrated in the Plymouth travel-to-work and Plymouth areas.

Taking ownership status, almost three-quarters of the plants were independents with the remaining quarter being subsidiaries of national or multinational companies. Such a pattern is perhaps to be expected given the small size of the majority of operations. In fact, a cross-tabulation gives the following picture:

Table 1: Organizational Status by Employment (% of plants)

Organizational Status	Employees 1-9	10-24	25-49	50-99	100-499	500+	Total
Independents	53.4	26.0	11.1	5.8	3.4	0.5	100
Subsidiaries	7.8	18.3	16.3	15.7	35.9	5.9	100

(X^2 significant at 5% level)

(From Gripaios 1984, p.27)

The effect of the subsidiary plant of the national or multinational enterprise is evident here, as is the relationship between independent status and size with over a half of independents employing fewer that 10 people. It might be objected that size is not a particularly reliable indicator. If, though, turnover is used instead a similar pattern emerges insofar as 63% of the subsidiaries have a turnover exceeding £1m as compared with only 8 per cent of the independents.

This pattern of ownership and status is probably a consequence of previous regional policy when branch plants were established during periods of previously high industrial movement and when local companies were acquired by firms outside

the area. Branch plants are especially vulnerable to reductions on demand and are susceptible to closure as has been witnessed in Devon and Cornwall in recent years. Payne's (1982) survey shows just how vulnerable manufacturing plants have been to closure in the 1950s and 1960s. He shows that employment in new firms opened before 1971 fell by 10 per cent between 1979 and 1980. In the 1970s, to take one example, Rank Toshiba in Plymouth employed 2,000 but this figure has now dropped to around 500. The corporate restructuring that often occurs in multiplant firms frequently leads to this kind of behaviour and therefore prompts the question of the role of regional policy in subsidising such moves.

The role of technical change has been highlighted above with regard to the effects on a small firms policy. The data from the establishment survey provide some interesting findings in terms of the extent to which the branch plants are in fact integrated into the local economy as compared with their dependence upon the parent organization. A useful way of examining this is by examining the locus of decision-making.

Table 2: Location of Decision-Taking % of branch plants

		Address Taken					
Type of Decision	At same Address	RODC	ROSW	SE	ROUK	OVERSEAS	More than one site
R & D	48.3	2.6	2.6	9.9	6.6	7.3	22.5
Investment	25.8	4.0	4.0	17.9	10.6	9.3	28.5
Purchasing	72.8	2.6	2.6	4.6	1.3	0.7	15.8
Marketing	49.3	1.3	6.6	19.7	3.3	1.3	18.4
Production	82.2	0.7	0.7	2.0	1.3	0.7	12.5

Key:

RODC - Rest of Devon & Cornwall
ROSW - Rest of South West excluding Devon & Cornwall
SE - South East
ROUK - Rest of United Kingdom

(From Gripaios, 1984, p.29)

The type of decision appears to be related to the degree of autonomy. Thus, there is considerable autonomy in purchasing and production whereas the other areas

suggest a high degree of centralization within the parent organization. In many areas of decision-making activity, then, the branch plants are very dependent on what goes on elsewhere. From the point of view of regional policy the obvious lesson is that there could be a problem for regions having a dependence on such branch plants. In many instances, branch plants occupy premises that are purpose-built. The branch plants are, as suggested above highly dependent for their continued fortunes upon demand levels and technological change. Rather than adapt a plant to changed circumstances it often pays an organization to move to a different location.

The extent of managerial autonomy is a useful index of the degree of integration into the local economy and it is clear that the dependence on branch plants in the local economy suggests such a lack of integration. Another way of examining this feature of integration is to take industrial linkage since the more linkages there are in a particular region between firms the lower will be the 'leakage' to other regions and, indeed, the greater will be the regional multiplier. Linkage can be examined by reference to both goods and services. In respect of the origin of supplies, 71.5 per cent of plants reported taking more than fifty per cent from outside Devon and Cornwall. This is divided with 66.4 per cent of the independents and 84.9 of the subsidiary branch plants. In the case of the latter, the source of supplies was often from other branch plants of the same organization. The position is perhaps made clearer by the fact that over ninety percent of those plants employing more than 100 employees obtained more than a half of their supplies from outside the two counties.

The other form of linkage derives from services as investigated by Dobson (1984) whose findings are summarised in Table 3. What is clear from this is the way in which the lower order services tend to be provided locally, whereas Group 1 services are less likely to be so provided. Dobson has shown how the branch plants were more likely to import services.

TABLE 3 : Major Source of Services used. % of Plants Responding

Type of Service	Devon & Cornwall	ROSW	SE	ROUK	Overseas	Total	Non Respondents (Number)
Group 1							
Computing	60.0	8.1	20.7	10.4	0.7	100	231
Legal	75.7	2.8	16.1	5.0	0.3	100	49
Financial Advice	71.7	4.9	17.5	5.4	0.4	100	143
Accounting	78.3	3.4	12.4	5.5	0.3	100	44
Export Services	50.3	11.5	25.5	12.1	0.6	100	209
Public Relations	60.9	7.1	24.4	7.1	0.6	100	210
Group 2							
Research and Development	61.1	2.9	16.5	12.4	7.1	100	196
Group 3							
Haulage	90.2	2.9	1.5	5.5	0.0	100	91
Office Cleaning	99.4	0.0	0.6	0.0	0.0	100	192
Plant Hire	94.5	0.5	0.5	3.5	0.0	100	165
Waste Disposal	97.9	0.4	0.4	1.3	0.0	100	131
Total						366	

6. Discussion

The brief look at the Devon and Cornwall Establishment Survey presents a picture of a local economy having somewhat loose linkages both for materials and for services. Furthermore, decision-making, especially for higher order functions, is centralised outside the local area and where a high degree of employment takes place in externally owned branch plants. An important effect of this situation could be that the local economy is badly placed in terms of reacting to both economic and technological change. There is a hint, though not empirically proven, that with such an overall picture, the most forward-looking and dynamic entrepreneurs may operate outside the region. Certainly there is evidence that key staff functions are performed outside the region on a large scale (marketing, research and development, etc). The point is that these skills are generally not readily available locally.

The argument here is that future policy should address the question of balance within a local economy. The stress here is upon self-sustained growth associated with the potential for local linkage. As shown above, the current situation suggests under-developed material linkages in the far South-West.

There would appear to be a severe constraint on the service sector since the externally owned plants tend to obtain their business services from outside the region. In this sense, external ownership has a detrimental effect on service development. It is possibly the case that only those firms that can survive without regular contact with the higher order services will be attracted to the region. It follows that there is an urgent need to encourage the development of organizations providing such services especially since such a strategy would also encourage externally owned firms to use the local services.

A policy encouraging the formation and growth of the independent firm could also increase the amount of local linkage and self-sustained growth. Furthermore, the significant number of job losses arising from the externally owned sector would

be importantly reduced.

One problem that has not been addressed here is the fact that many small companies fail because of gross mismanagement. Clearly, local authorities and central agencies need to be able more effectively to identify those companies that could be at risk. Rate of employment is a good guide as is the range of products and the introduction of new products. Essentially, it comes down to funding agencies having greater knowledge of the activities of small firms as well as having knowledge of the linkage potential.

If a more indigenous policy were to be adopted then, by definition, more decisions involving research and development, employment and investment would be taken far more on a local basis than exists at present. It is the small firm that over time is likely to sustain the net new jobs and even then the possibility is that a relatively small number of firms could be involved. Traditional policy involving simply maximising the number of new firms not only has a displacement effect it does little for increasing local linkage. What is needed, therefore, is a more coherent integrated policy.

Taking policy in changed circumstances a number of important issues needs to be considered in designing a strategy for local growth. Bearing in mind the weakly developed local linkages, the limited amount of higher-order decision-making and the relatively low potential for service development, policy needs to be based on an understanding of how new firms come to be founded, who forms them, why they are formed and the potential for survival for such new ventures. Without such knowledge the failures and disappointments of previous policy are likely to be repeated.

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THE POLITICS OF INDUSTRIAL SUBSIDIES:

THE BRITISH CASE

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Note on quotation

As with all papers I write, this one reflects my thinking on the subject at the time that I wrote it; I may change my mind before presenting the paper, while presenting it or afterwards. Because this is a first version of the paper, it is more tentative than might otherwise be the case. Nevertheless, please quote from the paper if you wish - academic debate can only proceed through the vigorous criticism of ideas, rather than shielding them from public gaze until they are polished to what usually turns out to be a transient perfection. In any case, my citation score could do with improving.

This paper seeks to contribute to the second objective of the workshop, 'to consolidate the existing body of empirical research having a bearing on the relationship between public authorities and private enterprise in the process of public subsidy'. The basic theme of the paper is that, given that industrial subsidies in some form or another are apparently unavoidable, it is important that they should be cost effective: that the public money spent on them should help progress towards the stipulated objectives. The evidence reviewed in the second part of this paper suggests that they are often not cost effective in the sense defined. Public money is spent to enable firms to do things that they would have done in any case. The third section of the paper attempts to suggest why, at least in Britain, the pressures for cost effectiveness are relatively weak, whilst those which seek to maintain subsidies in their existing forms are relatively strong.

Perspectives on Industrial Subsidies: a Brief Review

One may distinguish three broad views on industrial subsidy. There are those who argue that, in effect, we need 'more of the same', as long as we learn from the lessons of past experience and hence get it right next time. 'The same' in the British case is selective intervention making some use of tripartite consultative and advisory mechanisms. In defence of this approach, it could be argued that it has never been properly applied in the British case. Metcalfe, for example, argues that 'it is not that tripartism has been tried and found wanting. It has been found difficult and left untried'. (Metcalfe, 1984, 126).

Others would argue that the poor record of industrial subsidies in Britain and other countries demonstrates the need for a return to a purer market mechanism, unsullied as far as possible by the interventions of government. This view is argued in the 1984 Economic Report of the President which asserts that industrial policy 'has been unsuccessful in Europe'. (President of the United States, 1984, 88). Taken as a whole, the argument presented there against industrial policy is somewhat nationalistic and partisan, and contains a number of statements which are open to challenge, but a succinct and robust case is made for the market mechanism:

> The best way to deal with the many changes in demand that occur in a dynamic economy is to allow investors and workers to respond to such changes. Because they reap the rewards of their successes and bear the costs of their failures, investors will seek out industries that pay the highest rates of return. Similarly, workers will have incentives to work where they can earn the highest wages. The free movement of capital and labour in response to new profit opportunities and wage differentials increases growth. Government allocation of investment that ignores market signals usually stunts growth by diverting labor and capital from more productive uses.
>
> (President of the United States, 1984, 88; for a British statement on these lines, see Burton, 1983).

Another view is that there is need for more interventionism of a different kind, particularly directed at the financial sector and the selective allocation of credit. The argument advanced is that Britain has been characterised by a dominance of finance capital over industrial capital which has encouraged overseas investment to the detriment of domestic investment, thus accelerating the process of decline in the

industrial economy. It would be possible to write a paper on this topic alone, but one point which is often forgotten should be stressed. When investment is undertaken in the UK, the return in terms of extra output is considerably poorer than in competitor countries; about half the figure obtained in terms of extra output from manufacturing investment in France and the BRD (National Economic Development Office, 1980). Simply stimulating more investment would not solve the country's problems and might indeed worsen them by depressing the overall rate of return as a result of the encouragement of more marginal projects.

A personal perspective

Where does the writer stand? I have been studying industrial policy for about a decade. I started my work with an ideological preference in favour of selective interventions by government in the working of a mixed economy. My research over the years has made me less sanguine about the beneficial effects of government intervention - at any rate, in the British case. Britain may, of course, face particular obstacles in designing and implementing a satisfactory industrial policy. (See Zysman 1983).

Particular national problems aside, the direct economic benefits of intervention are often disappointing and may be offset by its opportunity costs. In particular, short run benefits may be offset by long run costs. Keeping a particular plant open or safeguarding a selected industry may preserve employment in the short run, but may lead in the longer run to a domestic economy which is less able to adapt to changes in the global economy and which, because it is inherently less competitive, can offer a more limited and less attractive range of employment opportunities.

As the OECD points out:

> When aid is discretionary there is always some danger that, due to social and political pressures, funds are allocated to less productive firms, thereby prolonging the existence of inefficient structures and running the risk of stimulating over-capacities. In practice, discretionary procedures often penalise those productive firms which are ultimately more likely to promote investment and eventual employment.
>
> (OECD, 1983a, 79).

Because of its often overlooked opportunity costs, industrial policy may produce two losers rather than one winner. A particular case from British industrial policy may help to make this point. The Rootes company was pressurised by government in the 1960s to locate its new car plant at Linwood in Scotland, rather than at Coventry which would have been its preferred location and where it had a site. (Wilks, 1984, 78). However, the requirements of regional policy, and the need to provide a major local user for the Ravenscraig steel plant (itself the product of a botched decision by the Macmillan Government) led to the new plant being built in Scotland. Linwood has, of course, since closed, and the future of Ravenscraig is uncertain. In the meantime, the car industry in Coventry has experienced a precipitous decline, producing high local levels of unemployment in a previously prosperous area. If the new plant had been built at Coventry, in what was then the heartland of the motor industry, there is at least a chance that it would still be open today. As it is, both the West Midlands and the West of Scotland have lost out.

However, this paper is not intended to be a sermon on the merits of the market mechanism. In evaluating the success or failure of government interventions in the industrial economy, it must be remembered that such interventions are made in projects which look like poor bets on normal commercial criteria. In other words, one would expect a high failure rate in selective interventions. However, this failure rate has often been higher than it need be in the British case because government often delays its intervention until an industry or firm has reached its terminal crisis and is beyond resuscitation. Such a pattern of intervention is a reflection of the ad hoc character of industrial policy in Britain, of the lack of a proper planning mechanism, or at least of any adequate means of coordinating the work of the various government departments that work in the area. (See Grant, 1981, Chapter 2; Wilks, 1984).

Even if there are significant areas of failure in the way in which government formulates and implements industrial policy (and these failures are, in principle at least, capable of remedy), the market system in practice displays many imperfections which undermine the claim that it should be the almost universal mechanism for the allocation of resources. As the OECD comments:

> Markets neither automatically ensure full employment and price stability, nor guarantee harmonious regional development. Markets are also unlikely to anticipate future social and economic needs correctly in some areas of economic activity because the relevant information is not easily accessible. People usually also have uneven starting opportunities. In addition, there are economic activities for which the rewards for fulfilling needs cannot be easily

> appropriated by the supplier (public goods and economic benefits). Other activities generate external costs. Some markets may be distorted by concentrations of market power, which can then reduce or eliminate proper adjustment, cost cutting and innovation.
>
> (OECD, 1983a, 8).

However, the mere fact of market failure does not, of itself, justify government intervention. Intervention may fail to solve, or even compound, the original problem, or create some new problem which was worse than the original one. One needs to ask whether intervention is helpful in a particular instance, and then, if it is thought to be helpful, one has to think about the particular form that it should take, and how it can be successfully implemented.

Unfortunately, this last question is not asked often enough, although it is an area where political scientists should be particularly capable of making a contribution. There is a tendency to assume that any political problems associated with the formulation or implementation of industrial policy are, by definition, insoluble and that the presence of such problems of itself creates an argument against the use of industrial subsidies. For example, the Economic Report of the President argues that 'The prospects for a good Federal adjustment program may be limited by the same problems that would plague industrial policy initiatives in general - possibly deserving groups would be crowded out by their less deserving but politically powerful competitors'. (President of the United States, 1984, 94). The possibility that one might want to investigate the feasibility of adjustments to the political process so that the effects described would be

minimised is not even considered.

When considering the British case in particular it is important to remember that the UK economy is probably the most concentrated in the western world (Utton, 1982) and in many areas of economic activity the competitive market mechanism cannot be said to work, even in an imperfect fashion. There are some areas of economic activity which are natural monopolies, even if it is admitted that some of these supposed natural monopolies are artifices resulting from legislation, or subject to erosion by technological change. Many formerly state owned concerns are, of course, being privatised and in other cases new chief executives have been brought in who see the pursuit of success in the 'market' as their first priority. Unfortunately, in many cases the 'market' does not exist in any meaningful sense of that term. For example the 'market' in coal is determined domestically largely by government decisions about how power should be generated, and internationally by the subsidies provided for coal mining by other states. In other areas, government's role as a purchaser (e.g. in construction, pharmaceuticals and the defence industries) has a profound impact on the form and level of economic activity. These arguments lead us in two directions: the need to take competition policy seriously; and the need to admit that there are areas which are not susceptible to the market mechanism, particularly in a world where other governments are highly interventionist.

The view taken here is that the principal case against too heavy a reliance on the market mechanism is not an economic one. After all, in so far as there are market imperfections, government could seek, as far as possible,

to remove the underlying causes for those imperfections, rather than treat their symptoms. Moreover, it could be argued that even though the market mechanism has its limitations, these limitations are less onerous than those that result from a system of central planning on the Soviet model. That is not an excuse, however, for forgetting that the market has inherent limitations as an economic device. The real risk of such selective vision is not so much that some real practical limitations are ignored, but that it contributes to an all too prevalent state of mind which treats the market almost as an objection of veneration, a revealed mystery, rather than as an imperfect mechanism for ordering one aspect of the social behaviour of men and women.

Nevertheless, the real case against an uncritical adulation of the market mechanism is a social one. The unrestrained operation of the market, whatever its economic benefits, can have serious social costs which governments should not ignore. The market mechanism often places the burden of industrial change on those least able to bear it - the poor, those in ethnic minority groups, in deprived regions or inner city areas, or in single industry communities. Even more important, the market mechanism, if it is not subject to appropriate political restraints, can rend apart the social and political fabric of a country. I have no hesitation in making the value judgement that I would not like to live in what Sir Ian Gilmour has called a clockwork orange society (Gilmour, 1980, 16), although unfortunately we now seem to be nearer such a society in Britain than when Gilmour first coined the phrase. Even if such arguments are not found convincing on the basis of their moral appeal,

it should be remembered that the market mechanism itself requires a reasonably secure social climate in which to operate. The fact that the market mechanism encourages individual aggrandisement at the expense of collective obligation tends to undermine that social climate which fosters the mutual trust and social peace which a successful market system requires. (See Hirsch, 1977; Crouch, 1983).

There is, therefore, often a case for intervention on social grounds. If such intervention becomes too extensive it can be counter productive for the reasons outlined above. One needs to cope with the social consequences of industrial change without so distorting the process of industrial adjustment that the competitive position of the economy deteriorates and everyone is worse off in the long run. Drawing this balance is not easy, and it is a matter of judgement rather than the application of blueprints, but that does not mean that the attempt should not be made.

The opening section of this paper may be too normative for the taste of some political scientists, but in such a contentious area it is only fair to state where one stands, The next section of the paper will offer a more analytical attempt at understanding the lessons of the British experience with industrial subsidies.

Industrial Subsidies in Britain: the Record Reviewed

The term 'subsidy' referred historically to a parliamentary grant of money to the Sovereign for state needs; it is used here in the sense of money contributed by the state or a public body to a commercial undertaking which is held to be of public utility. The problem of deciding what constitutes 'public utility' is, of course, at the heart of the difficulty of deciding whether a particular subsidy, or subsidies in general, are efficacious. The first section of the paper tried to make the point that too great a reliance on subsidies can destroy the market mechanism with undesirable consequences. Agricultural policy throughout the western world offers a salutary warning in this respect. As the OECD comments, 'present agricultural policies make many world markets for agricultural products residual in character, which is one of the reasons for instability in demand and supply at the international level'. (OECD, 1983a, 21).

In this section, the argument moves away from the consideration of general arguments for and against subsidy towards a much more specific and limited, but nevertheless, important set of questions: in particular areas of industrial policy, how far, if at all, have industrial subsidies been successful in attaining their stated objectives. The question of whether the stated objectives are desirable is left to one side, so that the issue tackled becomes one of cost effectiveness. Has the public money spent achieved the desired results?

For an industrial subsidy to be effective, in the limited sense defined, three conditions have to be met. Potential recipients (in general,

firms) have to be aware of the existence of the particular subsidy. They have to be aware of its applicability to their particular needs, and hence be induced to apply for the subsidy. Most important of all, having taken up the subsidy, their acceptance of it should lead to a modification of their behaviour in a way that conforms with the objectives of government industrial policy. In fact, the available evidence (see Grant, 1984 for a review) suggests that firms are not often aware of the available aid, and that even when they are aware of it, they often do not take it up. As a former Permanent Secretary of the Department of Industry has commented, 'On the whole, where selective assistance is concerned, we have been response constrained, not resource constrained'. (Quoted in Grant, 1981, 52). What is even more worrying, when firms do accept subsidies, they often do what they would have done anyway in the absence of the aid: at best, projects are speeded up or go ahead on a larger scale. (See, for example, Imberg and Northcott, 1981, 12).

In order to provide a structure for the subequent discussion, government industrial subsidies will be considered in relation to five main policy areas. There is some overlap between the areas as I have defined them (e.g. between regional policy and inward investment policy), but they seem to me to be a sensible way of distinguishing between the different policy arenas. The five policy arenas are:

1. Regional policy
2. Aid to attract inward investment projects which have a choice of location between countries
3. Aid to restructure declining sectors of industry
4. Aid to small firms
5. Innovation policy aid

Regional policy

We have now had some fifty years experience of regional policy in Britain, but the depressed areas are broadly the same as fifty years ago, with the addition of the West Midlands. Indeed, the West Midlands has been adversely affected by the transfer of industry to other areas as a consequence of regional aid policy. The relative position of Scotland has improved somewhat (fewer people are now unemployed there than in the West Midlands), but this is as much to do with North Sea oil as with regional policy. Of course, things could have been a lot worse without regional policy, but the available evidence suggests that regional policy has been a relatively expensive way of purchasing a relatively small number of additional jobs which often turn out not to be very durable. The Regional Studies Association, which is relatively well disposed to regional policy, admits that 'The main impact of regional policy's success in increasing job opportunities in the Assisted Areas appears to have been to reduce the rate of net out-migration from the less prosperous regions and to raise their female activity rates rather than directly reducing the number of registered unemployed'. (RSA, 1983, 7). The Regional Studies Association argues that 'What is required is the creation of a general economic environment in the depressed regions that is much more conducive to growth-inducing innovation' but admit that 'it would be very difficult to overcome the dispartities in potential arising from the South East's dominance of corporate headquarters, R and D and producer services generally'. (RSA, 1983, 110).

Research by the Department of Trade and Industry suggests that the application of regional aid over the period 1960 to 1981 had resulted, by

1981, in a net increase of around half a million jobs. (DTI, 1983, 6). There is 'some evidence to suggest that regional industrial incentives were less effective in terms of job creation in the 1970s than in the 1960s and were somewhat less effective in the second half of the 1970s than in the first half'. (Public Accounts Committee, 1984, vi). At 1984 prices, the cost per job created was around £40,000.[1] However, this average figure conceals a wide range, which may have gone as high as £316,000 per job in some cases. Certainly, there have been very high costs per job in the case of the oil industry, where regional development grants have been given to plants which would have located in the same place anyway. Moreover, it could be argued that in some industries, grants have accelerated a trend towards greater capital intensity, leading to net job losses. (Robinson and Storey, 1980). A case in point is chemicals, although the DTI regards the research conclusion that regional assistance of £1,400 million to the chemical industry has resulted in a loss of 22,000 jobs as simplistic, although they do not reject it altogether. (Public Accounts Committee, 1984, 22).

Nevertheless, there is evidence that regional grants have affected location decisions by industrialists and are more likely to be built into investment appraisals by companies than other types of grant. (CBI, 1978, 5; Walker and Krist, 1980, 27, 32). In large part, this has been because of their 'automatic' nature in the case of RDG (the more important type of grant). (Walker and Krist, 1980, 46-59). Hence, the Government's proposals to place a cost per job limit on regional grants, although understandable from a public expenditure viewpoint, may render regional aid less effective in the future than in the past.

Before leaving the subject of regional aid, it should be noted that there is something to be said for the multi-functional regional development agency such as the Scottish Development Agency and the Welsh Development Agency. These bring together a number of industrial policy activities together under one institutional roof - factory building and leasing, attraction of investment, assistance to companies, aid and advice to small firms etc. The Scottish Development Agency has been particularly successful in working in cooperation with local authorities to develop plans for localities that are severely depressed or have been hit by a major plant closure, This model combines flexibility of approach, an intimate knowledge of local conditions, and an 'in house' esprit de corps. However, it may be difficult to replicate outside Wales and Scotland which share many of the advantages of fully autonomous 'small countries': a relatively small elite group bound together by a network of informal links, and the possibility of marketing the country as a distinct entity (e.g. 'Silicon Glen' in Scotland). Even so, within a union state, (Rokkan and Urwin, 1983, 181, 187), there are limits to regional autonomy and separate Scottish offices abroad have been a particular source of friction, given that they appear to imply that Scotland is more than an appendage of England! It is doubtful whether a North-East or Merseyside agency could be as successful as the SDA, and even the latter has made its share of mistakes!

Inward investment

When the Conservative Government came into office in 1979 it announced its intention to continue to provide funds to attract internationally mobile inward investment projects and followed this statement of intent by putting together a substantial aid package for the US owned firm, Dow Corning. (Grant, 1981, 61). In subsequent years, the Government increased the proportion of financial assistance to industry given to inward investors. 25 per cent of all section 7 offers in 1978-79 went to foreign-owned companies; by 1981/2 it was 47 per cent. Even more striking, 15 per cent of all section 8 offers in 1978/79 went to foreign owned companies; by 1981/82, the proportion was 58 per cent. (Department of Industry, 1983, 15).

The government argues that 'Foreign-owned companies not only bring injections of capital investment and jobs to the UK but also innovative management and production techniques which benefit the UK's industrial structure'. (DTI, 1984a, 1). A major study of multinational investment strategies in the British Isles carried out by Hood and others for the Department of Trade and Industry found that 'Foreign direct investment in the UK has been a major source of employment, and the productivity and investment and trade performance of foreign firms has been superior to that of indigenous companies'. (Hood and Young, 1983, 305). Although there have been some highly publicised cases of withdrawal by transnational companies from production in Britain, this has often been with good cause and a DTI study found that employment lost through closure was similar in both UK-owned and foreign-owned groups, although foreign-owned plants increased their employment overall, while surviving UK-owned plants showed a net contraction. (British Business, 26 November 1982, 536-37). A study in Northern Ireland

found that British owned plants were, on average, likely to have a shorter production life than plants owned by American or West German companies. (Northern Ireland Economic Council, 1983, 28). Of course, this is not to say that inward investment by foreign owned companies has no disadvantages, not least the tendency of US companies to support their domestic operations with funds from their foreign affiliates. However, our concern here is not with the arguments for and against encouraging inward investment by transnationals, but with the cost effectiveness of aid to such companies. As Hood and his colleagues point out, 'Given the general problems of the manufacturing sector in the UK and the absence of policy alternatives, it is reasonable to presume that Britain will want to remain a major host nation to multinational enterprises'.(Hood and Young, 1983, 319).

Attracting such investment has not been easy, given that the overall level of foreign direct investment is not rising as fast in real terms as it was in the 1960s and early 1970s, and that there is increased competition for it from other European countries (particularly the Irish Republic) and also from newly industrialised countries such as Brazil and Taiwan. General studies of the way in which firms take investment decisions suggest that government assistance is regarded as a welcome bonus, but is not allowed to affect the decision about whether or not to undertake a particular project. (CBI, 1978, 17-18; Imberg and Northcott, 1981, 12). Of course, in the case of assistance for inward investment, a decision to invest has already been made in principle, and the choice that remains is about the location of the investment, although this is often influenced by the existing distribution of overseas plants. The research by Hood and his colleagues shows that government financial assistance was very important

for 29 per cent of the incoming companies interviewed, and important for another 10 per cent. It was of less importance than access to the U.K market which was mentioned as important by 52 per cent of companies, and by 62 per cent of the European owned companies. Another key factor was the availability of companies by acquisition which was rated as very important by over a third of the sample. (Hood and Young, 1983, 168).

The evidence suggests that government incentives were an important influence for some companies, particularly for those setting up green-field ventures in the assisted areas. Nevertheless, one should not overlook the fact that over 60 per cent of companies interviewed said that financial assistance was not an important influence on their initial location decision, or they did not know what influence it had. (Hood and Young, 1983, 168). This suggests that quite a considerable proportion of government assistance to inward investors is given to companies who are not influenced by it, although any attempt to develop a more selective approach would be inconsistent with the general policy of 'welcome' and might have counter productive effects.

Aid to declining sectors

The last Labour Government set up a number of aid schemes for declining sectors, and one such scheme has been run by the Conservative Government (for the privately owned sector of the steel industry). Typically, the schemes have combined assistance for new investment and consultancy advice on efficient production with aid for firms wishing to merge, rationalise or going out of business. Given that these schemes operated in sectors already experiencing severe difficulties, it is not surprising that many of them achieved disappointing results, although an experiment encouraged by the Conservatives using a merchant bank to rationalise a sector in difficulty was arguably even less successful.

I would like to look at two of the schemes which have been studied in detail by government economists. (Lambert, 1983; Potter and Davies, 1983). The Clothing Industry Scheme was directed at an industry 'characterised by low investment, labour intensive production methods, and widespread financial and managerial weaknesses, all related to a highly fragmented industrial structure. This resulted in poor productivity, low wages and high labour turnover, market loss and increased import penetration'. (Lambert, 1983, para.1). In other words, the industry was a clear case for treatment.

The scheme tended to attract the faster growing companies within the industry.[2] Nevertheless, its impact on investment seems to have been limited (although the funds provided, some £21 million in total, were not that generous, and the investment portion covered only seven

per cent of total investment costs in the industry within the period of the scheme). The first limitation was that the scheme was response constrained; companies spent less than expected and so received proportionately less in grants, leading to a shortfall in expenditure of £8M. In 118 cases an offer accepted by the applicant had led to no claim for payment by 1981. As far as those companies which did take up assistance are concerned, only 16 per cent said that they would not have undertaken the investment project without assistance, and in addition to the thirty-one companies interviewed, another five could not be contacted because they were insolvent or, in one case, would not be interviewed because of serious difficulties resulting from an overly ambitious investment project financed by the scheme. Nevertheless, a majority of companies did argue that assistance had led to the acceleration or enlargement of investment projects.

The DTI report admits that the additional investment generated by the scheme was probably too small to have more than a marginal effect on the industry's capital stock. In any case, the strength of the recession which commenced in the industry in 1979, far outweighed the modest effects of the scheme and led to major restructuring which obscured any productivity benefits obtained. It had been hoped that the timing of the scheme would induce a counter-cyclical boost to investment in 1975-6, but this did not occur. The best estimate made by government econometricians suggests that for each £1 of assistance received, companies invested, on average, an additional 96 pence net of government assistance. Whether this pound for pound return is worthwhile is a matter for personal judgement.

The scheme also provided assistance for merger and rationalisation projects, although these measures were not popular. There is also some evidence that this assistance impeded rationalisation by enabling some companies to survive; about a fifth of companies interviewed doubted whether they would have remained in business without the assisted projects. It is also disturbing that where investment assistance did lead to an enlarged project, such projects tended to be less successful than those unaffected or simply brought forward.

If one was going to be harsh about the scheme, one could say that the money was taken up largely by the more successful companies to boost investment they already intended to undertake; that, in so far as it had any impact on industry rationalisation, it helped some less efficient companies to stay in business; and that the impact of the scheme on productivity and output in the industry was not significant.

Phase two of the wool textile scheme accounted for a higher proportion of investment in the industry at the time of the scheme than in the case of the clothing industry scheme, and the rationalisation scheme was more popular than in clothing.[3] Econometric analysis suggests that phases one and two of the scheme increased total investment in wool textiles by between 15 and 35 per cent over the period 1974-79. However, the 'knock on' effects were limited in so far as 80 per cent of the new machinery bought was not British, largely because British machinery was not available. The report also notes that, if only in the short term, firms which put their accumulated cash surplus into gilts received a far greater return than those that invested in machinery. From a cost effectiveness point

of view, it is somewhat disturbing that fifty-seven per cent of firms said that they would have gone ahead with their investment without the scheme.

When government runs a section 8 scheme for a sector, it is usually already in dire straits. The problems of the sectors are not the fault of government, although it is easy to blame government for not finding solutions. However, it is difficult to be optimistic about the cost effectiveness or the wider social effectiveness of interventions in declining sectors.

Small firms

The Conservative Government has placed particular emphasis on measures to assist small firms, but it cannot be said that they have been all that successful. The loan guarantee scheme which came into operation in 1981 was designed to improve the flow of commercial funds to small businesses with a viable proposition which would not otherwise get financial backing. Under the original scheme, the Department of Industry guaranteed repayment of up to 80 per cent of the value of new medium term loans made by participating financial institutions. The decision about whether a project is 'additional' is made by the financial institutions, and this has led to accusations that banks have offloaded their more dubious propositions on to the scheme. The scheme was not self-financing as was hoped for, with the earliest loans showing a one in three failure rate. There was speculation that the scheme might be dropped altogether, but such a move would have been unpopular with the small business lobby, and it was reprieved for seven months in June 1984. However, the element of government guarantee was reduced to 70 per cent and the premium levied by the DTI to cover losses was increased from 3 per cent to 5 per cent, thus making the scheme less attractive to potential borrowers. It was subsequently extended on the same terms until the end of 1985.

Given the faith which the Government places in small firms as a seed bed for economic recovery, the findings of a study of the scheme are not reassuring:

> Most of the proprietors of small businesses in our study did not know, when they came to apply for their Scheme loans, how to manage their businesses to the best advantage. They didn't know how best to assess and structure their financial requirements, nor did their bank managers. Business fragility was often compounded by the type of finance. Once started they were uncertain as to how best to control their businesses and some of the better ones devised means of their own rather than seek the benefit of external practical advice. Often their bank managers seemed reluctant to monitor regularly what happened to the business. Advisers, predominantly the accountancy profession, either were not asked, or did not offer to assist; nor did they help anticipate the procedural and administrative problems which small firms encounter.
>
> (Robson Rhodes, 1984, 10).

The report has some harsh things to say about small businessmen, although it also praises their determination. It is clear that many of them had prepared inadequately for starting a business; one-eighth had planned for less than a month! (Robson Rhodes, 1984, 50). When four areas of business (marketing, production, finance and purchasing) were combined for borrowers starting new businesses, it was clear that inexperience outweighed experience. (Robson Rhodes, 1984, 51). Approximately seven per cent of borrowers and claimants appear to have been insolvent previously. About 64 per cent of new borrowers formed a view of their financial needs entirely by themselves, but as the report comments, these ideas were not based on any real knowledge of the market for finance. (Robson Rhodes, 1984, 53). Thus, 'a picture emerges of potential borrowers as having little understanding of the way in which to set up businesses, with no research, planning or proper gestation of their ideas, with little or no knowledge of the finance required (either type or amount) and with

no experience of practical and useable assistance available to them'. (Robson Rhodes, 1984, 54). The report describes many borrowers as struggling through 'relying on the most extraordinary books and records with peculiar and unintegrated management information systems'. (Robson Rhodes, 1984, 55). The report sums up the typical borrower as 'naive', 'financially inept', as having produced 'ill conceived, initial funding proposals' and 'bereft of practical and forthright advice and assistance'. (Robson Rhodes, 1984, 57). Not exactly an encouraging picture for those who believe in the virtues of the small entrepreneur.

The other principal government assistance scheme for small firms, the Small Engineering Firms Investment Scheme, was directed at existing firms in the engineering industry, particularly subcontractors engaged in batch production. The production of the research report was privatised and the authors chose to illustrate the report with photographs of some of their businesses and their entrepreneurs, a series of images calculated to depress anyone not already depressed about the state of British industry. Moreover, the report found that financial analysis among these firms was quite simple and unsophisticated. The 'Main business motive appears to be survival, pay the salaries and keep the business turning over until the recession ends, by asking the prices that the market will pay. Owners of small firms also simply enjoy running their own business and profit is often seen as a secondary issue'. (Research Associates, 1984, 28). So much for profit maximisation![4]

Phase one of the scheme was estimated to have cost £25 million, and to have created 512 new jobs and saved 172 existing jobs and to have boosted

output by £31M a year. Additional output was therefore about £1.20 for each pound of government money. At £36,500 per job created or saved, the cost per job is not dissimilar to that for regional policy. However, the report also admits that nearly all the extra business and jobs will have been gained at the expense of UK competitors, so there may in fact be a net job loss in the engineering sector as a result of the scheme. (Research Associates, 1984, 1).

Innovation policy

Innovation policy is defined here as a high technology oriented policy directed at assisting the development of generic technologies such as microelectronics, robotics and biotechnology; ensuring their dissemination and application in older industries; and making sure that research and development advances are carried through to the successful commercial launch of a product in the market place. The last Labour Government started some schemes of this kind such as the Microprocessor Applications Project, but the number and scope of such schemes, and the funds available for them, have been substantially expanded by the Conservative Government. Indeed, the present Government's industrial policy could be defined as an innovation policy.

Innovation policy has been highly successful in the sense that it has not been response constrained. Indeed, in November 1984 the Department of Trade and Industry was forced to impose a moratorium on applications for fresh grants under the Support for Innovation scheme because funds were almost totally committed until spring 1986. However, despite the high level of take up of the available funds, they do not seem to have percolated down to medium-sized and small firms to any great extent. Only ten out of a hundred and thirty of such firms studied in a survey of the chemical industry had made use of Support for Innovation funds; of the remainder, forty-four said that they were not aware of such funds, and forty said that they were not applicable, often, it would seem, because of misconceptions about the scope and rules of the scheme. (National Economic Development Office, 1984, 30-31).

Because of the relative newness of many of them, we have less evidence about the cost effectiveness of innovation aids compared with the other types of industrial policy that have been discussed, although the Microprocessor Applications Project does seen to have raised awareness of the ways in which microelectronics can be used in manufacturing processes. (Northcott and Rogers, 1982). However, although schemes which facilitate the diffusion of information about new technical processes may be more acceptable to industrialists than schemes which seek to influence the investment decision, it should not be assumed that innovation policy is a 'cleaner', more problem free type of industrial assistance than those discussed earlier. This type of policy is prone to technological chauvinism and which could lead to an attempt for Britain to try to develop its own capability in every new technology, when something more modest is required. (Henderson, 1981; Williams, 1984). In particular, there is a risk of spreading available funds so thinly that their impact is limited. However, a more considered assessment of the impact of this type of policy will have to await research studies of the kind discussed earlier.

The effectiveness of industrial subsidies: an overview

The general conclusion that may be derived from this review is that government industrial policy has not always been as cost effective as one would hope for. It should, of course, be remembered that policy proceeds from the assumption that companies are, and must remain, independent entities enjoying full commercial autonomy. The attempt to influence decision-making at the level of the firm is made through various incentives which may be accepted without modifying decisions made by the company in the way desired by government. These difficulties are compounded in the British case by the poor development of intermediary bodies such as trade associations which can explain the relevance of particular incentives to their member firms, and hence increase the chances of such incentives influencing decision-making at the level of the firm.

Often, good intentions can founder on the difficulty of devising an appropriate mechanism to put them into practice. One of the problems in the British wool textile industry was the age of the machinery, and both of the wool textile schemes contained a scrapping requirement as a condition for assistance. The objective of the scrapping requirement was to reduce over-capacity in the industry and to prevent prices being driven down to uneconomic levels.

In practice, the scrapping requirement proved difficult to implement. There is an economic incentive to use machinery which has been fully depreciated in the company accounts but which can still be operated, as

it allows managements to set price levels which do not have to include depreciation and interest charges. Part of the problem was a 'distrust of entering into new technology' and an almost sentimental 'reluctance about putting a hammer through machines which had some serviceable life in them, or which could come in useful; all attitudes which have not served the wool textile industry particularly well in the past'. (Gane, 1978, 23). However, manufacturers showed some ingenuity in getting round this problem; in the first phase of the scheme, three of the companies interviewed by Gane bought old machinery from other companies to put under the hammer themselves. In the second phase of the scheme, this practice seems to have developed into something of a market in 'certificates of scrapping'. (Potter and Davies, 1983, p.29). The problem was compounded by the fact that many firms with old machines were able to carry on in production because they received financial assistance under another government scheme, the Temporary Employment Subsidy (operated by the Department of Employment rather than DTI). Moreover, because short batch production is cheaper on older machines, the scrapping requirement may have put firms at a disadvantage by making it more difficult for them to respond to changes in demand. As far as the overall objective of limiting severe competition was concerned, scrapping of itself achieved little in view of the openness of the market to imports. It is therefore not surprising that the DTI's economists found 'it difficult to see what purpose scrapping serves' (Potter and Davies, 1983, p.31) and that the scrapping requirement was dropped from subsequent Section 8 schemes.

The more general lesson to be drawn from this experience is that policy-making often proceeds through a process of trial and error, or disjointed incrementalism, with a particular problem (in this case, to put it bluntly, clapped out machinery that should have been in one of the industrial museums Britain is so good at) leading to an experiment with a solution which, having found to be unsatisfactory, is dropped and replaced by some other method. That industrial policy-making should proceed in this way is perfectly consistent with all that we know about the policy-making process in general in Britain. It does at least show that some kind of learning process is taking place in government, even if it is hesitant and addressed to implementation issues rather than broader questions of cost effectiveness in terms of the comparison of alternative policies.

Any assessment of the wider benefits and costs of industrial subsidies ultimately rests on value judgements. However, it is important to remember that government is generally intervening where the market has failed to work properly, (or has worked in a way which government finds socially or politically unacceptable), and where it is often too late or too difficult to retrieve the consequences of (apparent) market failure. Whatever view one takes of the desirability or otherwise of government intervention, if schemes are not properly devised, implemented and monitored, there is a risk that government may compound the consequences of market failure rather than alleviating them.

The politics of cost effectiveness

One of the conventional assumptions about British industrial policy is that it has suffered from too much inconsistency. In fact, apart from special cases such as the steel industry, which has received disproportionate attention from both academics and commentators, industrial policy in Britain is not characterised by inconsistency compared with other policy arenas. (Gamble and Walkland, 1984). Of course, it could still be argued that it has been too inconsistent compared with industrial policies in other countries. However, in some areas of policy (e.g. regional policy) it could be argued that there has been too much consistency in the sense that there has been a lack of willingness to adjust existing policies in the light of evidence that they are not working satisfactorily. There is considerable inertia built into the policy system, and this is reinforced by various 'interests' who have a stake in the status quo, whilst the countervailing forces for change are relatively weak.

The criticism that insufficient resources are devoted in Britain to the continuous monitoring and appraisal of policy so that lessons may be fed back into the policy-making process (Hogwood, 1976; Grant,R, 1983) is well founded; there is even a lack of a general compendium of statistics covering the various types of subsidy on the lines of the West German Subventionsbericht, whilst appraisals of industrial subsidies are not available as they are in Sweden as a consequence of freedom of information laws. (Grant,R, 1983, 378). However, this lack of emphasis on monitoring, appraisal and feedback is as much a symptom of the problem, as a cause. More attention is not given to these tasks because they have little

political impetus behind them, whereas there are considerable political pressures for the continuation of existing policy. In examining the principal actors in the domestic decision-making process, I shall consider the pressures which lead to a reluctance to adjust policy and the countervailing pressures for cost effectiveness, before turning to the international pressures for cost effectiveness.

The Department of Trade and Industry

Responsibility for various aspects of industrial policy is dispersed around a large number of government departments (for example, the pharmaceuticals industry is dealt with at the Department of Health and Social Security and construction at the Department of the Environment), but the ministry with the broadest range of tasks and concentration of expertise in the area is the Department of Trade and Industry (DTI). Until 1983, Trade and Industry were separate departments and Industry had a reputation among informed observers for supporting measures to 'protect' its industrial clients, which could include schemes of industrial assistance based on cooperation with the industry concerned. Although civil servants change their particular jobs quite frequently, they often stay with one ministry (or closely related ministries) for much of their career, and many of the more senior civil servants in Industry (and hence in DTI) had experience of the first Wilson Government's Ministry of Technology or the Department of Economic Affairs in the early stages of their careers. (See Wilks, 1984, 27). Hence, civil servants in DTI could be argued to have a moderately interventionist outlook, tempered by their closeness to the CBI. (Williams, 1980, 93).

The other relevant characteristic of departmental culture in the DTI may be said to be a desire for continuity and administrative simplicity in the design and execution of policies. This was an important consideration which led senior civil servants in the DTI to resist changes in the regional grant regime, despite mounting evidence that large sums of money were going to capital intensive projects which would have located in the same place without a subsidy. As Sir Peter Carey, then Permanent Secretary of the Department of Trade and Industry commented in 1981:

> What is important for Government to bear in mind, I believe, is the stability of a regime of investment incentives in a regional context.... I think one has to think very carefully indeed before one makes changes in regional policy measures. One has to be very sure one is going to make a conscious change for good reasons which are going to persist for a long time. (Public Accounts Committee, 1981, 14).

This generally cautious attitude has been reflected in the approach of the DTI and its predecessors to the provision of industrial subsidies; in general, (leaving aside one or two highly political decisions taken by ministers) there has been no suggestion that they have been profligate with public money. Indeed, there are a whole series of internal and external controls to make sure that they could not be profligate, even if they so wished. First, there is the whole system of Treasury control, to which was added an additional political control (in the form of an Industrial Policy Group in the Treasury) during the 1974-79 Labour Government 'to "defuse" the Industry Department which was beginning to offer an

alternative economic interpretation to that originating in the Treasury'. (Wilks, 1984, 20). Second, there are a number of internal controls, such as the 1975 Criteria for Assistance to Industry which attempted 'to define a framework for all kinds of allocation of government funds to industry'. (Wilks, 1984, 31). In particular, the Department has placed considerable emphasis on the additionality criterion which is concerned not with a judgement about whether a company could or should go ahead with a project without a subsidy, but whether they would go ahead without government assistance. This is not the place for a discussion of the additionality concept which I have assessed elsewhere (Grant, 1981, 81-2). The main point that needs to be made is that, despite the good intentions and considerable efforts of civil servants, the additionality criterion does not achieve the desired effect; many subsidies are given to projects which are non-additional. (See, for example, Robson Rhodes 1984). Third, there are external controls in so far as most selective subsidies are vetted or allocated by boards of industrialists and outside experts. Applications for Section 7 and Section 8 assistance are cleared by the Industrial Development Advisory Boards made up of industrialists, and support for industrial research and development is provided through Requirement Boards. The membership of the Requirement Boards is drawn largely from the industries concerned, with minority participation by civil servants and government scientists. Although their formal role is to advise the Secretary of State, in practice they allocate funds to projects.

All these arrangements help to ensure that money is used for the purposes for which it was allocated, and that it is disposed of in a way

broadly acceptable to industry. However, none of these in-built checks ensures that money is used cost-effectively as well as properly; that is to say, that it contributes towards the achievement of policy objectives, as distinct from being spent in the way that was intended, and in a fashion acceptable to key client groups.

The one group within the DTI that could be said to have a professional commitment to (and a formal role in) the pursuit of cost effectiveness is the department's economists. In some respects they may be said to be marginal to the mainstream of policy formation, but this has made it easier for them to ask awkward questions and to act as 'devil's advocates', even as Mavericks in terms of the conventions of British administrative culture. In case the impression has been given that they are Don Quixotes tilting at administrative windmills, it should be added that they have been able to provide relevant economic analyses for particular decisions, and to win the cooperation of administrators by giving them bargaining counters they can use in their negotiations with firms or foreign governments. They have also produced some valuable 'after the event' analyses of particular subsidy schemes. In short, they are the one 'in house' group with a clear commitment to cost effectiveness through the analysis of policy and the application of the lessons learned to subsequent decisions.

There is, however, one recent development that does at least offer the potential of giving a greater emphasis within the DTI to questions of cost effectiveness. When Patrick Jenkin became Industry Secretary in 1981, he found that the Department had no objectives. He insisted

that such objectives should be drawn up, and broken down into a series of specific objectives for individual divisions of the department. This process has been continued by Norman Tebbit (with some 'drying out' of the objectives) and Tebbit claims that having a stated set of aims 'help us to focus on the essential and to avoid using scarce resources on peripheral activities'. (DTI 1984b). This exercise has been backed up by the creation of a Policy Planning Unit which considers broad policy questions and maintains contacts with academics through a seminar. However, the real success of this exercise will depend upon continuing ministerial commitment, and on the relevance of the objectives to the everyday work of the department. Some momentum may have been lost during the period of Norman Tebbit's enforced absence as a result of injuries sustained in the Brighton bomb attack, and it is also a little worrying that whereas the Jenkin document on 'strategic aims' mentions a thousand operational targets intended to guide the day-to-day work of the department, there is no reference to these in the Tebbit document on 'aims' (note that the word 'strategic' is omitted, one of a number of subtle but significant presentational differences).

Pressures from the centre of government

Reference has already been made to the Treasury's interest in industrial policy, if only because it consumes considerable amounts of government money, but interest may also be shown by what is referred to in lobby briefings as 'the highest political level'. As Wilks comments, 'It is quite striking how closely, if intermittently, prime ministers have concerned themselves with industrial policy' (Wilks, 1984, 289-90). This is particularly likely to be the case with a strong and determined prime

minister who has a clear conception of what she thinks needs to be done, and whose projected self-image includes an emphasis on the fact that she is the first trained scientist to hold the office. However, ad hoc interventions from Number 10 in the pursuit of public expenditure reductions, or to speed the privatisation of state industries, do not amount to a systematic concern with cost effectiveness.

I have argued in the past for 'the creation of a strategic co-ordination function, discharged by a senior minister of Cabinet rank (holding some honorific title such as Paymaster-General) with responsibility for the co-ordination of all aspects of policy concerned with both the promotion of industrial efficiency and the social consequences of industrial change'. (Grant, 1981, 46). The Cabinet Office has developed an increasing interest in industrial policy under the present administration, and this culminated in the appointment of the former chairman of the Manpower Services Commission as a minister attached to the Cabinet Office with responsibilities in the general area of job creation. However, this new appointment seems to have led to a certain amount of bureaucratic in-fighting designed to protect existing organisational territories, and for the time being the minister seems to have been left with a rather mixed and limited range of tasks. The significance or otherwise of this appointment in terms of promoting cost effectiveness can only be properly evaluated in a longer time perspective.

Regional ministries

One consequence of Britain's 'union state' form of government is that the DTI's role is largely confined to England, with considerable industrial policy responsibilities being vested in the regional ministries in Scotland, Wales and Northern Ireland (particularly the first of these). Not only do these ministries have important formal powers, but they are also present on most committees concerned with industrial policy questions in Whitehall where they are well placed to defend the particular interests of their regions. In the last resort, they have considerable political clout: for example, the Ravenscraig steel plant in Scotland was reprieved from closure in large part because of the risk of a resignation by the Secretary of State for Scotland.

This is not to say that the Scottish Office (or any of the other regional ministries) wins all its battles: for example, the Scottish Office was unable to save the Invergordon aluminium plant despite the proximity of the 1983 general election (in the event, the political price that the Conservatives paid in terms of losing the seat in which the plant was situated to the Social Democrats was a small one in the context of their overall victory). However, it is not without significance that spending on industrial subsidies by the regional ministries has increased significantly under the Thatcher Government. (See Grant and Wilks, 1983). Any case for more cost effective policies is likely to meet formidable political obstacles if it impinges on any of the vital interests of any of the regional ministries, particularly the Scottish Office.

The CBI and trade associations

The CBI has always been rather ambivalent in its attitude to industrial subsidies, which is not surprising when one considers that its ideological antipathy to such measures has to be balanced against the fact that its members benefit financially from them. However, it has always been a consistent support of regional policy and this support has undoubtedly been one of the political obstacles which helped to slow down overdue changes in the regional policy regime.

If anything, sectoral trade associations, particularly those in declining sectors, are even more likely to lobby for the continuation or introduction of subsidy programmes for their members. Quite understandably, such associations are likely to be concerned with the immediate interests of their members rather than longer term questions of cost effectiveness. Similarly, Economic Development Committees of the National Economic Development Council are likely to favour subsidy programmes which bring financial benefits to the industries with which they are concerned. One thus has a process in which the industrial policy community of DTI and regional ministry civil servants, National Economic Development Council staff and committees, and trade associations and businessmen can reinforce one another's commitment to, and support of, the incremental development of existing subsidy programmes.

Parliament

One might suppose that Parliament would have an interest in securing cost effectiveness in public expenditure, and in a sense this is the case. However, its mechanisms for doing so are relatively weak and tend to be swamped by the pursuit of more immediate constituency interests. In practice, Parliament is rather marginal in the formation of industrial policy (Coombes and Walkland, 1980), and where it is successful, it is often in the pursuit by MPs of sectoral, regional or constituency interests. An electoral system based on single member constituencies gives individual Members of Parliament a strong incentive to defend the immediate interests of their constituents; indeed, it is part of their job to do so. It is therefore not surprising that Sir Peter Carey should observe that in areas such as regional policy 'one does come up against the political decision, which is, because it involves constituencies and areas of the country, perhaps more marked than in the case of other macro-economic policies'. (Public Accounts Committee, 1981, 29). Kaufman, a former industry minister admits that it will 'be those representatives of marginal constituencies from your own Parliamentary Party whom you will most wish to help, and whose delegations you will most seek to impress'. (Kaufman, 1980, 144). However, as Kaufman also admits, there are a number of techniques for dealing with such delegations so that they leave satisfied despite not having secured a change in policy. (Kaufman, 1980, 145).

The greatest potential influence on policy can be exerted by groups of MPs within the governing party organised into backbench committees. These may be concerned with a region or a particular sectoral interest,

but, in either case, if the interest they represent is of particular significance to the party concerned (say shipbuilding in the case of the Labour Party or small businesses in the case of the Conservatives), they may be able to exert considerable pressures in defence of existing patterns of subsidy. For example, pressures from small business interests closely linked to the Conservative Party no doubt helped to secure a reprieve for the Conservative Government's problem ridden Small Businesses Loan Guarantee Scheme.

The greatest Parliamentary pressure for most cost effectiveness in industrial policies comes from the cross-party select committees, such as the Industry and Trade Committee and the Public Accounts Committee, especially the latter which has the services of the staff of the National Audit Office to draw on. In particular, a series of reports by the Public Accounts Committee on regional policy contributed to growing scepticism about the cost effectiveness of the policy, and finally to the policy changes announced by the Conservative Government in 1983. However, the Public Accounts Committee have examined regional industrial incentives on a number of occasions since 1973, drawing attention in particular to the poor value for money obtained from the Regional Development Grant scheme.

It thus took some ten years before the reports of the Public Accounts Committee had any noticeable impact on policy. This is not surprising, given the countervailing forces which support the continuation of existing policy which have been discussed, and the weaknesses of the sanctions available to the committee. As a cross-party committee, it had no means

of forcing successive governments to take account of its views. All that it could do was to produce well argued and documented reports aimed at informed opinion in the hope that its exposure of the inadequacies of existing policy would lead to a change of direction. This eventually happened, although only in the context of a government anxious to seek reductions in public expenditure and with its political base largely outside the deprived regions. The Public Accounts Committee is one of the few mechanisms for promoting greater cost effectiveness in industrial policy, but one cannot expect too much from it. In so far as it does secure policy changes, these tend to come about through an indirect impact on informed opinion rather than a direct impact on government policy. Hence, they tend to be secured slowly, if at all.

Academics

Academics tend to underrate their own influence on policy formation, or at least they do not talk about it very much, perhaps because of embarrassment about a possible conflict of interest between their analytical and advisory roles. Be that as it may, they do have an influence on policy-making, particularly in terms of placing issues on the political agenda, and contributing to the debate about possible new policy initiatives. This influence is often exerted in a rather indirect way, through research reports for government departments, royal commissions, parliamentary committees or pressure groups; through formal or informal discussions with civil servants; or through acting as advisers to opposition parties. However, as one experienced business association official has commented in relation to the influence of the academic

world, 'Its direct role in the day-to-day pressures may not be great, but its influence on the longer-term consideration of issues which one knows are going to flare up sooner or later can be considerable'. (Stocker, 1983, 256).

The most significant academic body operating in the area of industrial policy is one organised around a particular approach to policy, the Regional Studies Association. Its members are largely geographers, town planners, and economists (it would seem that few political scientists are members), and although there is clearly disagreement among the members about the kind of regional policy that should be pursued, the members of the Regional Studies Association share a clear commitment to some form of regional assistance. (See RSA, 1983). Of itself, such a commitment is unobjectionable, but it is significant that the only organised body of academic opinion operating in this area is committed to a particular type of industrial subsidy. Outside of government, only a few unorganised individuals (largely political scientists) have sought to tackle the wider issues of cost effectiveness that an industrial policy raises.

The European Community

In the autumn of 1984, the British and Dutch Governments were engaged in an industrial subsidy competition to obtain for their countries a £7 million expansion project by the Mid-Wales based Laura Ashley fashion and design group. Having sought to match the original Dutch offer, the UK Government found itself faced with a last minute offer of even more

aid from the Netherlands, but the attached conditions were not attractive to the company. Subsidy competitions of this kind are not in the interests of the member states or of the Community as a whole; the only real beneficiaries are the companies that are subsidised. As Wilks comments, 'competitive bidding between states for major investments is a serious problem, which limits the autonomy of any individual government'. (Wilks, 1984, 259).

The European Community has, in principle, a considerable interest in preventing such competitive bidding between member states; and the member states themselves would benefit from an agreement to restrain such practices, if one could be sure that any agreement would be strictly enforced (the first state to 'break out' of such an agreement might, of course, be able to make substantial short-term gains in terms of inward industrial investment). In practice, what the European Community has done is much more limited. Leaving aside the special case of steel, where the Treaty of Paris provides the Community with more extensive powers than those available under the Treaty of Rome, the Community has taken a number of actions which, although not without significance, do not add up to any kind of coherent policy which might encourage greater cost effectiveness in the use of industrial subsidies by member states.

The Community sets an overall ceiling for the amount of aid that can be provided in different areas; these ceilings are not a constraint in the British case, as the level of aid offered is generally well below the permitted level. It has intervened to stop particular subsidies (as in the Philip Morris case) or to curb particular tax incentives

offered to investors (as in the case of the Irish Republic). It has also developed certain sectoral policies as, for example, in shipbuilding with the objective of securing a progressive reduction in the level of subsidy. However, such objectives are difficult to pursue against a background of poor demand and global overcapacity, particularly when an industry is concentrated in depressed regions, as is often the case with shipbuilding. In March 1984 the Commission proposed an extension to 31 December 1986 of the Fifth Directive on Shipbuilding. 'The extension was proposed because no recovery in the shipbuilding market is forseen before then so restructuring will need to be continued and aids to shipbuilding will continue to be required'. (Cmnd. 9348, 21).

Of course, rather than tackling the symptom of subsidy, the Community could seek to tackle the underlying problem of overcapacity in depressed industries. However, this is easier said than done. In particular, it depends on the willingness of other world producers (such as Japan) to conclude and abide by agreements. Even within the Community itself, there may be a lack of enthusiasm for (or, at least, a lack of agreement on) 'crisis cartel' measures which could be taken by the Community, as the case of petrochemicals shows. Given the general political difficulties of the Community, one cannot anticipate that it will be able to exert any strong influence on the use made by member states of industrial subsidies in the foreseeable future.

The Organisation for Economic Cooperation and Development

It could be argued that there are stronger grounds for optimism about the capability of the OECD to exert an influence on the industrial subsidy policies of its member states in the direction of greater cost effectiveness than in the case of the EEC. First, the OECD does embrace all the western industrial nations (although this wider membership also makes agreement in principle more difficult to reach). Secondly, and perhaps more important, it could be argued that the OECD has made a more useful contribution to the debate on industrial policy than the EEC through its development of the concept of positive adjustment policy. (OECD 1983a).

Following a 1979 publication on 'The Case for Positive Adjustment Policies', the OECD initiated a programme of work on positive adjustment policies. This led to a Statement on Positive Adjustment Policies adopted by the OECD Council at Ministerial Level in 1982. In broad outline, this emphasised that aid to structurally weak industries should be temporary and reduced according to a prearranged timetable; saw a role for government in promoting a climate favourable to innovation; and called for manpower policies to put a renewed emphasis on measures designed to improve labour market adjustment, and to avoid locking labour into declining activities.

Of course, it is one thing for ministers to sign a general declaration and even, as they did, to urge its effective implementation, and another thing to actually put those policies into effect. The fact that a particular policy approach has been endorsed by the OECD will make little impression on sectoral or regional interests at the national level. For the OECD principles to be translated into effective action at the national

level requires an act of domestic political will which may not always be forthcoming. As the OECD itself admits, 'Almost inevitably, under conditions of persistently slow growth and high unemployment, governments face increasing resistance to their determination to respond positively to the need for structural adaptation'. (OECD, 1983a, 5).

It would be too easy to be cynically dismissive of such efforts. At the very least, they do provide a valuable learning experience for policy-makers. As the OECD comments, 'The exchange of experience in dealing with structural adjustment problems has improved mutual understanding between policy-makers... It has also helped Member countries to learn from each other's successes and failures'. (OECD, 1983a, 6). In particular,

> the active dialogue between those who normally work in the field of macro-economic policies and those who deal with more specialized micro policies has considerably increased the awareness of policy-makers, at all levels, of the interrelationships between macro-economic performance and structural adjustment, of the need for consistency between macro- and micro-economic policies, and of the macro-economic and international implications of all kinds of structural policies. (OECD, 1983a, 6).

Apart from general work on identifying and evaluating government intervention, the OECD has followed up the 1982 statement with intensified efforts to tackle the structural difficulties of particular sectors such as steel or shipbuilding, and a number of studies on adjustment policies in particular sectors. For example, the OECD has produced a report on

positive adjustment policies in the dairy sector which analyses the policies pursued in different countries, draws attention to policies which have insulated the sector from changing economic circumstances, and points to policies which could be followed in the future. (OECD, 1983b). One of the welcome aspects of the report is that it evaluates policies not only in terms of their relationship to the restoration of market forces, but also in terms of the political ease with which they can be brought about. I am strongly of the view that good industrial policy-making involves not just the sensible application of sound economic theory, but also an appreciation of the political obstacles likely to be encountered in the implementation of policy. (For a more general development of this argument, see Grant and Nath, 1984).

Behrmann goes so far as to argue the case for an OECD industrial policy which 'would seek to channel industrial activities into those sectors that would produce the desired results for mutual goals of wealth and power, while at the same time seeking to minimise economic and social costs in an equable fashion'. (Behrmann, 1984, 128). Behrmann acknowledges that there are a number of obstacles which could prevent OECD members cooperating more effectively, above all 'the absence of any agreed criteria of acceptability of any industrial strategy, and the other is an absence of a community of interests sufficient to cause the acceptance of bargains that may be perceived to be somewhat inequitable'. (Behrmann, 1984, 145). It is probably premature to talk in terms of an OECD industrial policy, but the fact that the issue can be raised at all is an indication of the progress that the OECD has made. It seems to have made more of the possibilities open to it - and has, to some extent, enlarged those possibilities - than the EEC has been able to do with its greater formal powers.

The importance of policy analysis

The general theme of this paper has been that one cannot expect very strong, consistent or effective pressures for greater cost effectiveness in the use of subsidies to emerge from the industrial policy community itself, although Prime Ministerial or ministerial initiatives, properly sustained, can do something to overcome inbuilt inertia. In the longer run, international agencies may be able to exert an important influence on domestic subsidy policies in the direction of greater cost effectiveness, but that is largely a future hope, rather than a description of the present situation.

It is therefore important to ensure that there is an effective policy analysis community[5] made up of civil servants, academics, the staff of international organisations, the staff of bodies such as the National Economic Development Office etc. which can influence the debate on policy measures through the use of evidence, argument and analysis. This is not a self-interested plea for making more money available for academic research; in any case, what is often required is not new research, but the intelligent distillation of existing findings. What is also important is that there should be links for the exchange of information and ideas between the members of the policy analysis community. Increasingly, this exchange will take place at an international level. As the OECD emphasises in its statement on positive adjustment policies, 'The dividing line between domestic and international policies has become increasingly blurred. There is a risk that domestic policy distorts international competition, thereby shifting adjustment burdens and unemployment problems on to other countries'. (OECD, 1983a, 116).

It may be that this workshop, or any group which emerges from it, may be able to make its own modest contribution to strengthening the policy analysis community. Of course, one should not underestimate the difficulty of the task; on the other hand, well sustained reasoned argument can influence the policy debate in the long run. After all, 'Our doubts are traitors, And make us lose the good we oft might win, By fearing to attempt'. (Shakespeare, 1604?. 76).

NOTES

1. The cost per job at 1982 prices was £35,000. It was suggested in questioning at the Public Accounts Committee that the figure in 1984 prices would be £40,000 and this assumption was not challenged by the Department of Trade and Industry's representatives. (Public Accounts Committee, 1984, 22).

2. The following discussion of the scheme is based on Lambert (1983). Lambert's report is not pagenated, nor is it likely to be widely available in libraries, and detailed page references will not be given.

3. The discussion of phase two of the wool textile scheme is based on Potter and Davies (1983).

4. There is reason to believe that this is not an idiosyncratic finding. The report on the first phase of the wool textile scheme noted a 'pattern of proprietorship in the industry in which owners identify closely with their companies and are unlikely to get positions of similar status and responsibility elsewhere. Many therefore prefer to continue to make low profits rather than sell out and be left without position'. (Gane, 1978, 26).

5. The term 'policy analysis community' is not my own; I first heard it used by Geoff White of HM Treasury.

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An international comparison of subsidies to biotechnology - the relationship between private business and public authorities

Contribution to the Workshop
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Preface

This paper reports preliminary results of a research project on "The political consequences of the restructuring race between OECD-countries" which started in 1983. It is financed by ZWO, the Dutch national funding agency for basic scientific research.
Within the framework of this project, the political consequences of parallel support of two sets of technologies are analyzed: of factory automation which may increase the productivity gap between highly industrialized countries (cf. the paper submitted to the same workshop by Rob van Tulder on "Subsidies for the Development of CAD/CAM Equipment in Major Industrial Countries - Political Background and International Interaction") and of biotechnology which may radically alter the international division of labour in the field of agriculture and raw materials.

The present paper is partly based on two earlier studies:

> Gerd Junne - European Multinationals in Biotechnology, Pilot Study for the Institute for Research and Information on Multinationals (IRM), Geneva, August 1984, and
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> Kees van den Doel, Gerd Junne - De gevolgen van de toepassing van de biotechnologie voor de internationale betrekkingen, Contribution to the Technology Assessment Biotechnology of the Dutch Ministry of Education and Science, March 1985.

It also benefitted from the work that other project members - Annemieke Roobeek and Guido Ruivenkamp - have done on biotechnology.

The present comparison of government efforts in the field of biotechnology, however, is at a very early stage of elaboration. The purpose of this paper is to write up the available information on government support for biotechnology in different countries and to formulate a number of hypotheses. These will serve as a background for a round of interviews that will take place during the summer in order to get additional information on the origin of the support programs, different attitudes of different political actors, and the interaction between biotechnology programs in different countries. At the IPSA conference in July, an improved version will be available.

1. Introduction: Biotechnology as a Strategic Sector

Biotechnology is expected to play a similar role in the restructuring of the economy (and in changes of everyday life) in the 1990's and early in the 21st century as microelectronics has done in the 1970's and the 1980's.
It will have a farreaching impact on agriculture and the raw material base of the economy. It will change the food industry, the pharmaceutical industry, the chemical industry, the mining industry and eventually even influence developments in microelectronics. It will give rise to many new materials, many new products and many new production processes. It promises to make a major contribution to economic growth, while at the same time alleviating some of the problems created by economic growth: the energy problem, the mineral resources problem, the health problem and the environment problem. Given these expectations, it is no surprise that governments all over the world recently have given high priority to programs supporting the development of biotechnology. Since it is not only a new area of growth, but since it has fundamental implications for almost all sectors of the economy, biotechnology can be regarded as a "strategic sector", - not in the military sense but in the economic sense of being decisive for the future international competitiveness of national economies.

1.1. Definition of Biotechnology

There are many different definitions of biotechnology which refer, however, to the same set of technologies. According to an OECD-study on biotechnology, it is defined as

> "the application of scientific and engineering principles to the processing of materials by biological agents to provide goods and services".[1]

The terms "application of scientific and engineering principles" and "biological agents" are concretized in the definition of the European Federation of Biotechnology which has defined biotechnology as

> "the integrated use of biochemistry, microbiology and engineering sciences in order to achieve technological (industrial) application of the capabilities of micro-organisms, cultured tissue cells and parts thereof".[2]

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1 Alan T. Bull, Geoffrey Holt, Malcolm D. Lilly - Biotechnology. International Trends and Perspectives, Paris (OECD) 1982, p. 21.

2 European Federation of Biotechnology (EFB) - Definition of Biotechnology, EFB Newsletter Nr. 5 (September 1982), p. 2.

For the purpose of the present analysis, it is not necessary to stand still at the intricacies of these definitions. It is enough to realize that biotechnology has to do with the industrial use of the capability of microorganisms such as bacteria, plant and animal cells and enzymes to produce an extremenly broad spectrum of different substances and to convert different substance into others.
With the progress made in the field of "genetic engineering" (especially the ability to transplant specific characteristics of one species into the genetic code of another: recombinant DNA technology) since the early 1970's, the capabilities of microorganisms can be enhanced in such a way that the range of fields where these capabilities can be used profitably has been extended considerably.

Biotechnology is not all that new. For centuries mankind has made use of the productive capacity of microorganisms for baking bread, making cheese, brewing beer and producing wine. However, because of the new insights in genetic engineering, microbiology and fermentation technology, "modern biotechnology" has a by far wider range of possible applications than "traditional biotechnology".

1.2. Perceptions of Governments

Governments have realized this potential during the 1970's. Especially at the end of the decade, there has been a proliferation of national reports that emphasize the crucial importance of modern biotechnology for future economic development. This increased consciousness cumulated in the publication of eleven major reports published in 1981 alone.[1] Many top politicians since then have underlined this importance and stressed that their government is willing to accord high priority to future developments in this field.
The French president Mitterand said that he expected biotechnology to have the most farreaching consequences of all the new technologies.[2] The German Minister of Foreign Affairs, Genscher, stressed in a speech to business leaders that microelectronics and biotechnology presently are at the centre of a revolutionary technological development. Those that will not be able to keep up with the development in these two fields will run the risk to lose track in all

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1 Commission of the European Communities - The FAST Programme, vol. 1: Results and Recommendations, Brussels, December 1982, p. 19.

2 Cf. Discours prononcé par F. Mitterand à l'occasion du Colloque National sur la Recherche et la Technologie, 13 Janvier 1982.

the others as well.[1] The Japanese Ministry of International Trade and Industry (MITI) has described biotechnology as "the last revolutionary development of this century".[2] And the first chapter ("Towards a 'Bio-Society' ?") of the European Community's FAST report, written to contribute to the definition of long-term Community research and development objectives and priorities, is entirely devoted to biotechnology.[3]

1.3. Research Question and Hypotheses

Given the considerable emphasis placed on biotechnology, it seems interesting to investigate how national biotechnology programs have come about. This could be a case study to throw some light on the policy process behind subsidies for high-technology industries in general. It can be expected that this policy process significantly differs from the process that leads to subsidies for ailing sectors. Established sectors of the economy normally have a well-established access to public policy making. They have well organized associations that can lobby for them. Their representatives have time to devote to participation in political decision making; some of the representatives may even have become politicians themselves. Since established sectors provide considerable employment, management can enter coalitions with trade unions which will exert some pressure on the labour-friendly side of the political spectrum. Since these sectors have a considerable impact on the economic development of specific regions, they normally can mobilize regional support for their points of view, influencing the behavior of political representatives of the regions in question.

All this is different in the case of new industries. They will often not have their own associations, or these associations will not have much experience yet. Their representatives have to devote almost all their time to the expanding business, leaving less time and attention for political processes. Their work force is still small. Consequently they will have difficulties to find allies among trade union representatives. This is also difficult because employees in small, new companies are less often trade union members. Their impact on regional

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1 Hans-Dietrich Genscher - Die Technologische Herausforderung. Lecture for the members of the German employers' association ('Bundesvereinigung der Deutschen Arbeitgeberverbande) on 13 december 1983, p. 18/19.

2 MITI.

3 Commission of the European Communities - The Fast Programme. Vol. 1: Results and Recommendations, Brussels, December 1982, pp. 8 - 72.

development is not yet felt. They therefore will be less able to exert enough pressure on regional politicians to have their case supported.

Because of these differences, it can be expected that business plays a less important role in the formulation of public policy with regard to new high-technology sectors than with regard to ailing sectors. This is a first hypothesis to be tested.

The second hypothesis is that national science bureaucracies (in ministries of education and science as well as in national funding organizations) in an early phase of a technology's development are highly influenced by each other. Most new technologies come up in a specific country (or undergo a faster development in a specific country) with the result that other countries are lagging behind. Bureaucracies in these countries will orientate themselves at the example of the most advanced country which defines the "state of the art". There is also an element of risk-aversion in this attitude. The fact that other countries start to "target" the new industries can be a reason for the most advanced country to increase its own subsidies in order to stay ahead of developments elsewhere. I therefor suppose that there is a strong interactive element in subsidy policies of different countries. At least in an early phase, it may not be the internal policy process that is decisive for the explanation of subsidies, but the interaction between different national programs.

A third hypothesis is that the influence of private business will increase over time. During an early phase, government programmes and priorities may be stronger influenced by scientists that will give advice on developments that are technologically feasible and desirable. Once the feasibility is proven and development approaches the phase of commercialisation, private (and, perhaps, public) enterprises will become more involved and will try to steer the development into the direction of what might be viable from a commercial point of view. They will take their own position in international markets into account and try to boost the development of products and processes that the national companies will be able to bring to the market.

1.4. The Argument

To test the hypotheses, the following chapter II will present the material available on subsidies paid in a number of OECD-countries. Unfortunately, this information does not yet allow definitive conclusions. Additional information will be necessary that will be collected in interviews to be held in spring and summer 1985.

Some tentative conclusions, however, will be advanced in chapter III. The first is that in most highly industrialized countries, cooperation between public authorities and private business has become so close that it is difficult to talk about clearcut subsidies in many cases. In a high-technology field such as biotechnology, cooperation between universities and private companies, for example, has become very intense. Both sides of such an arrangement get advantages from such a cooperation. There is a subsidiy element in these arrangements, but it is very difficult to arrive at a concrete amount which could be regarded as a "subsidiy equivalent".
Some information is available on the shift of emphasis in public programs and on the influences that have caused these shifts. The public sector seems to have an important role in the definition of public programs, but private companies have made their weight felt right from the start. The extent of this, however, differs from country to country.

With the important role in supporting the new industries in their respective country, governments have become engaged in a kind of "biotechnology-race", which is part of a more general "restructuring race" in which the major OECD-countries seem to have been caught. This has been discussed elsewhere in detail.[1]

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1 Kees van den Doel, Gerd Junne - De gevolgen van de toepassing van de biotechnologie voor de internationale betrekkingen, Contribution to the Technology Assessment Biotechnology of the Dutch Ministry of Education and Science, March 1985.

2. National Support Programs for Biotechnology

Since biotechnology finds many different applications, research in biotechnology is financed by many different agencies in different countries. It is often not possible to identify biotechnology-relevant research because it can be an integrated part of e.g. an agricultural program (development of new varieties) or a programme on road transport (alternative fuels) etc. There are therefore only very rough comparisons of expenditures in different countries. The European Community recently tried to make such a comparison:

Table 1: Estimates of Public Expenditures on Biotechnology R+D[1]
(in million ECU, 1982/83)

	Biotechnology "proper"	"Biotechnology-relevant"
United States	225*	618*
Japan	56*	
West Germany	36	132
France	31	84
United Kingdom	46	59
Italy	13	34
Netherlands	10	26
Belgium	7	14
Denmark, Greece, Ireland, Luxembourg	3	6
European Community	146	355

(* at a rate of 1 $ = 1,123 ECU)

The amounts given probably have increased during the last two years.

2.1. Expenditures in the United States

According to the Office of Technology Assessment of the U.S. Congress, "federally funded basic research in the United States has been essential to the development of biotechnology" and "the Federal commitment to basic and

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1 Commission of the European Communities - Biotechnology: The Community's Role, "Background note": National initiatives for the support of biotechnology (Communication from the Commission to the Council), COM (83) 328 final / 2, Brussels, June 1983, especially Table 4 on p. 34.

generic applied research ... will be a necessary element in the commercialization of biotechnology in the coming years".[1]

U.S. Government funding of biotechnology research at present concentrates almost exclusively on basic research.[2] Government agencies funding basic research in biotechnology are the National Institutes of Health, the National Science Foundation, the U.S. Department of Agriculture, the Department of Energy, and the Department of Defense.[3] Of these, by far the most important has been the National Institutes of Health (NIH). NIH has been for biotechnology somewhat the same as the Pentagon has been for the development of microelectronics.

Applied research is largely left to industry. Applied biotechnology research is almost exclusively financed within the framework of the Small Business Innovation Research (SBIR) program, established in 1982.[4] However, much of the funds flowing to small companies (about $ 5 million annually for biotechnology projects) are also in the interest of large companies. In order to get substantial amounts, "the law requests (but does not require) the proposer to obtain a follow-on funding commitment from a third party, usually a large corporation or a venture capital firm."[5]

"Bridging the gap between basic and applied research is 'generic applied' research, which is more specific than basic research, but longer term and more risky than most applied research."[6] According to the Office of Technology Assessment (OTA) of the U.S. Congress the limited funding of generic applied reseach constitutes a risk for America's international position, because as a result "Americans may not be as efficient as the Japanese in applying the scientific base to the development of marketable goods and services."[7] The stronger concentration of Japanese public funding on generic applied research

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1 Commercial Biotechnology: An International Analysis, Washington D.C.: U.S. Congress, Office of Technology Assessment, OTA-BA-218, January 1984, p. 307/308.

2 Commercial Biotechnology, Table 56, p. 309.

3 Commercial Biotechnology (p. 309) refers to a document of the American Association for the Advancement of Science for a detailed analysis of agency budgets: "R and D in the FY 1984 Budget: A Preliminary Analysis", Washington D.C., March 1983.

4 Commercial Biotechnology, p. 313.

5 Commercial Biotechnology, p. 314.

6 Commercial Biotechnology, p. 308.

7 Commercial Biotechnology, p. 323.

(see below, p. 9) is used as an argument in the U.S. to extend this kind of funding in the U.S. as well: "If current funding levels for bioprocess engineering research are not increased, the United States' competitive position in biotechnology may not be as strong in the future as it is now."[1] Consequently, OTA suggests different ways to increase funding of generic applied biotechnology research. Several of these measures would directly benefit industry.[2]

Some of the measures proposed, however, are defended by a very different argument: They would mobilize industry resources for universities. What we can see more and more often is that private companies are approached to finance research at public institutions. Especially in the field of biotechnology, a flow of subsidies from the private to the public sector has come about. Of course, private companies do not provide this money for nothing. They get influence on the direction of research in return, as well as the right to commercialize research results. If their expectations that benefits will exceed the costs are fullfilled, it will be difficult to talk of subsidies from the private to the public sector. -

2. Expenditures in Japan

As in the U.S., several Government agencies are funding biotechnology research in Japan: the Ministry of International Trade and Industry (MITI), the Science and Technology Agency (STA), the Ministry of Agriculture, Forestry and Fisheries, and three other Government agencies. "This research is a mix of basic, generic applied, and applied."[3] The fact that the Japanese Governments spends much more on generic applied and applied research than American agencies, gives Americans the impression that by their own emphasis on basic research, they subsidize Japanese companies which are allowed "to make optimal use of the basic scientific knowledge of the United States and other countries and very effecniently develop this knowledge into marketable products."[4]

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1 Commercial Biotechnology, p. 323. It is interesting to note that a beginning toward a federally funded generic applied research base in bioprocess engineering (in biocatalysis technology), started in 1981, was terminated in 1984. For an analysis of subsidy policy, reasons for the termination of programmes are at least as interesting as reasons for their creation.

2 E.g. increasing funding for university-industry cooperative programs, - see Commercial Biotechnology, p. 325.

3 Commercial Biotechnology, p. 317.

4 Commercial Biotechnology, p. 323.

Whereas MITI only started major biotechnology programs at about the same time when major support programs came about in France and Great Britain, STA already in 1973 founded an Office for Life Science Promotion. Its research and development programs in fields related to biotechnology were the largest and best funded in Japan until MITI's entry in the field. "Even today, STA's programs are comparable in scale to those of MITI".[1]

Technological strategy is typically formed by a "bottom-up" process in Japan, and private companies took the initiative for the formulation of biotechnology programs as well. Five major Japanese chemical companies organized a joint study group called the Biotechnology Forum after the announcement of the Cohen-Boyer patent for the basic rDNA process in 1980. According to the OTA-study on "Commercial Biotechnology", this Forum was instrumental in lobbying for the establishment of MITI's three major 'next generation' biotechnology" projects.[2]

In 1981, MITI established an Office of Biotechnology Promotion within its Basic Industries Devision "to provide policy oversight for MITI's biotechnology effort and to serve as liaison between MITI's Biotechnology Long-Term Vision Advisory Group and possible MITI efforts to obtain from the Japanese Diet special legislation governing the promotion of biotechnology in Japan. This special legislation, however, will probably not come about. A major reason for this is the international interaction between national programs. Up to now, it was assumed in this paper that international interaction would lead to an overall increase of national efforts to promote new industries. The OTA-study, however, mentions in a footnote as a prominent reason why the passage of a special program has become unlikely the visible American concern with Japanese Government aid to high-technology industries.[3] International interaction may, therefore, also contribute to decrease national subsidies. As a matter of fact, much of the OECD and GATT activities aim at a diminishing role of Ggovernment in subsidizing industry. The attitude of these organizations, however, is more critical with regard to subsidies to ailing industries than with regard to measures that stimulate new technologies (see below, p.). MITI's "next-generation" biotechnology projects are part of a 10-year program that is specifically designed to develop and diffuse biotechnology among

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1 Commercial Biotechnology, p. 476.

2 Projects in rDNA technology, bioreactors, and mass cell culture, see Commercial Biotechnology, p. 478.

3 Commercial Biotechnology, p. 476.

Japanese companies.[1] The amounts of subsidy, however, are not really impressive. As in other fields, MITI plays a coordinative role rather than providing large-scale financial backing. It is not only private industry that is coordinated. In a situation of "interministerial rivalry and competition"[2], cooperation between government agencies and private companies can also lead to more coordination within government at the initiative of industry: A planned MITI "next-generation" project in cell fusion, e.g. was stopped, after discussions with industrialists, "because the chemical companies ... were already rather advanced in this area, and because the Ministry of Agriculture, Forestry, and Fisheries and the Ministry of Health and Welfare were developing their own programs in the field."[3]

Given the peculiar Japanese context of very close cooperation between government agencies, private companies and universities, it is difficult to trace initiatives for subsidizing specific sectors. Because of the comparatively strong concentration on the industrial application of biotechnology (rather than basic research), it can be assumed, however, that industry had an overwhelming influence on the process that gave shape to the Japanese biotechnology programs.

2.3. Expenditures in the European Community

Inside the European Community, the largest government outlays for biotechnology can be found in the Federal Republic of Germany, which is also the country where a very early start was made with the support of biotechnology.

2.3.1. Expenditures in West Germany

As early as 1972, a program to promote biotechnology was adopted in the Federal Republic. The groundwork for a comprehensive Federal policy was laid by a report prepared by DECHEMA, the private research association of the German chemical engineering industry, which was published in 1974 and updated

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1 "According to a recent MITI policy statement, it is not feasible to rely on the private sector for biotechnology-related research that involves huge economic risks, so 'the Government itself must take the initiative in such R+D, while at the same time offereng assistance to private corporations in various forms to expedite this R+D'." - Commercial Biotechnology, p. 479.

2 Commercial Biotechnology, p. 476.

3 Commercial Biotechnology, p. 478.

several times since then to follow the "state of the art" and make suggestions for further developments in the Federal Republic.[1] Federal Government expenditures on research and development in biotechnology have increased steadily.

Table 2: Federal Government expenditures on research and development in biotechnology[2]

1974	24.6 mio. DM	1978	52.8 mio. DM
1975	41.2 mio. DM	1979	58.3 mio. DM
1976	44.3 mio. DM	1980	60.4 mio. DM
1977	52.2 mio. DM	1981	66.6 mio. DM

Much of this goes to nonprofit research centres such as the Gesellschaft für Biotechnologische Forschung (GBF) with a budget of almost DM 28 mio. in 1984[3], and to the 24 institutes and project groups of the Biology and Medicine Section of the Max-Planck-Gesellschaft. These institutions cooperate closely with German industry.[4] The research institutes "have boards of directors with strong industrial representation, so their research strategy is thus usually formed by a 'bottom-up' process".[5] Given the close cooperation between public research institutes and private companies, there does not seem to be competition between public research organizations and private industry for public funds.

An analysis of central government outlays only would underestimate the overall public support for new technologies such as biotechnology. Since research and education to a large extent falls under the responsibility of regional government (the "Länder"), substantial amounts are added at that level. The Government of Baden-Württemberg has, for example, approved DM 30 mio. for the construction of a new molecular genetics institute at Heidelberg, which will be supported also by the BMFT (DM 13 mio. over three years) and by BASF (DM

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1 The most recent (fourth) edition is DECHEMA (Deutsche Gesellschaft für Chemisches Apparatewesen e.V.) - Biotechnologie 82, Frankfurt 1982.

2 Bundesministerium für Forschung und Technologie, Faktenbericht 1981 zum Bundesbericht Forschung, Bonn 1982, p. 83.

3 GBF - Programmbudget 1983, Braunschweig 1982, p. 7.

4 Only for four out of 17 areas of activity, the GBF has no industrial partner, - see GBF - Wissenschaftlicher Ergebnisbericht 1982, Braunschweig 1983, p. 4. For the cooperation of the Max-Planck-Gesellschaft with industry, see Rainer Herbeck - Biotechnology and Technology Transfer Views of a Major German Research Organization, in: Biotech 83, pp. 795-802.

5 Commercial Biotechnology, p. 478.

4 mio. over five years).[1] Given the location of the institute and its immediate benefits for BASF, the public spending contains a considerable subsidy element hidden in the budget for universities. A similar project in West Berlin is jointly financed (DM 40 mio. each over ten years) by Schering AG and the city's Technical University.[2] The largest federal state, Nordrhein-Westfalen, also makes efforts to boost biotechnology research on its territory.[3]

Japan and West Germany have a strong chemical and pharmaceutical industry which stimulated government activity in the field of biotechnology at an early stage. Where the chemical industry is less important, as in France and Great Britain, support programs have been initiated much later, and Government itself had to play a more active role to start activities in the field.

2.3.2. Expenditures in France

Public involvement in biotechnology, in France, started more or less with commissioning a report on the "Sciences de la vie" in 1978, which underlined the importance of the field but did not discuss measures to be taken by public authorities to enhance the development of biotechnology.[4] Such measures were proposed in the "Pelissolo-Report"[5], published in 1981. The new socialist government chose biotechnology as object of one of seven major technological "programmes" on which the majority of all civilian research funds should focus. A "Mission des Biotechnologies" was established in August 1981 and produced a planning document for biotechnology in France in July 1982.[6] During the first three years (1983-1985) of a mobilisation program for the next ten years, about FF 600 mio. should be invested.[7] However, these plans proved to be

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1 Commission of the European Communities - Biotechnology: The Community's Role, 'Background Note', COM(83) 328 final/2, p. 16.

2 Schering AG - Presseinformation: Gemeinsame Initiative des Landes Berlin und der Schering AG auf dem Gebiet der Biotechnologie, September 23, 1982.

3 Zukunftstechnologien in Nordrhein-Westfalen, Presse- und Informationsamt der Landesregierung Nordrhein-Westfalen, Düsseldorf 1984, pp. 97-106.

4 François Gros, François Jacob, Pierre Royer - Sciences de la vie et société. Rapport présenté au Président de la République, Paris (Documentation Française) 1979.

5 Jean-Claude Pelissolo - La biotechnologie, demain ? Rapport au Premier ministre, Paris (Documentation Française) 1981.

6 Commercial Biotechnology, p. 477.

7 Margaret Sharp - Research note on 'Biotechnology in France', University of Sussex, August 1982, p. 12.

overambitious. France lacks a sufficient supply of trained researchers in this field, "because the biological disciplines have not traditionally been favored in France".[1] According to the OTA-studie, "enthusiastic French Government officials advocated generalized support of R+D projects" in biotechnology "regardless of the prospects for successful exploitation, to the dismay of industrialists who doubted the viability of some of the projects designated to receive Government support."[2] Obviously, industrialists' role in policy formulation has been less prominent in France than in West Germany or Japan.

Since the nationalization of major companies by the socialist Government, it has become more difficult to distinguish between government policy and company strategy. Of the three major French companies with important research programs in biotechnology, Elf Aquitaine is 67-percent government owned, Rhône-Poulenc 100 percent, and Roussel Uclaf 40-percent (with the rest owned by Hoechst from West Germany).[3]

2.3.3. Expenditures in Great Britain

The British Government subsidized the development of enzyme technology already during the sixties.[4] There were many uncoordinated short-term programmes during the seventies, and funding declined because of the general adverse economic situation. Massive government help has emerged relatively late.[5] The starting point of a more coordinated policy has been the publicaton of the Spinks report[6] in spring 1980, named after Alfred Spinks, formerly director of research at ICI[7], chairman of an advisory committee on biotechnology which suggested a considerable increase in government spending.

The Government in 1983 borrowed three industrial experts (from ICI, Glaxo and BP) to monitor what British industry is doing - or failing to do - in biotechnology. The group has identified several priority areas where it believes

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1 Commercial Biotechnology, p. 324.

2 Commercial Biotechnology, p. 479.

3 Commercial Biotechnology, p. 75.

4 Albert Sasson - Les biotechnologies; Défis et promesses, Paris (UNESCO) 1983, p. 278.

5 Christopher Farrands - The Biotechnology Boom in Europe, The Economist Intelligence Unit, European Trends, No. 3 (1983), p. 37.

6 Biotechnology: a report of a joint party (Advisory Council for Applied Research and Development, Advisory Board for the Research Councils, The Royal Society), March 1980.

7 Commission of the European Communities - Biotechnology: The Community's Role, 'Background Note', COM(83) 328 final/2, p. 25.

Britain can and should be strong. The Government is prepared to fund the cost - up to one third - of selected research and development projects.[1] Actually, about £ 40 million were set aside for biotechnology in 1983, an amount which is said to equal the funding in West Germany or France.[2]

2.3.4. Expenditures in other EC-Countries

In other EC-countries the development of biotechnology is supported as well. In Italy, this support is channeled through the Ministry of Scientific Research and the National Research Council. As in France, some of the important firms with activities in biotechnology are state-owned (as Soreni, a subsidiary of ENI). However, "it is generally recognised that research at Universities and research initiated by the National Research Council need more coordination and concentration to become effective".[3]

In the Netherlands, Government spending on biotechnology recently has increased considerably. One company alone, Gist-Brocades (the world's largest penicillin producer and the second largest producer of enzymes), will get 100 mio. guilders (more than $ 25 mio.) from the Government during the next five years to expand research and investment.[4] Government efforts aim at an incresing coherence of research and development efforts in universities, research institutes and industry.[5] In Belgium, too, much of Government activity in the field serves to gear academic research to commercial exploitation.[6] In Denmark, the Government supports biotechnological research through the Science Councils. The Danish state is directly involved in biotechnological production through the Statens Seruminstitut, the sole producer of human vaccines in the country.[7]

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1 Financial Times, 11 May 1984.

2 Nachrichten für Außenhandel (Eschborn) 6 May 1983. According to Farrands (p. 37), this claim does not stand scrutinity.

3 R. Falin. F. Parisi - Biotechnology in Italy, in: E.H. Houwink - A Realistic View on Biotechnology, European Federation of Biotechnology, Frankfurt, September 1984, p. 97.

4 Volkskrant, 26 October 1984. The example of Gist-Brocades might be a worthwhile topic for a case study. It seems that the company got much more from the Government than it demanded.

5 E.H. Houwink et al., R.R. van der Meer - Biotechnology in the Netherlands, in: Houwink (ed.), p. 103.

6 W. Fiers, E. Wulfert, J. Vekemans - Biotechnology in Belgium, in: Houwink (ed.), p. 68.

7 H. Barfoed, E. Falch - Biotechnology in Denmark, in: Houwink (ed.), p. 72.

2.3.5. Expenditures by the European Community

Beside the different member countries, even earlier than most of them, the European Community started with the preparation of a biotechnology programme. In 1975 the Commission issued preparatory documents for a Community programme in biomolecular engineering.[1] It took more than six years, however, before the Council of the European Community finally adopted the Biomolecular Engineering Programme (1982-1986) in December 1981. The reason why it took such a long time to arrive at a common programme was that the Community proposals had contributed to the awareness of governments of the potential of biotechnology, and these wanted to devise their national programmes in biotechnology first before embarking on a common programme. In most of the national programmes, little attention was paid to the European dimension.[2] The endowment of the Community Programme, accordingly, was rather meager: The programme was to be executed with a budget of 8 Mio Ecu in the first phase, running from 1 April 1982 until the revision of the programme, with an additional budget of 7 Mio Ecu in the second phase, adopted in October 1983, from 1 January 1984 until 31 March 1986.[3]

Of the more than one hundred research contracts concluded during the first phase, about half has been with university departments, and the other half with public research institutes. Only a handful have been concluded with private companies. Companies involved were Carlsberg in Denmark, Degussa in Germany, Vioryl S.A. in Greece, and Wellcome in Great Britain.[4] Participation of private business in the preparation of the Community programme had been mediated, to a great extent, through associations such as the European Federation of Biotechnology (founded in 1978) that has brought together over 40 learned societies. Industrial participants have been prominent in the specialised working groups which meet under its umbrella.[5] The large number

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1 Commission of the European Communities - Biotechnology in the Community, COM (83) 672 final/2-Annex, p. 15.

2 Commission of the European Communities - The FAST Programme, vol. 1, p. 23: "Yet few of the national reports stress the European dimension, and national policy-makers may even see European collaboration as a threat to their personal sphere of influence."

3 Commission of the European Communities - Research and training programme in biomolecular engineering (April 1982-March 1986), Catalogue of contracts with classification of activities, Phases one and two, Brussels, August 1984, p. 9.

4 See part II on 'Geographical Distribution of Laboratories Participating in the Cost-Shared Actions and List of Contracts', in: Research and training programme in biomolecular engineering, pp. 79-115.

5 Commission of the European Communities - Biotechnology in the Community, COM (83) 672 final/2-Annex, p. 52.

of applications for research funds as well as the intensification of conctacts between researchers in different European countries stimulated by the programme, has contributed to legitimize the preparation of a larger Community programme in the execution of which industry will probably play a more significant role.

The Commission submitted plans for a more extensive programme to the Summit Meeting at Stuttgart in June 1983. The European Council in June 1983 approved the priority objectives formulated by the Commission which elaborated more detailed proposals in a communication on Biotechnology in the Community to the Council of October 1983, which were favourably received. In April 1984, the Commission presented a Proposal for a Council Decision adopting a multiannual research action programme of the European Economic Commuity in the field of biotechnology (1985-1989).[1] Throughout the proposals, strong emphasis is placed on the importance of industrial consultation and collaboration. This applies to each of the stages from training and research, through to the exploitation of their results, and the formulation of Community policies in biotechnology.[2] A special section (2.3.) is dedicated to 'Participation of Industries in the Programme'. Small and medium size enterprises are especially encouraged to become involved.[3]

Whereas the Commission's communication of October 1983 still foresaw a total budget of 200 Mio ECU (or 40 Mio. ECU a year), the total amount was brought down to 153.8 Mio. ECU in the communication of April 1984, out of which 65,3 Mio. ECU was to be financed by national administrations, leaving only an amount of 88.5 Mio. ECU to be carried by the Community (about 18 Mio. ECU a year).[4] At its December meeting, the Council of Research Ministers approved only 55 mio. ECU in funding spread over five years, again a sharp cut from what officials had originally hoped to obtain. This considerable reduction is the result of current European Community budget restraints[5] as well as continuous pressure from the governments of the Member States to keep Community actions limited to programmes that could not be realised by individual member countries as well. The involvement in international programmes is often criticised by national institutions or associations that wonder whether the

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1 COM (84) 230 final, Brussels, 26 April 1984.
2 COM (84) 230 final, p. 10.
3 COM (84) 230 final, p. 29.
4 COM (84) 230 final, Financial Record, p. 2.
5 Cf. Chemical Engineering, 21 January 1985, p. 50.

same amount spent at home would not show better results and benefit them more directly.[1]

Quantitatively, the common European programme is not very impressive. It is less interesting for private industry than for universities. But the deliberations that lead to such a programme are important for the preparation of the national programmes in Europe. The preparation of international programmes leads to a continuous comparison between national programmes and draws the attention of national policy makers to important fields they may not yet have covered. Accordingly, discussions on common programmes are one of the mechanisms that increase the international interaction between different national support programmes.

2.4. Expenditures in other OECD-countries

Support to biotechnology programmes is not restricted to the large economic "blocs", the U.S., Japan and the European Community. Practically all industrial countries have developed biotechnology programmes, whether they have a strong industry or not. This underlines that subsidy schemes are not always the result of industry lobby, but often the result of government initiatives.

3. Cooperation between Public Research Institutes and Private Industry

In this paragraph, it will be described how governments often took a first initiative, and why the influence of business on support programmes in biotechnology in many cases has increased over time.

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1 Such criticism has been voiced in Great Britain, for example, with regard to the European Molecular Biology Laboratory at Heidelberg, a ten-nation project. An extensive report by the British Medical Research Council was necessary to refute the criticism ("The United Kingdom's Participation in the European Molecular Biology Laboratory. Report to the Medical Research Council", October 1983, 73 p. + annexes).

3.1. Difficulties to Define Subsidies

The amounts cited in the preceding paragraphs do not seem very large, especially when compared to subsidies paid to agriculture or to declining industries as the steel industry. And the bulk of it will not even be a subsidy (in the narrow sense), but rather expenditures on public research. If only those amounts are taken into account that are paid to (private or public) companies either in the form of direct grants, tax credits or cheap loans, subsidies for biotechnology industries seem almost negligible.

But if the main question is how Government backs industry, outright subsidies are less important than other measures. The activities of the Japanese Government are a notorious example. Direct subsidies are of comparatively little importance. But the whole policy of the public sector (ministries, research agencies, public financial institutions) is geared to the advancement of specific sectors. It is because of this close relationship between business and the public sector that one often speaks of 'Japan Inc.'. It is the integrated approach of shaping a suitable regulatory framework, encouragement and coordination of research and development, a supportive education and science policy, provision of markets by government procurement and (non-tariff) protection etc. that forms a much more effective support than just money. For an international comparison of government support, the whole 'policy-package' is relevant, not the outright subsidies only.

With government policy as a whole aiming more and more explicitly at an increased international competitiveness of the national economy, infrastructure expenditures of Governments often get the character of subsidies to the sector they serve. The more higher education in specific fields, for example, gets tailormade to suit the needs of a specific industry, the more it can be regarded as a form of subsidy. The more influence industry gets on the selection of research priorities at universities and on curricula, the more expenditures in these fields can hardly be distinguished from subsidies. Where lies the difference between direct support of research and development of a company, regarded as subsidy, and the expenditures on university research that has been programmed in cooperation with the same company and that will be used to develop new products by the very same company ?

It has been mentioned above (p. 8) that in the field of biotechnology, a somewhat reverse flow of 'subsidies' has come about with private companies financing

university research alongside with public institutions.[1] It is only at the surface, however, that this is a flow from the private to the public sector. Normally, the company in question gets the right of first commercial exploitation of the results of the research it has co-financed. It can thereby appropriate the results of much larger research efforts than it could have financed on its own, without carrying all the overhead cost connected to a large research team and the installation of expensive equipment.

In most OECD-countries increasing emphasis has been put on industry oriented research at universities and on closer cooperation between industry and universities. Many national programmes have the enhancement of this cooperation as a major objective. Certainly, this cooperation is not only advantageous for the companies. It increases the means at the disposal of university researchers, opens careers for some staff-members and better students, and can give them the satisfaction that their research is of direct use. Nevertheless, there is a subsidy element in this close interrelationship between public research institutions and private companies, however difficult it is to specify it.

With other forms of public enhancement of biotechnology, similar difficulties do exist to estimate the 'subsidy equivalent' of specific measures, be it the installation of science parks, often on (or neighbouring) university premises[2], risk capital funding, joint ventures by Public Institutions (as the British Technology Group) and the private sector, as in the case of Celltech, the creation of transfer centres which should help with the commercialization of the results of basic and applied research (as in France),or the public appointment of business consultants as in Norway.[3]

Government activity to enhance biotechnology is a good example for the difficulties to get an operational definition of 'subsidies' in a situation in which government agencies and the private sector cooperate very closely in many different forms so that the concept of 'subsidy' gets blurred.

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1 This happens in Germany (cf. p. 11/12), in Sweden, Finland and elsewhere. See e.g. N Molin - Biotechnology in Sweden, in: Houwink (ed.), A Realistic View on Biotechnology, 1984, p. 114, and P.M. Markkanen - Biotechnology in Finland, in Houwink (ed.), p. 75.

2 Elf Aquitaine at Toulouse and Transgene at Strasbourg moved their new biotechnology facilities near universities in order to profit from proximity, - see Sasson - Les biotechnologies: défis et promesses, p. 282.

3 The Royal Norwegian Council on Science and Technology has recently engaged business consultants in its efforts to find interesting business areas for Norwegian industry in biotechnology, - see I. Hagen - Biotechnology in Norway, p. 107.

3.2. The Initiative of the Public Sector

Very often, cooperation between government and business is so close that it is difficult to trace who has taken the first initiative to subsidize a specific activities. Business association sometimes react to the request of government to elabroate concrete proposals, but the idea to come up with such a request may have originated from the business association itself. It was for example "partly at the request of the Federal Ministry" that the German DECHEMA's Committee of Experts drew up "Biotechnology studies" in 1974, 1976 and 1982 which contain recommendations for a government programme of research and development.[1] The idea to ask for these studies, however, may have been launched by DECHEMA representatives themselves.

The large role of governments in the initial phase of the development of biotechnology is understandable when one takes into account that most research in this area has been carried out by universities and public research institutions. Only when a break through was realized in genetic engineering in the early 1970's, many larger companies started to build up their own facilities in this field. Those most familiar with the "state of the art" and the further needs of the scientific community, therefore, during the first phase where the researchers themselves who, initially played an important role in the formulation of research programmes.

Beside the researchers themselves, government officials played an important role, too. One of the reasons for their activities in biotechnology was that they had been accused in many countries that their industrial policy was only backing the losers, without being able to avoid the decline of some traditional industries. In order to compensate for these losses (more and more regarded as unavoidable), governments looked for new sectors they could push. European governments also wanted to avoid that a late start in biotechnology would bring Europe into the same uneasy position that the old continent actually has in the field of microelectronics.

The role of private companies or business associations differed from country to country. This role may have been important in the case of Germany, where very strong (and well organized) chemical, chemical engineering and pharmaceutical industries do exist. It has been negligible in the case of France where these industries are comparatively weak. In Japan and Great Britain, it became strong only at a moment when the commercial opportunities had clearly been recognized.

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1 H.J. Rehm, D. Behrens - Biotechnology in the Federal Republic of Germany, in: Houwink (ed.), p. 87.

3.3. Shifts in Priorities as Commercialization Starts

The first wave of development of modern biotechnology, after the initial breakthrough at university institutes, was carried to a great extent by small ventures in the United States: new biotechnology companies around some prestigious researchers that had left universities. Large companies only got a more prominent role when the first enthousiasm of venture capital had withered away, after it had become clear that production of commercial quantities at competitive prices would take longer than initially expected.

In order to produce larger quantaties than at the laboratory stage, more process know-how was necessary which the research ventures often lacked. With the commercial application of biotechnology coming in sight, larger companies got a more active interest in biotechnology developments for a number of reasons:

- the enormous market potential had in the meantime become obvious,
- some new biotechnology products would compete with their traditional products, and
- the first patents granted draw their attention to the fact that they might become excluded from attractive markets if they did not enter it at an early stage themselves.

It was especially after the announcement of the Cohen-Boyer patent for the basic rDNA process in 1980 that Japanese companies became active lobbyists. Following the award of this patent, "the Committee on Life Sciences of the Japan Federation of Economic Organizations met in alarm to discuss a Japanese response. Included at this meeting were representatives of 30 major Japanese companies with an interest in biotechnology. The Cohen-Boyer patent was seen as a matter of concern because, according to their company sources, the patent would affect almost any product application of rDNA technology. Ironically, it was suggested that the United States were designating biotechnology as a strategic national industry and was weaving about it a network of protective patents." 1

In Great Britain, a similar change took place at about the same time. Whereas the direction of government involvement previously had been "determined largely by Government officials and scientists acting through already existing committees, with only occasional input from the private sector", the Laboratory

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1 Commercial Biotechnology, p. 478.

of the Government Chemist, part of the Department of Industry, set up a Biotechnology Unit. This Unit is headed by one official from the Laboratory of the Government Chemist and three full-time biotechnologists on loan from industry.[1] One of the tasks of this group is to see that ventures like the new government-backed Agricultural Genetics Company remain "an opportunity not an obstacle" for the British Industry.[2]

In Germany, increased emphasis on the role of industry is not so much the result of the start of commercialisation of biotechnology products, but of the change of government in 1982. In France, the role of industry has hardly increased.

*

There does not seem to be any competition in the countries dealt with between public research institutes and private industry for government support. With the increased influence of industry on government programmes in biotechnology and the increasingly intensive cooperation between public research institutions and private industry, the work of public institutions is largely geared to advance the position of national companies in the world market, and public institutions and private firms therefore do not really compete for government funding.

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1 Commercial Biotechnology, p. 478.

2 Financial Times, 11 May 1984.

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An international comparison of subsidies to biotechnology

ECPR, 25-30 March 1985

THESES FOR DISCUSSION

1. There is considerable difference between subsidies for established sectors and subsidies to 'new' sectors with regard to the political process that leads to government support.
2. Traditional sectors have a well-established access to policy making, effective lobby organisations, links to trade unions and regional policy makers. New industries will have little experience on the political scene, less management time to devote to policy issues and few links with the trade union bureaucracy or regional political actors.
3. In many high-technology sectors, cooperation between public authorities and private business has become so close that the concept of 'subsidies' becomes blurred. Many government activities, inspired by close government -business interaction, can be regarded as a 'subsidy-equivalent'.
4. For a technology that will find application in many different economic sectors, there may be none that will advocate its support strongly enough. For the very same reason, one can expect more initiative from governments to support developments in the new field.
5. Government programmes will first concentrate on what seems feasible technologically. Once technological feasibility is proven and development approaches the phase of commercialisation, business interests will want to focus public programmes on projects viable from a commercial point of view.
6. There is strong international interaction in the formulation of subsidy programmes. Less advanced countries will try to copy the progress in the more advanced ones, and the industry in more advanced countries may feel the need to 'retaliate' with similar government programmes to keep its advantageous position.
7. International interaction may not only stimulate subsidy programmes, it may also be an obstacle to such programmes if it can be anticipated that other countries would react negatively.
8. International programmes to advance a new technology may not succeed to increase international cooperation. The preparation of these programmes may draw the attention of national policy makers to hitherto unacknowledged fields of importance and thus help to increase conflicting efforts at the national level.
9. There is a zero-sum element in subsidizing industrial sectors in different countries. Only in so far as industries in a given country develop faster and more effectively than in other countries, their international competitiveness will increase as the result of subsidies.
10. Competing national support programmes have contributed to international conflicts between highly idustrialized capitalist countries. International measures to soften these conflicts (within OECD, GATT or at summit meetings) have not yet had the intended effect. -

Janvier 1985

LES AIDES A L'INDUSTRIE :

CRITERES D'EVALUATION ET EFFICACITE

J. LE FOLL

Ces documents de travail ont un caractère technique et provisoire. Ils font l'objet d'une première diffusion pour stimuler des discussions et appeler commentaires et critiques.

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RESUME

Les aides financières de l'Etat aux entreprises industrielles constituent un moyen important de l'intervention publique sur le système productif. Mais qu'appelle-t-on aide à l'industrie ? Quels en sont les finalités et les bénéficiaires réels ? Les réponses sont souvent ambiguës ou partielles. L'objectif de plus en plus nettement affiché de modernisation de l'appareil industriel et la forte croissance des aides financières ces quatre dernières années incitent à approfondir l'analyse.

La présentation par grandes masses des flux annuels d'aide depuis une quinzaine d'années permet déjà de dégager quelques caractéristiques intéressantes : très forte croissance des aides à l'exportation sur toute la période, et de presque toutes les formes d'aide depuis 1981, forte concentration sur quatre secteurs industriels : sidérurgie, construction navale, aéronautique et informatique, et sur un nombre limité de grands groupes, poids des considérations sociales et d'indépendance nationale dans l'affectation de ces crédits publics.

Pour dépasser ce premier niveau de constat, il faut ensuite expliciter des critères d'appréciation et des éléments de comparaison. La diversité des objectifs de l'intervention publique sur le système productif, et la diversité des moyens utilisés -l'aide financière n'étant généralement pas le plus important- conduisent alors une première réponse : la quasi-impossibilité d'une évaluation complète et unique de l'efficacité conçue comme adéquation de l'aide financière seule à l'ensemble de ses objectifs.

Se plaçant au niveau de l'entreprise aidée, il apparaît d'abord qu'en règle générale l'aide publique permet de réaliser des actions qui, sans elle ne l'auraient pas été, ou l'auraient été avec une ampleur moindre car elles étaient jugées peu rentables ou trop risquées par les entrepreneurs. Il semble également que dans notre système français, la permanence et la complexité des principales procédures d'aides créent des changements de comportements et des interdépendances particulières entre les entreprises et les services administratifs concernés.

Si enfin on se préoccupe des effets plus généraux des aides à l'industrie, on est conduit à étudier leur impact sur l'aménagement du territoire, le développement des secteurs industriels aidés, la balance des paiements, les finances publiques et l'emploi. On constate alors, qu'au-delà des effets escomptés, il est tout à fait important de prendre en considération des effets indirects de déplacement ou d'éviction qui, bien que difficiles à évaluer, diminuent dans des proportions significatives l'efficacité qui a pu être appréciée a priori au niveau microéconomique. Une plus grande transparence et la réalisation plus systématique d'évaluations, a posteriori permettraient sans doute d'augmenter l'efficacité de ces aides et leur adéquation à l'objectif principal de modernisation industrielle.

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L'intervention publique sur le système productif est très variée dans ses objectifs et ses modalités. Pour l'essentiel elle résulte de politiques générales qui fixent les conditions dans lesquelles fonctionnent les entreprises (réglementation, fiscalité, crédit...) ou qui affectent leur environnement (formation, recherche, grandes infrastructures...). Dans notre système d'économie mixte, l'Etat met également en oeuvre un dispositif plus fin d'intervention en direction de certaines catégories d'entreprises, dispositif dont la justification repose soit sur le constat d'une carence de l'initiative privée, soit sur la poursuite d'objectifs que les entrepreneurs privés ne sont pas amenés à prendre en compte spontanément : indépendance nationale, qualité de l'environnement, objectifs de caractère macroéconomique ou social. Dans ces interventions directes, les pouvoirs publics combinent de manière très complexe diverses formes de contraintes, de protection, d'actions d'entrepreneur et d'incitations. La présente étude traite des aides financières, forme d'incitation importante et quantifiable.

La mesure des aides publiques et de leurs effets soulève de nombreux problèmes. Les problèmes méthodologiques classiques des analyses de transferts ont certes été répertoriés depuis longtemps (1) (2) :

- problèmes de définition (des objectifs, des décisions isolables pour l'analyse, des groupes concernés,...) ;
- problèmes d'analyse des flux (directs et indirects, immédiats et différés) ;
- problèmes de valorisation (particulièrement pour les effets hors marché) ;
- problèmes d'agrégation (dans le temps, selon les objectifs et les groupes,...).

C'est par une démarche plus pragmatique qu'on tentera ci-après d'aborder cette analyse de l'efficacité des aides. Après avoir fourni quelques indications sur la définition et l'importance des flux financiers concernés, on se placera des divers points de vue complémentaires à partir desquels sont généralement formulées les principales questions concernant ce sujet : quels objectifs, quels impacts ex ante et ex post sur les décisions et les comportements ? quels effets sectoriels et macroéconomiques ?

(1) Les numéros renvoient à la bibliographie en annexe.

I - DEFINITION ET MESURE DES AIDES

Dans un domaine aussi complexe il est utile de préciser le champ de l'analyse. Même si certains développements de cette étude semblent pouvoir s'appliquer à d'autres sortes d'aides, on se limite ici à certaines catégories d'interventions financières, décidées par l'Etat et concernant des entreprises industrielles (industrie manufacturière*).

Après avoir énuméré les catégories retenues on rappellera l'importance des montants financiers en jeu et leur évolution depuis une quinzaine d'années.

1-1 Eléments de définition

L'exemple simple de l'aide financière est évidemment la subvention accordée directement sur fonds publics, sans contrepartie en termes de remboursement ou de fourniture d'un bien ou service. A l'opposé, la notion d'aide aux entreprises est ambigüe et pourrait être conçue de manière très large : toute action de l'Etat ayant un impact, direct ou indirect, sur une entreprise, par rapport à une solution de référence où cette action n'existerait pas, devrait en théorie être examinée, qu'il s'agisse de réglementation, de services collectifs, de marchés publics ou d'allocation de ressources. Il est à craindre que dans cette acception large aucune limite simple, aucune solution de référence claire ne puissent être définies et donc aucune évaluation tentée.

On retiendra dans cette étude une définition assez proche de celles qui ont déjà été retenues dans divers travaux administratifs précédents [3] à [8]. On se limitera aux interventions qui se caractérisent par un flux financier, sans contrepartie directe, de l'Etat vers des entreprises, soit directement, soit à travers des agences ou des établissements agissant selon des directives de l'Etat. On leur assimilera quelques actions dérogatoires en matière de fiscalité et de

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* plus précisément les secteurs U02, U04, U05 et U06 de la nomenclature en 14 postes de l'INSEE.

crédit. Le cas des marchés publics ne sera pas traité bien que certains marchés d'études soient en fait des aides aux entreprises contractantes, et que de nombreux marchés de produits industriels aient un certain contenu d'aide publique.

Plus précisément on retiendra (*) comme aides financières directes les subventions et primes versées, les bonifications d'intérêt décidées par l'Etat pour des prêts ou avances accordées directement ou par des organismes financiers (incluant les prêts et le réescompte à taux privilégié), les systèmes de garantie de prix pour la construction navale et les exportations, les dotations en capital aux entreprises publiques industrielles, ainsi que quelques systèmes fiscaux spécifiques s'écartant du droit commun, en faveur de certaines catégories d'investissements industriels.

1-2 Quelques ordres de grandeur

Avec la définition restrictive indiquée, et en se limitant aux secteurs industriels, on peut dresser un tableau résumé qui fournit les principales caractéristiques de l'aide financière directe sur la période 1970-1983.

../.

(*) D'autres définitions seraient évidemment concevables. Une définition plus restrictive consisterait par exemple à considérer que les dotations en capital accordées par l'Etat aux entreprises publiques ne sont pas des aides, que les garanties à l'exportation sont le résultat d'une procédure d'assurance et que les crédits privilégiés à l'exportation, correspondant à l'application du "consensus" de l'OCDE, sont pour l'essentiel une aide aux pays en voie de développement... A l'inverse une définition plus large, mais sans doute encore plus discutable, conduirait à inclure dans les aides à l'industrie certaines mesures fiscales particulières (dont l'aide fiscale à l'investissement) ou générales (avantages liés au régime de l'amortissement dégressif), les marges pour études libres de certains marchés publics, certaines aides à l'emploi transitant par les entreprises,... Selon les rubriques retenues l'évaluation des aides financières à l'industrie en 1982-83 varierait alors d'une vingtaine de milliards dans la définition la plus restrictive à plus d'une centaine de milliards de francs.

Les aides publiques à l'industrie de 1970 à 1983

moyennes annuelles, en milliards de francs de 1983

	1970-72	1974-76	1979-80	1982-83
Aides spécifiques à la sidérurgie, la construction navale, l'aéronautique et l'informatique (a)	8,7	10,9	7,2	13,5
Apports en fonds propres (hors des quatre secteurs précédents	1,2	0,7	0,8	5,0
Aides à l'exportation (b)	3,2	6,3	11,9	17,9
Autres aides financières (c)	3,0	3,2	4,7	7,5
Total	16,1	21,2	24,6	43,9
Aides/Valeur ajoutée industrielle (%)	2,1	2,4	2,6	4,6
Aide/Dépenses du budget de l'Etat (%)	2,9	3,2	3,1	4,8

Notes sur le tableau :

a) procédures particulières à ces secteurs, apports en fonds propres, et prêts garantis à la sidérurgie ;

b) pour l'essentiel le coût pour l'Etat et la Banque de France de la garantie du risque économique et des réductions de taux d'intérêt ;

c) notamment les bonifications d'intérêt pour les prêts à l'investissement, les aides aux entreprises en difficulté, à l'aménagement du territoire, à la recherche,...
(cf tableau en annexe 1) et [8]

On notera de plus que :

- ce tableau est établi en francs constants de 1983 (déflateur : l'indice de prix du produit intérieur brut) ;
- pour lisser certaines évolutions dues à des décalages temporels de quelques mois dans les décisions et surtout les paiements, on a présenté des moyennes annuelles portant sur quatre périodes de deux ou trois ans ; pour 1983 il s'agit encore d'évaluations provisoires ;

- si en règle générale les prêts à taux privilégiés ne sont comptés en aide qu'à concurrence de leur équivalent en termes de bonifications d'intérêt, une exception a été faite, sur critère économique pour la sidérurgie où les prêts sont comptabilisés comme aide pour leur totalité, l'année de leur versement (les anciens prêts ne sont donc pas pris en compte l'année de leur consolidation).

1-3 Une première caractérisation des aides

Le tableau de la page précédente et les compléments fournis en annexe 1 permettent de mettre en évidence cinq caractères principaux des aides à l'industrie depuis quinze ans :

- la montée en puissance du système d'aides publiques durant les années 70, particulièrement à l'occasion de la première crise pétrolière, puis sa progression spectaculaire après 1981 : doublement des aides versées entre 1973 et 1976, triplement des aides entre 1980 et 1983 ;

- le poids considérable, sur toute la période, de quatre secteurs en crise et fortement contrôlés par l'Etat depuis très longtemps : la sidérurgie, la construction navale, l'aéronautique et l'informatique. On verra plus loin la part des considérations d'indépendance nationale dans l'aide accordée à ces secteurs en quasi commandite publique avant 1981, et presque totalement nationalisés depuis cette date ;

- la très forte croissance, sur toute la période étudiée, des aides à l'exportation, d'abord de la garantie de risque économique, puis de l'abaissement des taux d'intérêt dans le cadre du "consensus" de l'O.C.D.E.. On rappelle que ces aides concernent pour l'essentiel les ventes de biens d'équipement (y compris aéronautique et armements), particulièrement aux pays en voie de développement ;

- pour le reste, malgré l'extrême diversité des procédures, les montants financiers en jeu sont restés limités. L'analyse détaillée montre qu'une part importante de ces interventions concerne également des entreprises en difficulté. Ainsi, la part des aides consacrées à une politique volontariste de redéploiement industriel vers des activités en croissance

est restée particulièrement faible, jusqu'en 1981 : quelques centaines de millions de francs par an pour l'innovation, la recherche-développement, les économies d'énergie et de matières premières, le développement des petites et moyennes industries. Depuis 1982, les masses financières relatives à ces actions ont été sensiblement accrues, mais leur part dans le total des aides reste à peu près stable ;

- enfin, il est intéressant de rapprocher les flux d'aide publique et les données concernant le poids relatif des divers secteurs industriels, la taille et la concentration des entreprises, les liaisons financières et les marchés publics. Il est clair que pour l'essentiel les aides spécifiques aux quatre secteurs déjà cités sont versées à une dizaine de grands groupes industriels : les deux groupes sidérurgiques, les groupes contrôlant les cinq grands chantiers de construction navale civile, la S.N.I.A.S., la S.N.E.C.M.A., Dassault et le groupe BULL. De plus, ces groupes occupent avec trois ou quatre autres, dont principalement Thomson et Renault (mais hors la sidérurgie), une place essentielle dans la recherche-développement industrielle et dans les exportations nationales de biens d'équipement, critères d'attribution d'aides importantes ; enfin, nationalisés depuis très longtemps pour certains, depuis 1981-1982 pour la majorité d'entre eux, ils reçoivent évidemment l'essentiel des dotations en capital de l'État aux entreprises et groupes industriels publics (9) et (10). On constate ainsi que les aides financières directes définies ci-dessus ont été attribuées pour l'essentiel à un nombre limité de grands groupes industriels, généralement "abonnés" à plusieurs catégories d'aides et souvent bénéficiaires par ailleurs d'importants marchés pour la Défense Nationale et l'équipement des grands services publics : énergie, transports et télécommunications. Une étude récente de l'INSEE (6) complète cette approche et fait apparaître la forte concentration sectorielle des aides : la part des aides dans la valeur ajoutée des dix-huit secteurs industriels qui y sont distingués est de moins de 3 % en 1979, 1980 et 1981 sauf pour deux secteurs où elle dépasse 13 % : sidérurgie et navale-aéronautique-armement ; ces deux secteurs ont reçu plus de la moitié des aides accordées à l'industrie de 1979 à 1982. (cf annexe 1)

La mise en relief de ces cinq traits fondamentaux constitue en quelque sorte le premier niveau de l'évaluation du système d'aide à l'industrie. Elle apporte déjà des indications très intéressantes qu'on retrouvera d'ailleurs dans la suite de l'analyse. La forte concentration des aides depuis plus de quinze ans sur un nombre très limité d'activités et d'acteurs industriels est un indice de l'inertie du système, inertie mise en évidence depuis longtemps (4) et (7) ; elle montre également que l'Etat exerce dans quelques domaines une tutelle forte et croissante, dont on présentera les justifications dans la deuxième partie. Le poids durablement élevé de quelques secteurs en régression, particulièrement la sidérurgie et la construction navale, et la faible part des aides consacrées au développement des activités à fort potentiel de croissance mettent en évidence le poids élevé des objectifs de caractère défensif ou de nature sociale. Les objectifs économiques, de redéploiement industriel et de modernisation paraissent avoir été moins prioritaires sur l'ensemble de la période et les aides correspondantes paraissent avoir été superposées plutôt que substituées aux précédentes. Une analyse plus rigoureuse nécessite maintenant de définir des éléments de référence et de comparaison, indispensables à toute étude d'efficacité.

II - L'AIDE FINANCIERE ET LES OBJECTIFS DE L'INTERVENTION PUBLIQUE

Si on s'interroge sur l'efficacité d'une aide de l'Etat, la première question que l'on se pose concerne son adéquation aux objectifs de la puissance publique. Mais alors comment déterminer ces objectifs? Comment distinguer le rôle spécifique d'une aide financière parmi divers moyens mis en oeuvre simultanément ?

Les analyses de certaines politiques publiques, les exposés des motifs de divers projets de lois, les ouvrages nombreux de juristes et d'économistes sur les divers rôles de l'Etat, constituent une matière très riche permettant de révéler les justifications de l'intervention publique auprès des entreprises industrielles. Le rappel qui en est fait ci-dessous permet d'illustrer les difficultés et les limites de ce genre d'analyse indépendamment de la description, présentée ensuite, des principaux moyens de l'intervention publique.

Ces deux paragraphes descriptifs, des objectifs et des moyens de l'intervention de l'Etat sur les entreprises ne permettront d'apporter que des réponses formelles à la question principale de l'adéquation de l'aide financière aux objectifs des pouvoirs publics.

2.1. - les justifications de l'intervention publique

C'est certainement par des mesures générales de la politique économique et sociale que l'Etat exerce, directement ou indirectement, l'influence la plus forte sur le système productif et sur l'évolution des entreprises :

- les actions d'éducation, de formation et de recherche, le développement des infrastructures (transports, télécommunications, énergie,...) dépendent pour l'essentiel de l'Etat et conditionnent largement le développement des entreprises à moyen et long terme ;

- les politiques sociales, fiscales, du crédit, des prix ... ont des effets directs immédiats et importants sur les charges des entreprises, sans que l'on ait généralement évalué leurs effets discriminants selon le type d'entreprises. Ces politiques peuvent avoir selon les cas des effets positifs ou pervers sur la compétitivité de l'industrie, effets plus importants que ceux des aides directes aux entreprises ;

- les mesures de régulation conjoncturelle ont également des effets discriminants indéniables, qu'il s'agisse des à-coups dans le contrôle du crédit ou des prix, dans la passation des marchés publics ou d'actions temporaires sur la demande intérieure.

Au-delà de ces politiques horizontales et de la gestion directe des services publics, il est généralement admis, dans notre système d'économie mixte, que l'Etat mette en oeuvre un dispositif plus fin d'intervention directe auprès des entreprises. Plusieurs justifications en ont été avancées depuis longtemps ; pour l'essentiel elles sont liées à l'appréciation, par les responsables publics, de divergences entre l'intérêt collectif et diverses catégories d'intérêts particuliers : indépendance nationale, nuisances, projets à haut risque ou à long terme, entreprises en difficultés, ... Dans un contexte de compétition internationale ces justifications sont renforcées par l'existence d'interventions importantes dans les pays concurrents. (Même si on ne peut affirmer, ni que ces aides sont efficaces, ni même, compte tenu des autres contraintes auxquelles sont soumises les entreprises étrangères, que ces interventions suffisent à les placer dans une situation avantageuse par rapport aux entreprises françaises) (11).

Si on affine l'analyse on constate que des considérations plus ambigües sont également à la base de certaines interventions : une certaine conception de l'organisation et des interdépendances du système productif et/ou une meilleure connaissance par l'Etat, réelle ou supposée, des évolutions du marché mondial sont mises en avant pour prôner :

- des aides aux entreprises performantes leaders sur leurs marchés, (politique des champions),
- des aides aux P.M.E. et à la création d'entreprises : renouvellement du tissu industriel, accroissement de la concurrence ...
- des aides aux producteurs de biens d'équipement, à l'innovation et à la Recherche-Développement : politiques de filières, d'attaque du marché mondial, ...

Des aides à l'exportation ou à la reconquête du marché intérieur pour certains produits, ainsi que des aides aux investissements sont justifiées plus directement par des considérations macro-économiques (balance des paiements, croissance) et tentent de pallier une compétitivité insuffisante de l'offre française (12).

Enfin, certaines interventions ont, au moins en partie, pour objectif de corriger les effets négatifs sur certaines entreprises de mesures générales ou d'interventions antérieures ou encore de compenser des contraintes imposées par ailleurs.

Généralement les interventions auprès des entreprises poursuivent simultanément plusieurs objectifs sans qu'il soit possible d'en apprécier l'importance relative, qui peut d'ailleurs évoluer dans le temps : une part des aides à l'exportation peut ainsi être rattachée à l'objectif d'aide aux pays en voie de développement ; certaines aides aux entreprises en difficulté correspondent au soutien de l'activité dans des bassins d'emploi où le chômage est durablement très élevé et dans des régions privilégiées par la politique d'aménagement du territoire,...

A l'inverse certains objectifs apparaissent antagonistes dans leur généralité et quant aux orientations d'ensemble qu'ils supposent :

- développement de la concurrence et politique des champions,
- reconquête du marché intérieur et spécialisation au niveau mondial,
- "survie" des entreprises en difficulté et accroissement de la compétitivité.
- croissance de l'investissement et développement de l'emploi,
- responsabilité de l'entrepreneur, rémunération du capital risque, et socialisation du risque par des systèmes de garantie.

Un minimum de cohérence ne peut alors être atteint que dans la pondération des interventions correspondantes.

Une difficulté supplémentaire au niveau de l'analyse des objectifs tient sans doute au statut même de la société anonyme ; c'est une personne morale ayant une définition et un champ d'action précisés par la loi, mais dont le rôle social est généralement perçu comme plus large que la fabrication et la vente de biens ou de services marchands, et qui par ailleurs sert de support à des interventions à finalités diverses et à la collecte de certains impôts et des cotisations sociales. L'analyse complète des aides qui transitent par ces sociétés doit certainement tenir compte de ces caractères complexes.

2.2. - l'aide financière dans la panoplie des moyens d'intervention

Comme on l'a déjà indiqué, en ce qui concerne les interventions directes à un niveau détaillé, les pouvoirs publics combinent de manière très complexe diverses formes de contraintes, de protections, d'actions d'entrepreneur et d'incitations. Pour chacun des objectifs cités au paragraphe précédent, l'aide financière n'est que l'une des formes d'incitation et il est donc largement arbitraire de chercher à en évaluer les impacts "toutes choses égales d'ailleurs".

Les interventions dans les secteurs liés à l'armement ou plus généralement à la défense nationale illustrent clairement cette imbrication : actions d'entrepreneur par les arsenaux et les entreprises publiques, marchés réservés aux entreprises et aux produits français, contrôle strict des productions et du commerce extérieur, incitations à la R.D. dans des domaines très spécifiques ...

En matière de pollution, de protection des travailleurs, d'aménagement du territoire, ... on trouve également des combinaisons complexes de contraintes (interdictions, réglementations avec des contrôles et des sanctions très variables et dont les impacts sont rarement appréciés), d'actions directes concernant les administrations, les agences de l'Etat et les entreprises publiques et d'incitations variées (informations, tarifs publics, fiscalité, systèmes de garantie, aides financières).

Dans les autres domaines la panoplie des moyens d'interventions se compose aussi d'incitations diverses et souvent interdépendantes où le rôle de l'aide financière n'est pas séparable des autres formes d'incitation.

Ainsi, il semble que dans certains cas l'effet attendu de l'aide financière n'est pas lié pour l'essentiel au supplément de ressources procuré à l'entreprise. L'aide serait plutôt un signe tangible et positif appuyant un discours et une argumentation, marquant l'intérêt que les pouvoirs publics attachent à une orientation qui concerne le système productif, et/ou un moyen d'accélérer la prise en compte de certains problèmes nouveaux et d'obtenir une adhésion la plus large possible de tous les partenaires sociaux à des choix généraux. Ne serait-ce pas le cas pour les aides à l'aménagement du territoire, aux économies d'énergie et de matières premières ?

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Il n'en reste pas moins que l'aide financière représente plusieurs milliards de francs de ressources nettes annuelles pour les entreprises et constitue dans certains cas un élément important du choix de l'entreprise. Il est donc utile d'examiner plus précisément l'adéquation de cette aide aux objectifs affichés avant d'en étudier l'ensemble des impacts.

2.3. L'adéquation de l'aide financière aux objectifs

A ce stade de l'analyse deux réponses formelles peuvent déjà être apportées à la question générale de l'efficacité des aides financières : la première concerne l'impossibilité d'une évaluation complète et unique de l'efficacité conçue comme l'adéquation de l'aide financière seule à l'ensemble de ses objectifs ; la seconde est relative au caractère de flux monétaire de l'aide financière : une telle aide ne peut être adaptée qu'aux problèmes où pèse réellement la contrainte financière.

2.3.1. Une pluralité d'évaluations partielles

La diversité des objectifs poursuivis et la complexité des relations objectifs-moyens suffiraient sans doute à expliquer pourquoi il n'existe pas, à notre connaissance, d'étude complète d'efficacité de systèmes d'aides financières. Les études concernent plutôt, soit de façon plus générale des évaluations de politiques publiques, soit de manière plus ponctuelle l'évaluation de projets industriels précis ou l'adéquation d'un moyen particulier à un sous-ensemble partiel d'objectifs (2) (5) et (13).

Il faut également ajouter que très souvent les objectifs sont définis à priori de manière trop vague pour permettre une évaluation quantifiée et surtout que leur importance relative peut varier selon l'interlocuteur ; la pluralité des points de vue impose alors une pluralité d'évaluations.

2.3.2. Le caractère financier de l'aide

Une autre approche est de s'interroger sur les avantages de ce type de moyen, c'est-à-dire d'un flux monétaire, par rapport aux autres moyens envisageables : on peut sans doute affirmer que ce moyen particulier est mieux adapté que les autres lorsqu'il s'agit de problèmes où les aspects financiers sont importants.

En d'autres termes, on peut penser que l'aide financière, quels que soient ses modalités d'attribution et son montant, est adaptée aux objectifs de l'intervention publique dans tous les cas où l'action spontanée des entreprises dans le sens souhaité par l'Etat est freinée par une contrainte financière. Celle-ci peut se caractériser soit par un manque de ressources financières, soit par une faiblesse relative des profits attendus de ces actions (par rapport à d'autres actions que pourraient entreprendre les entreprises), soit enfin par l'importance du risque financier lié à ces actions.

Dans tous les cas où les freins et obstacles au développement souhaité sont d'une autre nature, l'aide financière ne peut être qu'un palliatif à court terme et de faible efficacité ; c'est sans doute le cas lorsque les infrastructures publiques (réseaux de communications, urbanisme....) les systèmes de formation et de recherche publique, les méthodes de régulation et de contrôle des pouvoirs publics, sont inadaptés.

De plus, dans tous les cas où les objectifs publics sont permanents et structurels et où une insuffisance relative des profits constitue un obstacle sur le long terme, il semble que des mesures générales touchant pour l'essentiel à la fiscalité et à la parafiscalité seraient le cas échéant les plus adaptées : fiscalité touchant de manière différenciée le travail, le capital, les investissements, les profits, les exportations, certaines consommations intermédiaires (énergie) ou certaines formes de nuisances. L'analyse des effets discriminants des mesures générales (réglementation, fiscalité, tarifs publics) devrait permettre leur réforme et, dans certains cas, la suppression des aides directes actuelles.

L'aide financière directe ne devrait donc intervenir que dans les cas où l'ampleur du risque ou l'insuffisance des ressources financières ou des profits attendus sont les principaux obstacles à court ou moyen terme au développement souhaité des entreprises et de plus, lorsque ces obstacles ne concernent que quelques entreprises ou quelques catégories d'entre elles.

Même dans ces hypothèses, l'adéquation de l'aide à l'ensemble des objectifs affichés doit être analysée de manière critique : par exemple une aide financière à l'exportation qui revient à baisser le prix des produits exportés sera d'autant plus efficace que l'élasticité-prix est élevée : cet effet est en contradiction avec l'objectif consistant à

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favoriser les produits sophistiqués où le prix de vente est un paramètre moins important que, par exemple, la qualité des produits, l'existence d'un service après-vente... (14). De même l'aide financière a priori n'est pas nécessairement la méthode la mieux adaptée pour soutenir des projets rentables (en espérance mathématique) mais très risqués, particulièrement si on ne peut pas mettre en évidence d'avantages collectifs autres que ceux liés à la croissance de l'entreprise directement concernée. Dans ces domaines des systèmes de garantie, de socialisation du risque, paraissent plus adéquats, par exemple pour certaines formes d'innovation ou de recherche industrielle (15).

Dans un autre domaine, il y a également un certain manque de cohérence entre un objectif intermédiaire de renforcement des fonds propres et un moyen tel que des bonifications d'intérêts qui, à l'inverse, privilégie l'endettement par emprunts ; le développement des prêts participatifs assimilables par certains aspects à des fonds propres répond-il en partie à ce problème ?

III- L'ANALYSE MICRO-ECONOMIQUE DES AIDES FINANCIERES

Compte tenu de l'analyse précédente des objectifs et des moyens de l'intervention publique sur le secteur productif, il est clair que l'évaluation de l'efficacité des aides financières attribuées aux entreprises est particulièrement délicate. Au niveau de l'entreprise aidée on peut, en simplifiant, classer les effets en deux catégories : d'une part l'aide permet de réaliser des actions qui, sans elle, n'auraient pas été réalisées, ou l'auraient été avec une ampleur moindre, d'autre part l'aide introduit des changements dans les comportements des agents économiques concernés. En outre ces changements dépendent des procédures retenues pour décider et contrôler les aides publiques.

3.1. L'aide modifie les décisions des entreprises

L'accroissement conditionnel des ressources modifie les rentabilités relatives des actions réalisées ou réalisables par les entreprises concernées : il y a soit modification dans la consistance des projets, soit addition de projets nouveaux.

Il faut cependant noter que l'effet de l'aide est généralement marginal, c'est-à-dire que d'une part l'aide profite d'abord à des actions "spontanées" conformes à ses objectifs (les actions que l'entreprise aurait réalisées sans aide), et d'autre part l'aide permet de réaliser des projets nouveaux (par leur nature ou leur ampleur) qui n'étaient pas jugés rentables sans elle par les entreprises concernées. Dans les deux cas, l'évaluation de l'efficacité dépend de l'analyse de ce que l'entreprise ferait sans aide* et peut être très variable selon les modalités d'attribution retenues.

Par ailleurs, une part de l'aide publiqué se diffuse de manière complexe et bénéficie aux fournisseurs, aux clients, aux salariés et aux actionnaires de l'entreprise sans entraîner nécessairement de changement important des activités. Cette diffusion peut d'ailleurs avoir des effets bénéfiques, bien que souvent inattendus : on peut par exemple penser que les fortes aides publiques à la grande informatique durant les années 60 et 70 (plan calcul,..) ne sont pas étrangères au développement et au dynamisme des sociétés françaises de service et d'ingénierie informatique.

3.2 - L'aide modifie les comportements.

Ce type d'effet est encore plus délicat à analyser dans la mesure où on entend par "changement de comportement" une pondération différente et irréversible des critères de choix et non comme précédemment une valeur différente de certains paramètres entraînant des modifications dans les décisions.

Ces changements de comportement peuvent être très variés :

- lorsque l'aide appuie un discours et un argumentaire convaincants elle peut accélérer des changements inéluctables (concurrence mondiale, énergie chère, nuisance, introduction de l'électronique ...) soit par l'amélioration de l'information, l'effet démonstratif de certaines actions, la réduction du risque,... A l'inverse elle peut d'ailleurs susciter des réactions d'attente et de surenchère ;

* ce qui peut être différent de ce que ses dirigeants déclarent avoir l'intention de faire, particulièrement dans une négociation d'aide.

- lorsqu'il s'agit d'aides temporaires, les effets pervers d'attente avant la décision, puis d'anticipation de certaines actions pour bénéficier de l'aide peuvent être importants ;

- de manière plus diffuse, la complexité et l'opacité du système d'aides introduisent des biais dans le comportement de certaines entreprises qui comptent sur l'assistance des pouvoirs publics en cas de difficulté et consacrent une énergie et des moyens non négligeables à obtenir des subsides à divers guichets. Une part de la responsabilité d'entrepreneur est alors transférée insidieusement au niveau de certains services administratifs qui n'ont généralement ni les moyens ni les compétences pour l'assumer.

De façon générale la prise en charge par la collectivité de certaines dépenses et d'une partie du risque inhérent à toute activité productive peut avoir selon les cas des effets opposés : soit conduire l'entreprise à relâcher ses efforts et à compter de plus en plus sur l'aide publique, soit à l'inverse l'amener à profiter de cette assurance et de ces ressources supplémentaires pour avoir un comportement plus dynamique, réaliser de nouveaux projets et accroître le volume de ses activités. Distinguer à priori, dans des circonstances toujours complexes, ces deux types de comportements potentiels est particulièrement difficile. Aussi, au delà de l'analyse de leurs effets "mécaniques", un des problèmes essentiels de la gestion des aides publiques est certainement de pouvoir les attribuer le plus possible à des entreprises qui sont, ou peuvent entrer, dans la deuxième catégorie : entreprises qui ont démontré dans le passé leur dynamisme et leur capacité de gestion, entreprises dont les difficultés sont dues à des phénomènes difficilement prévisibles et ne sont que temporaires, entreprises nouvelles se lançant dans des activités à priori prometteuses.

3.3. - Les procédures sont souvent inadaptées.

Trop souvent les entreprises aidées ne répondent pas à ces critères et les effets pervers qui viennent d'être énumérés sont même accentués par les méthodes administratives de préparation, d'attribution et de contrôle des aides financières.

Même lorsque les systèmes publics d'information et d'étude permettent de proposer des orientations de politique industrielle, les marges d'incertitude inévitables et les spécificités des entreprises concernées nécessiteraient des adaptations que la complexité et la lenteur de la plupart des procédures administratives ne permettent généralement pas. Le cloisonnement des administrations, la faible transparence de la plupart des systèmes d'aide, le caractère partiel ou superficiel de beaucoup de contrôles, la limitation des possibilités de sanctions réduisent considérablement les améliorations possibles au niveau de l'évaluation des aides déjà attribuées et de d'adaptation des aides nouvelles. La lourdeur des procédures et le manque de transparence sont souvent accentués par les contraintes générales acceptées officiellement au niveau international (G.A.T.T., O.C.D.E. et surtout C.E.E.), contraintes qui peuvent en particulier conduire à allonger les délais et à compliquer les procédures. L'analyse des évolutions passées ne fait pas apparaître de processus d'apprentissage des services administratifs dans ce type d'activités.

De toutes manières, même en supposant des améliorations importantes dans le fonctionnement des administrations, il ne semble pas que les services de l'Etat seraient capables de suivre d'assez près les fluctuations à court terme des activités de production pour réagir au coup par coup de façon opportune, ni même de maîtriser un grand nombre de critères de choix appliqués à une multitude de projets variés. Les actions d'incitation et particulièrement les systèmes d'aides financières devraient donc être clairs, simples et relativement durables (quelques années) tant dans leurs principes que dans leurs modalités, et le nombre d'aides négociées au niveau central devrait être très limité. Ce n'est sans doute qu'à ces conditions très restrictives, et encore loin d'être remplies, qu'on pourrait envisager le développement de mécanismes continus d'évaluation et de régulation externe dépassant le stade des appréciations qualitatives générales et d'avis ponctuels d'experts, et permettant une remise en cause des formes d'aides jugées peu efficaces ainsi que le proposait un rapport de préparation du IXème Plan (16).

IV - L'ANALYSE SECTORIELLE ET FONCTIONNELLE DES AIDES

Dans les paragraphes précédents, l'analyse ne portait que sur l'entreprise aidée et sur les relations directes entre cette entreprise et les services administratifs. La question se pose également des effets sectoriels et régionaux des aides publiques ainsi que de leurs effets sur les agrégats macro-économiques. On examinera ici les effets directs sur certains agrégats, quelques indications complémentaires sur l'apport spécifique des bouclages macro-économiques à l'aide de modèles économétriques ont été regroupées en annexe 2.

4.1. L'impact régional

Sans remettre en cause l'impact positif sur l'aménagement du territoire de certaines aides qui visent soit explicitement cet objectif, soit le soutien de certaines activités où les contraintes de localisation sont déterminantes, certaines remarques doivent être faites (17) :

- l'exemption de taxe professionnelle pour les implantations nouvelles dans certaines régions est admise sans compensation financière par l'Etat des pertes de recettes correspondantes des collectivités locales. Ceci peut se traduire soit par une baisse des recettes fiscales des collectivités concernées, avec par exemple des effets négatifs sur les infrastructures dont elles ont la charge, soit par une charge fiscale supplémentaire pesant particulièrement sur les entreprises déjà implantées et freinant leur développement. C'était déjà le cas depuis très longtemps avec des exemptions de patente ; n'y a t-il pas un risque de même nature pour les nouvelles aides accordées par les établissements régionaux et les collectivités locales ?

- les fortes aides à la construction navale bénéficient depuis une trentaine d'années à un nombre réduit d'entreprises localisées dans des bassins d'emploi défavorisés. Une étude faite par le bureau de l'Industrie en 1977 avait déjà conduit à s'interroger sur les effets pervers de ces aides massives. Compte tenu du niveau élevé de protection

et d'aide financière obtenu par ces entreprises pour leur activité principale, elles n'avaient que peu de motivations pour diversifier leurs activités dans ces zones. L'aide publique n'a-t-elle pas favorisé la mono-industrie ? Une diversification plus précoce de ces zones n'aurait-elle pas mieux correspondu à l'objectif d'aménagement du territoire ? (sans compter qu'elle aurait rendu plus facile la réduction d'activité des chantiers).

- La prise en compte de la nature et des tarifs de quelques services publics peut être tout à fait déterminante pour la localisation de certains établissements d'entreprises industrielles. L'ampleur des transferts associés peut d'ailleurs être supérieure aux subventions publiques accordées au titre de l'aménagement du territoire. Ainsi, concernant le téléphone, un groupe de travail du Commissariat Général du Plan (18) a évalué, pour l'exercice 1981, la sous tarification des communications locales à quatre milliards de francs et la surtarification des communications interurbaines à onze milliards de francs. Une partie de ces transferts bénéficie directement à des entreprises implantées à Paris et dans la proche banlieue.

- Il est évident que dans de nombreux cas les aides au développement régional conduisent plus à déplacer la localisation de certaines activités qu'à en accroître l'importance au niveau national. Ce déplacement se fait donc au détriment d'autres zones géographiques dont le développement est ainsi freiné. Bien que cet effet soit conforme à l'objectif affiché, on peut regretter que ses aspects négatifs ne soient pas évalués. (tout en admettant que ce genre d'évaluation est particulièrement difficile).

4.2. L'impact sectoriel

Le phénomène de déplacement indiqué ci-dessus est également valable au niveau sectoriel. Dans tous les cas où les aides ont pour effet de développer l'activité de certaines entreprises sans modification, par rapport à une évolution sans aide, de la part de marché des entreprises françaises pour les produits correspondants, l'aide introduit un transfert au détriment des autres entreprises françaises s'adressant à la même clientèle.

Cet effet est particulièrement nocif lorsque l'aide consiste à maintenir en service des unités de production insuffisamment performantes pour des productions réalisées ailleurs sur le territoire national avec moins d'aide ou même avec profit et où, de plus, peuvent subsister des marges de production inutilisées. N'est-ce pas le cas dans certaines productions "traditionnelles" de biens intermédiaires ou de biens de consommation courante comme le textile (19) ?

Cet effet est plus délicat à interpréter lorsqu'il s'agit de la mise en place d'unités nouvelles très performantes. Dans ce cas l'aide permet d'accélérer le renouvellement du tissu industriel et de conquérir des parts de marché au détriment des concurrents étrangers (20). Il n'en reste pas moins qu'elle risque de mettre également en difficulté d'autres entreprises françaises opérant dans le même secteur. Lorsque cette opération est réalisée par accroissement de la productivité du travail, le nombre d'emplois créés par l'aide peut être inférieur à court ou moyen terme aux diminutions d'emplois induites chez les concurrents français sans qu'il y ait nécessairement compensation au niveau amont (biens d'équipement et BTP).

Il faut cependant convenir que l'aide publique, particulièrement lorsqu'elle représente une part importante du chiffre d'affaires des entreprises aidées, a des effets positifs indéniables à court terme sur toute la filière de production concernée. Comme on le verra à propos des activités en régression, l'aide permet d'éviter ou de retarder un effondrement brutal qui aurait surtout profité à l'offre étrangère et aurait mis en difficulté les soustraitants et fournisseurs nationaux. Repousser les échéances permet aussi, lorsque le temps ainsi gagné est bien utilisé, de préparer les restructurations les mieux adaptées au développement de l'industrie nationale.

4.3. L'impact sur la balance des paiements courants

On a déjà indiqué certains problèmes posés par les aides à l'exportation au niveau des objectifs (aide aux entreprises ou aide aux clients étrangers), au niveau de l'adéquation des moyens aux objectifs (en termes

d'élasticité de la demande aux prix, l'aide est plus efficace pour les produits banalisés, que pour les produits sophistiqués vers lesquels on voudrait par ailleurs spécialiser l'industrie française) et au niveau du comportement des entreprises (ces systèmes de garantie ne les incitent-elles pas à avoir un comportement d'assisté ?).

Les aides à l'exportation, ou à l'investissement porteur d'exportations, peuvent également avoir pour effet d'inciter les entreprises à délaisser le marché intérieur, à s'orienter vers les pays les moins solvables et les moins développés et à privilégier les "grands contrats", alors que nos échanges commerciaux sont structurellement déficitaires avec la R.F.A. et les Etats-Unis et que le développement du commerce courant stabiliserait les échanges avec de nombreux pays.

De plus, le système de désencadrement, de bonifications et de réescompte privilégié gonfle artificiellement les ventes à crédit, l'endettement des entreprises et les prêts à l'étranger. Ainsi une partie significative de l'effet positif des aides sur la balance commerciale disparait si on fait le bilan des mêmes opérations aidées au niveau de la balance des paiements, c'est-à-dire en tenant compte des charges financières induites par les exportations à crédit.

Enfin ne peut-on penser que des actions en faveur de certaines activités également pourvoyeuses de devises seraient plus efficaces que les aides à l'exportation de produits manufacturés ? (tourisme, activités financières, ingénierie,....). Même s'il est par exemple difficile de vérifier le sens de causalité de la liaison entre les exportations d'ingénierie et les exportations d'ensembles de production, un développement des activités tertiaires exportables se justifierait indépendamment de son éventuel effet d'entraînement sur les exportations de biens (14).

Il n'en reste pas moins que, compte tenu de leur forte croissance depuis une quinzaine d'années, et de l'ampleur des masses financières en jeu, les aides à l'exportation constituent désormais un soutien

structurel des exportateurs français de plus en plus difficile à remettre en cause. Elles ont contribué avec les biais indiqués ci-dessus, mais de manière jugée très significative par les entreprises exportatrices au développement du commerce extérieur, particulièrement pour les biens d'équipement. Enfin, compte tenu du déficit durable de la balance commerciale et de l'endettement extérieur, une approche macro-économique en termes de coût de la devise permet également de justifier certaines aides publiques à l'exportation (21).

4.4. L'impact sur les finances publiques

Globalement les aides financières étudiées représentent ces dernières années un flux annuel d'une cinquantaine de milliards de francs actuels, soit moins de 5 % du budget de l'Etat. Même si ces aides à l'industrie manufacturière ne correspondent pas toujours à une allocation très efficace des ressources collectives, elles ne constituent pas non plus une charge insupportable pour les finances publiques.

Il convient cependant de relever certains caractères particuliers du système actuel vis-à-vis des finances de l'Etat :

- plusieurs systèmes d'aides sont actuellement conçus de telle façon qu'aucune évaluation du coût pour les finances publiques n'est présentée au moment de la décision d'aide. Dans de nombreux cas aucune évaluation n'est d'ailleurs possible, et aucun plafond n'est prévu ni au niveau de l'intervention ponctuelle ni au niveau global de la rubrique budgétaire concernée (cas des garanties) ;

- de nombreuses décisions d'aides engagent les budgets futurs pour des valeurs importantes et mal connues (garanties, bonifications d'intérêt) ;

- les effets pervers déjà évoqués peuvent conduire les entreprises à minorer le coût pour l'Etat au moment de la préparation des décisions, ils

peuvent également conduire les pouvoirs publics soit à persévérer dans des actions coûteuses et peu intéressantes, soit à compenser par des aides nouvelles des coûts occasionnés par des actions décidées antérieurement par les entreprises avec des incitations publiques ;

- à l'inverse, il faut rappeler que le système de l'impôt sur les sociétés doit être pris en compte pour l'évaluation du coût net des aides de l'Etat : celui-ci est fortement réduit par rapport au montant brut de l'aide pour toutes les entreprises qui paient un impôt sur les bénéfices, même s'il n'est généralement pas possible de calculer le supplément de bénéfice lié à l'attribution de l'aide. Dans l'ensemble les aides sont ainsi plus coûteuses lorsqu'elles sont attribuées à des entreprises déficitaires. (en tenant compte des possibilités de report de déficits).

- de manière encore plus générale, mais toujours avant un éventuel bouclage macroéconomique, il est important de repérer et d'évaluer d'autres effets indirects,en particulier à travers les comptes des organismes sociaux. Ce problème concerne plus spécialement les aides aux entreprises en difficulté, dont certaines particularités vont être analysées maintenant.

4.5. Quelques particularités des aides aux activités en régression

Une interrogation fréquente lorsqu'il s'agit d'entreprises confrontées à des difficultés qu'elles ne peuvent surmonter seules est la suivante : n'est-il pas préférable, à la fois pour les finances publiques et plus généralement pour la collectivité,d'aider au maintien de l'activité plutôt que de procéder à des licenciements économiques accroissant ainsi le nombre de chômeurs et le coût du chômage ?

Il est certain que ce problème peut se poser en termes aigus et très concrets, particulièrement dans une analyse concernant des effets locaux

et à court terme de l'éventuelle fermeture d'un grand établissement industriel :

- accroissement du chômage directement lié à la réduction de l'activité dans l'établissement ainsi qu'en amont et en aval (clients, fournisseurs et sous-traitants locaux) ;

- effets cumulatifs des pertes de revenu et d'emploi pour la zone géographique ;

- pertes de recette et accroissement des dépenses pour l'Etat et les organismes de Sécurité Sociale.

La difficulté et l'urgence des problèmes sociaux nécessitent de toute évidence des actions appropriées dans certains bassins d'emploi particulièrement fragiles. Ceci ne devrait cependant pas empêcher de prendre en compte les données objectives sur les conditions de la compétitivité internationale, le caractère inéluctable de certaines évolutions des techniques et de la demande et surtout les effets pervers déjà indiqués sur l'ensemble du tissu industriel d'aides massives à un petit nombre d'entreprises ayant de fortes difficultés structurelles. Ainsi les aides de l'Etat à la sidérurgie et à la construction navale (ainsi d'ailleurs qu'aux charbonnages) ont connu une croissance quasi continue depuis une vingtaine d'années. Les ajustements paraissent s'y opérer plus lentement en France que dans d'autres pays industrialisés, l'Allemagne Fédérale et le Japon notamment. Dans ce dernier pays un dispositif législatif particulier permet, semble-t-il, une meilleure anticipation et une meilleure gestion des secteurs industriels en régression (lois de 1978 et 1983 sur les entreprises confrontées à des difficultés structurelles) (2).

On peut penser que, pour ces secteurs, le maintien durable d'aides financières élevées s'explique moins par des facteurs économiques explicites et quantifiés que par quelques considérations socio-politiques : la forte concentration des personnels dans un nombre limité de grands établissements, certaines traditions historiques qui avaient permis des salaires et des

garanties sociales souvent supérieures à la moyenne, et dans la plupart des cas une appréciation par les responsables politiques d'un intérêt tout particulier de ces productions du point de vue de l'indépendance nationale, même dans le cas de la sidérurgie (22).

Enfin, pour revenir de façon plus technique à la question posée au début de ce paragraphe, il ne semble pas que l'aide au maintien de ces activités soit moins coûteuse, sur le moyen terme et pour les finances publiques, que l'aide aux chômeurs qui serait nécessaire en cas de régression plus rapide. Il faut certes tenir compte des effets cumulatifs déjà indiqués ci-dessus et de leurs conséquences possibles sur la croissance économique globale, mais plusieurs arguments vont dans l'autre sens :

- tout d'abord les effets de déplacement et de substitution décrits en 4-1 et 4-2 réduisent dans beaucoup de cas l'avantage tel qu'il peut être apprécié au niveau national par rapport à une évaluation microéconomique locale. Par ailleurs, c'est sans doute dans ces cas de crainte de fermeture d'établissements que les effets pervers également décrits précédemment risquent d'être les plus importants. Ces deux effets de surenchère et d'exagération des effets directs de l'aide au niveau local, et de sous-estimation ou même de refus de prise en compte des effets indirects dans d'autres zones géographiques ou d'autres secteurs d'activité, sont presque inhérents au système et aux procédures d'aide ; ils peuvent être très coûteux pour les finances publiques et pour la collectivité nationale.

- une comparaison précise au niveau microéconomique suppose de calculer le gain marginal, pour les finances publiques, d'un licenciement évité. Ceci pose de manière cruciale les questions traditionnelles à la fois de la définition d'une solution de référence acceptable et de la grande diversité des situations concrètes. Malgré le caractère quelque peu arbitraire de ces calculs, il faut noter que, sauf en cas de programmation sérieuse d'une baisse rapide d'activité, l'aide au maintien de la production a tendance à croître dans le temps lorsqu'il s'agit des secteurs cités précédemment (au moins le coût par salarié); à l'inverse les aides affectées aux

salariés privés d'emploi par la réduction d'activité dans ces secteurs baissent très sensiblement dès la deuxième et surtout la troisième année(23). Un calcul limité aux coûts de la première année serait évidemment trop sommaire, de plus il conduirait à pérenniser l'aide publique en recommençant tous les ans le même raisonnement sur les licenciements évités.

Ces développements illustrent la complexité de l'analyse et des calculs que supposerait une évaluation sérieuse de l'efficacité des aides aux activités en régression. Ils mettent également en évidence les interdépendances étroites entre les aides à l'industrie et la politique de l'emploi : il est clair que les aides à ces secteurs permettent de gagner du temps dans la solution de certains problèmes d'emploi en retardant des adaptations inévitables du système productif ; certaines aides à l'emploi qui ne sont pas prises en compte dans cette étude : préretraites, aides à la formation professionnelle et à la mobilité,... permettent au contraire d'accompagner ou d'accélérer les mutations indispensables de l'appareil productif.

CONCLUSION

L'efficacité des aides financières de l'Etat aux entreprises industrielles peut être appréciée de multiples points de vue. On a tenté dans cette étude de passer en revue les principaux d'entre eux. Que l'on étudie l'adéquation des aides à leurs objectifs propres, leurs effets directs sur les entreprises aidées ou leurs effets plus généraux sur des agrégats sectoriels, géographiques ou macroéconomiques, on est conduit à un grand scepticisme sur l'efficacité globale de ces méthodes d'intervention, scepticisme encore renforcé par le constat portant sur les procédures d'attribution et de contrôle des aides : complexité, lourdeur, opacité et manque de maîtrise en ce qui concerne un très grand nombre de systèmes d'aides. Toutefois il ne faut pas oublier, dans ce bilan global, les aspects positifs des aides publiques, des résultats étant obtenus soit par l'importance même des flux financiers en faveur de certains secteurs et à l'exportation, soit de façon plus subtile, par leur caractère démonstratif ou d'accompagnement de politiques plus globales : automatisation, économie de matières premières, matériaux nouveaux, innovation, développement des petites et moyennes entreprises industrielles,...

Au-delà de cette appréciation globale, il semble utile d'insister sur quelques particularités qui compliquent considérablement les efforts d'évaluation du système d'aide et nuisent à son amélioration. On les regroupera autour des quatre thèmes de la spécificité des aides à l'industrie, de l'adéquation objectifs-moyens, de la prise de risque et de la transparence.

a) La spécificité des aides à l'industrie

Cette étude était centrée sur les aides de l'Etat aux seules entreprises industrielles ou, comme l'indique un rapport annuel au Parlement, sur "les fonds publics attribués à titre d'aides aux entreprises industrielles" (3). Il est clair que les mots d'aide ou de solidarité

n'ont pas tout à fait le même sens selon qu'il s'agit d'une intervention auprès d'une personne morale, cas des sociétés anonymes visées dans cette étude, ou d'une personne physique. Celles-ci sont concernées directement par de nombreuses aides publiques qui ne relèvent sans doute que partiellement des analyses présentées ci-dessus : aides au logement, aux familles nombreuses, aux personnes âgées, aux agriculteurs, aux personnes privées d'emploi,...

S'agissant de l'industrie, même si certains objectifs socio-politiques ont pu paraître déterminants dans le maintien durable de certaines aides, on peut à priori penser que les objectifs principaux de l'intervention publique sont plutôt de nature économique.

b) L'adéquation objectifs-moyens.

La diversité et la complexité des objectifs et des moyens des Pouvoirs Publics sont sans doute inéluctables, et dans le meilleur des cas elles répondent à la diversité et la complexité des problèmes et des situations concrètes. On peut cependant penser que les aides financières à l'industrie devraient avoir pour objectif principal de renforcer l'industrie nationale en allégeant certaines contraintes financières.

Or on a vu que lutter contre les faiblesses de l'industrie pouvait nécessiter bien d'autres moyens d'intervention de l'Etat :
- l'information, particulièrement sur les marchés, sur les concurrents étrangers, sur les nouvelles technologies ;
- la formation professionnelle et supérieure, ainsi que la recherche industrielle ;
- des systèmes d'assurance, de garantie permettant de lancer plus de projets risqués mais à priori rentables.

En outre, dans tous les cas où l'Etat a des objectifs précis en ce qui concerne les spécifications et les quantités de produits à fabriquer et où il assume plus ou moins directement l'essentiel des risques, les méthodes d'incitation sont sans doute les moins efficaces

et dès à présent les moins importantes. Il ne semble d'ailleurs pas que l'Etat ait ou doive avoir généralement des objectifs de cette nature, hors le cas des marchés publics mais, pour un nombre restreint de grands projets nationaux, l'action directe par les entreprises publiques ou par des sociétés d'économie mixte permet d'éviter les ambiguïtés et les effets pervers décrits précédemment.

Enfin on a vu également que certaines aides à des entreprises industrielles avaient des objectifs sociaux très marqués. Ne pourrait-on alors les rattacher plus clairement à la politique de l'emploi ?

c) La prise de risque

L'analyse de la prise de risque, déjà évoquée à plusieurs reprises, nécessiterait des études spécifiques. Plusieurs catégories seraient à envisager : défaillance d'un gros client ou d'un fournisseur important, arrivée rapide de nouvelles technologies ou de nouveaux produits, échec technique ou commercial d'un projet de développement,... Depuis le début des années 70, le ralentissement de la croissance, l'ouverture des frontières et l'accélération des progrès techniques dans certains domaines, ont accru le risque encourru par les entreprises, particulièrement dans les activités industrielles (11). La prise en charge collective des risques jugés excessifs par les entreprises ou par leurs banquiers semble être devenue une des justifications importantes de l'intervention publique. Certains instruments spécifiques ont certes été développés ou créés mais le plus souvent on constate une imbrication étroite entre les aides financières et les systèmes d'assurance ou de garantie, ce qui ne facilite pas l'analyse.

d) La nécessaire transparence

Il est évident que la première condition à remplir pour évaluer l'efficacité des aides est de disposer d'une information de qualité sur les flux financiers concernés, les entreprises bénéficiaires et les engagements souscrits par les divers partenaires (2) et (16).

../.

Le grand nombre de services administratifs concernés, la complexité des procédures et l'imprécision dans les méthodes de comptabilisation des aides, à la fois dans le budget de l'Etat et dans les comptes des entreprises, sont des obstacles importants. Leur poids est encore accru par la barrière principale que constituent les diverses règles de secret touchant aux données individuelles : celles-ci, qu'il s'agisse des flux d'aides, des comptes des entreprises aidées ou des engagements souscrits, sont couvertes par le secret en matière fiscale, douanière, statistique, bancaire, de défense nationale ou des affaires, soit plus généralement par les règles sur le secret professionnel. Il est clair que ces règles interdisent toute évaluation détaillée de l'adéquation objectifs-moyens hors des services administratifs gestionnaires des aides ou éventuellement d'un service d'inspection d'un département ministériel concerné.

Les méthodes actuelles de gestion des aides, qui privilégient les études et la définition d'engagements a priori, ne facilitent pas non plus l'évaluation. On peut penser qu'un système définissant mieux les responsabilités et permettant de faire plus confiance à priori aux organisations chargées de gérer les procédures d'aide et aux entreprises pouvant en bénéficier, mettrait plus l'accent sur le renforcement des contrôles et des évaluations a posteriori.

On a montré enfin dans plusieurs parties de cette étude, qu'une évaluation correcte doit prendre en considération des effets de déplacement, de substitution ou d'éviction : les aides financières ont souvent pour effet de privilégier une ou quelques entreprises par rapport à d'autres entreprises françaises. Indépendamment de leur impact social, indéniable dans certains cas, leur impact économique n'est globalement positif que si elles se traduisent par un accroissement relatif de l'activité en France, et donc de la part de marché des entreprises françaises (marché intérieur et extérieur) ; il est rare que l'information correspondante soit rassemblée.

Dans tous les pays développés les aides financières aux entreprises industrielles constituent un instrument important de la politique de renforcement de l'appareil productif dans ses parties les plus sensibles, celles qui sont le plus exposées à la concurrence internationale. Les masses financières en jeu montrent que c'est particulièrement le cas en France, surtout depuis les changements intervenus en 1981 et 1982. L'analyse de ces flux, de leurs bénéficiaires et de leurs effets indirects indique que des progrès sont encore possibles pour mieux ajuster cet instrument aux objectifs d'adaptation et de modernisation de l'industrie nationale.

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ANNEXE 1 - L'EVALUATION DES AIDES A L'INDUSTRIE

On présente dans cette annexe :

1) quelques compléments aux évaluations présentées dans la première partie,
2) les dotations et prêts aux groupes publics en 1982 et 1983,
3) l'évaluation des aides à l'industrie du projet de loi de finances pour 1985,
4) l'évaluation de l'INSEE pour les années 1979 à 1982

1) Indications complémentaires au tableau de la première partie

Le tableau résumé présenté page 7 a été établi à partir du tableau d'ensemble ci-joint qui fournit les aides versées par l'Etat de 1970 à 1982/ en francs courants), et d'indications complémentaires,mais provisoires, concernant les aides accordées en 1983 (budget, collectifs, avis et rapports du Parlement; informations des services gestionnaires).

Les rubriques retenues sont :

- Sidérurgie : prêts du F.D.E.S. (et du F.I.S. en 1983) et dotations en capital l'année de leur versement. De plus l'Etat a pris à sa charge en 1978, 13,4 milliards de francs de dettes des deux groupes ;

- Constr. nav. : versements annuels de l'aide spécifique à la construction navale ;

- Aéronaut. : aides spécifiques au secteur de l'aéronautique, surtout les grands programmes civils d'avions et de moteurs (hors marchés publics) et dotations en capital aux entreprises publiques du secteur ;

- Informat. : versements liés aux divers plans concernant l'informatique (y.c. composants) et dotations à Bull ;

- Ss Tot. Sect. : somme des quatre rubriques précédentes ;

- Autr. Dot. Cap. : dotation en capital aux groupes industriels publics hors les quatre secteurs précédents ;

- Gar. Export. : coût des procédures d'assurance et de garantie à l'exportation : Garantie de risque économique, Assurance crédit et Assurances prospection et foires ;

- Créd. Export. : coût des procédures d'allègement des taux des crédits à l'exportation : bonifications à la B.F.C.E. (et au Crédit National) réescompte privilégié, et prêts du Trésor aux Etats Etrangers. Compte tenu de leurs caractéristiques (durée, taux, différés) on a assimilé ces derniers à des subventions ;

AIDES PUBLIQUES A L'INDUSTRIE _ Tableau d'ensemble

Millions de francs courants et %

en M.F.cour.	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Sidérurgie	494	534	491	530	760	576	1587	1488	13915	3258	343	5967	3908
Constr.nav.	309	465	610	626	784	1124	1071	964	1042	1563	1300	1596	1843
Aéronaut.	1131	1668	1865	1497	1835	2312	2186	1886	1888	1146	1422	1460	1523
Informat.	60	283	223	215	329	701	1384	746	444	335	297	402	281
SsTot.Sect.	1994	2950	3189	2868	3708	4713	6228	5084	17289	6302	3362	9425	7555
Autr.Dot.Cap.	370	265	498	496	426	395	75	212	580	620	453	200	5197
Gar.Export.	164	351	437	373	414	1211	1782	1210	1191	3181	1632	1198	1319
Créd.Export.	702	702	593	854	1657	1355	2101	2880	2664	4075	7458	14145	15713
Ss.Tot.Export	866	1053	1030	1227	2071	2566	3883	4090	3855	7256	9090	15343	17032
Dével.région.	434	346	299	239	331	340	280	518	590	803	767	833	741
Ind.Agr.Alim	143	142	110	121	154	187	181	177	196	215	238	316	333
Rech.Innov.	116	128	150	154	152	196	374	293	424	485	575	608	852
Pol.Industr..	0	0	72	107	109	148	141	106	122	203	402	466	1601
Bonif.&équiv.	258	318	281	382	437	571	715	828	941	1123	1585	2140	2389
SsTot.4	951	934	912	1003	1183	1442	1691	1922	2273	2829	3567	4363	5916
TOTAL	4181	5202	5629	5594	7388	9116	11877	11308	23997	17007	16472	29331	35700
Aid/V.A.Ind.	2,0	2,2	2,2	1,9	2,2	2,4	2,7	2,3	4,4	2,8	2,4	3,8	4,1
Aid/FBCF.Ind.	11,1	12,4	12,4	10,9	12,6	15,9	18,4	16,5	33,1	21,2	16,9	28,6	32,5
Aid/Dép.Budg.	2,6	3,0	3,0	2,6	3,0	3,0	3,4	2,9	5,4	3,4	2,8	4,1	4,3
Aid.Ex/EX.BE.	4,6	4,9	4,6	4,4	5,4	5,5	6,2	5,6	4,9	7,8	8,2	11,0	10,7

Sources : - Rapports au Parlement sur les fonds publics attribués à titre d'aides aux entreprises industrielles

- Calculs du Bureau de l'Industrie de la Direction de la Prévision (8)

- Ss Tot. Export. : somme des deux rubriques précédentes ;

- Dével. région. : primes à l'aménagement du territoire et au développement régional et mesures fiscales associées (hors exonération de taxe professionnelle) ;

- Ind. Agr. Alim. : pour l'essentiel la prime d'orientation agricole ;

- Rech. Innov. : aides à la recherche industrielle et à l'innovation (surtout par l'A.N.V.A.R.), aides aux économies d'énergie et de matières premières ;

- Pol. Industr. : crédits de politique industrielle et pour 1982 et 1983, coût du "Pacte textile" ;

- Bonif. et équiv. : bonification d'intérêt pour les prêts à l'investissement industriel accordés par les établissements spécialisés, équivalent bonification pour les prêts du F.D.E.S. à l'industrie (hors sidérurgie), dotations à l'I.D.I.

- Ss Tot. 4 : somme des cinq rubriques précédentes ;

- Aid/V.A. Ind. : poids des aides recensées (en %) dans la valeur ajoutée brute de l'industrie (branches U02, U04, U05 et U06 des comptes nationaux) ;

- Aid/F.B.C.F. Ind. : poids des aides rencensées (en %) dans la formation brute de capital fixe des branches industrielles(comptabilité nationale) ;

- Aid/Dép. Budg. : poids des aides recensées (en %) dans le total des dépenses définitives du budget général de l'Etat (y.c. dépenses définitives des comptes d'affectation spéciale) ;

- Aid. Ex/Ex. BE. : poids des aides à l'exportation (en y incluant la moitié des aides à la construction navale) dans les exportations françaises de biens d'équipement professionnel (U05 A des comptes nationaux).

2) Dotations et prêts garantis aux groupes publics en 1982 et 1983

Dotations en capital et prêts avec la garantie de l'État reçus par les groupes publics du secteur concurrentiel en 1982 et 1983

Millions de F

Groupes publics (par secteur principal d'activité)	1982			1983	
	Dotations		Prêts garantis par l'État (1)	Dotations	Prêts garantis par l'État (2)
	État	SFPI			
Sidérurgie (Usinor, Sacilor)	2 800	–	845	5 800	7 580
Autres biens intermédiaires (CDF–Chimie, EMC, Rhône-Poulenc, Saint-Gobain, Péchiney)	1 177	2 700	–	2 800	2 812
Biens d'équipement (Renault, Thomson, CGE, Bull, CGCT)	1 020	300	300	3 057	500
TOTAL	**4 997**	**3 000**	**1 145**	**11 657**	**10 892**

(1) Les banques ont, en outre, accordé directement 3 000 MF de prêts participatifs en 1982 (400 MF pour les groupes sidérurgiques, 1 050 MF pour les autres groupes des biens intermédiaires et 1 550 MF pour ceux des biens d'équipement)
(2) Y compris prêts du Fonds d'intervention sidérurgique en 1983

Note : Le tableau indique, pour les groupes industriels publics du secteur concurrentiel anciennement et nouvellement nationalisés, classés par secteur, le montant des dotations en capital et celui des prêts accordés avec la garantie de l'État. Les grandes entreprises nationales sont en dehors de ce champ.

On retient ici une optique de Trésorerie : il s'agit des montants effectivement reçus par les groupes publics en année civile. Les dotations en capital sont prises en compte qu'elles prennent la forme d'augmentations de capital ou d'avances actionnaires. Par contre, on ne comptabilise pas les capitalisations d'avances actionnaires et les conversions d'obligations couvertibles. Par souci de cohérence, les dotations en capital de la Société financière de participation industrielle (Banques), opération exceptionnelle en 1982, sont également pris en compte.

Source : Rapport sur les Comptes de la Nation de 1983

3) Une évaluation fournie par le Projet de Loi de Finances pour 1985

Le "Rapport Economique et Financier" annexé chaque année au projet de budget fournit une évaluation de "l'ensemble des aides à l'industrie" inscrites annuellement dans les lois de finances initiales (L.F.I.).

Ce qui suit est extrait du dernier rapport (p. 54)

"L'ensemble des aides à l'industrie enregistre une nouvelle augmentation, après les fortes progressions des années précédentes. Elle apparaît dans le tableau suivant :

(En millions F)

	L.F.I. 1983	L.F.I. 1984	L.F.I. 1985
Aides générales à l'investissement	22.006	22.692	26.053
Aides aux entreprises publiques	17.651	20.651	22.048
Aides aux exportations	3.820	4.893	6.201
Total	43.477	48.236	54.302
Progression sur l'année précédente	+ 15,1 %	+ 10,9 %	+ 12,6 %

Le projet de loi de finances pour 1985 continue donc d'assurer le soutien des entreprises industrielles, dans l'esprit des P.P.E. n° 1 et 3 du IXè plan."

4) Une étude de l'INSEE

Economie et Statistique a publié en septembre 1984 un article de J.C. DUTAILLY : "Aides aux entreprises : 134 milliards de francs en 1982". Outre des données globales et par type d'aide, cette étude fournit des évaluations d'aides par secteur détaillé (niveau : 18 secteurs pour l'industrie au sens strict).

Pour l'industrie au sens strict (biens intermédiaires, d'équipement et de consommation) on peut dresser le tableau suivant :

milliards de francs et %

	1979	1980	1981	1982
Total des aides aux entreprises (milliards de francs)	82,9	103,3	126,7	133,9
dont Aides aux secteurs industriels	14,4	15,6	35,6 (1)	33,9
dont Aides aux secteurs sidérurgique, naval, aéronautique et armement	7,4	7,3	23,4	16,2
Aide/Valeur ajoutée en % :				
Total industrie (2)	3	3	6	
Sidérurgie	13	14	75 (1)	
Navale - Aéronautique - Armement	23	17	19	

(1) Cette évaluation inclut la transformation en dotations en capital lors de la nationalisation de Sacilor et Usinor, de 13 800 millions de francs de prêts antérieurement accordés par l'Etat.

(2) Au niveau de nomenclature utilisé dans cet article, le taux d'aide/valeur ajoutée est inférieur ou égal à 3 % pour tous les autres secteurs industriels et pour ces trois années.

ANNEXE 2 - LES APPORTS SPECIFIQUES DE L'APPROCHE MACROECONOMIQUE

Au-delà des aspects micro-économiques, sectoriels et fonctionnels présentés dans l'étude il est intéressant d'analyser ce que peut apporter l'approche globale par un modèle macro-économique. Plusieurs analyses ont été consacrées ces dernières années à ce thème des effets macro-économiques des aides publiques et à des sujets voisins : impacts macro-économiques d'un grand projet industriel, d'une relance de l'investissement industriel, d'un allègement des charges des entreprises industrielles,... Des travaux ont été réalisés, notamment à l'INSEE et à la Direction de la Prévision, en utilisant les modèles METRIC, COPAIN, DMS et PROPAGE (12) et (24) à (27). Sans prétendre traiter l'ensemble des questions posées par l'analyse macro-économique des interventions publiques, on mettra en évidence quelques problèmes de méthode que l'on rencontre lorsqu'on veut apprécier les effets d'une aide financière avec un modèle économétrique, avant de présenter les apports spécifiques de cette approche pour l'orientation d'une politique d'aide publique au secteur productif.

1) Quelques problèmes de méthode

Ces problèmes de méthode tiennent à la fois à la structure et au caractère très global des modèles et à la nécessité d'une caractérisation fine de l'aide et de ses effets directs.

- les modèles DMS, METRIC COPAIN et PROPAGE ne comportent aucune variable permettant de prendre en compte directement des actions comme la formation, l'innovation, la recherche-développement ou la croissance externe des entreprises en France ou à l'étranger ; par ailleurs, leur analyse sectorielle du système productif paraît très grossière lorsqu'on s'intéresse à une aide spécifique limitée à quelques entreprises.

- le rôle prépondérant de l'Etat dans les décisions et le financement de certaines grandes entreprises n'y est pas explicitée (hors les Grandes Entreprises Nationales dont le traitement est pour l'essentiel exogène).

- l'analyse d'une aide peut nécessiter des études amont complexes et détaillées : à la limite il serait nécessaire de construire un modèle

partiel explicitant les effets spécifiques de l'aide et des projets aidés sur toutes les variables du modèle macro-économique (effets spécifiques par rapport aux effets moyens déjà traduits dans le modèle macro-économique) puis d'introduire les résultats de ce modèle partiel comme variables d'écart dans le modèle global (25), (26). Ainsi les questions essentielles, liées aux effets directs de l'aide, doivent être traitées par un jeu d'hypothèses extérieures au modèle. Si celui-ci peut contribuer à en évaluer les effets, il ne saurait en valider la pertinence (27).

- enfin l'appréciation globale des effets d'une mesure d'aide pose les problèmes classiques de comparaison de solutions alternatives et d'analyse multicritère : comparaison de plusieurs variantes correspondant à diverses interventions possibles, hypothèses très fortes sur le financement public (endettement, impôt sur les ménages,...), rôle de la solution de référence (par exemple, une intervention accroissant le déficit extérieur ne sera pas appréciée de la même façon selon que le compte central prévoit un déficit ou un excédent de la balance commerciale), pondération des effets sur chacun des agrégats macro-économiques (croissance, emploi, inflation, finances publiques...).

2) Les apports spécifiques de l'approche macro-économique.

Au-delà de ces problèmes de méthode, l'approche globale et l'utilisation de modèles formalisés semblent nécessaires de manière générale pour compléter et assurer la cohérence d'ensemble de l'analyse et dans quelques cas pour évaluer, sous certaines hypothèses, l'ordre de grandeur des effets possibles de l'aide publique.

L'approche globale permet de préciser et éventuellement d'élargir l'analyse déjà présentée dans les paragraphes précédents sur les impacts sectoriels, sur les finances publiques et sur la balance des paiements : effets de déplacement ou d'éviction, effets indirects par la fiscalité... Plus généralement, l'approche macro-économique permet de relativiser la présomption d'efficacité ou d'inefficacité qui pourrait être déduite des

analyses micro-économiques ; elle permet en effet, en amont de toute quantification, d'expliciter les mécanismes par lesquels l'aide peut modifier les agrégats macro-économiques. Ainsi, indépendamment de ses particularités, toute aide financière accroissant le déficit budgétaire ex ante permet, selon DMS et METRIC, une croissance supplémentaire du P.I.B., de la F.B.C.F., de la consommation des ménages et de l'emploi ; généralement ce déficit accru entraîne une dégradation de la balance commerciale, un déficit ex post des finances publiques plus faible qu'ex ante, et une certaine désinflation. Cette approche permet de mieux cerner le domaine de validité des aides spécifiques : dans quels cas sont-elles plus efficaces que d'autres mesures conduisant au même déficit budgétaire ?

Bien que ces modèles économétriques ne permettent pas d'apprécier directement les modifications de comportement des agents, leur utilisation peut également être éclairante dans ce domaine lorsqu'ils permettent d'évaluer l'ampleur des changements de comportements qui seraient nécessaires pour atteindre certains résultats.

Même si les quatre modèles déjà cités ont des spécifications différentes sur des points importants (rôles respectifs des profits et de la demande anticipée, conditions de la substitution capital-travail,...) et fournissent des résultats différents pour une même mesure d'aide, ils constituent sans doute les seuls instruments permettant d'analyser de manière rationnelle les effets intertemporels (y compris le rôle de la situation conjoncturelle), les contraintes globales que doit respecter l'ensemble des aides spécifiques ainsi que les effets indirects par l'intermédiaire de la demande et des revenus (12).

Par contre, il ne faut pas perdre de vue qu'il s'agit de modèles à court ou moyen terme qui ne sont d'aucune aide pour évaluer les effets à long terme ; ceci est particulièrement important pour les grands projets concernant le secteur productif dont la réalisation peut prendre plusieurs années et dont les retombées principales se font sentir ensuite pendant dix ans ou plus. Dans ce cas l'approche macro-économique permet essentiellement d'analyser les interdépendances et les effets à court-moyen terme d'une accélération ou d'un ralentissement de ces opérations (26).

3) Quelques résultats significatifs

Il est toujours difficile de comparer entre elles des variantes réalisées avec plusieurs modèles, par des équipes et à des dates différentes et surtout à l'occasion de l'examen de problèmes variés. Compte tenu de ces difficultés, liées particulièrement à la manière de normer les variantes, on se limitera ici à comparer quelques variantes traitant explicitement de subventions d'équipement attribuées aux entreprises et dont le montant ex ante est connu. Sous ces réserves et en résumé, pour obtenir, au bout de cinq ans, un accroissement unitaire de l'investissement des entreprises, il faut un flux annuel supplémentaire de subventions d'équipement aux entreprises de

- cinq selon COPAIN
- quatre selon METRIC
- deux à trois suivant le secteur selon D.M.S. (en 1980, hors commerce).

Les deux tableaux ci-après fournissent quelques indications complémentaires sur les variantes étudiées (28).

Tableau 1 - Effets mesurés la cinquième année d'une subvention d'équipement aux entreprises de 10 milliards de francs 84, renouvelée chaque année.

	COPAIN	METRIC
- Supplément d'investissement (en G.F. 84)	7,1	2,4
- Supplément de P.I.B. (en %)	0,28	0,26
- Variation du prix du PIB (en %)	- 0,59	- 0,38
- Balance commerciale (en G.F.)	- 3,2	- 3,5
- Capacité de financement des administrations (en G.F.)	- 7,7	-12,6

Tableau 2 - Variantes D.M.S. - Effets la cinquième année (29)

Amélioration de la compétivité par attribution de subventions d'équipement

Variante : attribution de 2 milliards de francs actuels de subventions d'équipement supplémentaires chaque année de 1981 à 1985 au secteur suivant :	Croissance du PIB (en %)	Consommation des ménages (en %)	Investissements des entreprises (en %)	Emplois par an	Chômeurs en 1985	Capacité de financement (en milliards de francs 1980)			Prix à la consommation (en %)
						de la Nation		des administrations en 1985	
						par an	en 1985		
Industries agricoles et alimentaires	ε	ε	+ 0,1	2 600	— 5 000	— 1,7	— 2,3	— 2,8	— 0,1
Biens intermédiaires	ε	ε	+ 0,2	3 000	— 6 900	— 1,4	— 2,0	— 1,8	— ε
Biens d'équipement	ε	ε	+ 0,1	2 400	— 5 900	— 1,2	— 2,0	— 2,1	— ε
Biens de consommation	ε	ε	+ 0,2	3 800	— 8 200	— 1,3	— 1,8	— 2,0	— 0,1
Bâtiment génie civil	ε	ε	+ 0,1	1 100	— 3 000	— 0,5	— 0,8	— 2,0	— ε
Services marchands	ε	ε	+ 0,1	1 700	— 3 800	— 1,4	— 1,8	— 1,4	— ε
Commerces	ε	ε	+ 0,5	400	— 1 100	— 0,5	— 0,7	— 2,2	ε

COPAIN et METRIC donnent des résultats assez voisins si on examine les effets sur l'investissement, la croissance et la balance commerciale ; COPAIN fait apparaître des résultats plus favorables en termes de prix et de compte des administrations.

D.M.S. et METRIC diffèrent de manière beaucoup plus sensible. "La différence flagrante dans le cas des variantes subventions entre les deux modèles provient du rôle joué par le profit dans les équations de prix et d'investissement : dans D.M.S. la présence de termes de profitabilité importants dans les équations de prix et d'investissement entraîne qu'une réduction des coûts unitaires ou une subvention ont des effets comparables ; au contraire, dans METRIC, ces termes sont beaucoup plus faibles si bien que l'impact d'une subvention sur l'investissement est réduit". (30)

On notera par ailleurs que :

- la mesure étudiée n'a pas d'impact a priori sur le coût relatif des facteurs de production donc sur la substitution capital/travail, ce qui ne serait pas nécessairement le cas avec d'autres formes d'aide ;

- on n'a pas tenu compte dans cette présentation rapide de l'influence éventuelle de la situation de départ. Or on peut penser qu'une aide est d'autant plus efficace que la situation financière des entreprises est dégradée. De ce point de vue la situation prévue pour 1985-87 est très différente du constat établi sur 1980-82 (31) ;

Enfin, si on désire rapprocher ces évaluations chiffrées des considérations plus qualitatives présentées dans cette étude, il paraît important de distinguer trois étapes dans la démarche :

1) l'effet direct de l'aide sur l'investissement des entreprises aidées, étudiée précédemment et que ne fournit pas le modèle macroéconomique (D.M.S. peut cependant évaluer la variation d'investissement dans le ou les secteurs aidés).

2) la propagation du choc initial dans toute l'économie nationale à court-moyen terme, principalement par des effets de prix et de demande, ce que font les modèles utilisés. Les résultats annoncés ci-dessus concernant le supplément d'investissement des entreprises tiennent compte de ces effets indirects.

3) les effets à long terme de grands projets industriels, qui sont souvent à l'origine des aides à l'investissement dans les secteurs très capitalistiques (sidérurgie, nucléaire, ...) et des aides à la recherche-développement dans les secteurs les plus modernes de l'industrie (électronique, aéronautique et espace). L'analyse réaliste de ces effets est indispensable pour répondre à la question centrale de la part des dépenses d'investissements (volume et affectation sectorielle) dans le développement d'une offre nationale compétitive.

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The Politics of Industrial Subsidies in Austria and the Style of Industrial Policy Making

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I. Introduction

In Austria the term "subsidies" in industrial policy is as uncommon as subsidies are common (only nationalised industries are "subsidised" sometimes). The Austrian common sense meaning of subsidies is giving money to the fine arts etc. Industry is not subsidised but promoted, although the most important means of promotion, of course, is money. I will not go further with terminological discussions. In this paper I will deal with those means of industrial promotion which are based on the supply of money. In Austria it is usual to distinguish between direct and indirect economic promotion. The latter mainly consists of the fiscal economic promotion. Every enterprise has a legal claim on this type of economic promotion, which depends on the profits. The decision wether to make use of this incentive lies in the power of the enterprises. This paper will not deal with that type of industrial promotion but will focus on direct economic promotion. This type is characterised as follows,

- enterprises do not have a legal claim on it,
- the decisions about its use are made in ministries, agencies, etc. instead of enterprises,
- wether subsidies are granted depends on the projects to be financed with.

Subsidies are given in a variety of forms by a growing number of institutions. In section II the development of the system of subsidies is described. Section III deals with the character and size of the institutions and instruments. In section IV a brief account of policy making at the micro level is given.

I am grateful to a collegue who supplied me with a first version of his latest product. Furthermore I would like to thank those experts of industrial promotion interviewed for this paper.

II. The Development of the Austrian System of Industrial Subsidies

Industrial subsidies started in 1948, when Austria and the USA signed the treaty of the European Recovery Programme (ERP). In the context of the Marshall Plan the United States provided Austria with goods whose proceeds of sale were used for the creation of the ERP-Fund (Haas/Wehsely, 1977:236). Since then the system of subsidies for industry, trade, commerce, and tourism was extended increasingly. In the 1950s five additional instruments for governmental subsidies were introduced, eight more in the 1960s, in the 1970s the increase was doubled in comparison with the 1960s (16 new instruments), and even more accelerated in the 1980s (11 new instruments until the midyear of 1984). Of course the instruments introduced differ in charakter, size and importance, nevertheless the increase of them gives an adequate impression of the overall development of the system of industrial subsidies. Although some of the instruments were introduced only temporarily, one characteristic feature of this process is that the new instruments did not replace old ones, but were added to those.

A similar development took place within the range of fiscal investment promotion. Apart from some forerunners this kind of economic measure was introduced in 1953, when an accelerated depriciation (of 50%, respectively 20% for buildings) was introduced for a three years' period. Within the following years experiments were made with the instruments of fiscal investment promotion. In 1967 accelerated depriciation was introduced for an unlimited period, and other forms of fiscal investment

promotion were adopted additionally: 1967 the tax-privileged dotation of reserve funds was granted (to be used for investment within four years), in 1972 an investment allowance (which leads to a 120% depriciation), and in 1982 an investment bounty was introduced. The use of the last measure does not presuppose profits, as the other instruments do. Therefore in this respect it comes rather close to what we call subsidies in this paper, but on the other side it cannot be used for steering the industrial development and therefore tends to combine the disadvantages of both, subsidies and fiscal investment promotion.

Within the overall development of the Austrian system of economic promotion a shift can be noted from fiscal to non-fiscal programmes, in particular in the last years. Unlike the 1970s the subsidies now exceed the amount of the fiscal investment promotion. This should not be interpreted as a forced realization of the economic programme of the governing party (SPÖ), which in fact argues in that direction for a long time (Müller, 1983a), but as a consequence of the economic performance and the concrete challenges government has to face everyday.

Within the range of non-fiscal investment promotion a shift from funds toward investment banks and government schemes has taken place, which reflects the same determinants as the increased expansion of the non-fiscal investment promotion. Since

the mid of the 1970s government not solely had to face the question how to induce economic growth by measures of economic policy, but also a number of more specific problems of economic as well as political character. Among them the consequences of the pressure of competition of the Newly Industrializing Countries in particular came into prominence for traditional branches like steel, textile and paper. These branches are affected by both, the problems of the business cycle and their structurual weakness. Thus industrial policy from the 1970s onwards besides the overall industrial promotion had to deal with the specific problems of individual branches, enterprises and even plants. This was one reason for the expansion of the instrument of industrial policy. Within the last years more attention than before was paid to the new challenges today's industrial nations have to come to grips with to maintain their position. Thus the instruments of industrial policy had been enlarged due to technical innovation (e.g. microelectronics). Moreover the system of subsidies was expanded to help the enterprises to submit those instructions which had been produced within another policy field (e.g. for the promotion of environment protection). The extension of the instruments of industrial policy led to an interbreeding of formerly separated instruments. The government departments, whose industrial activities increased, often did not have the necessary experts for the implementation of new governmental schemes, therefore it often was transfered to already existing institutions outside the bureaucratic structure of the ministries.

While some of the policy measures introduced show a slight party bias, the general course of industrial policy was a corporatist one. Corporatism is a general feature of social and economic politics in Austria, but recently had been weakened in sectors like fiscal and energy policy (Nowotny, 1985; Müller, 1985). A similar development did not take place within industrial policy so far, and it might be argued that corporatist concertation in this sector is of particular stability, which rests in the strength of interest groups vis á vis the state. The state may turn out to be de facto the weakest part in the tripartite concertation of industrial policy. Among other factors it is of relevance that there is no government department especially for the purpose of industry. The one which, according to its name, is concerned with industry, is not primarily concentrated on industrial policy, but on trade and price policy (cf. Aiginger, 1984), and until 1983 it was always in the hands of the representatives of the interest groups. Therefore the department did not develop own strategies for industrial policy but was concerned with the implementation of policies designed mainly by the interest groups. The Ministry of Finance, on the contrary, had its own position, but was interested more in the size of industrial subsidies than their use. Thus the development of the Austrian system of industrial subsidies primarily rested on the decision of the "social partners". The Council for Economic and Social Questions, which is an institution founded by the interest groups for the advice

of government (cf. Lehmbruch, 1979:171) 1970 and 1978 had made suggestions for the design of industrial policy (Beirat, 1970, 1978). It turns out that most of these suggestions had been realized, although sometimes with a delay of some years. The respective laws in parliament normally were supported by both big parties to whom interest groups are interlinked in a variety of forms. Thus, industrial policy on the macrolevel is a corporatist one.

III. The Structure of the System of Industrial Subsidies

Seven different kinds of instruments for industrial subsidies can be distinguished: funds, investment banks, government schemes, aid for nationalized industries, labour market subsidies, export promotion, and tax abatements.

1. Funds

Six funds are relevant in the context of industrial subsidies, four of them have primarily economic goals, for two of them industrial subsidies are a measure of environmental protection.

a) ERP-Fund

This Fund has its own capital and is allowed to refinance itself at the Austrian Central Bank, but it is not allowed to use the capital market and is not financed by the state budget. It gives out credits at interest rates far below market levels

(therefore the own capital of this Fund is reduced from year to year). The difference between market levels and the interest rate of the Fund can be considered as subsidies. About 60% of the credits of this Fund go to industry. Within the last decade industry had won in importance in comparison with agriculture, while the sectors of transport, tourism and energy stayed constant. In addition to the credits granted directly to industry, the Fund is also concerned with crediting other instruments of the system of industrial subsidies, which in the decade under review amounts between a constant credit of 800 millions and 1 billion AS. The ERP-Fund is also responsible for the implementation of government schemes.

Table 1

Credits of the ERP-Fund for industry (in million AS)

year	credits granted by year	total of credits
1973/74	733,1	5.605,9
1974/75	1.159,2	5.460,9
1975/76	875,6	5.761,5
1976/77	994,5	6.029,6
1977/78	801,0	6.280,4
1978/79	852,6	6.441,3
1979/80	843,4	6.453,8
1980/81	1.065,4	6.786,9
1981/82	1.127,0	6.799,9
1982/83	1.227,9	7.026,3

There exists a catalogue of 12 criteria for industrial subsidies by the Fund. Some of them are directed towards an improvement of industrial structure, but their effect should not be overestimated because for becoming subsidised by the Fund it is sufficient to meet one of the criteria. An empirical evaluation of the Fund's policy up to 1976 did not give a positive account of its practice from the point of view of the development of industrial structure; promising industrial activities were promoted only late or on a relatively small scale, while most of the subsidies went into traditional industries (Haas/Wehsely, 1977:238f). The Fund therefore did not make an active industrial policy in the past, but it seems that something has changed since the late 1970s. The promotion of basic industries and traditional consumer good industries was substancially reduced, while credits to modern industries (technical producer goods) increased and make up more than 50% since then. Nevertheless the policy of the Fund still is not satisfactory from the point of view of industrial structure development. As mentioned above the resources of the Fund were reduced year by year. But this did not only lead to a more selective policy of industrial promotion, as the distribution among branches indicates, but led also to an overall reduction in the size of the credits regardless of the quality of the project.

b) BÜRGES-Fund

This Fund is concentrated on the promotion of small enterprises of all economic sectors. It has been extended considerably within the last years, both in the number of enterprises promoted and in the amount of money spent.

Table 2

Industry promotion by the BÜRGES-Fund (in million AS)

year	government spending for the Fund	credit volume granted by the Fund[1]
1976	293	408,5
1977	394	540,1
1978	510	797,0
1979	802	991,3
1980	761	1.276,9
1981	768	766,8
1982	755	693,7
1983	891	857,5
1984	814	
1985	853	

1) consists of three instruments handled by the Fund

This Fund provides subsidies for the interest of credit. In contrast to the schemes for commerce and trade, there exists a catalogue of criteria for industrial investment, but this catalogue is very long, vague and hardly selective. It is not possible to evaluate the policy of the Fund on the basis of re-

liable statistics and until now the Fund did not join the computerized system of registration of industrial subsidies. But experts agree that the policy of the Fund does have a watering-can effect, what means that everything is subsidised, and no emphasis was given to projects of industrial priority.

c) The Finanzierungs-Garantie-Gesellschaft (FGG)

This instrument undertakes liabilities for industrial credits for which the financing of the credit otherwise would have failed because of the lack of banking security. From 1969 to 1983 the company did so in 460 cases, which amounts to a credit volume of 6,9 billion AS. Since 1977 the company also gives subsidies for investment, and since 1980 the FGG in addition is responsible for the implementation of government subsidies. Until 1977 the FGG was called Development and Innovation Fund. An evaluation of its policy until 1976 came up with the result, that the Fund had promoted traditional sectors of the Austrian industry (like paper, wood etc.), while growing industries (chemicals, machine building, electrical engineering) practically had not been promoted. Although the change of the name has been justified by the described policy of the Fund, it may be doubted whether this strategy to come to terminological adequacy was the preferable one. An investigation of the policy of the FGG since 1980 comes up with the result, that paper industry now received a higher proportion of the Fund's ressources than ever before.

Table 3

Subsidies of the FGG (in million AS)

year	government spending for the FGG	subsidies of the FGG
1980	334	293,8
1981	2.090	2.116,2
1982	124	115,0
1983	223	216,1
1984	467	
1985	297	

Source: BMfFinanzen: Bundesvoranschlag 1985;

d) The Water Supply Fund, the Research Fund and the Environment Fund

While it is the task of the Water Supply Fund and the Environment Fund to subsidise the interest of credits for investment for the purpose of environment protection (reduction of industrial sewage etc.), it is up to the Research Fund to promote industrial research by subsidising investments, the interest credits, and to act as a guarantor for credits. The subsidies of the Water Supply Fund are used to finance the reduction of the interest of credit at three per cent and come up to an amount of about 300 million AS a year (cf. Kager/Kepplinger, 1981:182). The subsidies of the Environment Fund reduce the rate of interest by 6%.

2. Investment Banks

Both banks, the Investkredit AG and the Kommunalkredit AG, were founded by nationalized banks. The Investkredit is concerned with long-term financing of investment and, increasingly, with the handling of government schemes. While it had been doubted whether the investment promoted by the Investkredit since the end of the 1950s has improved the industrial structure of Austria (Haas/Wehsely, 1977:239f; Kager/Kepplinger, 1981:150), the new government schemes (TOP-credit campaigns) are the most ambitioned measures of industrial policy introduced so far.

The Kommunalkredit AG gives out loans for communities at a promoted low interest rate as a regional policy of industrial subsidies. The promotion of backward or depressed areas is the only target of this institution. For the period up to 1976 it was argued that the result had been the establishment of industries having a high labour content. These industries made use of the cheap female labour force of the respective regions which led to a conservation of obsolete industrial structures and even to the maintenance of regional disparities as fas as payment and work conditions are concerned (Haas/ Wehsely, 1977:241).

3. Government schemes

Government schemes were introduced in the early 1970s. Three schemes for the paper industry (1973-1984) operated on a four

per cent reduction of interest for credits the use of which had not been specified. A scheme for textile industry (1979-1983) offered a 10 per cent subsidy, for substantial investment in new machinery, provided that the old machinery was scrapped. In 1979 a special scheme was introduced for underdevelopped rural areas in the Alps. This scheme was not an exclusive industrial one and offered subsidies up to 50% - but not more than one million AS - for any investment in these regions. Another scheme was introduced in cooperation with the federal government and the provinces, the so called "100.000 AS scheme". The name reflects the amount given for each new job created respectively ensured for some years in certain areas. In 1978 a general interest support scheme operated on the basis of a three per cent reduction for interest rates for investment credits. This scheme was the largest one (28,5 billion AS promoted credit volume), and instead of genuine industrial policy goals it was motivated by general economic conditions, more precisely the high Austrian interest rate caused by monetary and fiscal policy. During this time substantial amounts of money had been spent for the losses of the lignit mining for reasons of supply and social policy.

If one leaves aside the aim of regional industrial policy, all schemes - with the exception of the one for the textile industry - mentioned so far in practice more or less had the charakter of general subsidies, because the criteria for their

Table 4

Government schemes for industry (in million AS)

year	paper industry	mining	textile, clothes and leather industry	interest support scheme (1978)	TOP-credit campaign	"100.000,- AS-scheme"
1976	19	222	-	-	-	2
1977	25	176	-	-	-	2
1978	55	216	-	3	-	2
1979	59	223	16	153	-	4
1980	72	221	85	345	-	17
1981	90	220	57	598	-	49
1982	107	202	68	650	-	66
1983	141	205	87	735	58	17
1984	242	216	75	600	156	54
1985	218	200	75	540	227	54

Source: BMfF, Bundesvoranschlag 1985

use had not been selective. As mentioned above, in the early 1980s some instruments were introduced which may be interpreted as a policy change from very general, non selective and reactive industrial schemes towards rather specific and active ones, which are based on a catalogue of strict criteria, directed to the improvement of the Austrian industrial structure. The TOP-credit campaigns fall under the last category. They were introduced in 1981 (material investment) respectively in 1984 (immaterial investment) and, again, operate on a three per cent reduction of interest rates of credits for investments which come up to these criteria. The first phase of this scheme was financed by the Austrian Central Bank, since 1982 it is financed out of the budget; the promoted credit volume is 1,5 billion AS. So far material investment is concerned 33 criteria falling into six broad categories have to be checked by an experts' commission, consisting of representatives of three Ministries, of three institutions of investment promotion, and academic economists (the representatives of the Ministry of the Federal Chancellor - now the Ministry of Public Economy and Transport - and the Ministry of Finance are decisive, while the other members are restricted to an advisory function). The practice of this commission is much more restrictive than those of other institutions: the first investigation shows that only 59% of the investment projects submitted to the commission had been accepted unchanged, while 16% had been considerably reduced in size and 25% were rejected (Aiginger/Bayer, 1982:173). The same study (1982:194) points

out, that the use of objective, partly quantifiable criteria led to a better allocation of the resources. But the TOP-credit campaign was not welcomed unanimously. One of its initiators reported that interest groups argued for a more complex system of criteria which in the end was realized. This change vis á vis the initial thoughts on a new instrument of active industrial policy made its effects questionable and gave old industries a better chance to receive money (Aiginger, 1984:230). In a fundamental critique it was doubted whether a reduction of interest rates of already granted bank credits is an adequate strategy for industrial innovation (Dorn, 1983:70). Furthermore it was stated that it is the same four persons who are decisive for the allocation of the subsidies like the general interest scheme introduced in 1978, and it was doubted whether the catalogue of criteria will be sufficient to avoid a policy as unselective as it was followed in the implementation of the latter scheme (Dorn, 1983:74). Actually that critic deduces a water-can policy of the TOP-credit campaign from the published data (Dorn, 1983:72) and came to the conclusion that the new instrument only masks the old problems of direct investment promotion (cf. Müller, 1983a:125f) by the catalogue of "scientific" criteria (Dorn, 1983:80).[1] Although in this writer's view the critique is exaggerated, it points out that

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1) See also the more technical critique of Richter (1983) and the reply of Aiginger (1983).

even the TOP-campaign is not the philosopher's stone of direct investment promotion. Nevertheless it seems to be the most sufficient instrument introduced to an improvement of industrial structure.

4. Aid for nationalized industries

From the mid of the 1970's on nationalized industries, which account for about 20% of all industrial workers and 25% of industrial output, were used as an instrument of economic policy to smooth out the business cycle by following a business policy which was more concerned with national economic goals than with industrial management (Nowotny, 1982). In the 1970s this policy was financed with the capital stock of the enterprises and therefore the usual pattern of a state-subsidised public sector was reversed (Müller, 1983a:127). Of course, this strategy could not be maintained for more than some years and the 1980s are characterised by the phenomenon of problem accummulation (cf. Müller, 1981:404f): nationalised industry is not able to maintain the described business policy any longer and has to receive substantial government aid (new capital as well as subsidies) to assure its survival, while the overall economic situation has not improved substantially.

Table 5

Aid for nationalized industries (in billion AS)

1981-82	7,8
1983-84	16,6

5. Labour market subsidies

An active labour market policy was introduced in 1968 under the conservative government (cf. Tálos, 1981:228f). The res-

Table 6

Subsidies of the Austrian labour market administration (in million AS)

year	subsidies for industries for protection or creation of jobs	total[1]
1974	149	752
1975	183	819
1976	160	745
1977	209	756
1978	231	939
1979	249	1.018
1980	172	826
1981	304	950
1982	720	1.554
1983	1.004	1.846
1984	1.626	2.400

1) includes other direct and indirect subsidies for industries

Source: BMfsV, Programmbudget der Arbeitsmarktverwaltung, 1981, 1982, 1983, 1984; Butschek 1981:36

pective laws had been central incentives of government to ensure the further cooperation of the Austrian Trade Union Federation (ÖGB) within the corporatist arrangements. Since then the size and character of the labour-market administration has been considerably extended. While the earlier period was characterized by the finance of measures for training in the late seventies and early eighties, subsidies for industry have increased from year to year.

6. Export promotion

The Austrian system of export promotion developped since 1950. Most important is the system of export guarantees, which is based on the principle of insurance. 16 different types of guarantees for political as well as economic risks are offered by the state or the Österreichische Kontrollbank AG. 1982 guarantees could be granted within the limit of 375 billion AS (Rossmann, 1982; Breuss, 1983). Since the beginning of the eighties the principle of insurance did not work as well as before, and the state increasingly had to pay for the guarantees it had granted, which means it had to subsidise the exports.

Table 7

Export promotion

year	payment for export guarantees from the budget (in million AS)	total budget expenditure for export promotion (in million AS)
1976	705	841
1977	578	723
1978	996	1.218
1979	1.666	1.957
1980	1.054	2.164
1981	1.516	3.175
1982	1.496	4.539
1983	2.540	4.704
1984	636	3.344
1985	700	5.040

Source: BMfF, Bundesvoranschlag 1985

7. Tax abatements

In Austria it is a widespread assumption that the Minister of Finance relatively often gives subsidies by discretionary decisions in cancelling tax outstandings. The secretaries of the Minister for instance sometimes reported to economic experts, that they have to spend a good deal of their time on the handling of such interventions on behalf of enterprises. The data reported in table 8, which is not restricted to industry, but also includes all other sectors of economy, does not confirm the view that tax abatements are the instrument of governmental subsidies, but in any case they are relevant within the Austrian system of subsidies and have been used increasingly within the last decade, in particular in the 1980s. However, the amount of

Table 8

Tax subsidies and tax outstandings

year	tax abatements (in million AS)	% of change	tax cancellations (in milion AS)	% of change	outstanding collectible taxes and customs-duties (in million AS)	tax outstandings on extended terms (in %)	tax outstandings in execution (in %)
1974	99,8		97,5		7.710,7	41,9	35,8
1975	126,5	+ 26,8	83,3	- 14,6	7.930,2	36,2	53,4
1976	115,9	- 8,4	177,0	+113,7	9.009,8	33,3	56,6
1977	85,9	- 25,9	159,9	- 9,7	9.859,2	21,5	61,6
1978	104,3	+ 21,4	186,4	+ 16,6	10.995,0	19,2	65,8
1979	236,6	+126,8	230,6	+ 23,7	12.670,4	18,0	67,1
1980	220,5	- 6,8	287,5	+ 24,7	14.117,8	16,6	65,7
1981	260,3	+ 18,0	381,6	+ 32,7	16.462,0	12,5	51,7
1982	370,4	+ 42,3	464,8	+ 21,8	19.686,1	12,7	54,4
1983	457,0	+ 23,4	580,0	+ 24,8	21.974,0	12,0	60,1

Source: Tätigkeitsberichte des Rechnungshofes für die Verwaltungsjahre 1974 - 1983, Wien 1975 - 1984

outstanding collectible tax and customs-duties nearly tripled within this period of time. Although the percentage of tax outstandings in execution also increased, while the percentage of tax outstandings on extended terms decreased considerably, it may be supposed that silent tax credit is a relevant instrument of economic policy.

8. A tentative evaluation of the Austrian system of industrial subsidies

It was demonstrated that the Austrian system of industrial subsidies is characterised by a variety of institutions and instruments. This variety is not fully justified by functional differentiation. Thus, a coherent strategy of industrial policy - to say nothing of "positive adjustment policy" - can hardly be identified within the system. Economic rationalization with the consequences of a reduction in the number of jobs is as well subsidised as the opposite strategy. While the TOP-credit campaign and the microelectronic scheme favour business strategies of the first typ, subsidies of the labour market administration are often used to preserve existing jobs irrespective of their chance for maintenance in the long run. But the absence of a coherent strategy holds true even for single instruments The catalogue of criteria of the interest support scheme introduced in 1978, for instance, allowed subsidies for active as well as reactive business strategies without giving preference to one of them (cf. Aiginger/Bayer, 1982:159).

The whole misery is dublicated at a more technical level. In the early 1970s when the expansion of the system of direct economic promotion started a cabinet committee was installed for the coordination of federal institutions concerned with economic promotion. The committee could not report spectacular success and did succeed only at the level of civil servants. In 1980 the task of the committee was redefined more precisely: it should develop an information system to identify firms which maximised subsidies by appealing simultaneously to different institutions of the system of subsidies. Since 1984 the system is working and has even widened its scope: it is planned to come to an information system which allows to evaluate the effects of previous subsidies for sectors, regions, and enterprises as a basis for new ones. Until now the system was not joined by some of the relevant institutions of industrial promotion. In spite of this shortcoming the establishment of the information system has to be welcomed as a starting point for a more coherent industrial policy.

IV. Patterns of Industrial Policy Making

An economic analysis of the Austrian system of industrial subsidies recently pointed out that lobbyism will be all the more effective the more decentralised the system is (Kager/Kepplinger, 1981:209). It was demonstrated in this paper that the system is in fact strongly decentralised. Moreover lobbyism is in fact

one of its central features. Not without reason a former top-expert of an interest group noted that interventionism is the principle of the Austrian system of economic promotion (cf. Mißlbeck, 1983:167). But it is hard to distinguish those who have the power of decision from the lobbyists. In the ERP-Fund, for example, the power of decision is held by the credit commission which consits of 12 representatives nominated by the two big parties but primarily by the interest groups (labour, capital). The lobbyists consist of business men and shop stewarts as well as local and sectoral representatives of the interest groups. Interest groups in corporatism have the means to discipline and control their membership but this relative independence of leadership does not effect the dispensation of subsidies itself but rather the magnitude of the subsidies.

Two more examples underline the importance of the described pattern. The subsidies of the paper industry scheme de facto were based on expertises by the Austrian Federation of Industialists. These expertises had to confirm that the project went along with the intentions of structural reform of the respective sector and is in correspondence with the catalogue of criteria of the scheme. Subsidies from the textile scheme were granted on application of the sectoral units of the interest groups. While the final decision de iure was made by the Minister of Commerce, de facto it was the interest groups that were decisive.

For them a system of subsidies that does not have clear criteria is adequate, because it facilitates the compromise between interest groups as well as within them. Thus all interests represented in the corporatist cartel can be taken into consideration (cf. Mißlbeck, 1983:172). The Austrian system of industrial subsidies on the microlevel of implementation is therefore in accordance with the corporatist policy design at the macro level of industrial policy.

V. Conclusion

The question whether corporatism is efficient has been discussed in length in the literature (cf. Grande/Müller, 1985). Faced with the Austrian results in industrial policy the question seems obsolete: corporatism in fact seems inefficient. Subsidies have not been provided by economic criteria, everything was in fact promoted. An analysis of the Austrian policy of agricultural subsidies which is corporatist, too led to an even worse result (Schneider, 1984) - thus the judgement based on a national perspective seems to be well justified. In contrast to this view a comparative study of the periode from 1970 to 1977 evaluates Austria relatively well in respect of industrial modernization. Moreover Austria was able to combine economic modernization with full employment which was evaluated as the best overall account (Czada, 1984; cf. Katzenstein, 1984).

The studies cited make reference to a period which was evaluated rather negatively by Austrian economists in respect to the effects of the instruments of direct investment promotion (Haas/Wehsely, 1977; cf. Kager/Kepplinger, 1981). Thus maybe these instruments fullfiled the function of subsidising the maintenance of full employment while the instruments of fiscal investment promotion were used for economic modernization. A result like this would not be welcomed by supporters of direct investment aid who argue that this type of economic intervention could be used for measures of qualitative industrial policy.

Of course the studies cited were directed backwards and it may be questioned whether the combination of both strategies, economic modernization and preservation of a high standard of employment, will be possible under the present conditions of accelerated technological change. The expansion of the direct economic promotion within the last years might be interpreted as a sign that under conditions of restricted political choice a decision was made in favour of job preservation. But it has been mentioned in this paper that the new instruments of economic promotion (the TOP-credit campaign as well as a scheme for microelectronics which was introduced in 1984/85) give more attention to positive adjustment policy than the old instruments. Furthermore in 1984 an innovation agency was founded within the Austrian corporatist system. This agency is to be augmented by a joint venture capital company in 1985. This implies that the corporatist

system has met measures to meet the challenges of the 1980s (cf. Chaloupek, 1985; Farnleitner, 1985).

Economists that critizise the economic policy of the state moreoften than not base their argumentation the assumption that the state is a kind of benevolent dictator. In other words they believe that once the appropriate measures have been conceived the economy will once again function as it should. In this sense economists seem to reveal a kind of boy scout attitude. Their approach tends to coneal that there are many divergent economic interests. Additionally economists neglect the fact of restrictions from the political institutions and the political culture. A viable alternative to the corporatist approach outlined in this paper would not be one of the benevolent dictator but rather one of party government. Often it is argued that party government is better qualified for qualitative decision making (for example by introducing a selective system of industrial promotion) than corporatist subsystems (Lehmbruch, 1979). The example of introducing an innovation agency does not confirm this view. This agency was in fact installed by the interest groups. Had this be done by a party, and there was a party which intended to do just this, the agency would automatically have been reduced to an instrument of state subsidiary (Müller, 1985). In contrast to the corporatist system the parties follow a short-term mass media oriented strategy (cf. Müller, 1983 b), hence it can be said that

long-term coordinated strategies seem to be less likely possible. It should be considered that the political culture of Austria displays an unwillingness to deal with conflicts arising out of qualitative political decisions. Therefore it follows that party government in Austria could lead to immobility rather than coherent leadership strategies.
It must be doubted whether this would be a favourable alternative to the industrial policy described in this paper. Thus perspectives of reform should concentrate on the improvement of the existing system rather than the change of the whole system.

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FRENCH GOVERNMENT SUBSIDIES FOR INFORMATION TECHNOLOGY

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FRENCH GOVERNMENT SUBSIDIES FOR INFORMATION TECHNOLOGY

Recent years have seen a significant increase in French Government support for information technology. As elsewhere in Western Europe this has been motivated in part by a traditional concern to preserve industrial, political and cultural independence. It has also been due to a common conviction that future productivity, economic growth and employment generation will depend on the efficient production and diffusion of information technology. France has been distinctive, however, for the extent and selective nature of its support (Webber, Moon and Richardson, 1984) and some analysts consider that its 'mercantilist' strategy - and the political and economic structures that allow its pursuit - may enable the French to withstand better than most the hegemony of the American and Japanese giants.

The aim of this paper is to consider the capacity of France for promoting an independent and competitive industry in information technology, paying particular attention to its use of public procurement and subsidies as instruments of industrial policy. It will argue that, while the scale of sustained financial support would appear to be crucial determinant of success in a State-led strategy of industrial modernisation, no less important is the nature of the 'political nexus' through which subsidies are allocated, regulated and deployed. In France, a nation where the issue of industrial ownership is fiercely contested, but where the principle of State aid has been seen as fundamental to national sovereignty, the subsidy debate has been principally 'technocratic' and has focused precisely on the question of control and political regulation. Economic liberalism in France means leaving the captains of industry absolute freedom in their use of subsidies rather than allowing them to swim or sink unassisted. In this respect, the contrast between the Socialist Government and the ancien régime of Giscard d'Estaing lies not so much in the degree of State intervention but in the concern of the Socialists to rationalise, regulate and extend the system of financial transfers and to deploy subsidies as an efficient instrument of industrial policy.

Part one of the discussion examines the nature of the French subsidy system before 1981 and, focusing mainly on public procurement and the use of export subsidies, considers its success in promoting three important areas of information technology: computers, telecommmunications and integrated circuits. Support during this period was provided predominantly in favour of the largest industrial groups in the sector, in the absence of an overall plan for information technology and with little control over the destination and use of funds. The result, by the end of the 1970s, was an industry dominated by large but inefficient companies which had become structurally dependent on the State for their survival. Part two examines the Socialist critique of Giscardian industrial policy and their design for restructuring the 'political nexus' between the State and industry. The most important reforms have created new selective methods for acting on supply (including the submission of capital provision to contractual agreements) and new methods for targeting and coordinating subsidies to encourage the diffusion of information technology.

Part three considers the degree of success with which the new strategy has been pursued. Nationalisation, planning contracts and a degree of reform in the system of subsidies seem successfully to have reversed the decline of French information technology. But a number of important problems remain: ambiguity in the contractual relations governing financial transfers to the nationalised firms; tensions in reconciling the interests of industrial groups with those of the State; the continued dependence of these groups on public markets and operating subsidies; and the problems of transferring a sufficient volume of financial aid to information technology due to budgetary constraints and to the inertia of a subsidy system still heavily biased in favour of industries in decline.

In conclusion, three major dilemmas confronting the French strategy of State led development will be considered. The first concerns the difficulty, in the absence of protectionism, of linking subsidies promoting demand to a policy developing national supply. It

is one thing to encourage firms to equip with information technology, but is quite another to ensure that they obtain it from national producers. The second dilemma concerns the capacity of national firms and of their governments for mobilising sufficient funds to meet the enormous research and development and investment costs required for competitiveness in the new technologies. These costs can only increase as competition between the Americans and the Japanese becomes more intense. Finally, given the scale of expenditure required in assisting national firms to obtain the minimum international markets shares required for competitiveness, how is it also possible to aid the small and medium sized firms which appear to be the most important source of innovation and employment?

1. The Subsidy System and Information Technology before 1981

(a) The French Subsidy System

The State in France has long controlled the principle sources of credit for industry . Combined with the close links between the summits of industry and the administration, this control would appear to provide, at least in theory, the attributes of the 'player state', capable of mediating effectively relations between the domestic and the international economies(Zysman, 1983; 1984; Hills, 1984). In reality, however, the situation is a little more complex. One of the major roles of the 'player state' - the discretionary control of financial transfers channelled through public or quasi-public agencies - has proven particularly difficult to perform well. Moreover, given the political limits placed on planning in France since the late 1960s, there has been little success in reconciling micro-economic with macro-economic objectives (Estrin and Holmes, 1983). When the Plan has been able to establish a hierarchy of sectors for priority support, as in the Sixth Plan (1970-1975), the bulk of subsidies have still been absorbed by the traditional beneficiaries of State largesse, namely steel, shipbuilding and the aircraft industry; a medium-term commitment of the State to priority sctors has been impossible to secure (Bonnaud, 1970). In additiion, the nationalised industries and

banks have fiercely resisted attempts on the part of successive governments to use them as instruments of industrial policy (public sector companies responded unenthusiastically to the government's 'buy French' computer policy during the 1970s) and there has been little success in coordinating their activies (Victori, 1979).

The nature of the subsidy system has reflected the massive but messy character of state intervention in France, although, until recently, the secrecy shrouding relations between the State and industry has prevented a full appreciation of the extent and structure of financial transfers. Attempts to analyse the system in recent years have revealed that French subsidies are complex, concentrated on a small number of privileged industrial groups and subject to little in the way of control or evaluation. Stoffaes (1984) estimates total aid to industry in 1981 at 100 billion francs, of which 40 billion for research and development (R&D), 16 billion in export aids, 13.2 billion in investment subsidies and loans, 12 billion in tax credits, 11.3 billion in operating subsidies, 6 billion for employment and 1.8 for industrial relocation in line with regional policy. According to other sources, including the unreleased 1978 Hannoun Report, this total comprised some 150 different types of of aid and was channelled through 24 different budgetary circuits and at least 23 committees (Commissariat Général du Plan (CGP), 1982; Brimo, 1981). Despite this complexity - creating a dissuasive labyrinth for small and medium sized firms - fifty percent of total transfers were concentrated on six industrial groups, accounting for ten percent of industrial added value, 10 percent of employment, 11 percent of exports and only 2 percent of total investment. Ninety percent of export aid went to support large contracts handled by these groups (Giordano, 1984). In contrast, only 3.2 percent of direct aid to industry in the late 1970s went to small and medium sized firms (Besse, 1983).

Concerning the connection between financial aid and industrial policy, only a small percentage of total transfers are considered to have been used in support of well-defined goals, or to have been

allocated by committees with some degree of influence or control over its use. A report on the subsidy system by the French National Planning Office (the Commissariat Général du Plan) in 1982 revealed that only about 17 percent of aid to industry was awarded on a contractual basis and targeted specifically for restructuring purposes. Distinguishing, on the one hand, between structuring aid and support aid and, on the other, between subscription and contractual aid, the CGP concluded that 73 percent of all aid to industry was attributed on the basis of automatic renewal, largely in the form of operating subsidies, and required no reciprocal obligations on the part of the forms concerned. The general findings of the report are summarised in the following table:

Table 1: AID TO INDUSTRY 1981

FFR Millions	Subscription Aid	Contractual Aid	Total
Structuring Aid	3800 (8%) (a)	8700 (17%) (b)	12500 (25%
Support aid	37200 (73%) (c)	1200 (2%) (d)	38400 (75%
Total	41000 (81%)	9900 (19%)	50900 (100

(a) R&D (2400), investment (1400)
(b) R&D (1700), investment (6000), employment (900)
(c) R&D (10500), covering losses (7900), export aid (18,800)
(d) Investment (600), employment (600).

Source: CGP, Aides à l'Industrie, Paris: CGP mimeo, 1982

In the context of the present discussion, it should be noted that the larger part of R&D aid, according to this study, has been distributed on a subscription basis (without reassessment or periodic evaluation) to the largest industrial groups, benefitting from their close links with those public agencies controlling aid to telecommunications, defence and nuclear energy contractors. R&D aid was also heavily concentrated by sector: in 1976, the aircraft industry received 62.1 percent of all public aid for R&D, professional electronics and telecommunications (for the military) 22.7 percent, information technology 2.5 percent, electrical engineering 2.3 percent and virtually nothing for other branches of industry (Stoffaes, 1977). And given the poor performance of many of the companies concerned, a large proportion of R&D aid would appear to have been misused as operating subsidies, as Zysman (1977) discovered in the case of computers and electronics. Even R&D aid disbursed for specific purposes to research institutes could be diverted in this way. In 1984, an enquiry by the Cour des Comptes (a public sector watchdog) revealed that R&D aid distributed by the research directorate of the Ministry of Industry had been misappropriated and used as operating subsidies or to cover losses (Cour des Comptes, 1984). Such aid has certainly been selective, but hardly targeted, and as an examination of State promotion of information technology reveals, it has rarely been deployed in support of a coherent industrial strategy.

(b) Subsidies and Information Technology

As the 1978 Hannoun Report reveals, those large companies receiving the bulk of State aid to industry - CGE and Thomson (telecommunications and electronics), Creusot Loire (nuclear reactors), SNIAS, SNECMA and Dassault (armaments), CII- Honeywell Bull (computers) - had, by the late 1970s, become structurally dependent on subsidies. Without them, none of these firms, it is estimated, would have been able to register profits between 1972 and 1977 (Brimo, 1981). In electronics, CGE, Thomson and Matra were able to accumulate large amounts of aid from a variety of different sources

(subsidies for R&D and exports, public procurement etc.). In the case of the CGE subsidiary CIT-Alcatel - the 'national champion' of French telecommunications - it has been estimated that 90 percent of R&D in the 1970s was financed from various types of public aid. As Christian Stoffaes (1977) points out, a real control of subsidies distributed on this scale is possible only if the firms involved subscribe to precise commitments and are subject to effective sanction. Otherwise, the risk of aid becoming a structural support for inefficient production rather than a spur to innovation would seem to be high. In the case of electronics and information technology, some of the total aid received has been negotiated in the framework of State-industry plans. However, the contractual nature of these arrangements has been more apparent than real: either reciprocal engagements have only vaguely been defined, and in the absence of sanctions or effective methods for monitoring implementation, or the firms involved have been able the exploit the administrative fragmentation of the State and its lack of industrial expertise.

But the relationship between these industrial groups and the State cannot be reduced to a simple formula of power in which the former, due to their superior control of information, and organisational cohesion can invariably prevail over the interests of the latter (cf. Bauer and Cohen, 1981). In the French case, it does appear that an absence of control mechanisms in the subsidy system has allowed a process of subsidy renewal, without reassessmant or evaluation, to occur. But it should also be recognised that, once such a relationship is established - the result of a gradual accretion of ad hoc decisions and aids - it can become heavily constraining for both partners. In France, the constraining nature of this relationship seems to have been reinforced in the case of information technology by the importance of two types of support - export subsidies and public procurement - deployed in the absence of a strategic design or consistent policies. For the firm, dependence on markets administered by the State - and regulated by a

political rather than an economic logic (Zysman, 1977) - can, under certain circumstances, make it difficult to adjust to competitive markets, even if large scale R&D support provides it with the assistance required for gaining access to them. For the State, not only is it difficult to submit institutionalised subsidies to contractual agreements, it is also extremely difficult to abandon companies whose survival depends on such aid, introducing a considerable degree of rigidity into short and medium term policy making (cf. Berthelemy, 1984). Thus, in the absence of an appropriate framework governing the use of subsidies and public procurement, policy instruments, which in other systems have been used to great effect in import substitution and external expansion (Japan being the most impressive example), can damage rather than improve the long term prospects of industry.

Computers

On the supply side, French promotion of its national computer industry has been based on a combination of direct subsidies and State encouraged mergers. On the side of demand, the State has attempted to create a market for its 'national champion' with what can only be described as an authoritarian 'buy French' policy. An absence of clear choices, confused objectives, insufficient financial support and an inadequate user policy all contributed to the failure of successive 'Plans Calculs'.

The details of developments in the 1960s and 1970s cannot be recounted here. Suffice to note that there have been several phases in the French programme of support for computers. In the first 'Plan Calcul', intended to create an independent French capacity in computers, the State committed itself to 420 million francs in subsidies if the new company created by the plan, CII, embarked on the development of a complete range of equipment. The refusal to specialise, and the decision to compete in the medium-sized computer market dominated by IBM, were largely responsible for the failure of this first phase of French computer policy: the

new company, created from the electronics subsidiaries of Schneider, CSF and CGE, was unable to compete with the American firms - Control Data and IBM - on the French market, of which, by the end of the first Plan Calcul, it had gained only 7.5 percent. In a second Plan Calcul after 1971, State aid increased to 700 million francs over five years (compared with an eventual shareholder contribution of one-tenth of this sum), at the end of which CII's market share had risen to just over ten percent (Lorenzi and Le Boucher, 1978). In a third phase, after 1976, the government approved the merger of CII with Honeywell Bull (created in 1970 by Honeywell's acquisition of General Electric's stake in the French company Bull) which gave the new group, CII-Honeywell Bull, the right to manufacture Honeywell computers in France. This agreement was under-pinned by a massive government subsidy (1.2 billion francs over four years) and its commitment to purchase a total of four billion francs in equipment from CII-HB between 1976 and 1980 (Zarader, 1983).

What were the consequences of this policy? In terms of market gains, its success was variable: while CII-HB computers accounted for 63 percent of installed equipment in the State administration by 1981, its share of euipment in public sector industry was only 35.4 percent and its total share of the French market 27 percent (Colletis, 1984). The company remained dependent on its captive State market and its gains elsewhere were in large part the consequence of government pressure -exercised through an interministerial committee for information technology -on firms to buy CII-HB equipment. As part of the 1976 agreement with CII-HB, the State had agreed to provide an additional subsidy equal to 55 percent of the difference between the 4 billion francs in orders promised and those actually realised. This was an important incentive for ensuring that French companies bought French. One analysis estimates that one-third of total orders were gained under such pressure from the interministerial committeeor in the absence of competition from IBM which, given the problems of fighting the administration, considerably reduced its sales effort, providing

CII-HB with an additional indirect subsidy of some 200 million francs (Jenny, 1984). In the absence of a more sophisticated user policy, this method of promoting domestic demand involved heavy costs for CII-HB clients due to the non-competitive price and often poor performance of its equipment compared with that of its foreign rivals.

The major shareholder companies of CII-HB have been similarly dependent on captive public markets - both at home and abroad - for their products. Thomson, the professional and consumer electronics group is a case in point. Most of its profits in the 1970s have been made on institutional markets in France and for its foreign sales and orders, it has relied on custom gained with the assistance of government foreign policy, and mainly in Third World, francophone, countries, backed by export credits and guarantees (Barreau and Nay, 1982). As Zysman (1977) points out, massive export subsidies - representing 12 percent of all aids to industry between 1970 and 1977, compared with 1 percent in West Germany (CGP, 1982) - have effectively extended the French State's protective umbrella from domestic to foreign markets and have reduced competitive pressures on firms to develop an independent marketing capacity and a viable, independent, export strategy. They have also encouraged firms to concentrate on their captive foreign markets to the expense of competitive markets in France which have been left undefended in the face of foreign penetration (Berthelemy, 1984; Giordano 1984).

Guaranteed and administered markets have also helped perpetuate the organisational weaknesses of those French groups which, like Thomson, have until recently been poorly coordinated juxtapositions of component, and often quasi-independent, firms and subsidiaries. Acquired over the years through a haphazard process of industrial 'empire building', the groups have been held together by central holdings, but have been beset by internal rivalries and poor vertical communication. The reluctance of companies like Thomson to launch products forcefully onto competitive consumer markets can be explained in part by the security of institutional markets and in part by the consequences of their internal fragmentation. These

factors apparently explain Thomson's failure to develop and commercialise the early lead of one of its laboratories in video disc technology in the mid-1970s (Levine and Vermont, 1984).

Telecommunications

The State has similarly promoted French companies in telecommunications through the Direction Générale des Telecommunications (DGT), although with greater success. Using a combination of direct subsidies and public procurement, the policy of the DGT has been to administer the domestic market - boosted by the State's massive (170 billion francs) development of the French telephone network - so as to develop the technological capacities of French firms and reduce the role of foreign firms. The DGT is estimated to have financed 70 percent of R&D in switching technology between 1970 and 1975 and, by the mid-1970s, the main beneficiary of this policy, the CGE subsidiary CIT-Alcatel, had gained a leading world position in digital switching for telephone networks. In the process, French technology successfully reconquered the domestic market - the share of the American ITT was reduced from 60 to 16 percent by 1978 - and CIT-Alcatel won important export orders, largely in the Middle East and North Africa (Ergas, 1983).

The success of this strategy can be attributed to two factors: the unusually large and sustained financial commitment of the State to the expansion of telecommunications and the guaranteed market provided by that expansion until saturation was approached in the late 1970s. In contrast to computers, the telecommunications market has not been subject to uncertainty and risk and has been better suited to administrative regulation. However, CIT-Alcatel has subsequently encountered problems in diversifying away from institutional markets (Le Monde, 15.5.84). And attempts by the DGT to expand the public market by developing new ancillary products for the telephone system - telex, teletext, telecopier and the electronic phone directory - have also experienced difficulties due to a desire to administer a consumer market in the same way as it has

successfully managed the expansion of the phone network. All of its new products have suffered from inadequate market research. As in computers, a common weakness in French policy seems to have been a concentration on production to the expense of a policy of application and product diffusion (Cour des Comptes, 1983; Lemoine, 1983, 50-53).

Integrated Circuits

In computers and telecommunications, French companies have been promoted largely with subsidies and public procurement, involving, at least in the latter case, a high cost 'mass attack' approach (Ergas 1983). In the case of integrated circuits - the components at the heart of information technology - neither public procurement nor adequate finance have been available as means of support.

The French State first became involved in integrated circuit production in the late 1960s. In an initial attempt to develop French integrated circuit production, Thomson was given 200 million francs to be invested through a subsidiiary, Sescosem. However, the problems of breaking into a market dominated by the large U.S. firms were immense. As in computers, the French Government wanted the company to produce the full range of integrated circuits, something it was unable to do meeting both quality and price requirements: even the French computer manufacturer CII failed to provide it with orders. A more realistic strategy - as in computers - would have been to specialise rather than to launch an attack on the American producers on all fronts.

Despite further subsidies after 1971, Sescosem's market share actually fell between 1968 and 1974. Subsidies continued to be provided without a reassessment of the company's strategy. This was due in part to the close relationship Thomson had forged with DIELI - the Direction des industries Electroniques et de l'informatique - in the Ministry of Industry. Thomson was accustomed to negotiating with DIELI, and DIELI, concerned to support its industrial partner, promoted Thomson's interests within the State administration (Lorenzi and Le Boucher, 1979). This explains why

Thomson received the lion's share (50 percent) of aid disbursed under a new plan for integrated circuits (the Plan composants) after 1977, despite the fact that it had been designed to inject a new dynamism into the industry by associating French firms with American partners and by breaking the Thomson monopoly.

The new State plan encouraged the creation of three new poles of specialised production: Matra and Harris, Saint Gobain and National Semi Conductor, and Efcis (Thomson) and Motorola. However, most of the capital made available by the State - 600 million francs over five years - appears to have been spent purchasing American equipment rather than developing French capacity (Mazataud, 1981). The two major problems, however, were the inadequacy of State aid, given the high costs of development, and the degree of international competition and the impossibility of using public procurement as an effective method of promotion. The 600 million francs provided over five years compared unfavourably with the 1500 million spent by the Japanese during the same period (Diop and Perrault, 1983). Texas instruments spent almost the same as the French total on R&D each year in the late 1970s. Public procurement was unable to provide an additional boost to integrated circuit production in France because public telecommunications accounted for only 15 percent of the market. In these circumstances, a State led strategy of industrial development was impossible to pursue and the firms themselves - the junior partners technologically in their respective alliances with U.S. companies - lacked the resources for independent growth. The aim of reconquering the domestic market with 'French' products was far from achieved: import penetration in integrated circuits increased by 21 percent in 1982 alone (Harrois-Monin, 1983).

By the beginning of the 1980s, the only areas of information technology where profits and a positive trade balance were being achieved were those where captive, public markets predominated - professional electronics (largely for defence), telephones, wire and cables - while in non-institutional markets, French firms were facing heavy losses and import penetration (see table 2). The concentration of subsidies and public procurement on the large groups which monopolised these narrow market segments had led to an

imbalance in the structure of national production and had contributed to the imbalance of trade. It had also, paradoxically, become a factor of vulnerability for the large firms since they had failed effectively to use their protected domestic base as a springboard for diversification at home or abroad. In France, their strength continued to lie in their control of reserved markets: at the end of the 1970s, Thomson's reserved market share was 61 percent in telecommunications, radio and television and 95 percent in military detection systems (Lorenzi and Le Boucher, 1981). Their role internationally continued to rely on exports linked to foreign policy (including tied aid to the Third World) and on subsidised contracts. This had also contributed to an imbalance of trade weighted heavily in favour of links with less developed countries, while the trade deficit continued to grow in high technology products with West Germany, Japan and the United States. Together, this pattern of production and trade and the system of subsidies which underpinned it, had become a formidable structural constraint on any attempt to reorientate the French economy.

2. Information Technology and the New Socialist Industrial Strategy

(a) The Socialist Critique

For Socialist economists and planners, the poor results of industrial promotion in information technology were indicative of the failure of industrial policy in France during the 1970s: a lack of policy continuity, the weakness of national research centres, the acceptance, after 1976, of a large degree of dependence on U.S. technology, an inefficient use of public procurement and an insufficient control of financial transfers (Mazier, 1983). Furthermore, the concentration of direct and indirect subsidies on limited number of market segments and firms - the *créneaux* policy - was considered to have damaged rather than improved the overall condition of French industry.

While large and medium size computer production had received preferential treatment, for example, integrated circuits had

been given belated and inadequate attention. Automation and office information technology had been almost entirely neglected. While large companies like Thomson, Bull and CGE had enjoyed the protection of public markets and subscription subsidies, innovative small and medium sized firms had been expected to sink or swim in competitive markets. Similarly, an excessive concentration of R&D funding (in 1979, 62.1 percent of R&D subsidies were consumed by the large firms of the aeronautics sector) had prevented the diffusion and application of information technology more widely in industry and productivity in French manufacturing industry had fallen well behind that of its major European competitors.

A report commissioned - and released reluctantly - by the French Government in 1982 revealed an important information technology gap in this respect between France and other leading industrialised nations. According to the Rapport Lemaine (1983), the French share of computers installed in Western Europe had fallen from 20.7 percent in 1978 to 19.3 percent in 1981, compared with a West German share of 26.6 percent. French deliveries of office information technology (bureautique) was 13 percent of the European total in 1982 compared with West Germany's 33 percent. The French share of micro computers in value was only 15.3 percent of the European total compared with 24.1 percent for West Germany and 28.7 percent for the United Kingdom. In manufacturing, the number of robots per 10,000 workers in 1981 was estimated at 0.7 in France, 6 in Japan and 8 in Sweden. In computer aided manufacturing (CAM), the total number of machines installed in France was estimated at 10,500, as against 20,000 in Italy and 28,000 in Germany. The impact of restricted diffusion on productivity was judged to be severe: between 1974 and 1981, the index of productivity in clothing, textiles and shoes had fallen from 100 to 93 whereas in arms manufacture and aeronautics (which had monopolised public R&D spending) automation had pushed the productivity index up from 100 to 224 (Lemoine, 1983).

In the Socialist critique of industrial policy under the Giscard presidency, aid to industry had been badly managed, uncontrolled and often misdirected, excessive in some areas and deficient in

Table 2: The Filière Electronique, 1982

(Million francs)	Production	Market	Exports	Imports	Balance
Consumer electronics	6200	17200	1600	9700	- 8100
Active components	5700	6500	4000	9700	- 800
Passive Components	7200	8300	3100	4200	- 1100
Measuring instruments	2900	3400	1900	2400	- 500
Counter-regulation	1800	2000	800	1000	- 200
Instrumentation	700	1300	100	700	- 600
Medical electronics	1500	2200	1300	2000	- 700
Professional electronics	20500	13000	9300	1800	+ 7500
Telephone and telematics	16800	15100	2600	900	+ 1700
Automation technology	7000	9000	1000	3000	- 2000
Information Technology	25200	30500	10000	15300	- 5300
Office technology	1000	4700	900	4600	- 3700
Software and services	11000	10700	1000	700	+ 300
Total	107500	123900	37600	51000	-13500

Source: Les Echos 28.5.83

others. The incoherence and absence of an overall design in industrial policy was held responsible for increasing import penetration (see table 2 above) and for growing dependence in trade and technology on West Germany, the United States and Japan. In information technology, the development of telecommunications, professional electronics and computers had been pursued largely independently of each other and consumer electronics had been abandoned to foreign producers by firms which, like Thomson, had devoted their energies excessively to institutional markets. But if State promotion of supply had been ineffective, the promotion of domestic demand had been even more so. Within the sector of information technology itself, the development of French integrated circuit production, for example, seems to have been pursued independently of the strategies of its potentially most important clients.

What was required, according to Socialist economists, was a strategy to reinforce the technological and commercial links between the different areas of information technology and advanced electronics (between telecommunications and consumer products, office information technology and computers, micro electronics and micro computers) and an articulation of capital investment between their increasingly interdependent levels as parts of a vertically integrated network, or filière (Truel, 1983). In terms of industrial policy, attention should be given to all levels of the filière, in contrast to the market niche, or créneaux, approach taken under Giscard d'Estaing and Raymond Barre. The promotion of supply should be closely coordinated with the promotion of demand and mobilised behind a coherent strategy of market reconquest at home and expansion, involving a new approach to international industrial alliances, abroad.

(b) The New Industrial Strategy

Bearing a similarity to Japanese industrial strategy in its attention to inter-company linkages and the importance of internally generated growth (20 percent of annual turnover in the filière électronique being generated from sales between its constituent

firms) the Socialist strategy for French industry would also require the structural conditions enjoyed by the Japanese - institutions allowing a sustained mobilisation of financial resources and a stable relationship between the State and industrial groups. The new government of Francois Mitterand intended to create the necessary conditions by nationalising the largest industrial and financial groups and by resurrecting the French planning system, bolstered by a new form of contractual agreement between the State and public sector companies.

In the case of some of these companies - Dassault, Matra and, to a lesser extent, Bull, Thomson and CGE - nationalisation amounted, in essence, to a statutory regulation of the status quo. The real change, however, lay in the replacement of private share holders (held largely responsible for the under-capitalisation of many of the newly nationalised firms) with a State share holder determined to provide the financial resources required for a rapid process of modernisation and to exert a significant degree of influence over their use. At the same time, public purchasing and aids still subject to common law regulation were to be rationalised and submitted to closer control. In sum, these reforms aimed to turn financial transfers from the State to industry into an effective instrument of industrial policy.

The Filière Electronique

The filière électronique, in which information technology plays the central role, provides perhaps the most complete example of the new strategy in action. First, an overall framework for development was created by the Programme d'action filière électronique (PAFE), a plan of symbolic rather than operational significance, expressing the political and financial commitment of the State and establishing a number of medium term strategic objectives. Controlling 50 percent of production in the filière, the State was now in a position to exert its influence over the entire sector. Adopted in July 1982, the PAFE aimed, over a five year period, to develop

national supply at a rate of nine percent per annum (as against three percent before 1981), to achieve a positive trade balance of 14 billion francs by 1986 and to create 80,000 new jobs. The cost of the programme was estimated at 140 billion francs, 60 billion of which was to be provided by the State (Truel, 1983).

Within this general framework, specific action at the level of supply has been carried out through contrats de plan (planning contracts) with the nationalised groups of the filière (Bull, CGE and Thomson) and, at the level of demand, through targeted aid for the application of information technology in industry (the Plan productique) and the promotion of R&D and innovation in small and medium sized firms.

Supply

On the supply side, the most important reforms following nationalisation have been the introduction of planning contracts between the State and the newly nationalised groups and the subsequent realignment of these groups along specialised product lines. Aiming to reconcile the strategies of the industrial groups with the broader objectives of the national and sectoral plans, the planning contracts have placed a degree of conditionality on State operating and capital subsidies. These conditions include a certain degree of commitment not only to industrial objectives (specified with regard to detailed enterprise plans drafted, in consultation with the unions, by the groups themselves) but also to wider national goals - improving vocational training, expanding R&D, contributing to a positive trade balance and extending financial and technological collaboration to subcontractors and other small and medium sized firms in the sector. Thus, CGE's contrat de plan aims both to increase its production of automation to five percent of the world market by 1990 (considered the minimum required for profitability) and to increase training and technological cooperation with other, smaller, companies.

The most important condition, however, is a return to profits (both Thomson and Bull are major loss makers) by 1986, a requirement to which all other objectives have, in principle, been submitted.

Within the framework provided by the contracts, managerial autonomy is, once again in principle, fully respected and, far from placing immutable constraints on firm strategy, the contracts are reassessed and effectively rewritten on an annual basis, a revision made necessary not only by changing economic circumstances but also by the annual budgetary constraint on the State's financial commitment.

The second major reform - the realignment of Bull, Thomson and CGE along specialised product lines (recentrage) - is intended to increase synergies, avoid a duplication of effort and to concentrate vital R&D resources, each grouping becoming a pole of production at each level of the filière: Bull and SEMS (Thomson) in computers, Thomson CSF and Matra in components, Transac (Bull) a and Thomson in office information technology, Thomson in consumer electronics and professional electronics and CGE in automation and telecommunications. With regard to the concentration of State R&D finance, it should be noted that, in 1982, public sector companies received 80 percent of R&D aid and were responsible for 90 percent of R&D in aeronautics, 66 percent in electronics, 61 percent in information technology and 59 percent in chemicals (Croze, 1984).

Demand

For the French Socialists - and once again like the Japanese - the development of a strong domestic base is absolutely essential for a strong French industry with an international vocation. But how is the domestic market to be reconquered by French firms given the degree of import penetration in information technology? First, while the use of public procurement is still considered an important means of providing national producers with demand, the rigid 'buy French' policy of the 1970s appears to have been relaxed. It is now recognised that an imposition of French products on consumer firms may be damaging not only for the client but also for the supplier which may fail under such conditions to develop competitive, quality, equipment (Lemoine, 1983). Besides

which the introduction of a Socialist 'austerity' policy in 1983 has cut the budget of the State administration by ten percent and reduced its public procurement capacity accordingly (Rocco, 1984).

Second, the new strategy places greater emphasis on horizontal aid intended to increase investment in information technology and to encourage the diffusion of new production techniques, discouraging firms from buying foreign equipment only if it can be matched in quality by a French supplier. This action - in combination with an effort to reduce the foreign content of French R&D spending - is considered essential for combatting the high import propensity in equipment goods investment (Mazier, 1984). The Plan productique (automation plan) launched in 1982 envisaged spending 2.4 billion francs over a three year period, promoting the annual expansion of French robot production by 25 percent, and reducing import penetration (as high as eighty percent in some products) by ten percent across the sector. It also aimed to eliminate a 2 billion franc (1982) trade deficit and to stabilise employment through vocational retraining.

In order to harmonise the expansion of production with that in demand, the new plan adopted three techniques: development contracts (between producers and their client firms); pilot operations (linking producers and users in R&D projects also involving government research agencies; and aid for automation consultancy, subsidising the costs of consultancy up to 80 percent for a three day period and up to 50 percent for an in depth 60 day period (Chaubard, 1984). Firms are also eligible for special depreciation allowances and have access to industrial modernisation aid from the recently created Fonds Industriel de Modernisation (FIM). This fund is administered by ANVAR - the Agence nationale de valorisation de la recherche - and is fed by a new means of mobilising personal savings for industrial investment, the Compte pour le Développement de l'Industrie (CODEVI). Finally, to help stabilise employment while increasing productivity, financial support is available for contrats de solidarité productique (automation solidarity contracts) providing aid calculated per hour in working time reduced, in addition to other aid for automation, if job loss can be avoided (Les Echos, 14.9.84).

The promotion of innovation and the diffusion of new technology is also encouraged by contractual action linked to programme mobilisateur number three ("maitrise du développement de la filière électronique"), created as part of the Loi d'orientation et programmation for R&D in 1982. Directed by a conseil scientifique, the programme mobilisateur is based on coordinated research programmes grouping public and private research teams and funded by government research agencies; concerted action linking private and public sector firms; and programming contracts (contrats de programme) to support basic R&D in electronics (Chapius, 1984).

Finally, there are a series of non-selective subsidies available in the form of tax credits, soft loans for innovation, vocational training support and State guaranteed venture capital. Since 1983, an R&D tax credit scheme has been available which reduces tax levied on innovating firms by as much as 25 percent. In mid-1984, a further set of measures linked tax credits to research spending and investment in software and computer services. ANVAR (see page 21 above) promotes innovation through loans or subsidy support up to a total of fifty percent of expenditure and its special fund, the FIM, provides aid to automation and investment in industrial information technology. The State also backs the provision of venture capital to innovating small and medium sized firms by Sociétés financière d'innovation (SFI). There has also been an important effort to decentralise. Since 1980, regional R&D spending has increased by about 400 percent and 27 regional research and technology délegations have been created to collaborate with ANVAR in targeting R&D promotion. More recently, regional centres and associations for organising training and encouraging the diffusion of new technology have begun to emerge (Ibid.).

In summary, the aim of the new industrial strategy has been to boost aid to industry (to compensate for the under-capitalisation of the largest firms), to ensure that it is subject to a degree of monitoring and control (without, however, stifling managerial initiative) and to target and coordinate aid within a comprehensive plan for industrial development.

3. The Results of the New Strategy in Information Technology

This paper began by asking whether France, equipped with a new industrial strategy, could successfully promote a competitive and independent industry in information technology. Two conditions were seen as necessary: its capacity for mobilising sufficient resources and its ability to restructure the existing system of financial transfers, deploying subsidies, both direct and indirect, as an efficient instrument of industrial policy. While it is clearly tooearly for a complete assessment of the strategy's success, the plan for electronics and information technology can be examined in terms of its objectives for the mid-1980s.

The problems facing the Socialists in industry when they assumed power were enormous. The general state of electronics and information technology has already been discussed in terms of performance and the deteriorating balance of trade. The extent of the industry's financial difficulties can be appreciated from the fact that, in 1981 - when Bull was forced to increase production and follow IBM's price cutting tactics - the company's borrowing increased to 4.4 billion francs compared with its equity of 1.3 billion francs. Hence its enormous capital needs after nationalisation. With a 6 billion franc debt in 1982, Bull estimated its needs at 2.5 billion francs in 1983, 1.8 billion of which would be required for covering its 1981-1982 losses. In fact, it received somewhat less than this sum in 1983: 1.5 billion francs in capital grants and 500 million francs in R&D aid.

The scale of finance in subsidies and capital grants required by the industry - and the constraints on providing it - pose the most intractable problem in promoting information technology. The 1982 plan for the sector envisaged an annual contribution from the State of 12 billion francs - the minimum considered necessary for putting Bull, Thomson and the other companies back on their feet and for launching the new programme. In the first full year of this programme - 1983 - a major part of the funds made available went to cover losses amounting to 49 percent of turnover across the

sector. Not only this but the total fell short of that planned by 2 billion francs. In 1984 there was a shortfall of one billion francs and in 1985 total grants and aids available will amount, once again, to only 10 billion francs - representing a 68 percent success rate over the three year period (Le Monde, 28.11.1984). In response, a number of firms - most notably Thomson - have turned to the stock exchange (the Paris Bourse) for extra capital: in May 1984, for example, Thomson offered 1.2 billion francs in bonds convertible into equity through Thomson CSF, which, while Government owned, is still quoted on the Bourse. At the root of this problem lies the limit placed by the Government on its budgetary deficit (3 percent of GDP) and the inertia of a subsidy system still heavily biased in favour of industries in decline. The single most important source of the subsidy constraint is the steel industry which has been absorbing around fifty percent total State capital grants for the newly nationalised companies each year. The conflict between promoting electronics - whose capital grants are insufficient - and covering the growing losses in steel has pitted the Minister of Industry against the Minister of Finance in a battle for funds. But the problem is this: although it is clearly better to promote the industries of the future instead of the lame ducks of the past, unless the accumulated debt of the steel industry is tackled now, it will only get worse and impose increasing constraints on the State's industrial budget in years to come. But for the time being, the problems of the steel industry would appear to be the major obstacle in the path of a successful strategy in electronics and information technology led by the State.

Nevertheless, the first three years of the Socialist Government's plan for the filière électronique have produced a number of significant results. The capital injections made by the State since 1982 have arrested the decline of the filière as a whole and have consolidated its existing strength in professional electronics and telecommunications. Exports in these two areas have almost doubled in value since 1981 and account in large

Public share of home market?

part for the improvement in the trade deficit for high technology products which has declined from 15 billion francs in 1982 to three billion francs in 1984. The aim of achieving a trade surplus by 1986 is not, therefore, totally unrealistic (Colomb, 1984). National production has also improved, growing by 8 percent per annum compared with three percent before 1981. While this is short of the 9 percent fixed as a target in 1982, this rate of growth, despite the slow down in the French economy since 1982, attests to the success of the new strategy in redressing the situation inherited by the Socialists in 1981. Furthermore, the two heaviest loss makers of the sector - Bull and Thomson - have significantly improved their performance and expect to be making profits by 1986 or 1987.

The new strategy seems to have been most successful in redressing the financial situation of the industrial groups and in consolidating the existing strengths of the sector's institutional markets. The introduction of planning contracts and the realignment of these groups along particular product lines appears to have had an important disciplining and streamlining effect. However, a number of important problems remain.

The first - the problem of mobilising sufficient finance to support a State led strategy of growth - has already been referred to. A second problem, to which the first is linked, concerns the continuing ambiguities of the contractual relationship between the State and the firms. This derives principally from the constitutional requirement that the State respect the annual budget voted by parliament. This means that, while the firms of the nationalised sector are expected to establish medium term objectives in their contracts with the State, the latter is unable to commit itself to the provision of capital grants more than one year in advance. This would appear to deprive the planning contracts of much of their potential influence over the strategy of the firms. One company, however, has recently received a multi-annual commitment from the State. The Government has agreed to provide Bull

with 4.5 billion francs by 1986, to contribute to R&D spending and to make available additional loans. This means that Bull can plan to devote ten percent of its turnover to R&D (6 billion francs compared with 2.8 billion francs between 1979 and 1982) and to invest a total of 3.8 billion. But its total financial needs will amount to 13-14 billion francs during this period, and the company will still have to raise 8 billion francs itself, a daunting sum given the narrow margins in the industry and the pressure applied on European firms by IBM's recent price cutting strategy.

A third problem - also connected to the new contractual relations between the State and the nationalised firms - concerns the reconciliation of company strategy with the objectives established by the planning contracts, and the mechanisms available for ensuring that these plans are respected. Does the new system allow for a sufficient control and monitoring of financial transfers, one of the most important problems of State-industry relations before 1981?

The critics of the new system maintain that planning contracts have increased the planning effort within the companies themselves but have altered little in their relations with the State. The National Planning Office itself plays an insignificant role in the process and the contracts themselves are vague and almost devoid of statistics (Rouilleaut, 1984). The mechanisms of control do not appear to have been increased and no inter-ministerial committee has been created to ensure coordination between the different contracts or coherence with the national plan (Dormoy and Marchiaro, 1984). The principle of managerial freedom means that a posteriori controls are the most important available, but once again, these seem to be limited, as in the case of the Cour des Comptes, by insufficient resources and a lack of industrial expertise. As before 1981, the information constraint continues to prevent the surveillance of industrial affairs by bodies responsible to parliament.

In this respect, there appears to be a great degree of continuity with the 'ancien régime'. In information technology, this was revealed by the 1983 announcement of an asset swap between CGE and Thomson and the merger of their telecommunications divisions. The affair was planned in secret - there had been no reference to it in either of the firms' planning contracts - and even government representatives on the companies' advisory boards were kept in the dark. The trade unions - also represented on the boards of the companies - were presented with a fait accompli as in the past. Even the minister for telecommunications was not consulted. Despite the apparent 'democratisation' of State-industry relations, the secrecy of affairs at the summits of industry and State seems to persist. This does not mean, however, that there is as little coordination between the strategies of the different groups as in the past. Nationalisation has strengthened the powers of tutelle of the Ministry of Industry, and its officials maintain that they are able to ensure that the nationalised companies conform with the programmes agreed to in the planning contracts, much more detailed versions of which are kept beyond the public view. According to officials, these contracts are the most important innovation in industrial policy since 1981 and ensure an effective control on the use to which financial transfers to industry are put.

But does the contractualisation of aid to industry, and the deployment of subsidies in accordance with an overall plan for development, amount to a viable strategy? In effect, the reform of State-industry relations provides only one of the conditions required for an effective State led process of market reconquest at home and expansion abroad. The other major condition - an institutional capacity for providing sustained financial support and venture capital - remains to be created in France. The Socialists have been unable to mobilise the banks behind industry as initially planned despite the fact that they are nationalised. Plans to create a national investment bank were abandoned due to opposition from the banks and their contribution to industry has been limited, according to their critics, by a traditional obsession with short

term results. In the absence of closer links between the State and banks in the promotion of industry - as in Japan - a State led strategy of development in France would appear to be limited by insufficient resources.

But beyond the question of the institutional conditions for a viable State led strategy, there are a number of powerful constraints deriving from the nature of the interdependent economy. In concluding this paper, three of the most important can be mentioned: the difficulty, in the absence of protectionism, of linking subsidies promoting demand to a policy developing national supply; the problem of promoting small and medium sized firms - a major source of innovation and employment - while assisting large companies to obtain the minimum international market shares required for competitiveness; and the increasing costs of funding investment and R&D in an international system dominated by the American and Japanese giants of information technology.

The first constraint on the French strategy concerns the high import penetration of the French market and the difficulty, under such conditions, of promoting industrial modernisation without also exacerbating the deficit in trade. This problem is particularly acute in equipment goods where the propensity to import is higher even than in consumer goods. In this respect, the measures of the Plan productique referred to above have been successful in encouraging firms to invest, but less successful in ensuring that they equip with French material. Hence a continuing disjunction between action on the supply and the demand side within the filière électronique. As noted above, the present Government has considerably relaxed the 'buy French' policy pursued in the past and ANVAR, the State agency for the application of research in industry, does not block projects based on foreign equipment. Also, while small and medium sized firms have been taking advantage of aid made available for purchasing equipment, they have not responded enthusiastically to the provision of aid (by the FIM, for example) designed to encourage the production of equipment. This supply side aspect of assistance to small and medium sized firms reveals

the inadequacy of subsidies on the present scale: these firms are unlikely to gear up for production unless they have access to sustained equity support.

This problem is closely linked to a second constraint. Despite their good intentions, the success of the Socialists in redirecting aid towards small and medium sized firms has been limited by the large and increasing demand for financial support on the part of the newly nationalised industrial groups. In order to compete internationally in information technology - and to supplant their rivals on the domestic market - these groups need to increase significantly their percentage of the world (and the U.S.) market. It has been estimated that, in order to compete internationally in office and factory information technology, a company needs to spend at least $250 million each year on R&D, a figure which will increase as competition between the leading Japanese and American multinationals intensifies. Simply to survive, that company also needs to capture between 3 and 5 percent of the world market. In certain areas, the French groups are close to this threshold: in consumer electronics, Thomson has 3 percent of the world market compared with the 15 percent of the market leader, Matsushita; in telecommunications, CGE (plus Thomson's telecommunications division) has 3.3 percent of the world market compared with ATT's 18 percent. But in information technology (computers), Bull has only 1.8 percent of the world market while IBM has 38. In integrated circuits, Thomson has 0.7 percent of the world market compared with Texas Instruments' 11. Providing the massive financial backing required for sufficiently boosting the size of these groups (presently receiving 79 percent of public aid) means that the small and medium sized firms - whose growth is essential for the strength of the national industrial fabric - may well be neglected(Le Monde, 29.11.1984).

Finally, the financial requirements of these large industrial groups points to the most important constraint on a State led strategy such as that of France. The small size and small markets of European companies may force them increasingly to turn to State financial support for their R&D and investment requirements. But, as in the French case, governments may well be incapable of providing independently of one another the resources these groups require. It has been estimated, for example, that the R&D budget of IBM is five times as great as that for the entire French information technology industry (Webber, Moon and Richardson, 1984). A similar contrast can be made with reference to the new French plan for its integrated circuit industry. The new plan, launched in 1982, has provided some 2½ billion francs to Thomson Semiconductors, a figure well in excess of that provided in the first plan for integrated circuits in the late 1970s (see pp. 12-13 above). The new plan has also met with some success, production increasing between 1983 and 1984 by 20 percent. However, only 80 percent of the aid considered necessary has been provided (partly as a result of the conflict of priorities between steel and electronics) and the total sum made available over four years is equivalent to that spent by the Californian firm Intel on R&D and investment in 1984 alone.

Given the expense involved in promoting a national information technology industry, the subsidy debate in France in the future is likely to be dominated not so much by the issue of whether to subsidise - as in the United Kingdom and West Germany - but by the practical question of how to subsidise enough and in the most effective way. The new strategy launched by the Socialists has already been successful in consolidating the strengths of French information technology and in reversing the decline in its weaker parts. Whether this strategy can also create an industry which is fully competitive on the world market remains to be seen.

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TOWARDS INCREASED CONVERGENCE
International Interaction in Subsidy Policies for CAD/CAM

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SECOND DRAFT

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INTRODUCTION

All industrial countries experienced major cutbacks in the rate of their productivity growth during the 1970s and 1980s. This was one of the indications of a structural economic crisis affecting the OECD countries. Defensive subsidiy schemes by most governments in support of declining industries in the Seventies became intensively critisized when the more structural nature of the stagnation was recognized. In a situation in which major industrial sectors are 'mature' and economies as a whole experience the consequences of the 'downswing' in the economic long wave after the second world war (profit squeeze, overcapacity, etc.), large scale rationalisation of production seems necessary to change the odds in an increasingly competitive and internationalised environment.
It is in this context that the micro-electronics industry has received favourable attention. It not only comprises sectors and firms which themselves are major growth industries and have developed many new products. The application of the technology apparantly can also help in the rationalisation process of other industries.[1] To this end an integration has to be achieved basically of the micro-electronics sector and the capital goods, e.q. the machine-tool sector. The latter process resulted in the introduction of so called CAD/CAM systems, referring to Computer Aided Design/Computer Aided Manufacturing.[2] CAD/CAM implies the integration of computers into the entire design-to-fabrication cycle of a product or plant[3] and promisses to be a major factor in the rationalisation of production.

Despite euphoristic predictions, however, it is only during the coming decade that complete integrated CAD/CAM (also referred to as Computer Integrated Manufacturing (CIM)) systems will be fully operational as the consequence of a large number of technological bottlenecks which have to be mastered especially in the development of interfaces and software, which makes communication between different parts of the system possible. Additionally huge problems arise in the process of social transformation connected with the diffusion of these systems. Like in the past, however, this has not withheld governments from heavily backing developments in this area, which in turn will have farereaching consequences for the outlook of the industry and likewise national economies in the coming decades.

In this article it is tried to outline the international dynamics of

subsidy policies in production automation or CAD/CAM. The argument is divided into three parts.
First, as a general background, the international interaction in the support of microelectronics will be examined. This process of international interaction created or enforced a certain company structure in microelectronics in the large OECD countries. This can be linked with a typology of state policies of different countries in the mid-1970s which distinguishes between liberal and mercantilist state policies. The typology makes it possible to assess changes in the policy of major actors which came about as a reaction to the relatively 'new' possibility of the increased integration of the microelectronics and machine-tool industies in CAD/CAM.
Secondly, some empirical data on sybsidy schemes for strategical parts of the CAD/CAM cluster will be presented and analysed.
Finally, it will be asked whether there is a growing convergence in the policies of major OECD countries with regard to microelectronics in general and CAD/CAM in specific. Changes in policies depend on changed positions of countries in the international 'restructuring race' and, closely linked with this, a decline in the effectiveness of past (proven) support strategies.

Four countries and firms originating from these countries, are the central actors in the field of CAD/CAM and will serve as the basis of analysis: the United States, Japan, France and West-Germany. In the third part, also some remarks will be made on the effectiveness of the policy of the European Community.

1. INTERNATIONAL INTERACTION IN POLICIES TOWARDS MICROELECTRONICS

In order to illustrate the statement that developments in government policies in support of microelectronics, e.g. CAD/CAM can only be analysed in its international context, in this part a short assessment is made of the process of action and reaction in microelectronics subsidies after the second world war (1.1.). This contributed to a certain firm structure (1.2.). A typology of government policies, then, will be presented (1.3.) which makes it possible to integrate processes of international interaction in an analysis of more recent events in the next parts of this paper.

1.1. Action and reaction in government subsidies

Direct government subsidies in support of the microelectronics industry have been present from the very start of the whole industry. The pace after the second world war was set by the US government, which especially through its defense budget has influenced most important technological 'breakthroughs' in chiptechnology, computers, telecommunication equipment, and advanced machine-tools. The influence of the Pentagon was strongest during the 1950s and 1960s, backed by an ideological favourable climate due to increased 'cold war' tensions.

The success story of many large US electronics firms has closely been linked to their relation with the Pentagon. An interesting example for instance is provided by IBM, which could develop new generations of computers on the basis of secure procurement contracts and R&D cooperation with the military. It provided the firm with a base from which it far easier could develop a strategy for dissemination of its large computers in the civilian sector.[5] Thirty years ago firms like General Electric and Cincinatti Milacron could already experiment with the development of Numerical Controled machine-tools due to generous funding of the Air Force, which after the introduction of the technology also demanded from major contractors that they installed these machines, thereby helping in the diffusion of the technology.[6] Joint development projects between defense and chip pioneers, spurred the growth of the latter, with the consequence that even small start-ups on the technological forefront like Texas Instruments quickly could reach billion-dollar status and develop multinational presence. CAD technology, another example, was initially funded by space and military authorities to be used in radar systems,[7] etc., etc.

This support strategy, which hardly can be called 'indirect' or 'generic', strengthened the involved firms, and helped them to expand internationally into the economies of other industrial countries. This made it almost impossible for these other countries - heavily affected by the consequences of foreign penetration for their economic structure and the competitiveness of their firms - to retain a presence in (micro) electronics without state intervention through subsidies, preferred procurement policies and the like.

The Japanese Reaction

Japan had a very weak position in the first decades after the second world war and went furthest by protecting its 'infant industries' in electronics in reaction to the dominance of the American companies. The imposition of American rule after the second world war and consequent constitutional impossibility to implement policies through the defense budget, resulted in a somewhat belated reaction towards the US challenge in a more civilian oriented way. "Home market protection in the form of import and investment restrictions and government involvement in technology agreements was an important element of Japan's targeting policy for the computer industry until the mid-1970s"[8] In 1958 an indigenous Japanese computer industry was started, backed by government-sponsored research. The role of the Ministry of International Trade and Industry (MITI) in these initiatives by which specific sectors were 'targeted' and pre-competitive industrial cooperation was stimulated, has received wide attention. Support of the machine-tool industry dates back to the mid-1950's. The Japanese market in semiconductors has been effectively protected against penetration of American firms. After IBM, only Texas Instruments was 'allowed' in the 1960s to settle in Japan. Programmes in support of microelectronics in order to 'catch up' especially with the Americans became very important in the 1960s and 1970s.

The First Subsidy Programmes in Europe

The reaction of European countries came later than the Japanese, probably because the dominance of American multinationals in Europe was far more prominent, the economies were more open and the rebuilding of steel, automobile, shipbuilding industries had politicial priority. The famous book of Servain Schreiber on 'le defi Americain' in the mid-1960s represented a growing awaraness on the European side of the weak position of many European firms as well as of the dominance of American companies.

Governments reacted by supporting parts of the remaining electronics industry. West-Germany started in 1967 with support of its computer and microelectronics industry.[9] The 1967 'Plan Calcul' in France also subsidised the electronic components ('chips') industry. The French in particular adopted a strategy of firm mergers to create 'national champions'. Examples are the foundation of Sescosem (semiconductors) in 1968, owned by Thomson, the joint venture of Thomson and the Atomic Energy Commission in EFCIS (semiconductors) in 1970, and the merger of CII and Honeywell-Bull (computers)in 1975. In computer applications, the German state created a joint venture (DATEL) with Siemens, AEG-Telefunken and Nixdorf in 1970. The large telecommunications equipment firms (Siemens in Germany, CGE and Thomson) profited from very protected home-markets. etc. An important part of the French budget in support of the microelectronics industry went, like in the United States, through the defense budget.

It seems clear that most programmes in Japan and Europe were a direct reaction to the policy of the US and the resulting strong position of the American companies worldwide. Policies in support of microelectronics in the US were of considerable importance especially in the 1950s and 1960s. As a reaction, Japan closed its borders and in the 60s and 1970s targeted several parts of its electronics and machine-tool industries (as well as other industries like automobile and shipbuilding). The European governments initially reacted more modest, but increased their support especially after the mid-1970s on a national scale, and recently also within the European Community.
At the moment the process of international action and reaction seems to become more dense, i.e. the reaction time has become far shorter than in the past. This is certainly influenced by shorter product cycles of most products in microelectronics, which forces firms and governments to react far more alert than in past decades. An interesting example is the speed with which countries reacted to the first Japanese concerted action[10] in basic R&D in the development of a so called fifth generation computer. Starting in 1979, this project made clear that the Japanese placed priority on the development of amongst others artificial intelligence, which is a rather disputed technological option. The shere fact that the Japanese adopted such a leading-edge strategy, however, induced the Pentagon to search for a comparable programme, which resulted in the starting of a 'next generation' computer project. The British initiated the so called 'Alvey project', and at least one of the parts of the ESPRIT programme in the European Community can be considered to be an effort of keeping track with the supposed Japanese lead in this area. The size of the budgets even

resemble each other: both the US and UK project amount to $ 500 million.
In such a 'race' no actor really knows where the others are heading, which results in close monitoring of each other, or in proposals to cooperate. Another recent example in microelectronics in general is the rather quick reaction of the Pentagon to a MITI project in large chips development.

It is perhaps no bold statement that, without this international and interactive support for microelectronics through government subsidies for R&D, protected home-markets, assured supply due to large government procurement policies and the like, the general state-of-the-art of microelectronics probably would be at least ten years behind its present status and many firms would still be loss making, except for some specific consumer goods applications.

1.2. The 'inner circle' of supported companies.

One of the most obvious results of direct or indirect government intervention in microelectronics has been the creation of a fairly stable 'inner circle' of firms which cooperate intensively with government agencies. These firms form the basis of the microelectronics industry in all countries.

In the United States about twenty large firms belong to the inner circle of prime defense contractors in the area of microelectronics related products. This created a close relationship between demand for sophisticated defense products and the firms which were able to provide them. Firms were allowed to develop certain technologies on a 'cost plus' basis, which implies that all development and production costs plus a certain profit margin were paid by the Pentagon. A few large machine-tool firms, some sophisticated large aerospace and major electronics companies thus found an assured market in the defense sector. These firms include: IBM, General Electric, Westinghouse, Honeywell, Boeing, Lockheed, Hughes Aircraft, Rockwell, Texas Instruments, Control Data Corporation, Cincinnati Milacron, NCR, Fairchild, RCA, McDonnel Douglas, General Dynamics, TRW, Motorola. Together with a few research institutes (like MIT, Carnegie Mellon, Stanford, Batelle) these large and multinational firms repeatedly figurate in large defense projects. Until recently this formed the only possible way by which these firms could cooperate with each other without violating anti-trust laws.

The smaller firms which from time to time are added, mostly operate as subcontractors.

In Japan the inner circle of firms mainly cooperating with MITI is more limited and consists of around ten firms. Companies that can be found in almost every major project on microelectronics in the past three decades are: Fujitsu, Hitachi, Mitsubishi Electric, NEC, Toshiba, Oki, Matsushita, and to a more limited extent also Sanyo, Sharp, Sumitomo. The cooperative projects could imply that seperate groups were formed which developed competing systems. In the VLSI (very Large Scale Integration chips) project for instance there was IBM compatible applications research carried out by three firms, whereas two other firms cooperated in the development of a more 'Japanese' system.

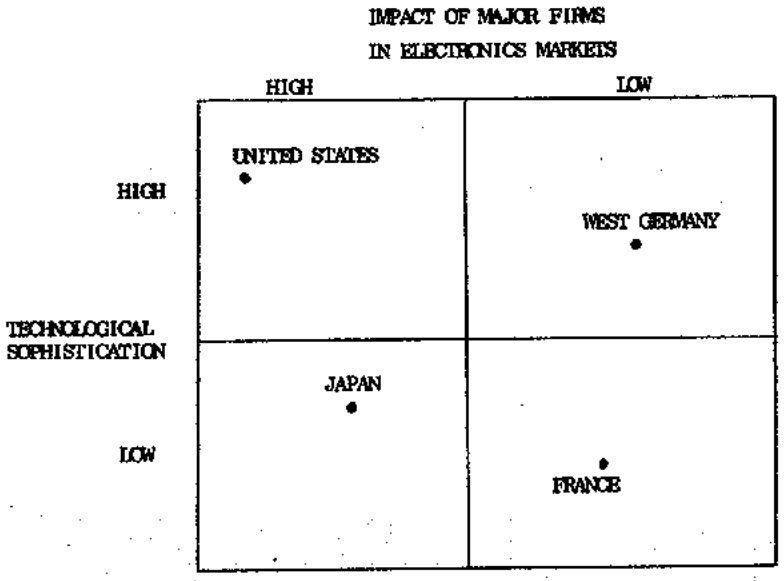
The number of large firms in European countries which support the national ambitions in microelectronics are more limited. In West-Germany the bulk of support went to Siemens; AEG-Telefunken stood, but to a lesser extent, also in the center of government attention. Other firms were too small and could not generate enough lobby power to receive large scale aid. Large defense contractors like MBB are additional important actors as well as major user firms like Volkswagen which is partly publicly owned.
The inner circle of firms in France is also limited with Thomson, CGE, Matra, CII-Honeywell Bull (now Bull) and CGCT as major and recently nationalised participants. Perhaps Dassault can be included and presently also Renault due to its activities in robotics (like Volkswagen in Germany).

With the exception of Siemens, the electronics firms which developed in the larger European countries and which are supposed to play a central role in the cluster around CAD/CAM, are of considerable smaller size than their American and Japanese counterparts. This means for both Japan and the US that government support for individual firms in principle can be of a more limited size (supposing that all countries want to stimulate the same broad range of technologies around microelectronics) because the firms can and will be able to provide most of the funding themselves either apart or in cooperation with other national partners. For the United States a second reason for a more limited support is that the absolute number of firms is far larger, making it difficult for the government to support these firms in a more or less selective way. The system of prime defense contractors, however, makes a certain amount of discrimination among firms ideologically feasible, although subject to periodically heavy pressure by non-defense contractants.

1.3. A typology of state policies

The relative international position of the four states in the midst of the 1970s in microelectronics with regard (a) to the number and impact of firms supporting the technology and (b) the technological sophistication of the national production structure in general, is illustrated by figure 1.
The figure only gives a rough and more qualitative indication of the nation's positions, which seems to represent the national policy makers' perceptions in this field.

FIGURE 1: COMPARATIVE POSITION IN TECHNOLOGICAL SOPHISTICATION AND FIRM STRUCTURE, MID-1970s



More or less quantitative indicators for the position of the countries on the horizontal axis are: number of large firms (see 1.2.), production volume, share of world market, R&D expenditures, technological leading position, and the like.
Indicators of the nations' position on the technology edge (the vertical axis) can be: the rate of diffusion of advanced technology, import penetration, trade balance in high-tech goods, etc.
Further research is needed to make a more precise assessment of the national position, but this is beyond the scope of this article.[11]

The very strong position of the American companies and the dominance of the American economy in international relations made it possible for the US to adopt a liberal position in the choice of its policy instruments after the second world war. The same, but to a lesser extent, is true for West-Germany which in the 1960s and 1970s (for instance in comparison with Japan) had a far more advanced technological position. Both countries on the top end of the vertical axis, therefore, adopted more or less liberal policies. This was also reinforced by the historically more decentralised nature of their political system.

Mills[12] expects in these more "liberal" states (the USA and Germany) that:

- The autonomy of the firm is respected.
- 'Industrial policy' is based on non-tariff barriers, which is legitimised through other policies such as defence and regional aid.
- Companies, even where subsidised through these indirect policies operate with a minimum of regulation.
- Competition is emphasised and existence of a strong anti-monopoly regulation.
- Inward capital investment is welcomed and there are few barriers placed against outward investment.
- There is free trade in technology.

It is likewise conceivable that, in combination with other historical and political factors (like the centralisation of the traditional state system) the countries on the lower end of technological sophistication adopted a more protectionist and corporatist strategy.

For these more "mercantilist" states (France and Japan) there is:

- An incorporation of industry into government or at least a strong industry/government linkage.
- An emphasis on exports which leads governments resources to be placed at the disposal of exporting industry, whilst tariff and non-tariff barriers would be used to decrease import penetration.
- Barriers to foreign capital penetration of the domestic economy and control of overseas investment.
- A lack of emphasis on competition which leads to considerable cartelisation.
- An encouragement of technology export and a containment of import of technology by government.

To some extent this typology largly was valid for the policies in microelectronics of the four countries until the middle of the Seventies. In the following parts it will be analysed to what extent policies of the four countries have changed in the area of CAD/CAM.

2. THE SUBSIDY RACE IN CAD/CAM

International interaction in microelectronics policies met a more or less 'new' dimension after the mid-1970s. In combination with other industries, like the machine-tool industry, microelectronics could revolutionise many parts of the production system. In the area of production automation CAD/CAM-like technologies seemed to provide the solution to many problems.

In short, the following factors have contributed to the support of the CAD/CAM option in all countries and major firms:

a. The supposed productivity growth stemming from the introduction of CAD/CAM techniques (in declining as well as sunrise industries).

b. The prospect of growing flexibility and quality control due to the use of CAD/CAM. This is widely considered to be a major element in the success of the Japanese strategy. CAD/CAM makes flexible automation possible in which small batch production becomes economical viable as opposed to the dominant system of rigid - large scale - automation. In a more competitive market it becomes important to have flexibility in production and to provide higher quality goods.

c. The machine-tool industry has always been considered vital to a nation's production system due to its central position in the whole economy, despite its relatively limited size. CAD/CAM is an extension of this capital goods sector into the electronics age.

d. The micro-electronics industry is widely considered to employ the technology
   (a) with the largest growth potential (computers, semiconductors, telecommunications equipment, etc. belong to the fastest growing industries),
   (b) which plays a central role in the predicted 'information society',
   (c) which is of great infrastructural significance and
   (d) which has rapid declining costs of manufacturing.
   Freeman for instance attaches to microelectronics - as a so called 'heartland technology' - the same role for economic cycles as historically has been played by steam-engine, textiles, railroads, the internal combustion engine, electricity and the chemical industry. (13)

e. Since CAD/CAM combines both strategical industries (machine-tools and microelectronics) its importance is apparant. The strategical value is also clear if we consider the strategies of major machine-tool producer and user firms (automotive, aircraft) which at the moment all integrate backwards into micro-electronics, whereas most large electronics and computer firms all integrate forwards into the capital goods sector for instance by acquiring smaller machine-tool or robot producers.

f. The option of stopping the runaway process to third world countries is provided for by production automation. Automation of industries which are affected by this process and experience also the competition of low-wage-countries (shipbuilding, automotive and textiles/apparal) can keep the industrial countries in the race for this lower-end of the world market in manufactures.

g. CAD/CAM promises increased and centralised control of the production process. This is important especially for large, multinational firms in an increasingly uncertain and crisis strucken world. It is also important in the capital-labour relationship, which is changing to the detriment of labour.

h. A final and important consideration stems from the military context. It is not only that microelectronics acts prominently in the international weapon race (electronic warfare), but the flexibility and productivity of the national production base also affect the viability of any military strategy.

These considerations have resulted in increased government subsidies for CAD/CAM in the larger countries. Most of the smaller OECD countries, with the exeption of Switserland and Sweden, experience major difficulties in adopting a similar strategy because they have a more limited industrial base in the machine-tool and/or electronics industry.

In this part of the paper, the policies adopted by the four countries in favour of CAD/CAM will be descibed (2.1.- 2.4.). Not included in the description are subsidies in the area of export promotion, rapid depreciation programmes and the like which, of course, additionally can affect the outlook of the industry to a considerable extent but for which hardly relyable comparative material exists. The description of the subsidy race in CAD/CAM will result in a summary and short assessment of the different tools of the chosen national strategies (2.5.).

2.1. Subsidies for CAD/CAM in the United States

In the course of the 1970s, the interest in the US for advanced manufacturing technologies increased. The traditional strategy was followed which means that the Navy, Army and Air Force issued a number of projects in support of production automation. In general these were coordinated under the so called ManTech (Manufacturing Technology) programme of the Department of Defense.

The programme objective is formulated as follows: " The United States' industrial base forms the basic foundation of our national security and military posture. The basic objective of the ManTech programme is to significantly improve the productivity and responsiveness of the industrial base..."[14] In 1984, approximately one third of the budget was directly aimed at computer aided manufacturing. Other parts of the programme, however, certainly affect the technological status of production automation indirectly. Most of the explicit CAD/CAM parts of ManTech, like the Integrated Computer Aided Manufacturing (ICAM) programme of the Air Force, started

in 1977/78. The programme experienced a rapid growth in its funding, indicating the increased interest. This can be illustrated by table 1.

TABLE 1: FUNDING FOR THE DEPARTMENT OF DEFENSE MANTECH PROGRAM ($million)

	1980	1981	1982	1984
Army	68	76	95	86
Navy	14	12	29	57
Air Force	56	66	86	57
IMIP*	--	--	--	83
Total	138	154	210	283

source: US Department of Defense; Office of Technology Assessment, 1984, p.316

* Industrial Modernization Incentives Program; until 1983 integrated in the funding of the three departments.

The programmes of the Defense Department do not really represent support of basic research.[15] Industry wants to take over the initiative as quickly as possible and through these programmes the department wants to remove some risks for (parts of) the industry linked to investing in these costly automation technologies. The Pentagon claims considerable spin-offs to private business especially in the area of NC-machines. The programmes which are the least oriented towards specific military applications, like the ICAM programme of the Air Force, the Electronics Computer-Aided Manufacturing (ECAM) programme of the Army and some other smaller projects, however, are only useful for the most sophisticated manufacturers. Thus, technology tends to be "tranferred to the sophisticated aerospace and electronics industries".[16]

In another project of the Pentagon in the area of large integrated semiconductors - the so called Very High Speed Integrated Circuit (VHSIC) - CAD technology is advanced. The VHSIC programme even had the very intention to standardise hardware descriptive language, because it was perceived as a great disadvantage that around 50 different languages figurated in industry, whereas industry was not able to organise standards itselve. The Department of Defense programme in this context takes the role of a 'focal point' for industry which is not done by the National Bureau of Standards.[17] Other projects financed by the Pentagon include a Next Generation computer project, a programme on development of production equipment for chips, and the like.

Other government bodies subsidising developments in CAD/CAM range from the National Science Foundation, which in 1984 funded between $ 6 to $ 9 million research and develoment in programmable automation, the National

Bureau of Standards (with a budget of around $ 4 million) which set up a whole CAD/CAM facility for testing and development of interface standards, and the National Aeronautics and Space Administration (NASA) with funds of around $ 6 million in support of robotics/teleoperators and computer aided design.[18]

The picture is more complicated since in the area of robotics research for instance "at least 27 government bodies were providing financial support (...) and a number of concessions - like a 25 per cent tax credit for research and development expenditure, and a three-year write-off on accelerated depreciation on research and development facilities and equipment - were on offer".[19] Additionally also federal states have increasingly created favourable conditions for R&D and diffusion of production automation. The latter is very hard to assess.[20]

The bulk of the direct (and increasing) funding for CAD/CAM, however, still is provided by the military.

2.2. Subsidies for CAD/CAM in Japan

The Japanese government in the 1950s started to protect its electronics, and machine-tool industry. In the first half of the 1970s this culminated, earlier than in other OECD countries, in a number of initiatives instrumental to the development of parts of the CAD/CAM cluster. Institutions like the Agency of Industrial Science and Technology, the Japan Small Auto Promotion Association, Japan Machine Industrial Association, the Ministry of Transport, the Ministry of Construction, but foremost the Ministry of International Trade and Industry (MITI), all developed minor or major projects in robotics, CAD, NC-Machine Tools, and the like. In 1971 an industrial robot association was created backed up by government. In 1980 JAROL (Japan Robot Leasing Company) started to lease robots (and later other flexible manufacturing material) to small firms. The total amount of subsidies for CAD/CAM or Flexible Automation has increased considerably during the last ten years and has shifted from more or less copying European and American technology to the development of new techology especially in the area of robotics in which the Japanese have developed a leading position since the beginning of the 1980s. The Japanese also were the first to initiate a project on the integration of different

CAD/CAM technologies in a so called 'Flexible Manufacturing Complex', which already started in 1977 and recently resulted in a test factory, which seems to be considerable more advanced than its counterpart at the American National Bureau of Standards. The project up till 1983 costed approximately $ 54 million.

"Japanese policy has not only supported university and industry research efforts; it has also helped to create markets in Production Automation equipment by providing assistance and incentives for manufacturers, including small and medium-sized enterprises, to introduce these technologies into their factories".[21]

Programmes for diffusion of CAD/CAM technology in more mature industries like shipbuilding and textiles, are equally important as more basic research projects in for instance sensor technology or artificial intelligence (5th generation computer project). They stimulate process innovations in CAD/CAM. A project, started in 1982 by the Ministry of Transport, on shipbuilding robots and automated systems ($ 12 million for four years) already seems a succes in the sence that it helped the Japanese shipyards to regain some of the lost ground in the race with their cheap-labour South-East Asian competitors. The same goals are set in a $ 54 million MITI project which started in 1982 on the development of automated sewing systems.[22]

It has been estimated that in robotics, government subsidies give Japanese robot producers a 20-25 percent price advantage over their US competitors[23] although is not likely that the same is true for other parts of the CAD/CAM cluster.

2.3. Subsidies for CAD/CAM in West-Germany

In the 1970s, German direct support of CAD/CAM was very modest (besides its large support of Siemens actitivies in computers, telecommunications equipment and chiptechnology). The "Humanisation of Work Programme" of the Federal Ministry of Research and Technology (BMFT), which in 1974 started with a ten-year budget of DM 100 million for research on robotics, only had indirect consequences for the development of the technology itself. With this programme, the government tried to combine measures to increase productivity with measures to improve working conditions in the factory[24], thereby facilitating the acceptance of new production technologies by the workers affected. The latter of course is an

important factor in a policy to support the diffusion of CAD/CAM. It is estimated that between 1974 and 1979 only about $ 13 million were spent on support of R&D in robots. Most of this research was done in joint industry-government-university projects in which the Technical-colleges (Hochschüle), but especially the Fraunhofer Gesellschaft , a large non-profit research organisation with 22 institutes spread around Germany, act as important intermediaries. These institutes and Technical-colleges form an integrated part of the industrial infrastructure of the Federal Republic and cooperate closely with private industry. This makes it also possible to cooperate on a more or less permanent basis with small- and medium sized firms which are dominating the machine-tool industry in Germany (like in the United States and France). Until 1979, however, most machine-tool producers received hardly any R&D assistance because more than 90 percent of state aid went to firms with a turnover of more than $ 110 million.

Since 1980 the interest in a more widespread support of CAD/CAM has increased considerably. This resulted in the Production Technology Programme (Program Fertigungstechnik) which subsidised industry with DM 164 million aimed at direct support towards R&D. Between 1980 and 1983 R&D in CAD/CAM in general received DM 43m, R&D in robots DM 17m and DM 61m was dedicated to Flexible Manufacturing Systems.[25] The second phase of the programme (1984-1987) meant a threefold increase of the first phase with a total budget of more than DM 500 million. This represents a planned growth in funding of more than 36% per year, which is far more than the growth of any other R&D project of the Federal government[26] and makes the priority of Germany in this area clear. These and other programmes also focus on assisting small and medium sized firms in R&D and in incorporating microelectronics technologies in their products. The latter is acheived for instance through the "Sonderprogramm Mikroelektronik" which has earmarked DM 90 million to machine builders between 1982 and 1985. Also other parts of a major offensive, started in 1984 by the Federal government with more than DM 3 billion subsidies from 1984-88 in the programme "Informationstechnik", will be instrumental for developments in CAD/CAM.

2.4. CAD/CAM subsidies in France

A host of measures in support of CAD/CAM has been developed in France. In France, more than in any other country of our survey, a tradition exists of active state intervention, which in the 1980s took the form of direct

nationalisation of the firms central in electronics: CGE, Thomson, Bull, Matra (majority owned). Most of the plans aimed at what the French call the 'filière productique' were already issued under the government of Giscard D'Estaing, but after 1982 were "reorganised by Mitterand to reflect a stronger Government role and increased funding".[27]

Some smaller projects already started in the Seventies, but only after 1979 larger programmes on robotics or on dissemination of CAD systems were issued (e.g. the Automatique et Robotique Avancée (ARA) project). In 1981 a regrouping plan for the machine-tool industry started which tries to arrange a division of labour between major firms in order to regain international competitiveness. With the socialist government, these strategies received wider and more fundamental attention and large funds were raised to help France become one of the major forces in the coming international information society.

Since the nationalisations, almost all of French R&D in electronics is done by governmental institutions. In robotics state-owned Renault figures prominently with around 50 per cent of the whole research capacity and with an important coordinating role in projects with other firms. Especially Matra and CGE are important actors stemming from the electronics industry in the strategy aimed at mastering the 'productique' cluster. In 1984 CGE and Thomson agreed on a sort of division of labour which implied a transfer of some of the CAD/CAM activities of the latter to CGE. Concentration of computer actitivities with Bull served the same end: a division of labour between the major nationalised firms in order to be able to gain sufficient economies of scale. On the other hand government research laboratoria like the Atomic Energy Commission (CEA) and the National Centre for Scientific Research (CNRS) are important carriers of the French national strategy. Like in the United States, the defense ministry, especially in the area of Space projects, plays an important part.

In 1983 a new facility had to help the transfer of saving accounts through the nationalised banks into more risk-bearing projects in production automation: the Industrial Modernisation Fund (FIM). The budget is planned to grow rapidly: from FF 3 billion in 1983 to FF 8 billion in 1984 for loans for R&D and diffusion of automation technology. For 1983-86 a 'programme productique' has been planned along the same lines as the plans for the machine-tool industry.[28]

Finally a number of programmes aimed at diffusion of microelectronics in other sectors and small and medium sized firms has been issued, for

instance the PUCE project (Produit Utilisants des Composants Electronique) with a budget of FF 40 million for 1983-84.

2.5. Summary and comparison of aid practice

Table 3 on pages 20-22 summarises the most important subsidies provided by the four countries. Special attention is paid to three subsectors of the CAD/CAM cluster: (advanced) machine-tools, Computer Aided Design (CAD) and Robotics. Some of the programmes are partly overlapping, which is only logical due to the integration of these different sectors in CAD/CAM. An additional part is added on other related policies which have important consequences for CAD/CAM but do not belong strictly to the three subsectors.

If we compair the policies of the four countries, it seems clear that Japan and to a lesser extent the United States, started their more widespread attention for CAD/CAM earlier than their European counterparts, and funded them also with considerably more money. The broad base of electronics firms, with their considerable lobby power in these countries, and their more serious attention for production automation having to operate in more competitive circumstances, are factors in explaining this subsidy offensives. In Japan, labour shortages, dependence on import of foreign resources, and the like gave additional incentives for investments in production rationalisation through CAD/CAM. In Europe, more than in the US and Japan, the smaller number of electronics firms had to compete with large declining industries for state funding, which became only more acceptable at the end of the Seventies, whereas the Americans were able to back their electronics industry on a larger scale through the defense budget. In Europe, most of the specific developments in CAD/CAM were advanced by firms in the automotive sector. It is conceivable that European governments became worried only after they widnessed the de-facto emphasis on production automation especially by the Japanese government and to a lesser extent by the American government and large firms.

The strategies adopted by the four countries in support of CAD/CAM are summarised in table 2.

Table 2. SUPPORT STRATEGIES IN CAD/CAM 1979-1985

	Research and Development		Diffusion	
	Large companies	Small companies	Large companies	Small companies
United States	X		X	
Japan	X			X
West-Germany	X	X		X
France	X		X	X

All countries support their national champions one way or the other in a sort of selective sector policy. In Japan, support for large companies includes also parts of the machine-tool industry since this is already integrated to a considerable extent with the large electronics industry, whereas in European countries and the United States, the machine-tool sector still consists largly of small- and medium sized family owned companies. In France, R&D aid for the larger companies in the machine-tool area aimes at the concentration of the industry. Only in Germany a wide system of research assistance to small and medium sized firms exists. The aid for R&D in Germany and Japan, therefore, more or less covers the structure of the whole national CAD/CAM cluster ranging from machine-tool to electronics industry, whereas especially in the United States the chosen support strategy (through Defense subsidies) discriminates against an important part of the cluster, i.e. the machine-tool industry.
The same is true for the policy in the area of diffusion of CAD/CAM technologies. In the US, where diffusion is stimulated, it is in support of the larger firms. In all other countries, diffusion among smaller companies is far more supported, which is not only benificiary for the firms affected, but certainly also for the firms which provide the equipment because most governments adopt a 'buy national' policy.

[illegible] FOR R&D AND DIFFUSION OF CAD/CAM IN FOUR COUNTRIES

	JAPAN	FRANCE	WEST-GERMANY	UNITED STATES
MACHINE-TOOLS (MT)	Since 1956 a number of laws for promotion of MT. Stimulation of firm cooperation through MITI. Direct subsidies: 1978-82 $ 444 mil. for NC-machines. "Preferred" interest rates of Japan Development Bank (JDB). R&D grants of $ 35-45 m p.a. Assistance for MT applications. Until 1980 barriers for direct foreign investment and restrictions on imports.	1981-84 $ 423m planned for regrouping plan of the top 20 MT firms. R&D assistance through CERMO and CETIM. Support of diffusion through Industrial Modernization Fund (FIM). "Buy French" policy. Formation of a holding company by 12 firms for export goals. Advanced MTs are also part of 'filière robotique'.	System of joint industry-government institutes (also aided by Länder). Federal funds for R&D personel (13% of costs). Aid to diffusion of advanced MTs. R&D and investment subsidies (20-40%) for application of microelectronics in MT production. Until 1979 most major MT producers did not receive any R&D assistance of the Federal government.	Concern on defense industrial base. Development of NC-machines in cooperation with Air Force. Diffusion of NC-machines to other prime contractors. Relaxing anti-trust rules by justice department for joint Research project by Machine tool industry, including also 25% tax credit.
COMPUTER AIDED DESIGN (CAD)	Part of the project on large semiconductors is also devoted to CAD for chip design. Changes in copyright laws for stimulation of software development.	Diffusion of 2000 CAD systems between 1979-83 as part the first plan 'Informatique et Société'. CNRS supports R&D in CAD. MICADO (Mission pour lad Concetpion et le Dessing Assisté par Ordinateur) helps diffusion since 1974.	Programme 'Datenverarbeitung': CAD/CAM part from 1976-79 totals DM 66m for R&D. Applied research done by Fraunhofer Institutes. From 1979 DM 25m p.a. for CAD software (75% of research at Hochschüle funded by state). 1984: DM 15m on R&D and DM 20-30m on diffusion of CAD.	NBS (funded by Air Force) research for standards: CAD standard issued in 1980 and quickly adopted. Total automation research at NBS in 1983 was ap.$ 7m 17 NSF projects in CAD. NASA: Computer aided planning ($ 2m in 1984); IPAD (aerospace vehicle design): $ 2.3 million in 1984. Pentagon: VHSIC project intends standardisation and commercialisation of CAD.

(continued on next page)

TABLE 3 continued

	JAPAN	FRANCE	WEST-GERMANY	UNITED STATES
ROBOTICS	1971, foundation of government sponsored Japan Industrial Robot Association (JIRA). Since 1974 a number of projects on R&D and standardisation of robots. 1980, establishment of leasing company (JAROL)-intially for robots only, now extended to other CAD/CAM areas in support of SMEs (in 1983 Y 10 bil.). Special depreciation programme (also by local governments). MITI project on R&D on Robotics for 'critical work'; 1983-1990: $ 62-83 million. Some small projects on R&D by Ministry of Transport, Ministry of Construction, Fire Defense Agency.	1975, start of a small programme on the development of a medical robot (Spartacus). 1980, continuation by ARA project (Automatique et Robotique Avancée). 1982-1985 loans for purchase of robots (FF 1200 million). MECA project: 1982-1985 FF 560m for testing and purchase of SMEs. Mitterand government developed the plan 'filière robotique'. Some projects on space robots by CNES. Central role for Renault in Filière.	Programme 'Humanisierung des Arbeitlebens', 1974-1983 DM 100m on robotics (social consequences). Only about $ 13m between 1974-1979 for robots R&D. Robotics part of programme 'Fertigungstechnik' 1980-1983: DM 17m. In second phase (1984-1987) 50 million is devoted to robots. Research support by Fraunhofer institutes especially for sensor systems and assembly operations.	Pentagon projects on robotics research. Part of ManTech programme 1977-85 devoted to robotics (total budget is appr. $ 100 million). Nationale Bureau of Standards, National Science Foundation, Defense Advanced Research Projects, NASA, Naval Air Rework Facility, etc. are estimated to fund about $ 10m per year on robotics R&D.

(continued on next page)

TABLE 3 continued	JAPAN	FRANCE	WEST-GERMANY	UNITED STATES
OTHER RELATED POLICIES	Mechatronics Investment Promotion Tax System: - special depreciation for SMEs - low interest loans Research Project on Flexible Manufacturing System with lasers: 1977-1984 Y 13.7 bil. ($54m). CAD/CAM in automated sewing: 1982-89 Y 13b. VLSI project for development of chips: 1977-1980 $ 132m. Supercomputer project: 1981-89 $ 82m. Fifth Generation computers project: 1982-91 $ 140m.	DAP programme for the diffusion of production automation among SMEs: FF 20m in 1982. Investment programme: Efficacité des équipements et maîtrise des débouchés: FF 2500m in favourable loans in 1982. Creation of CODIS, Comité d'Orientation pour le développement des industries stratégiques, in 1979: concentration on CAD/CAM, FF 110m in 1982 (for 1984 FF 715m planned). Preceding programmes replaced by the Fonds Industriel de Modernisation (FIM) in 1983: in that year FF 1b were spent of the planned FF 3 billion. Budget for 1984: FF 8 billion for loans on R&D and for users. PUCE programme, 1983-84 funded FF 40m for applications by SMEs of microelectronics.	CAD/CAM implementations in programme Fertigungstechnik: 1980-1983 DM 43 million 1984-87 DM 300 million Of total budget of DM 530m for the new programme also other parts related to CAD/CAM (or Flexible Manufacturing Systems). Parts of the 'Informationstechnik' programme (DM 2,960 million for 1984-88) will include R&D support of CAD/CAM like technologies. Sonderprogramm Mikroelektronik includes in the 1982-85 budget DM 90m for machine builders to applicate microelectronics. Approximately DM 500m in 1979-1982 period to SMEs in engineering sector for R&D personel. Some measures of the Länder provide additional funding for firms.	Air-Force Integrated Computer Aided Manufacturing (ICAM) programme started in 1978, Army's Electronics Computer Aided Manufacturing (ECAM) programme and a small Navy programme total in 1984 $ 56 m. The total defense funding for Manufacturing Technology (ManTech) is $ 200 million in 1984. Industrial Modernisation Incentives Program (IMIP) is $ 83m in 1984 for diffusion. Several support programmes by the authorities of the individual states (even in competition with eacht other). National Bureau of Standards set up a whole CAD/CAM facility for testing and the development of interface standards. Other Pentagon projects: VHSIC on development of high speed integrated circuits ($ 320m till 1986). Next Generation Computer ($500m for 1984-88). $ 90 m for development of production equipment for chips, etc.

sources: press clippings; Joël Le Quément, 1983; Office of Technology Assessment, 1984; Eurogestion, 1983; Department of Commerce, June 1984; European Commission (unpublished statement), 1985; CESTA, 1984; Arnold, 1984; International Trade Administration, 1983/84.

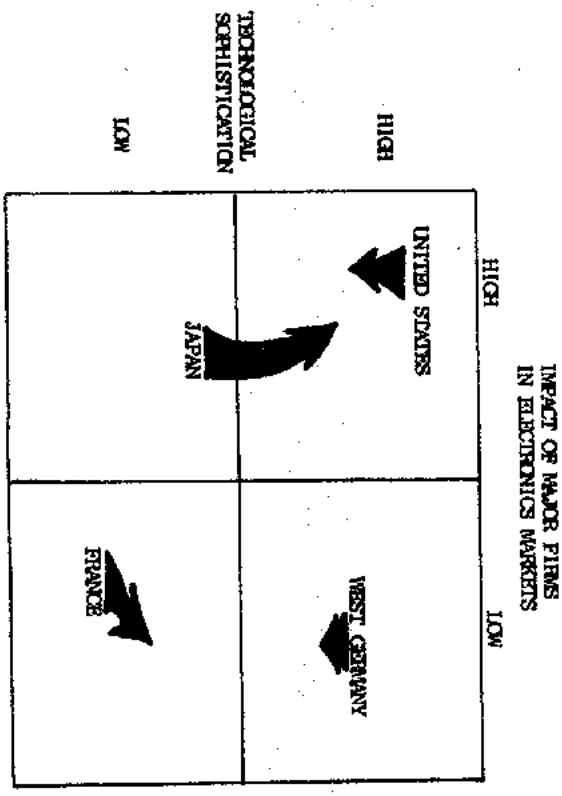
3. CHANGING POSITIONS AND CHANGING EFFECTIVENESS

The last ten years the relative position of countries in the area of CAD/CAM has changed considerably. In this part some trends are described (3.1.) and it is tried to consider the consequences of these changed positions for national policies (3.2.). An aspect of the international interaction in this context is formed by the attitudes of governments towards international cooperation patterns among firms. The general nature of these cooperation agreements will be summarized in the next paragraph (3.3.) and, finally, their consequences for the development of an effective strategy among European firms will be assessed (3.4.).

3.1. Trends in changing positions

If we recapitulate figure 1 (p.9), changes in the position of the four countries can easily be illustrated.

FIGURE 2: TRENDS IN COMPARATIVE POSITION IN TECHNOLOGICAL SOPHISTICATION AND FIRM STRUCTURE, 1975-1985



1. The position in electronics and advanced machine-tools (like in the automobile sector) of Japan has improved considerable. Past policies in support of new generations of memory chips, computer technology and robotics have no doubt been fruitfull in the sence that the large firms in these sectors at the moment operate at the technological forefront and have gained considerable production volume and market shares. In NC-machine tools for instance, the production volume of Japanese firms in 1975 was only half that of US firms, whereas they tripled the output of US firms in 1982/83[29], Japanese firms use considerably more CAD systems than others: ten times as much for instance as in Germany[30]; robot population and production is considerable higher than in any other country; estimates of the number of flexible manufacturing systems installed in Japan come to numbers which almost equal the numbers of the US and Europe combined; within a few years, Japanese large memory chips have come to dominate the world market. The Japanese firms have been extremely strong in standardised products. They are not yet strong in all parts of the CAD/CAM cluster, however: in software for instance they still have a comparative backlog.
2. The United States' advantage due to technological sophistication relative to other countries seems to become more thin. During more than two decades now the productivity growth of the whole economy lacked well behind that of most other OECD countries (except for the UK). Import penetration of a number of products in the CAD/CAM cluster has increased: large imports of NC-machine tools, robotics and memory chips are major examples of a declining presence of the most sophisticated producers even in the national market. In robotics for instance, most firms experience heavy losses.[31] In the recently issued Report of the President's Commission on Industrial Competitiveness, it has been estimated that imports are rising and exports are falling for the US in every major electronics market.[32] The same is true for the machine-tool industry.[33] A Department of Commerce assessment of the competitive status of the US Manufacturing Automation Equipment industries comes to the conclusion that the strength of the United States is mainly in the "areas of software for the CAD/CAM applications business, and in the peripherals such as sensors and programmable controllers".[34]
3. The position of Germany relative to the United States seems to have become better. The overall position of German industry, nonetheless, has decreased. Stams [35] registers a tendency towards more imports and less exports of high technology goods. For instance in the machine-tool sector imports grew from 23.8% in 1970 to 32.8% in 1982, although this is predominantly on the less sophisticated end of the industry; the number of

robots in Germany is considerable (3500 in 1982), but has a lower penetration rate than in Japan or the US and is predominantly employed in a few automobile firms and also developed by them; the number of CAD installations in Germany lags behind that of Japan. Three major studies on the international competitiveness of Germany in high technology recently reached parallel conclusions.[36]
4. The technology policy of France during the last decade clearly has had some succes in the area of telecommunications. It also made it possible for a few large electronics companies to play an international role in production automation. Due to that strategy, however, the industrial base also has become more concentrated and due, to their backward starting position, French firms still are relatively weak. In the domaines of the 'filière productique' an average import penetration of 65% exists, ranging from 90% of all integrated CAD/CAM systems to 50% of advanced robots being imported.[37]

3.2. Consequences for political margins

Until the end of the 1970s, the United States were able to retain a leading position with defense oriented support policies. This strategy, thus, had considerable effectiveness. The positions of Japan and West-Germany (see figures 1 and 2) have to be associated with higher direct government involvement. Especially Japan, coming from the lower end of the vertical axis, i.e. with lower technological sophistication of the whole economy and its firms, had to adopt (relatively effective) state aid in a national effort to 'catch up. France is the country with the weakest position on both ends of the scale and it was therefore likely that (1) it had to adopt the strongest and most direct support strategy for the national electronics and machine-tool industry, whereas (2) this will be associated with great difficulties and thus will have a limited effectiveness. Has this changed in the last five years?

3.2.1. Japan: the problem of the technological forefront

In a growing number of areas in CAD/CAM Japan has gained a position of technological leadership due to past concerted actions. This has several consequences for the political margins of new strategies: (1) it is not clear anymore what a 'viable' technological path may be, because several

options without technological or commercial precedent have an uncertain future; (2) far more basic research has to be done, which puts a heavy burden on the nation's capacity and makes it less possible for firms to invest only in product development and marketing; (3) the firms on the leading end are less willing to cooperate with other (weaker) national competitors; (4) more concentration on basic research also can withdraw government funds from subsidies towards the dissemination of the technology, thus creating a lower diffusion rate among small and medium sized companies (like in the US); (5) other countries react in a more or less protectionist way, causing MITI to restrict domestic producers' exports (sometimes through 'voluntary trade limitations') which has the additional effect (6) that Japanese firms will have more direct foreign investments and cooperate with US and European firms in joint-ventures in order to evade barriers at home and abroad, but thereby also limiting their 'national' interests and undermining to a certain extent the power base of MITI and other governmental institutions. The necessary adoption of a 'leading edge' strategy thus affects the effectiveness of proven subsidy strategies.

It is considered in general that the role of MITI as a coordinating and targeting agency has decreased in past years. Leading firms (e.g. in the automobile sector) are not readily willing to cooperate for fear of losing their leading position.[39]

International countervailing measures put Japan under pressure to limit its exports. Since 1981 for instance, MITI organised an export cartel for manufacturing machinery. Exports to other countries have to be licensed in order to assure a minimum price level (raised in 1983) to limit exports and control exporters.[40] This stimulated Japanese firms to conclude more international cooperation agreements with other robotics manufacturers or users of machinery. Paradoxically these developments on the one hand are supported by MITI, but on the other hand help the firms concerned to 'escape' the reach of MITI.

Including firms with these international cooperation agreements in concerted national action becomes additionally more troublesome, since this can cause too quick a worldwide dissemination of newly developed 'Japanese' technology. Some of the frontline projects already provide examples of this kind of exclusion of major national firms. In the

VLSI project, for instance, Matsushita was left out probably because of its links with Philips (which owns 35% of the firm). Le Quément suggests that Kawasaki - one of the leading firms in that area - was left out of the R&D pole in robotics formed around MITI, Hitachi, Yaskawa and Shin Mewa because of its ties with the American firm Unimation (now: Westinghouse).[41] Neither is the firm a participant in the Flexible Manufacturing Complex[42] which unites all major electronics firms. Another recent example is a project on software by MITI, Nippon Telegraph and Telephone (NTT) and Fujitsu, Hitachi and NEC. Mitsubishi, a major firm in this area might have been excluded due to its cooperation with IBM in the development of software. Interestingly enough the cooperation pole itself will cooperate with AT&T of the US (and IBM's most powerful competitor in this area).[43]

The strategy of NTT in general already caused a number of conflicts because it discriminates four firms (the so called "Denden Family":NEC, Fujitsu, Hitachi and Oki Electric) against other firms. Major firms not belonging to this inner circle, like Matsushita and Mitsubishi "feel excluded from their fair share of these partnerships" and therefore support "the semi-liberalization of NTT's monopoly, mainly brought about by US pressure for market access".[44]

This kind of dissent amongst major firms in Japan reduces the effectiveness of past subsidy strategies and creates a domestic lobby movement in support of more liberal policies.

3.2.2. The United States: problems with the military strategy

The declining lead in the international position of US firms, has caused a reconsideration of many traditional strategies in support of the national industry.

In the first place, the Pentagon is more forced to 'prove' the effectiveness of its subsidies in reaching a technology transfer to private industry. It is still not able to do so.[45] The Pentagon presently tries to diffuse the technology developed under the ManTech programme to industry by way of two information centres. The results are not yet clear.[46] In this case a growing struggle between the Pentagon and the US congress becomes apparant. In 1983, for instance, the House Appropriatons Subcommittee on Defense decided that the ManTech programme should be labelled 'R&D' in stead of 'procurement' policy [47] which is indicative for differences in the explicit goals attached to this programme and makes the continuity of the programme more uncertain.

In the second place, it is tried by Congress to initiate direct subsidies to firms. Here we face a direct confrontation between Congress and the President's office.
In October 1984 for instance, president Reagan "withheld his approval", i.e. he vetoed a number of Acts proposed by Congress aimed at improving manufacturing technologies in a more direct way with federal funding of $ 250 million during 1985-1988.[48] Other bills were in the pipeline in 1984. For example, members of the House Science and Technology Committee proposed a National Robot and Automated Systems Leasing Act to copy JARCL of Japan. A Robotics and Automated Manufacturing Systems Research and Education Act has been proposed as well as a 10 percent tax credit for purchases of CAD/CAM equipment.[49] Since March 1984, however, there has been no progress in these proposals (to my knowledge, rvt).
In the third place, there is a more intense conflict between the Departments of Commerce and Defense. Commerce also tried to initate a programme in support of CAD/CAM with direct subsidies instead of procurement/R&D but without success up till now. The struggle between Commerce and the Pentagon over the jurisdiction in the area of export licenses for strategical sensitive goods (almost all parts of the CAD/CAM cluster belong to this category) recently has been won by the latter indicating a victory for more protectionist sentiments.
The still dominant role of the Pentagon in domestic subsidy policy, fourthly, has induced major lobbing efforts by those parts of industry which hardly profit from the defense based strategy to get protection especially from Japanese imports. A well documented case has been brought about by a single machine-tool firm (Houdaille) which was adopted by the Commerce Department as a test-case for protection, but which eventually also ended in a Presidential veto. A request by the National Machine Tool Builders Association for a tariff on machine-tool imports is still pending. The protectionist measures in support of the automotive industry can also be analysed in this context: the arrangement with Japan to limit its automobile exports after 1981 was explicitly meant to give the American automobile industry the breathing space to invest in production automation in order to be better able to face the competition with cheaper and better Japanese car imports. It is no accident that General Motors is at the moment the only (and probably winning) protagonist of terminating the protectionist measure because it has most succesfully diversified in robotproduction and the use of advanced automated equipment in its production lines. Ford and Chrysler have made far less of an effort and

therefore have an additional incentive to support prolongation of the quota, despite huge profits in the past three years.[50]
In the fifth place, the strong emphasis on anti-trust laws begins to weaken. The justice department already relaxed anti-trust rules for joint research projects of machine tool firms. A number of other joint research and development projects were allowed. For instance the Microelectronics & Computer Technology Corp. (MCC) unites a bundle of large electronics companies and formed a major lobby power against anti-trust laws.[51] These and other efforts (like proposals from the already mentioned President's Commission on Industrial Competitiveness) in 1984 resulted in the signing of a bill that protects companies involved in joint research projects from antitrust actions.
In summary, a mixed picture of the US policy emerges. There is the willingness to protect industry in order to enable it to automate and to stimulate cooperation amongst large national companies by relaxing anti-trust rules. On the other hand the Pentagon still is a major actor in this policy, thus the efficiency for other firms beside the prime contractors will be low, and therefore additional and more direct support may be needed in the nearby future. This mixed picture, however, exactly represents the "mixed" international position of the United States.

3.2.3. France: limited industrial base and low effectiveness

Most of France's nationalised electronics firms which are supposed to support the "filière productique" have operated in the red for several past years. Although some managed to limit their losses, Bull, Thomson and CGCT in 1984 together, nonetheless, lost around $ 140 million. Only CGE is profitable.[52] Renault, despite its own activities in production automation, experienced considerable losses, is not able to retain its European market share and is planning to adopt a rationalisation strategy without precedent. The latter will bring the socialist government in even greater conflicts with large parts of the trade unions.

As soon as the impossibility of creating the promissed new employment by an ambitious investment programme in new technologies became more or less apparant, the socialist government got serious problems with defending its strategy for the "redéploiement industriel" against attacks of trade unions which originally supported its ascendence to power. Such conflicts probably would have been more intense with a non-socialist government, but still meant a weakening of the appeal of the government.

In general a small R&D capacity, lossmaking firms with small market shares, considerable import penetration in CAD/CAM, distrust in parts of the society against too rapid introduction of 'labour-replacing' technologies, makes the effectiveness of the French efforts limited. Many programmes as a result did not reach the planned expenditures.

In the machine-tool regrouping plan for instance, for which $ 423 million was planned for 1981-84, up till 1983 only $ 55 million was spent. The creation of machine-tool poles was not very succesful. A firm like CGE considerable reduced its participation in one of the machine-tool poles (Intelautomatisme).[53]

Another example: in 1983 only FF 1 billion could be raised of a planned FF 3 billion under the Fonds Industriel de Modernisation (FIM). It is highly doubtfull, therefore, that the planned increase in spending for 1984 (FF 8 billion on loans for R&D and dissemination among users) has been reached.

In 1983-1984 FF 40 million were planned for the project PUCE (Produits Utilisants de Composants Electroniques); only FF6million were spent in reality.[53a]

The Office of Technology Assessment estimates that "the average agency cutback for 1983-84 was about 20 percent from levels projected in 1981".[54] Since most projects nonetheless were continued and did not became more modest, the effectiveness of these projects will remain lower than anticipated.

Not all programmes were underspent: the ADEPA programme for instance was a success. It intended to support diffusion of production automation equipment to small users on a sort of leasing base. This is probably also due to the limited scale of the project, with 100 smaller firms participating.

In general, it can be observed therefore that the 'tissue industriel' of France still has a limited absorption capacity for CAD/CAM, which can only be changed at a far slower pace than desired. This has important consequences for the cooperation strategies of French firms. The French were undoubtably the most fierce supporters of cooperation among European firms and tried to settle a number of cooperation contracts with

valuable European partners. They also were important lobbyists for a European industrial policy in information technology (see 3.4. on the ESPRIT programme). Lower effectiveness of the domestic policy and a lack of really valuable and sizable partners in CAD/CAM after 1983 led the French government to support international cooperation of French nationalised firms with American and Japanese companies in order to barter transfer of technology against access to the French market. The latter is clearly a disguised form of liberalisation of the protected home market.

3.2.4. Germany: declining, but with perspectives

The machine-tool industry is the largest single industrial sector in West Germany with approximately 1 million people employed. The integration of German machine-tool firms, which were especially strong in the development and production of mechanical equipment, and the electronics branche poses one of the most urgent problems for an effective management of the (slowly) declining position of the country. In the field of electronic controls, the German machinery industry, with its emphasis on skill-intensiveness, is comparatively weak.[55]

It is, however, not by accident that the Christian Democratic-liberal government coalition decided to raise the direct support for machine-tool firms to diversify into electronics, since these firms traditionally belong to the constituency of the CDU. Whether this will be effective is hard to assess at the moment, but it has been observed already that the programme 'Fertigungstechnik' is a considerable succes, with at the moment more than 2000 requests for aid. 90 percent of the firms applying for a subsidy (40% of R&D costs) are small and medium sized firms (below 500 people employed). It seems that with projects in which more inter-firm cooperation is required, more problems arise.[56]

Friebe signals a number of general problems inherent to the German political and economic system which might affect the effectiveness of any policy: (1) the decentralised political systems can result in competition between the Länder and overlapping support schemes, (2) the large number of government agencies (Ministry of Research and Technology, Federal Post Office for procurement policies, Ministry of Defense, the Minsitry of

Economic Affairs) engaged in policies related to CAD/CAM gives major coordination problems, (3) duplication of R&D can also originate from the intense competition among research institutes and Technical Colleges which all want to develop the most lucrative technologies.[57]
An additional problematic factor is the position of the trade union. The largest union in the metal working sector - IG Metall - recently changed its attitude from support of production automation towards a far more negative one. The Christian Democratic-Liberal coalition thus can bring a consensus about with large parts of the machine-tool industry (with the intention also of limiting support to Siemens), but now has to deal with a more reluctant trade union.
In all parts of the CAD/CAM cluster, German firms are increasingly cooperating with American and Japanese firms. In robotics for instance, most agreements induced a marketing (or at best a licensing) role of German manufacturers for their foreign (mostly Japanese) 'partners'. With the exception of Nixdorf, West Germany lacks a large own computer industry: Siemens sells besides its own series Fujitsu mainframe computers. This implies the danger of a 'colonisation' of German industry and thus will limit the effectiveness of governments efforts in these areas if we suppose that the government does not want to support foreign competitors. The widespread system of government-industry cooperative research institutes makes it very hard to discriminate against Japanese or American firms, certainly if they cooperate with domestic producers.
Mixed and partly conflicting strategies can be a main weakness of German subsidy policies in CAD/CAM having to cope with a more limited production base in electronics and consequently reduces the effectiveness of support strategies considerably. A more comprehensive analysis, however, probably can only be made in a few years time.

3.3. International cooperation among firms

If we look at figure 2 it becomes clear that international interaction tends to head towards a situation in which the United States and Japan increasingly show the same technological sophistication and firm structure. This has resulted not only in major trade disputes, but also in a growing number of international cooperation agreements between US and Japanese firms. Not only with the intention to share R&D results, but also to enter mutual markets. If we consider the 'objective' position of firms from the

United States and from Japan, they might have more in common and more to offer to each other than firms stemming from West Germany and France. This has resulted in a relatively dense network of cooperation agreements between firms operating in the CAD/CAM cluster around the 'Pacific', whereas the network of cooperation agreements among European firms is much more limited or even totally absent in some areas.
European firms on the other hand do have a large number of cooperation agreements with Japanese and American firms. The latter can provide them with advanced technology in CAD/CAM. The agreements serve to compete better with the most important rivals which (still) are mainly European firms, and it can give them more easy market access to the larger and leading markets of the US and Japan.[58] It has already been illustrated what the consequences of these international cooperation agreements might be for the effectiveness of national subsidy policies. The low degree of cooperation between firms within the European Community has clearly also consequences for the effectiveness of any programme initiated by the European Commission.

3.4. The effectiveness of European Community programmes in support of CAD/CAM

The most appealing programme in support of Information Technology within the European Community , the ESPRIT programme for which 750 million ECUs where dedicated over a five year's period, was heavely backed by twelve large European electronics firms: GEC, ICL, Plessey, Thomson-Brandt, Philips, CIT-Alcatel (CGE), Olivetti, STET, Siemens, AEG, Nixdorf and CII/Honeywell-Bull. The definite programme started in 1984 and can be considered as a flow of subsidies towards European firms complementary to national programmes.
Five sub-projects were adopted which all affect the state of the art in the CAD/CAM cluster one way or the other. One sub-project, however, the Computer Integrated Manufacturing (CIM) project, is explicitly in support of CAD/CAM. It is the objective of the CIM programme to "establish the technology base for progressive introduction of computer aids in all phases of the manufacturing process..."[59] with an emphasis on discrete batch production as the technologically most demanding problem. It was paradoxically the CIM project which experienced major problems in getting its 'fair share of the subsidy pie' (i.e. one fifth) and in which most large European electronics firms were not very willing to cooperate. As a result the programme has a lower priority than the other parts of the ESPRIT programme and the

amount dedicated to it is approximately 14 percent of the total budget. At the moment the project staff is in a constant battle to retain even the present level of funding.[60] This of course considerably limits the effectiveness of the programme.

Perhaps the most important reason for the low priority in European policies for the CIM project was that IBM was also applying for a place under the ESPRIT sun. The firm explicitly targeted the CIM-area: six of the seven proposals submitted by IBM fell under the CIM project. Two projects were approved. Both projects are either of very limited size or make IBM cooperate with a wide number of participants, thus making the role of the firm very marginal. But although the participation of IBM can be regarded as more or less symbolic, the other major electronics firms apparantly are not willing to cooperate with IBM which is considered to be their biggest adversary in almost any area of information technology. Cooperation of IBM with an Italian participant on a bilateral level, additionally, also affected the effectiveness of the EC strategy: the Italian firm DEA which produces very sophisticated robots was one of the most promissing participants in the CIM project; it was forced to back out of the project due to a cooperation deal of its parent company (the state owned STET holding) with IBM exactly in the area of production automation. The deal with IBM, according to the parent company, suck out all resources for other projects such as ESPRIT and the subsidiary therefore had to withdraw. This probably also caused Olivetti recently to terminate its support for a joint-venture with STET in the area of production automation.[61]

Another reason for large European electronics firms not to participate very enthousiastically in the CIM project, might be that CAD/CAM already is a vital part of their present competition. Research cooperation thus would not be of the pre-competitive nature which is the aim of the ESPRIT programme. It might involve an exchange of too strategic information which the firms rather keep for themselves. Most of the CAD/CAM systems developed by these firms at the moment are only for their own use and therefore directly affect their level of productivity which reinforces the strategical importance of the technology and thus limits their willingness to exchange vital information in cooperation projects.

Finally, it is interesting to see what the impact is of another recently started initiative of the European Commission directly related to the

support of CAD/CAM technologies: the BRITE (Basic Research on Industrial Technologies for Europe) programme. It received favourable attention by all major electronics companies (and many other firms) which supported the declaration of intention. The aim is to support the next step after basic research towards the diffusion of technology (adaption to concrete circumstances in the customers industries). It therefore seems to be more 'neutral' to the electronic firms than the CIM programme and can help them to gain access to markets they have not reached yet and does not seem to include participation by non-European owned multinationals.

In general the effectiveness of the subsidy strategy of the European Commission is very much affected by international cooperation agreements with US and Japanese companies, which is a direct consequence of the weak position of individual European firms and countries relative to the US and Japan. This probably will result in a less-than-optimal support of CAD/CAM on a European scale.

4. CONCLUSION

The analysis on the basis of CAD/CAM related policies has shown that, in general, the originally liberal states are becoming more mercantilist, whereas the mercantilist states are becoming more liberal (Cf. typology on p.9)

Especially the United States and Japan show this tendency. The dynamics of the changes in their policies largly depends on direct interaction between the two countries which are increasingly in converging technological positions (see figure 2).

Although in the United States the autonomy of the individual firm in general is still respected, growing efforts for direct support are combined with more stringent export controls in order to limit technology transfer. Strong anti-monopoly regulations have been weakened in order to enable firms to cooperate. There is a growing de-facto consensus on some forms of industrial policy, although it is ideologically not opportune to give policy initiatives this name. Decreasing effectiveness of the "military strategy" additionally stimulates protectionist tendencies.

Japan has abandoned most of its direct mercantilist policies by lowering trade barriers. MITI at the moment even considers to abolish all taxes on imports of computer equipment, because it thinks the Japanese industry is strong enough to do it without these protectionist measures. Domestic disputes over the effectiveness of former policies also pressed the government to adopt more liberal policies.

In some areas US protectionism even has bypassed Japanese protectionism. For instance, it has been assessed that the "US has approximately 45% of its manufactured imports subject to some form or another of nontariff barrier" whereas "Japan (...) has only 22% of its imports subject to restrictions".[62]

The political convergence of Japan and the United States becomes particularly clear in relation to the policies adopted by the European countries. Some examples:

- In close interaction with each other, Japan and the USA are abolishing their trade barriers in semiconductors, whereas the European countries try to protect their vulnarable position behind a tariff wall of about 17 percent.
- In both countries a liberalisation of the telecommunications monopoly has been acheived (at least formally). In Europe only the UK has done the same. The other European countries are only considering the possibility of liberalising national PTTs in a distant future.

- Under pressure of the USA (and of the Japanese Ministry of Education), Japan is changing its copyright laws for computer software to almost US-identical versions.
- Both Japan and the USA opted early for a new GATT round in trade liberalisation talks, whereas the European countries are more reluctant.
- The level of business cooperation around the Pacific is far higher than among the European firms.

On a different technological level and to a more limited extent, the European countries take also more or less converging positions.

Germany combined direct support of electronics and machine-tool firms with a more liberal international strategy. In competition with the US and Japan, however, a more protectionist role increasingly is played in concerted action with other European governments within the European Community.

France still seems the most mercantilist state, which is understandable because of its relatively weak position. But it has also partly liberalised its markets as a consequence of the ineffectiveness of former policies (which did not work exactly because of France's weak international position).

It is probably only due to the increased convergence in the positions of France and Germany that a European policy in Information Technology (ESPRIT) could be adopted. Large differences still exist between the countries of the European Community, which makes the effectiveness of this effort troublesome.

Whether the convergence in the positions of the USA and Japan will result in international political cooperation or discord[63] will, next to historical and cultural factors, very much depend on the effectiveness of their domestic strategies to stay at the technological forefront. If the United States' government is not able to mobilize its own industry to this end (and it seems that this is not effectively done through the defense budget) conflicts will arise with Japan. These conflicts, on the other hand, will be tempered by lobby activities of US firms cooperating with Japanese enterprises.

The outcome of the process in the longer run will probably depend more on the ability of the US firms to stop their relative declining position, rather than on the degree to which Japan will open up its markets.

The European countries will not play a very important part in such developments towards international cooperation or dispute in the high tech area. West Germany alone is too small and has too limited a production base to influence international conflict or cooperation on its own, despite its still high technological capability. Thus, European countries increasingly become marginal. Only if a common European Community Policy can be persued effectively, the international structural and political power of European countries and firms will grow and makes Europe (again) a factor in the international interaction in microelectronics in general and CAD/CAM in specific.

NOTES

1. The impact of microelectronics on the rationalisation of the service sector has also been large ('office automation'). This, however, falls beyond the scope of this paper although it is considered to affect additionally the automation of the factory in a situation in which offices and plants, white-collar and blue-collar work increasingly can be integrated.
2. Computer Aided Design refers to a process "which uses a computer system to assist in the creation, modification and display of design". Computer Aided Manufacturing can involve "production programming, manufacturing engineering, facilities engineering, industrial engineering, and reliability engineering (quality control). CAM techniques can be used to produce process plans for fabricating a complete assembly, to program robots, and to coordinate plant operations". Preston, Crawford, Coticchia - CAD/CAM Systems, Marcel Dekker Inc (New York), 1984, p.320
3. Op.Cit., 1984, p.320/321; The structure of the CAD/CAM market is very difficult to analyse. It consists of products areas like electronic instrumentation, software, etc. (Cf. Gerybadze, 1983, p.26). In this paper examples and empirical data are mainly taken from a few major parts of CAD/CAM: CAD, NC machine-tools, robotics, computers and semiconductors.
5. Cf. Robert Sobel - IBM, Colossus in Transition, Bantam Books, 1983, p.99
6. David Noble - Forces of Production, Alfred A.Knopf (New York), 1984. Noble makes it clear that the Air Force only stimulated a specific technology path, whereas other technologies in the short would have been more viable and could have had more positive effects for the workers operating the machines. Strategical choices of the Air Force, supported by aircraft producing and large machine-tool firms, thus had far reaching consequences for the way in which parts of the machine-tool industry could develop.
7. Eric Arnold - Computer Aided Design in Europe, manuscript, 1984, p.9
8. United States International Trade Commission - Foreign Industrial Targeting and its effects on U.S. industries; phase I: Japan, October 1983, p.131
9. Cf. United States International Trade Commission - Foreign Industrial Targeting and its effects on U.S. industries; phase II: the European Community and Member states; Cf. Giovanni Dosi - Technical Change and Survival: Europe's semiconductor industry, Sussex European Research Centre, paper no.9, 1981.
10. Maurice English, Adam Watson Brown - Japanese actions in I.T., draft eight, Commission of the European Communities, Information Technologies Task Force, Brussels, July 1984, p.4
11. A very interesting attempt is made by Henry Ergas - Why do some Countries Innovate more than Others?, CEPS papers, no.5, Brussels, 1984
12. Jill Hills - Information Technology and Industrial Policy, Croom Helm, 1984, p.35-38.
13. Freeman, et al, 1982
14. Larry Allen, Lloyd Lehn - Technology Area Description of the Manufacturing Technology Program, The Department of Defense, Director of Industrial Resources, Office of the Deputy Under Secretary of Defense, Washington, 30 June 1983, p.1
15. Interview with Pentagon ManTech official.
16. Office of Technology Assesment (OTA) - Computerized Manufacturing Automation, April 1984, p.319
17. Interview Pentagon, VHSIC officials.
18. Cf. OTA, 1984, p. 325

19. Financial Times Business Information (FinTech 4) - Automated Factory, March 5, 1984, p.2
20. Cf. Office of Technology Assessment - Technology, Innovation and Regional Economic Development, Washington, July 1984; Le Quément, 1983, p.55, describes the policy of the state Michigan in support of production automation.
21. Berkely Round Table on International Economics - Draft study for OTA on Programmable Automation, 1983, conclusion, p.5
22. Cf. Eurogestion - Factory Automation, Japanese Developments, 1983, p.9
23. FinTech 4, February 1984, p.2
24. BMFT - Forschungsbericht Humanisierung des Arbeitslebens 81-012, August 1981, p.15
25. Cf. e.g. Cesta - Strategies nationales D'Automatisation, Les Politiques de Recherce/Développement en robotique, Paris, 1983, p.115
26. BundesMinisterium fur Forschung und Technologie (BMFT) - Bundesbericht Forschung 1984, summary, p.89
27. OTA, 1984, p.353
28. European Commission, unpublished statement, March 1985, p.6 (annex II)
29. Op.Cit. p. 4
30. K. Matsushima - Stand der CAD-Technologie in Japan, ZwF 77 (1982) 6, cited in CESTA, 1983, p. 104
31. Fintech, March 1984, p.1
32. John Wilson - America's high-tech crisis, why Silicon Valley is losing its edge, in:Business Week, March 11, 1985, p.46
33. Cf. National Research Council - The competitive status of the U.S. Machine Tool Industry, National Academy Press, Washington, 1983
34. US Department of Commerce - A Competitive Assessment of the U.S. Manufacturing Automation Equipment Industries, Washington, June 1984, p.83
35. Dr.D.Stans - Le Programme Fertigungstechnik 1980-1983, p. 103, in: CESTA, 1983
36. For a critical review of these studies, see Dietmar Heller, Christian Langer - Internationale Wettbewerbsfähigkeit bei technologieintensiven Gütern, in: Wirtschaftsdienst, Hamburg, nr.10, October 1984, 64 jrg.,p.483-488
37. Joël Le Quément - L'Usine du Futur Proche, Agence de L'Informatique, 1983, p.103/104; With regard to the R&D capacity of France in relation with the US, Mr.Fabius, in his function as Minister of Industry and Research (presently Prime Minister) pointed out in 1984 "that the global industrial research efforts of all French institutes were equal to the spending of the Massachusetts Institute of Technology". Financial Times, February 23, 1984
38. OTA, 1984, p. 346
39. Op.Cit. p.340
40. Blick durch die Wirtschaft (Frankfurt), 31 March 1983
41. Le Quément, 1983, p.74; in rechecking this, it was interesting to see that all firms mentioned in the pole do have cooperation agreements with American firms. These were, however, of a marketing and licensing nature towards to US market. Only Kawasaki has a more or lesse equal technical cooperation relation with its large American partner.
42. Cf. CESTA, 1983, p.22
43. Asahi Evening News, October 2, 1984
44. M.English, A.Watson Brown, 1984, p.17
45. The General Accounting Office has done some research on the effectiveness of Defense Departments expenditures. It found out that transfer of technology was not apparant. GAO - Manufacturing Technology- A Cost Reduction Tool at the Department of Defense That Needs Sharpening, Washington, September 1979, cited in OTA, 1984, p. 314
46. Interview Pentagon, december 1984

47. OTA, p. 314
48. Press Release, The White House, Office of the Press Secretary, October 30, 1984 dealing with H.R.5172: "The new role for the Federal government (...) could also serve as the basis for a Federal industrial policy to influence our Nation's technological development. This Administration has steadfastly opposed such a role for the Federal government".
49. Fin Tech, March 1984, Bill numbers are: HR 4046, HR 4047 and HR 4048.
50. Protectionist measures in support of the steel industry also must be interpreted in the context of the race in rationalisation: due to negative experiences (one steel company for instance used its extra profits not to invest in production automation but to buy an oil company) the US government is now only willing to consider protection of firms which really invest in production automation.
51. In order to influence the decision making process, the chairman of MCC was recruted from the National Security Agency and no.2 man at the CIA, Mr. Bob Inman, which knows nothing about the technology concerned but which could use his access to Congress to lobby personally for the bill. Cf Business Week, February 18, 1985, p.70-71
52. Business Week, March 4, 1985, p.31
53. Claire Blandin - La France au royaume des géants..., in: La Tribune de l'economie, January 17, 1985
53a. Computable, March 1, 1985
54. OTA, 1984, p.54
55. H.Blau, K.Faust, S.Richter, H.Schedl - The Technological Competitiveness of West German Industry, in: Friebe, Gerybadze (ed), Microelectronics in Western Europe, The Medium Term Perspective 1983-1987, Erich Schmidt Verlag, 1984, p.133
56. Technieuws/Bonn - Productietechnologie in de Bondsrepubliek, January 1985, p.14/15
57. Klaus Friebe - Industrial Policy in the Federal Republic of Germany, in: Friebe, Gerybadze (ed), 1984, p.47-48
58. Cf. e.q. Gerd Jurne, Rob van Tulder - European Multinationals in the Robobitcs Industry, January, 1984; Rob van Tulder, Eric van Empel - European Multinationals in the Semiconductor Industry, October 1984, for an elaboration of these cooperation patterns
59. Commission of the European Communities - ESPRIT PROJECT, Brussels, COM (83) 258 final, Annex to the Council Decision, June 1983, p.4
60. interviews, European Commission
61. Computable (Amsterdam), March 22, 1985
62. Business Week, April 8, 1985, p.9
63. see also the discussion on this topic by Robert O.Keohane - After Hegemony, Cooperation and Discord in the World Political Economy, Princeton University Press, New Jersey, 1984, 290 pp.

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The Northern Development Company as an mediating actor in Dutch regional policy

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Workshop: The politics of industrial subsidies.

By: J.M. Van Der Meulen

March 1985

Introduction

Over the last 15 years subsidizing the industry has become one of the most rapdly growing and important forms of intervention in Dutch economy by the government. Because of this growing importance several economists tested the efficacy of these subsidies and developed a growing body of economic theory, which made a distinctive contribution to the understanding of this phenomenon. Surprisingly, these studies hardly gave any attention to the political dimension of industrial subsidies. Yet, we think that a good understanding of the politics of industrial subsidies requires a political as well as an economic analysis of this phenomenon. For this reason this paper will focus on the political aspect.

A fundamental, but untill recently neglected, aspect of the politics of industrial subsidies is the way in which the government subsidizes the industry. In principle there are four ways a government can subsidize the private sector;

- by means of an office of the central government
- by means of local authorities
- by means of a privat organization,that mediates between the government and the private sector
- by means of a public organisation, that mediates between the government and the private sector

In this paper we will focus on a public organisation subsidizing the private sector. The reasons for this restrictions are:

First, untill now little is known about the role public organisations play in the politics of industrial subsidies. Second, althoug these organisations allocate public funds, and are governmental institutes, they cannot simply be seen as an annex to governmental piolicy. These organisations often develop and implement their own policy. Of course taking in account of their mediating role, but still to be seen as independent actors.

To obtain a better understanding of the role public organisations may play in the politics of industrial subsidies, in this paper we will describe and analyse the policy formulation and policy implementation by the Northern Development Company (NDC). Before we can describe and analyse the NDC's policy it is necessary to under-

stand what the NDC is, and why it was established. This will be the topic of the first section of this paper.In the second section we will describe the government's policy with regard to the NDC. Next we will describe the policy process of the NDC regarding its policy formulation as well as its policy implementation. In the fourth section the aims of actors in the private sector (trade - unions and employers organisations) will be described. Finally we will draw some conclusions and link them with existing theories about policy- formulation and implementation.

We hope that by describing and analysing the policy process of the NDC we make a contibution to a better understanding of the role independent mediating organisations play in the politics of industrial subsidies.

1. Why the NDC was established.

Over the post war period, the Netherlands, like most other West-European countries, has undergone a very rapid and marked industrial development. This development has not, however, been uniform throughout the country, but rather, has tended to concentrate in the Western part of the Netherlands, and in particular in the 'Randstad'. Other regions, such as the Northern provinces, did not enjoy this rapid economic growth and therefore didnot share in the rising prosperity as much as the West of the country did. With an economic structure heavily depending on the declining activity agriculture ,unemployment in this part of the Netherlands was high, activity rates low, emigration substantial and the per capita income level was below the national average. As main causes for these disparities the Dutch government saw a quartet of structural problems the North had:

1. a poor infrastructure
2. an out of date production capacity
3. a very low rate of investments
4. an unskilled labourmarket

To remedy these structural imperfections, the Dutch government introduced a regional policy in the mid 1950's. In the following years this policy not only marked real increases in expenditure, but also in its scope and increased in its overall complexity. In spite of these changes, there has always been a remarkable constancy in the spirit and aims of the regional policy. Throughout the entire period a more equal interregional welfare distribution was the policies the central goal; and the central means were incentives, like investment premiums and infrastructure subsidies. Notwithstanding the relative succes of the regional policy, it had to be admitted that it did not meet the needs of reinforcing the social and economic structure of the North in a sufficient way. In the beginning of the 1970's this structure was, in comparision with the rest of the Netherlands, still very underdeveloped. Obviously, one could not expect all the good from infrastructure subsidies and investment premiums. Therefore the Dutch government in 1971 decided to introduce a new instrument, the Industrialisation Bureau Northern Netherlands (IBN).The aims of this bureau were to reinforce the economic structure of the North of the

Netherlands by attracting new industry. But soon after the IBN was established it turned out that it was not attracting new industries, but had to focus its attention on the problems of existing companies. And although the Minister of Economic Affairs assured that this was only a short time emphasis, the practice of the IBN showed that these activities were much more structural in character. The main cause of this failure was thought to be the impossibility of the IBN to provide private enterprises with risk-bearing capital. Therefore the Dutch government decided to introduce an instrument which had this possibility. This was the Northern Development Company (NDC), which replaced the IBN in 1974.

The NDC

The NDC was established in 1974 as an independent company of which the shares were held by the Minister of Economic Affairs. According to the articles of association the aims of the NDC were to reinforce the social and economic structure, and reduce the unemployment rates in the Northern provinces of the Netherlands. According to a letter of the Minister of Economic Affairs, it was the task of the NDC to pursue these aims by:

a) Stimulating initiatives to establish new companies;
b) Participating in the capital of existing and newly established companies;
c) Initiating new industrial companies by itself;
d) Getting in touch with inland companies as well as with foreign companies, in order to interest these companies for establishment in North of Netherlands;
e) Accompanying companies interested in establishing a new industry in the North of Netherlands by:
   1. supplying information and advices
   2. mediating for governemental grants, premiums and so on.
f) Developing initiatives, a contributing to the continuation and achievement of promising economic activities in North of the Netherlands.

The relationship between government and NDC was settled in two agreements:

1. The particpation agreement.

In this agreement the conditions were embodied which the NDC had to regard in case of participation in the capitalstock of an enterprise. The most important conditions were

- the projects must be situated in the Northern provinces of the Netherlands;
- the projects must fit into the social-economic ,regional and sectoral policy of the Dutch government;
- there must be reasonable perspectives for satisfactory industrial economic return, eventually after a starting period.

2.The finance- and guarantee agreement.

This agreement settled the financial assistance of the state in relation to the provision for the wants of the NDC and the meeting of exploitation losses.

The NDC is managed under the supervision of a Board of Directors. In 1974 the NDC had two managers. The board of Directors consisted of:

- four members from the four Northern provinces
- two members from the industrial life (one member from the trade-unions and one member from the employers organisation)
- two members from the Dutch government
- a president from the board

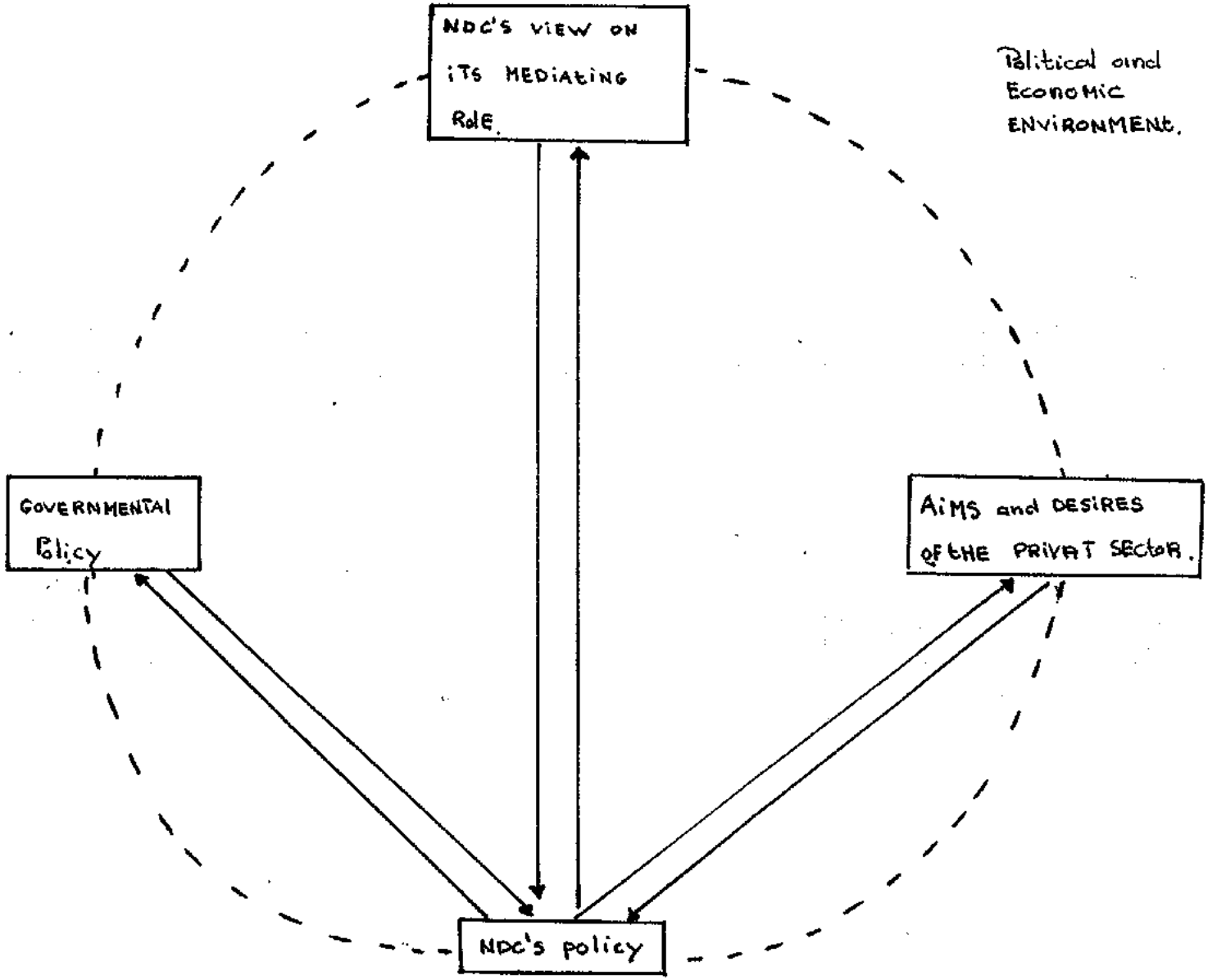
When the Board approves a participation the Minister of Economic Affairs must finally give his approval. The legal form is alimited liability company.

If we survey the formal relationship between the Dutch government and the NDC we can say that the NDC is a rather autonomous actor. It is the NDC that selects the firms who in its opinion have to be considered for a participation. Then the NDC decides wether a participation is granted or not. The only thing the Minister of Economic Affairs can do is withhold his approval. In the 10 years of the NDC's existence this never happened. So the NDC decides in principle who will obtain a participation and who will not.

To select companies and to decide wether or not participation had to be granted, the NDC had to formulate its own policy. In doing so the NDC had to bear in mind at the one hand that it was an

instrument of Dutch regional policy, and at the other hand had to take account as much as possible of the aims and desires of individual companies. So the NDC had to mediate between individual companies and the Minister of Economic Affairs. Hence, the policy the NDC accordingly pursued was largly depending on the view the NDC held of their own mediating role. (see scheme I)

Summarizing this section: The NDC was established to attract new industry to the North of the Netherlands. In this way production capacity in this part of the country had to be expanded and renewed and thereby the economic structure reinforced and unemployment reduced. The NDC was in the eyes of the Dutch government an incentive instrument of the regional policy. The NDC could only perform this task by mediating between these governmental aims and the aims and desires of private enterprises and there organisations.


NDC'S VIEW ON ITS MEDIATING ROLE.
Political and Economic ENVIRONMENT.
GOVERNMENTAL Policy
AIMS and DESIRES OF THE PRIVAT SECTOR.
NDC'S policy

SCHEME:I

2. The governmental policy between 1974 - 1984.

In this section we will give a review of the economic and social policy of the Dutch government between 1974 and 1984. It would of course go to far to give a complete overview of this policy. Therefore we confine ourselfs to those aspects of this policy which were relate to the policy process of the NDC.

Before 1974 the Dutch economy was very healthy and based upon an annual substantial growth. And although the unemployment rates sharply rose at the begin of the 1970's, no one really worried about this; on the contrary, Dutch economy was seen as doing well.The unemployment, was considered to be caused by conjunctural fluctuations and therefore temporary.

The macro-economic policy pursued by the Dutch government at the beginning of the 1970's was primarly aimed at stimulating demand in a Keynesian way. The policy aimed at restructuring and renovation of the economic structure (supply side) was of much lesser importance.

Regional policy on the contrary was primarly aimed at reinforcing the economic structure. The key elements in this policy were incentives. The incentives on offer ranged from benefits like removal-costs-assistance to benefits like investments premiums. The establishment of the NDC could be seen as directly in the line of this 'incentive policy'. For, in accordance to the aims of this policy the NDC had to attract new industries to the North of Netherlands by offering risk-bearing capital. So till 1974 the Dutch government predominantly pursued a conjunctural macro-economic policy, while its regional policy was primarly aimed at improving the economic structure.

In 1974 the economic situation of the Netherlands changed dramatically. At the end of 1973 the Netherlands were confronted with an oilboycot by the Arab countries and not long after with sharply increased oilprices. As a result unemployment rates rose sharply and investments declined to an extremely low rate. Moreover, prices as well as wages rose to a very high and sustained rate.

Hence, the profitibility of many enterprises eroded. Slow but sure, it became clear that the increased unemployment figures of the beginning of the 1970's had not been temporary and conjunctural, but had been the first clouds of a structural recession. The oilcrisis of 1973 had accelerated this depression.

Besides stimulating the demand the government now also attempted to improve the economic structure. This was mainly done by supporting individual firms. The idea behind this policy was that during the depression the existing know-how, production capacity and employment had to be preserved, so that after the depression the economic structure would be still competative with other countries.

In the years 1974 and 1975 the number of firms that requested help increased enormously. Hence, the Dutch government decided to establish a special bureau that was concerned with handeling these requests. This bureau was the Bureau Special Industry Financing (BISF).

So the stagnation of the economic performance has had, in some degree implications for the macro-economic policy of the Netherlands. But not only for this policy.

Soon after the oilcrisis of 1973 it became clear that the assumptions on which the regional policy had been based no longer were valid. As a result of the economic crisis the offered regional incentives did not attract the expected new industry. Obviously other factors like the location, had become of more importance for investment decissions. So the incentives on which the regional policy was based appeared during this period incapable to attract new industry. This also went for the incentives the NDC offered.

In its first years of existence the NDC had not been able to attract new industry, but was confronted with firms which had continuity problems. This of course had important implications for the functioning of the NDC. Instead of directing its efforts on the attraction of new industry, it now had to focus its attention on the problems of existing firms and had hardly time for its original task. Notwithstanding these problems the government

sticked to its opinion that the NDC had to be a stimulating instrument whose aim it was to reinforce the economic and social structure, and reduce the unemployment by attracting new industry in the North of Netherlands. This opinion became apparent when the Minister of Economic Affairs said in a debate in parliament :"In my opinion we must not change the nature of the NDC but notice that we are leaving the begin period"(Handelingen tweede kamer p. 5054 june 1975). So the government in person of the Minister of Economic Afairs, still had the opinion that the NDC had to perform a stimulating role. To improve the performance of this role the government increasingly adopted the problem firms from the NDC. This took place especially after the government established the BISf in august 1975 Besidesthis the government gave the permission to enlarge the staff of the NDC and to heighten the credit ceiling.

The national economic performance in the second part of the 1970's was disappointing, to say the least. The economy continued to decline and moreover was negatively influenced by a number of international factors such as the sharply increased energy prices, imbalanced foreign trade figures and interest rates which were higher than usual. Altogether these factors caused the economy to stagnate at the begin of the 1980'; slow but sure it became clear that the economic recession was not temporary and conjunctural, but rather had a permanent and structural character. This new vision had of course important implications for the macro-economic policy the Dutch government pursued. The government began to realize that the social and economic structure would not improve through the policy of supporting firms with continuity problems.

In the course of the 1980's a number of reports were issued which gave the basis for the idea that recovery only could took place through renewed industrialisation. Especially the white paper "Place and future of Dutch industry" became of great importance for the course of the Dutch government. In accordance to this paper the government held the view that the economic restructuring had to be founded on healthy enterprises. Hence the government

changed its policy of support of industry intoone of stimulation. So from that moment on the macro-economic policy of the Netherlands was primarly aimed at stimulating new industry whereby the attention was focussed on enterprises with good perspectives for the future.

But the slow and occasionally negative rate of economic expansion of the 1970's not only had implications for the macro-economic policy of the Netherlands, but also for the regional policy. In the 1980's the government came to the insight that regional policy itself was no longer sufficient to solve the enormous problems of regions like the North. Slow but sure the idea took form that especially the problem regions could derive benefits from the new macro-economic policy, provided this policy could be well implemented.This had to be done by the NDC.

In the view of the government the NDC was the right organisation to implement this policy by:

- in this way the government could use the skills of the NDC and had not to establish a new organisations;
- the Northern region derived probably the most benefits from an immediate implementation of the macro-economic policy;
- yet another governmental organisation would inevitably lead to further coordination problems.

Hence, the NDC at the beginning of the 1980's, got the extra task to implement the macro-economic policy of the Dutch government in the North of Netherlands.

Besides, the government made some notes about the functioning of the NDC. These notes were;

a) The government held the view that, in view of the bad results of the particpations, the NDC had to look more critical than before at new participations;

b) The second note dealt with the reduction of the participation risks. The government thought it was desirable for great investment projescts to look for co-financers. In this way the risks of a participation would be spread over several participants.

c) Finally the last marginal note was concerned with the task of the NDC. The government emphasised that in future the NDC had to concentrate its activities on the healthy part of the industrial life, and had to stimulate new industry with good perspectives. In this way the NDC could re - industrialise the North and reinforce its economic structure.

If we survey the governmental policy between 1974 and 1984 we can say that during this period the macro-economic policy as wel as the regional policy changed over time. In the begin of the 1970's the economy was doing well and the economic policy was aimed primarly at stimulating the demand. But the oilcrisis of 1973 made that the government had to support firms who, as a result, of the crisis had got into continuity problems. The second oilcrisis changed that policy again. Because the government became aware of the structural character of the crisis, it decided to improve the economic structure by stimulating the healthy part of the industrial life. At same time the support to companies was diminished.
The regional policy of the begin o.f the 1980's was aimed at stimulating the problem regions by offering regional incentives. Till 1980 this policy did not change, but in the begin of the of the 1980's the government became aware that this policy was not sufficient to fight the regional problems. Holding the view that new macro-economic policy also could remedy the regional problems, the government decided to implement its new policy on the regional level.
The role the NDC had to perform in the regional policy changed also over time. Till 1980 the NDC was annex to the regional policy. With the offering of risk-bearing capital,in fact a regional incentive, it had to had attract new industry.But after 1980 the NDC got an extra task, the implementation of the governmental policy on the regional level. Besides, the NDC had to alter its course in such a direction that it would harmonize with the new macro-economic policy of the government. In concreto this meant that the NDC had to direct its efforts on the healthy part of the industrial life.

3. The policy of the NDC between 1974 - 1984.

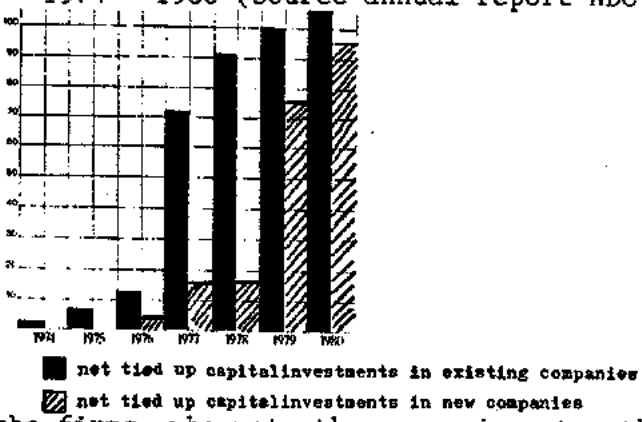
In this section we will describe the policy the NDC developed and implemented between 1974 and 1984. Thereby we will confine ourselfs to the most important activity of the NDC, the offering of risk-bearing capital. This descriptionis devides into three periods. This periodizing is based on significant differences in the pursued policy.The discription of the NDC's policy is based upon the annual reports 1974 - 1984.

3.1. The policy of the NDC between 1974 - 1976.

As we said in the preceding section the establishment of the NDC coincidended with drastic changes in the economic situation in the Netherlands. These changed economic circumstances had of course important effects on the policy the NDC had to pursue. When the NDC started its activities, its policy was primarly aimed at reducing the lag of the Northern regions behind the rest of the country. This had to be done by attracting new industry. But soon after the start, it became clear that the NDC could not pursue its original policy, but had to focus its attention in the first place on the problems of existing companies. As a result of the recession many firms in the North had were drawn into financial distress and therefore needed immediat 'firt-aid'. If the NDC would not help these firms they irrevocably would have gone bankrupt. Because the political pressure to help these firms became very strong and it was one of the aims of the NDC to preserve employment, the NDC decided to help these firms. This of course had an obvious and direct effect on the policy the NDC pursued.
First, it made that in it first two years of it existence the NDC participated mainly in companies who had continuity problems.(see figure 1)
Second, the employment had to be preserved as much as posible. This meant in concreto that when the NDC cnsidered to participate, it not only had to reckon with the business economic aspects of

the participation, but also had to take full account of the employment one could preserve by participating.

Figure 1. net tied up capital investments 1974 - 1980 (source annual report NDC 1980)



To single out the firms who met these requirments the NDC developed the following procedure.

After a request for support, the NDC set up a preliminary investigation into the nature of the problems, and determined which contribution a participation eventually could make for solving the problems. When the results of this investigation were positive, the proper participation investigation could start. By this investigation the NDC considered all the aspects of the business conduct. Hence the NDC distinghuished the next aspects:

- The market. The company needs to procure a motivated sale expectation for its products.
- The management. The NDC judges the management quality of the company.
- The branches of industry, the NDC analyses the situation the branches of industry.
- The production techniques, equipment and organisation. The NDC considers the tecnical and organisational merits of the companies and the investments programs.
- The social climate. The NDC examines the quality of the employment and of the social policy of the firm, by speaking with the trade-unions and the council of employers.

- The financial and economic structure. The NDC analyses earlier annual reports and the financial forecasts of the company, based on market expectations. In the light of the financial forecasts the amount and form of the participation is fixed.
- The juridical structure The NDC examines the articles of assocociation and contracts of the company.

From the above mentioned examinations the NDC derives its participation conditions.

When a company enjoys the confidence of the NDC, the NDC proposed a participation to the Board of Directors. After approval by the Board, the proposal is lain before the Minister of Economic Affairs who has to give his allowance. When he also approves, the participation will be offered to the company. The participation is effectuated when at last the company accepts the submitted.

With this procedure the NDC hoped it could select firms who, after a starting period, ultimately would be able to reinforce the economic structure of the North.

So if we summarize this first period we can say that the NDC had, as a result of the recession, to change its original policy of attracting new industry into supporting industry. Consequence of this was that it had to develop an own participation policy which could handle the problems of the 'new' target group.

3.2.The policy of the NDC between 1976 - 1980

In 1976 the policy makers of the NDC were afraid that the nature and the intensinty of the external problems would in future determie the NDC's course of action. To avoid this the policymakers of the NDC developed a new policy with which they could preform their original role again. This new policy consisted of three elements. First, the NDC wanted to stimulate, support and coordinate innovation processes in small and medium sized firms. This had to be done by, on the one hand participating financially in the initial risks and, on the other hand, searching for know-how, whereby the

NDC's own research staff could, if necessary, help in the thinking process.

Second, the NDC wanted to phase out its financial support of companies with continuity problems. The NDC held the view that financial problems could not effectively be fought with only a financial injections. The finacial problems needed a more fundamental approach in which the financial support was 'copingstone'. Hence the NDC emphasised more and more its advising and mediating function while it payed fewer and fewer attention to its financial function. The NDC could do this because the government had,as we saw, established in august 1975 a special bureau which dealt with supporting enterprizes. So the NDC could relegate firms with continuity problems to this bureau.

Third, the NDC strengthed the conditions for participations. In the view of the NDC it was no longer the task of the NDC to reconstruct companies, but to attract new industry. Hence the efforts of the NDC were directed on firms who intended to expand or to establish an industry in the North of Netherlands.

When the NDC in spite of these intentions still had to support a company, it wanted only to support companies which after a while, would be able to realise positive returns on investments. For these reasons the NDC decided to adjust its participation criteria, on bases of the experiences of the first two years. In concreto this meant that the NDC strenghed its participation criteria. (unfortunally we cannot describe how these criteria changed, because the NDC never published this information)

In spite of the great expectations of this new policy the NDC had to admitafter a few years that its policy had completely failed. The facilities the innovation policy had offered were hardly used and, although the criteria for participation had been more stringt and the course of the NDC had been diverted (from financing to advising) the NDC still invested most of its capital in existing companies who had continuity problems.(see figure 1) Moreover the results of the participations during this period, were not very good. (see appendix 1) The only positive point we can mentionin

this period is that the unemployment declined to some degree. (see appendix 2)
So, if we summarize we can say that although the NDC altered its course in order to perform its original task again, the practice of the NDC showed that the problems the NDC had in the first period remained the same.

3.3. The policy of the NDC between 1980 - 1984.

At the beginning of the 1980's the economic situation of the Netherlands, and in particular in the North, was very bad. Unemployment increased and the investments rates further declined. Moreover the economic situation was negativeley influenced by a number of international factors such as the sharply increased energy prices, the high quotation of the dollar and the higher than usual interest rates in the Netherlands. Altogether these factors placed a heavy pressure on the company results, which could be seen in the sharp increased unemoloyment rates and the risisng number of firms that went bankrupt. Especially in the North the damage was great. Under these bad circumstances it became clear that the NDC could not handle economic shocks like these. The results of the participations in this period were very bad. It was therefore no surprise that the NDC came to the conclusions that it had to change its policy.
In the past, the annual report of 1980 says, the NDC has invested to much of its capital in firms who were not able to realise positive results after a while. As main cause for these misinvestments the NDC saw its misjudgement of the economic situation. The NDC had thought to long that after a while there would be an economic revival again and that recovery could not stay away. In those years the NDC had invested in firms which , in the light of later economic development, had to be said that they were unhealthy. Often the starting costs went on for a longer period than was anticipated and together with incidental losses these firm 'ate away' their capital. The consequence of this was that the NDC often financed these firms for a second time, although the returns

of the participations did not improve. This of course lead to huge losses.

From these bad experiences of the 1970's the NDC learned that it had to invest its risk-bearing capital in the first place in those firms whose own ingenuity, know-how and attitude could lead to the development of new products and techniques. Therefore the NDC directed its efforts from that moment on in the first place to the healthy part of the industrial life. The NDC no longer gave support to firms whose perspectives were not good. Recovery and re-industrialisation, in the view of the NDC, had to be founded on the healthy firms. Hence, the policy of the NDC changed in this sense.

Aside from being more cautious in considering a participation the NDC from now on put emphasis on the following points:

- The NDC favored participation in independent firms. Thus no subsidiaries
- Participation by the NDC may not lead to artifical competition.
- The NDC wanted to invest in the establisment of new firms, new developments or expansion of activities with demonstratable possibilities.
- There had to be a basic business philosophy, whereby the earning capacity could be demonstrated.
- Only by rare exception would the NDC be prepared to take over shares of a concern.
- The NDC would give preferences to a minority shareholding in which the business partner has to contribute specific know-how and marketing ability.
- In a joint venture, the commercial partner had to bear the responsibility for the realization of the prognnoses agreed before the contract was signed.
- The NDC will not participate in the financing of structural losses. Before participation therefore must be some indication of earning capacity on reasonble terms.

So the participation conditions, in some degree, changed and were strengthed.
The results of this changed policy were, in relation to former periods, substantially better. (see appendix 1)
So if we summarize we can say that the NDC again changed its participation policy. From now the NDC only wanted to participate in the healthy part of the industrial life. Untill 1983 the results of this new policy seems to be better in comparision with former periods.

4 The aims and desires of the private sector.

This section deals with the wishes of the privat sector between 1974 - 1984. In this paper we will understand by the wishes of the private sector, the following:

- the wishes of the trade-unions
- the wishes of the employers organisations

Both these actors held during the period 1974 - 1984 different views of the policy the NDC had to pursue. In this section we will describe the viewpoints of both these actors and compare them with the policy the NDC pursued in reality. This section is primarly based on newspaper articles.

4.1. The wishes of the trade-unions.

The trade-unions held the view that the NDC had to put first and foremost the reduction of the unemployment. Of much lesser importance were the business economic aspects of the NDC policy. Hence the policy the NDC had to pursue had to be focussed on the creation or preservation of employment. Untill 1976 the NDC mainly pursued this policy, but than altered its course. As we saw earlier in this paper in 1976 the NDC strengthed the conditions for participations. From that moment the NDC emphasised that the business economic aspects of a participation would become of more impotrtance than before. The trade-unions, of course, strongly disagreed with this point of view and decided to suspend their activities in the Board of Directors. Although the NDC in the years after this had happened not changed its participation policy, the trade-unions in 1983 decided to take part in the Board of Directors again. The reason for this, we think, were twofold:

- Firstly, the economic situation in 1983 was significantly better than in 1977. Therefore the NDC had been able to diverts its policy from reconstruction activities to stimulating activities. These last activities were of course not so controversial as the first had been.

- Secondly, the trade-unions held the view more and more 'if you cannot beat them, join them'.

So, if we summarize, we can say that the trade unions held the view that the NDC had to direct its efforts primarly on fig ting the unemployment in the North. When the NDC in the second part of the 1970's laid more emphasis on the business economic aspects of participations, the trade-unions decided to leave the Board of Directors. Notwithstanding this event the NDC did not change its policy and the trade-unions in 1983 caught upon their activities in the Board.

4.2. The wishes of the employers organisations.

The employers organisations held the view that the NDC had to emphasize three points.

First, the NDC had to give good advice to the companies who asked for. Because this activity is beyond the scope of this paper we will not further discuss this activity of the NDC here.

Second, the employers organisation held the view that the NDC had to place money at the disposal of the companies without further meddling. The idea behind this was that, in the eyes of the employers organisations, the NDC was not, and never would be, able to run a company. Hence it would be the best for both, the NDC and the companies, if money was given to individual companies without further meddling. So the companis wanted to get money from the NDC without doing something in return

Third, the employers organisations held the view that the NDC had to offer its risk-bearing capital only to healthy firms, because otherwise the participations would lead to artificial competition.

5.Concluding observations.

In this section we will draw some conclusions and link them with some theories about policy making and policy implementation. If we recapitulate the case above described we can draw some conclusions. Perhaps the most obvious point that arises from our case is that the policy theory on which the NDC was based was no longer valid on the moment the NDC started its activities. In short, this policy was based on four assumptions, namel

- it was thought that the disparities in employment and activities between the North and the rest of the Netherlands were caused mainly by structural factors;
- it was thought that the economic structure of the North would improve, when new industry was attracted;
- it was thought that incentives, like offering risk-bearing capital, had a decisive impact on investments decisions;
- it was thought that the economic growth would remain and therefore the investments rates would stay on the same or a higher level.

So, in summary, the government established the NDC with the idea that it could reinforce the economic structure of the North by offering risk-bearing capital and, with that, attract new industry to the North of Netherlands. But soon after the NDC was established, it became apparent that the policy theory on which the NDC was based was not valid any more. This had of course serious consequences for the functioning of the NDC's. For, if a policy is not longer based on a valid final theory, the aims of the policy cannot be pursued with the means the theory selected. Mazmanian and Sabatier (1980) suggest in their study "Effective policy implementation" that one of the most important conditions for implementation of a policy is that the policy is based on a valid causal theory which is not undermined by the changing socio-and economic variables. When not, the policy makers lose their hold on the implementation process and there is a great chance the policy deflects from its original goals (Mazmanian & Sabatier p. 7).

This is exactly what happened in our case. The policy theory on which the NDC was based had been undermined by the changed economic circumstances and was therefore no longer valid. Throughout this development the government lost its hold on the implementation of the NDC's policy. As a consequence during the implementation of the policy, the NDC sought its own goals. For, instead of attracting new industry, the NDC supported firms with continuity problems. According to what Rein & Rabinovitz say (1977 p.5):" The experience of implementation (...) becomes an opportunity for institutional learning in that the translation of purpose into practice provides the occasion to learn about the practical difficulties lofty aims confront. However valuable ideals may be for inspiration, in the end they are subordinate to practice which sets the limits and defines reality of what is pragmatically feasible". So we can say that the policy implementation of the NDC in its first two years was mainly the pragmatisation of what was economicly possible.

In 1976 the NDC changed its policy and tried to perform its original task again. This change of was, we think, at the instigation of the Dutch government, who held the view that the in august of 1975 established (BISF) had to handle the support of firms and the NDC had to attract new industry. To enable this performance of this task the government placed extra money as well as extra manpower at the NDC's disposal. However the NDC itself developed a new participation policy to perform its task. As we saw earlier in this paper this new course did not change much. The reason for this was, that the governments overall definition of the problem, and thereby its policy theory, had not changed. Therefore the NDC had to operate in an environment that defined the economic crisis still or due to market tendencies, whereas, only the little part of the recession, handled by the NDC defined as structural. And although the government thought it had removed the most important obstacle that handicapped the policy performance of the NDC, it became apparrent that the NDC still couldnot perform its original task. In spite of the good intentions of the

NDC its policy was not tuned to reality. The policy was still determin ed by the experiences of the NDC and economic situation. So implementation shaped the policy.

After the second oilcrisis (1979) the government changed its macro-economic policy. From that moment on the government no longer stimulated in a Keynesian way the demand, but directed its efforts on the improvement of the economic structure. A second important change was that the re-inforcing from the economic structure no longer was based on the support of firms in distress, but was based on the idea that healthy firms had to be stimulated so that they would enlarge their activities. This new policy had, as we saw, important implications for the policy the NDC pursued. At the begin of the 1980's the NDC had to direct its policy at the healthy part of the industrial life and aside from that, had to implement the new macro-economic policy of the government on the regional level . So the policy theory changed to some degree and was more harmonising with the economic reality. This new policy had, in relation to the former periods more succes. The reason therefore we think, were:

1) the economy revivaled;
2) the policy theory could better identify the principal factors.

So we can conclude that one of the most important factors for the good implementation of a subsidy policy is a valid theory.

Also of interest were the different views the target groups held concerning the NDC.

As we saw the trade-unions held the view that the NDC had to reduce unemployment, while the employers organisations held the view that the NDC had to give money to the companies without further meddling. During the implementation of the NDC's policy both actors tried to steer the NDC's policy in their direction. As such the implementation process of the NDC could be seen as a political process. According to Pressman, Rein & Rabinovitz, we think that implementation can be seen as the continuation of the political process into another arena (1976 p.400). So the policy imple-

mentation of the NDC could be seen as the continuation of the politcal process in another arena, but, according to Bardach we believe this implementation politics is a special kind of politics. Bardach says (Bardach 1977 p.37): "Yet, implementation politics is, I believe, a special kind of politics. It is a form of politics in which the very existence of an already defined policy mandate, legally and legitimately authorized in some prior political process, affects the strategy and tactics of the struggle. The dominant effect is to make the politics high defensive. A great deal of energy goes into maneuvering to avoid responsibility, scrutiny and blame". In our case this also happened. The trade-unions in 1977 decided to suspend their activities in the Board of Directors and so avoided responsibility for the participation policy the NDC pursued. At the other hand the employers organisations tried to get money without wanting to do something in return.This kind of policitics is what Bardach calls 'Easy Money' (Bardach 1980 p.67).

In his book "The implementatiom game" Bardach argues that governmental purses are often unussually rich and what is more important, governments exchanges this money for less than corporations or consumers do. For this reason many parties in the private sector are interested in getting this money. To do so the parties play what Bardach calls the 'easy money' game (66-67. In this game every party tries to make off with a portion of the governmental money in exchange for 'program elements' of little or no value (p.67). In our case the employers organisations tried to play 'easy money', because they tried to get money from the NDC without offering something of value in return. If we survey the whole period we can say that during the first seven years many firms succesfully played 'easy money'.For in those years several firms got support, who, in the light of business economic criteria, had not to be considered for this support. However our impression of the last four years is that the business economic criteria of the NDC were strengthed and were oftenr applied than before. Hence we

think it has been much more difficult for companies to win the 'easy money' game.

So in the first seven years the trade-unions as well as the employers organisations both succeeded in steering the NDC's policy in their direction. Our impression of the last three years however , is that the NDC more and more pursued their own policy, whereby the governmental policy in regard to the NDC became very important.

A third conclsion we can draw is that the functioning of the risk-bearing capital changed over time.

When the NDC started its activities, the risk-bearing capital was seen as an incentive to attract new industry. But soon after the NDC its activities, the economic circumstances completely changed and the risk-bearing capital was used for support. So the risk-bearing capital didnot as expected, enlarge and renew the production capacity of the North but was used for the preservation of the existing production capacity. Till 1980 this function did not change, but than the capital got its orginal function back. In the 1980's the risk-bearing capital was used to stimulate the business sector in the broadest sense. This meant that the risk-bearing capital had got its original function again.

So the risk bearing capital was first an incentive than a supporting and finally an incentive instrument of the Dutch regional policy in regards the North.

A fourth conclusion we can draw is that the policy of the NDC became more succesfull after the government had identified the macro-economic problems in another way and therefore changed its economic policy.

In the begin of the 1970's the Dutch government saw the macro - economic problems caused mainly by conjunctural factors. Hence the policy the Dutch government pursued was primarly aimed at stimulating the demand in a Keynesian way. Of much lesser importance was the policy aimed at improving the economic structure(supply side). In 1974 this economic policy changed in some degree. From that moment the government not only stimulated the

demand, but also payed attention to the structural problems. The reason for this change was that as a result of the oilcrisis of 1973, many firms had got into troubles and requested the government for assistance. Because the government saw the crisis as conjunctural and therefore temporary, it decided to drag the firms through the hard times. The idea behind this policy was that by supporting industrial during the crisis, it would be possible to preserve the existing know-how, production capacity and employment. So the economic problems were still seen as conjunctural, but their effects were also structural.

In the second half of the 1970's it slow but sure became clear that the depression hadnot to be seen as conjunctural but as structural. This, we saw had impotant implications for the policy of the Dutch government in the 1980's pursued. For the policy was no longer aimed at stimulating. Dutch economy had to re- industrialize. So in the 1980's the Dutch government for the first time saw the problems as structural and therefore changed its policy

If we survey the amount of succes the NDC policy had during the period 1974 - 1984, we can say that it is notable that during the economic recession the policy of the NDC was not succesfull. Obviously the incentives the NDC offered were not adequate during this period of recession. This point of view is analogous to that of J.Taylor in his study on the effect of regional policy on the movement of industry in Great Brittain(Maclennan & Parr p. 43-64). In this study the author concludes that the succes of redistribution by incentives, like capital subsidies, are very heavily dependent upon the rate of industrial expansion in the economy as a whole. (p. 43) The reason for this unactractiveness of incentives during a period of recession is, we think, that the policy pursued, identifies the wrong factors causing a depression. For, in our case the crisis was till 1980 mainly seen as conjunctural although we think there was an important structural problem at that time. Only after the Dutch government defined the problems as being mainly structural did the results of the NDC improve. So we think that during the economic recession of the 1970's the

government pursued a policy that identified the wrong factors, causing the recession and therefore fought the wrong problems. Consequence of this was that th incentives the NDC offered were not effective.

A final interesting conclusion we can draw is that the NDC acted as a relative autonomous actor who did not lose sight of its mediating role and who pursued to some degree, its own policy.

When the NDC started its activities it was established as an autonomous company. Nevertheless if we survey the policy it pursued between 1974 and 1984 we can say that the NDC was relatively autonomous. For in the 1970's and 1980's it was the government who determinated the broad outlines of the NDC policy. Each time the NDC changed its policy this happened on instigation of the NDC. The filling in of this policy was done by the NDC. For the NDC developed its own participation policy and implemented it. So we can conclude that the NDC was a relative autonomous mediating actor.

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Appendix I: Firms results / Years	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
1. Okto b.v.	0	0	-	-	--	--	F			
2. Foacon B.V.	0	0	F							
3. De Halm B.V.	0	0	q							
4. SMD-Holding B.V.	0	0	-	-	+	+	-	F		
5. HRT-Instruments B.V.	0	0	q							
6. Schenkenschans b.v.	xxx	0	+	+	+	F				
7. Prins N.V.	xxx	0	-	-	-	--	-	-	+	-
8. Delamine B.V.	xxx	0	0	0	--	-	-	-	+	+
9. Holvrieka Holding B.V.	xxx	0	0	0	-	0	0	0	+	++
10. Willem ten Cate B.V.	xxx	xxxx	0	0	+	-	-	+	+	+
11. Heuga Productie B.V.	xxx	xxxx	0	+	--	--	--	q		
12. SIlenka b.v.	xxx	xxxx	-	-	0	0	-	-	+	++
13. Halbertsma B.V.	xxx	xxxx	+	+	+	--	+	--	--	--
14 Noord Nederlandsche Mac.	xxx	xxxx	+	+	0	0	0	+	+	--
15. Werkland B.V.	xxx	xxxx	+	+	-	0	--	F		
16. Kipp-Analytica	xxx	xxxx	0	0	-	-	--	--	F	
17. Rademakers b.v.	xxx	xxxx	+	+	-	-	--	-	-	-
18. Winn B.V.	xxx	xxxx	0	0	--	q				
19. Lignostone B.V.	xxx	xxxx	+	+	0	F				
20. Brons Industrie	xxx	xxxx	0	0	-	-	-	+	-	+
21. Vast goed Casolith B.V.	xxx	xxxx	xxxx	xxxx	+	+	-	-	-	+
22. Drenta radiatoren B.V.	xxx	xxxx	xxxx	xxxx	0	+	-	-	-	-
23. Laadtechniek b.v.	xxx	xxxx	xxxx	xxxx	0	0	F			
24. Van Poppel B.V.	xxx	xxxx	xxxx	xxxx	-	-	-	q	+	?
25. Marko Mark B.V.	xxx	xxxx	xxxx	xxxx	0	--	-	--	--	q
26. Warrior Insulation Comp.	xxx	xxxx	xxxx	xxxx	xxxx	0	0	0	-	--
27. Staalbouw Bergum B.V.	xxx	xxxx	xxxx	xxxx	xxxx	0	0	0	-	+
28. Magnesium International.	xxx	xxxx	xxxx	xxxx	xxxx	0	0	0	--	q
29. Noordelijke Zoutwinning.	xxx	xxxx	xxxx	xxxx	xxxx	0	0	0	--	q
30. Parley B.V.	xxx	xxxx	xxxx	xxxx	xxxx	-	-	?		
31. Kaufeldt Inter B.V.	xxx	xxxx	xxxx	xxxx	xxxx	0	-	F		
32. Fasto B.V.	xxx	xxxx	xxxx	xxxx	xxxx	xxxxx	0	-	+	++q
33. De Backers Compres. B.V.	xxx	xxxx	xxxx	xxxx	xxxx	xxxxx	0	?		
34. Katalistiks	xxx	xxxx	xxxx	xxxx	dxxx	xxxxx	0	--	-	+
35. S.Muller Sports B.V.	xxx	xxxx	xxxx	xxxx	xxxx	xxxxx	-	F		
36. Trelleborg Rubber b.v.	xxx	xxxx	xxxx	xxxx	xxxx	xxxxx	+	-	+	+
37. KLB. Controls.B.V.	xxx	xxxx	xxxx	xxxx	xxxx	xxxxx	0	-	-	-
38. Lode Instruments B.V.	cxxx	xxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	-	-	F
39. Leeuwarder Papier B.V.	xxx	xxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	0	0	-
40. Beheermij. Groningen	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxx	0	0	-
41. Physical Instruments.	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxx	-	F	
42. Verenigde Metaalbedr.	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0	q	

continuation Appendix I	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
43.Betap Tufting B.V.	xxx	xxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	+	++	q
44.ITL International B.V.	xxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0	F	
45. Flexol B.V.	xxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	-	-	F
46. Kip Caravans B.V.	xxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0	0	+
47. Powerplate B.V.	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0	-	+q
48. Datawatt B.V.	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	+	++
49. Enna aerosols. B.V.	xxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0	-
50. Nautilus B.V.	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0	0
51. Aramide V.O.F.	xxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxx	0
52. Menno Goemans. B.V.	xxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0

Explanation of the used marks:

0 =development of the company results as expected
- =development of the company results worser than expected
-- =development of the company results much more worser than expected
+ =development of the company results better than expected
++ =development of the company results much more better than expected
F = Firms who went bankrupt
q = Shares which were sold to other shareholders
? = Companies of which further information lacked

Appendix 2.

Unemployment in the Nortern provinces

	1976	1979	DECREASE
absolute	30.847	27.589	3.268
percentueel	7.4%	6.4%	1.0%

Unemployment National

	1976	1979	DECREASE
absolute	220.562	210.000	10.562
percentueel	5.3%	5.0%	0.3%

Unemployment rates between 1976 1979 in the Northern provinces and National.
(source annual reports NDC 1976 and 1979)

About the author.

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INNOVATION POLICY IN THE NETHERLANDS; INSTRUMENTS, ACTORS AND EFFECTS.

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Workshop: "The politics of industrial subsidies"

BY: ASJE VAN DIJK

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Innovation policy in the Netherlands; instruments, actors and effects

By Asje van Dijk*

Introduction

This paper deals with the innovation policy in the Netherlands during the last five decades, more specifically the emphasis led upon it at the eve of the 1980's and its implementation in the first years of this decade. As a starting point for a more detailed evaluation of the Dutch government's involvement in industrial innovation, I will summarize the main trends in Dutch government's industrial policy since the 1930's. Although this role grew steadily, one ideological principle continued to be in force: till the 1980's it was restricted to the creation of favourable conditions with a high technology-push character. At the beginning of the 1980's an important attempt was done to reorient the status quo policy, emphasizing long existent industrial activities at the end of life-cycles, to a more offensive, innovative and future oriented policy. Part one of this paper deals with this theme.

The second part of this paper analyzis the Dutch government's proposals formulated in a White paper on Innovation (1979) and evaluates the performance of the objectives in terms of allocated budgets. I will try to find an answer here on the question if the Dutch innovation policy after 1979 grew to a substantial higher level in comparison with the preceding period and other budget items, like support to individual companies or branches of industry with continuity problems. An other question in this part will be to what extent the innovation policy did support small and medium sized companies in relation to bigger ones.

The third section of this paper tries to find some explanations on the low performance level of the innovation policy relating to these smaller firms. For this aim, I will lift some details out of a case study on a policy-instrument which tried to stimulate smaller companies to applicate micro-electronics in new products or processes with a development credit.

In an epilogue main conclusions will be summarized.

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Part I: Innovation policy in the Netherlands

"A typical pre-war economics textbook (and many of the post-war ones) had nothing to say about R&D or even innovation ...", with these words Freeman (1982, pg. 195) illustrates the role of innovation in economics. It was seen as a black box that need not to be opened. Technological change was an exogenous factor only influenced by God and the engineers (Heertje, 1979, pg. 5) which fell like manna from heaven. Although technological development was accepted as a major, though autonomous factor in the improvement of socio-economic life, it was no part of the neo-classical economic theory and government policy itself.

Public reservations or neutrality towards technical development came into discussion after the rise of side effects -often negative- of new technologies. The declining economic situation in the industrialized countries however put the discussion in a very different context. Innovation became a magical cure for combatting the economical crises.

This section deals with the question which policy was followed by the government of the Netherlands on industrial innovation after the Second World War, more detailled it asks which instruments were emphasized, how these can be characterized and which role the government reserved for itself in relation to other actors in this field.

Dutch innovation policy

Until the 1930's, the Dutch government didn't play a prominent role in the economy; its economy was an example of a classic-liberal industrial economy (Fernhout, 1981, pg 3). The establishment of a separate directorate-general for trade and industry in the Ministry of Economic Affairs and Labour in 1931 and the semi-governmental institute on applied research (TNO) in 1932, may be seen as trade-marks in a changing view on government's role in this field. Although the involvement of public policy wasn't intensive during the 1930's and innovation didn't play an important role in the underlying neo-classical economic theories, some primary elements on innovation policy can be found in patent regulation, education and advancement of technological skills, research and development (R&D) activities in special institutes and a scientific infrastructure within liberal arts universities and technical universities.

After the Second World War an accent was placed on industrialization in basic sectors like steel and chemicals. Unusual for Dutch policy, detailed government notes on industrialization, indicative goals and possible means were formulated for investments, production(growth) and employment. The notes stated quite explicitly that the set objectives were no directives for industry but had to be seen as indications of

national priorities; their realization had to be the 'results of private economic decisions'. R&D-expansion as such was not questioned. A general opinion that increased expenditure in this field could do only good prevailed and for that reason R&D-budgets increased year by year.

In the first half of the 1950's the view on government's role in economic life grew. In 1951 five main goals of macro-economic policy were formulated: stable price level, balance of payments, full employment, balanced growth and an acceptible income distribution. These are still functioning today. Several governmental papers called attention to the importance of a more qualitative development of industry through systematic research. They concluded that the existent research was heavily concentrated in some big firms and asked for an interface between research institutes and industry. An instrument which functions until today as one of the main instruments in innovation policy , i.e. a Technical Development Credit for products or processes which are new for the country, was established in 1953.

The 1960's did not deal so much with innovation. Perhaps the high growth rates, up to about 5% yearly, can explain this. As in individual firms, innovation is an often forgotten, even non-agenda-issue in good times and a magic word in worsening times. A new instrument in Dutch innovation policy appeared in 1963 with the creation of so called Technical Scientific Attaches at the embassy in Washington. A note of the Minister of Economic Affairs from 1966 explicated the central problem factor obstructing a more innovative industrial development. The note stated that 'technical progress is a result of natural-scientific research and technical development and relied on fundamental research'. It concluded that the high costs of R&D-work made a more innovative industrial development very difficult.

This short quotation combined with the defined problem, gives us a good view on the so called policy theory, i.e. the assumptions about causal and final relations which ground a policy (c.f. V.d. Graaf, 1983, pg 60 and Hoogerwerf, 1984, pg. 501). According to Pressman and Wildavsky (1979, 2ed., pg. xxi) "Policies imply theories, whether stated explicitly or not, policies point to a chain of causation between initial conditions and future consequences". In terms of such an underlying theory, Dutch innovation policy appeared to be of a technology-push type. This means that innovation was primarily seen as a result of R&D-efforts. Fundamental research could initiate applicated research in a second stage and in succeeding stages product and process innovations.

In the economic literature on innovation the technology-push stimuli are distinguished from factors which explain innovation primarily as results from market stimuli. This market-pull approach can hardly found in Dutch government policy on innovation until the 1980's.

Although the character of this technology-push innovation policy can be explained from a theoretical focus, another factor must not be lost sight of. I allude to the actors in this field. Freeman (1982) states, that the preferential treatment of R&D was a combination of a matter of habit, the continuing power of a lobby and prestige elements associated with it: "The 'lobby' and the 'corridor-padder' are more important in this type of decision-making than elaborate calculations of return on investment" (pg. 190). High priority was given to military, air and space and prestige oriented R&D. Freeman concluded that the "priority accorded to these projects was so great that not without some justifications, sections of public opinion have tended to accept 'big science and technology' as the image of science and technology in general" (pg.192).
In the Netherlands an attempt to change the strong emphasis on limited R&D-fields was made in the 1970's. The first half of this decade brought a strong conjunctural turn. Growth rates declined and after the oil-crises of 1973 and 1975 a recession period became more and more visible. The white papers which accompanied the yearly butgetting process illustrated also the beginning of a new orientation, how fragile at that moment it was. In 1973 the Minister of Economic Affairs stated that in an increasing rate it could be determined that the innovation process was not only influenced by vigorous R&D-efforts. The attitude that more accent should be placed on the outcome of the R&D-efforts became stronger. Other factors like the organization of production, the management level, education and labour skills and well equipped information circuits were also emphasized as important factors in the innovation proces. Small and medium sized firms were marked as "new spoiled children", but were only verbally chastized, not treated to real measures and allocation of money. Reality was hard, other interests groups were better organized and more effective in moving the public money to them (c.f the R.S.V.-debacle, Wassenberg, 1984). Industrial policy focussed on support for big individual firms and certain branches of industry, operating at the end of life-cycles and with problems of continuity (c.f.appendix I). Immediate problems were so urgent, that longer-term strategic developments got surprisingly little time and attention. An occasional coalition of labour unions and employers made one big front to defend their settled interests. Because the actors in this field were very strong in mobilizing public and political support for their claims, the result was a heavily defensive industrial policy at the cost of a more offensive innovation policy. Research on the interaction between government and industry in this period taught that the possibility of (parts of the) industry to attract public money depended heavily on the existence of long lasting and widespread networks between actors from the domains of the industry, politics and

administration. In his study "Industrial Policy & Shipbuilding" (1982) De Feyter used a specific metaphor for this phenomenon, borrowed from his field of study, when he spoke of "plywood-domains". Corporate strategies which aimed at survival aptly incorporated social values -as for example employment- and did not define the environment of the corporation as exogenous. Competition between individual firms disappeared; they united to maximize the allocation of public money to them as a group.
The first doubts on the effects of this defensive industrial policy were articulated in the white paper "Note on selective growth" (1976). The Minister of Economic Affairs, R. Lubbers (presently Prime Minister), proposed to finish it and stimulate activities with more perspectives. Together with already existent measures, new tools to promote innovation in industry were announced, for example: better information circuits, experiments with management support in small and medium-sized companies in building up a more strategic way of structuring innovation processes and liaisons between bigger and smaller firms to allocate spin-offs to the latter. But statements in government's notes cannot be identified with practice. Big gaps existed between words and deeds in this area. This could only be bridged by a period of much public debate about and confrontation of conflicting interests in this area between emerging new innovative sectors or industrial firms and disappearing old ones.

The transition from the 1970's to the next decade revealed itself to be a real turning point in industrial policy in the Netherlands. At the end of the 1970's three important white papers were published which prepared the 'soil' for the 'seed' of a new industrial policy:
- a follow-up study on sector-help which concluded that this policy was not effective and ought to be reformulated;
- a note on innovation policy which tried to integrate and intensify innovation measures;
- a report from a commission who studied the threats and opportunities of micro-electronics and concluded that measures had to be taken to stimulate a broader introduction and application of this new technology.

Another pioniering-study was published in 1980 by a scientific advisory council of the government (W.R.R.). The study, "Place and Future of Dutch Industry", concluded that the Dutch industrial structure was not competitive anymore and operating in sectors with declining international growth rates. A re-industrialization proces should be initiated on specific, opportune fields. The identification of these fields had to be delegated to a commission recruited on basis of their technological or industrial expertise and with a certain

prestige within industry. This technocratic approach was explicitly emphasized, because the view prevailed that the usual corporative organization, with actors as representatives of employers, labour-unions and political parties, could not break through the settled interest of their status quo orientation which resulted in a heavily defensive industrial policy in the last years.
The commission was named after its chairman, the old Shell-director Mr. Wagner. On basis of a confrontation between strenghts and opportunities of Dutch industry, it identified thirteen main fields of attention on which a more offensive industrial policy would have to orient itself: i.a. medical and bio-technology, communication systems, environmental technology and equipment. A second proposal by the Wagner commission was to lower all those barriers which hampered a more flexible operation of the industrial activities. They recommended a more industrially oriented educational and vacational training system, a more flexible and differentiated wage system, deregulation, integration of the subsidy-system, lowering of the tax-level for industry, and a more market-oriented technology infrastructure. The proposals were broadly accepted and formed the main-lines of industrial policy in the Netherlands for the 1980's. The Wagner commission operated such in a very strategic way. First, they made an inventory of national strengths and weaknesses (especially against major competitor countries), and hence identified potentially important (new) industrial sectors. Greater advantages would be gained by exploiting new opportunities than by pursuing measures seeking to protect, ameliorate or reanimate ailing industries, it was thought. While these government's priorities in industrial policy were made public, industry could attune its future investments in new plants or management resources to them; it would sharpen their awareness of forthcoming structural changes in industrial policy.

In summarizing this bird's eye view of Dutch industrial policy over the last five decades, we can stipulate that it grew from a marginal involvement to more extensive cooperation. The consciousness governmental encouragement of innovation until the 1980's was limited to the creation of favourable conditions and incentives with a heavily technology-push character. Little consideration had been given to the question whether government might impede or accelerate innovation with demand-pull variables. After a growing recognition that the support of science and of R&D alone were insufficient to stimulate technological innovation, the white paper on Innovation and the Wagner-proposals appeared. Their dominant views reflect an increasing appreciation that individual firms cannot and will not fully support all of the activities necessary for a healthy innovative environment. Subsequent governmental coordination and careful indicative planning resulted in

assignment of priorities in this field. This new strategy will be of substantial importance to attune to a future-oriented governmental and corporate strategy (c.f. Hill and Utterback, 1979; Society for Long Range Planning, 1979).

The question now is how these innovative policies, formulated at the beginning of the 1980's, were implemented and how they influenced industrial development. Answering this question asks for an evaluation study. Because every policy needs some period in which plans can be put in practice, the Wagner-proposals seem to be too young to validly evaluate them. The following evaluation will be limited to an analysis of the policy as formulated in the white paper on Innovation. The next section deals with a report on this evaluation.

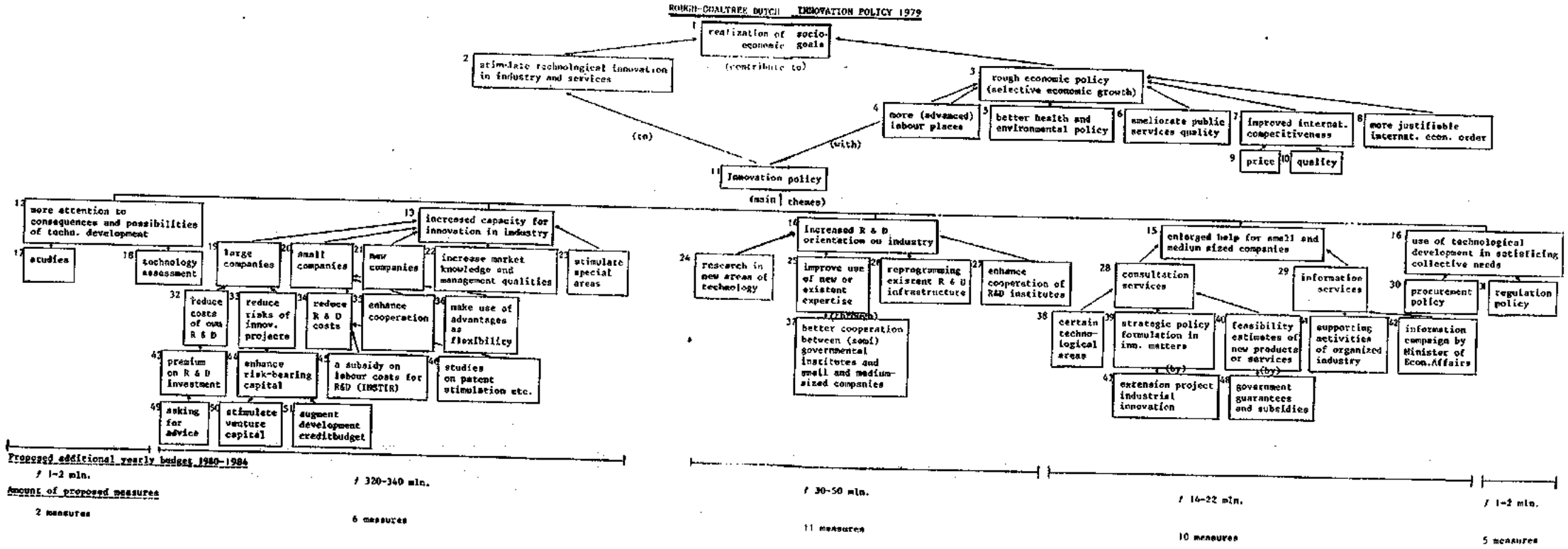
PART II: IMPLEMENTATION OF INNOVATION POLICY

In October 1979 the Dutch government presented a white paper on innovation policy to Parliament which pretended to integrate and intensify a more offensive industrial policy. The note stated that the problem-situation in the Netherlands could be characterised by insufficient industrial innovation resulting in declining growth rates, unemployment, low-skill jobs and declining international competitiveness. These problems were caused by a non-consistent industrial policy in the preceding decades with much emphasis on raw material processing and intermediate goods, rather than advanced, technology intensive goods. The industry seemed to be rather energy and resource intensive. The shortage of enough risk-bearing capital made it problematic to finance new initiatives. The formulation of this problem was broadly accepted by the important actors in this field: industry, research-institutes, government and political representatives.
The question now is which policy was formulated to deal with these problems and if the implementation of the proposals led to a higher level output in comparison with the five years preceding the Innovation paper.

The proposed policy for the 1980s

Kuypers (1980), developed a systematic method to analyse a policy and to present it in a comprehensive way. He presupposes that all policy can be reconstructed as a system of end-means relations in terms of a so called 'goal-tree'. Each element in such a goal-tree is an indication of a situation or action proposed by the actor of the policy. We used this method for an empirical reconstruction of the proposed policy in the white paper on innovation. The result is the goal-tree presented in scheme 1 on the next page.

As this goal tree points out, Dutch innovation policy deals with five main themes, called sector goals (elements 12-16). These sector goals are instrumented by underlying elements; together they form an end-means chain. For example: increased capacity for innovation (element number. 13) in small companies (el.nr. 20) will be stimulated through reducing R&D-costs (el.nr.34) by a subsidy on labour-costs for R&D (el.nr. 45).
Not all the elements at the bottom of this goaltree are operational, i.e. means which can be applied the day after the acceptance of the note by Parliament; they had to be worked out in the following period.


ROLIGH-CHALTREE DUTCH INNOVATION POLICY 1979
1 realization of socio-economic goals
(contribute to)
2 stimulate technological innovation in industry and services
(to)
3 rough economic policy (selective economic growth)
4 more (advanced) labour places
(with)
5 better health and environmental policy
6 ameliorate public services quality
7 improved internat. competitiveness
8 more justifiable internat. econ. order
9 price
10 quality
11 Innovation policy
(main themes)
12 more attention to consequences and possibilities of techn. development
17 studies
18 technology assessment
13 increased capacity for innovation in industry
19 large companies
20 small companies
21 new companies
22 increase market knowledge and management qualities
23 stimulate special areas
32 reduce costs of own R & D
33 reduce risks of innov. projects
34 reduce R & D costs
35 enhance cooperation
36 make use of advantages as flexibility
43 premium on R & D investment
44 enhance risk-bearing capital
45 a subsidy on labour costs for R&D (IBSTIR)
46 studies on patent stimulation etc.
49 asking for advice
50 stimulate venture capital
51 augment development creditbudget
14 Increased R & D orientation on industry
24 research in new areas of technology
25 improve use of new or existent expertise
26 reprogramming existent R & D infrastructure
27 enhance cooperation of R&D institutes
(through)
31 better cooperation between (semi) governmental institutes and small and medium-sized companies
15 enlarged help for small and medium sized companies
28 consultation services
29 information services
38 certain techno-logical areas
39 strategic policy formulation in inn. matters
40 feasibility estimates of new products or services
41 supporting activities of organized industry
42 information campaign by Minister of Econ.Affairs
(by)
47 extension project industrial innovation
48 government guarantees and subsidies
16 use of technological development in satisficing collective needs
30 procurement policy
31 regulation policy
Proposed additional yearly budget 1980-1984
f 1-2 mln.
f 320-340 mln.
f 30-50 mln.
f 14-22 mln.
f 1-2 mln.
Amount of proposed measures
2 measures
6 measures
11 measures
10 measures
5 measures

Others existed already (like el.nr. 51) and their budget would increase in the period 1980-1984. As can be seen at the bottom of this scheme 1, more then 30 measures were proposed to give the innovation policy more body and an additional yearly budget between 1980-1984 was reserved of 366 to 416 million Dutch guilders (for exchange rates see appendix 2).
When we look more specifically to the goal-tree three conclusions can be drawn:

1. The policy accentuates strongly the improvement of innovation capacity of the industry (el.nr. 13) along the line of reducing costs of R&D (el.nr. 32 and 34) and risks of innovation projects (el.nr. 33). The proposed premium on R&D investments (el.nr. 43) -which counted for about 40 million Dutch guilders yearly- and the intended subsidy on R&D-labour costs (el.nr. 45) -which counted for about 160 million Dutch guilders yearly- were not introduced in the four years following these proposals. So words and deeds do not coincide here very well.

2. The policy theory have to be labelled as a 'scientific and technical' type that stresses the technology-push and other supply-side factors of an innovation proces rather than demand-pull variables oriented on the market. Rothwell and Zegveld (1982, pg. 74) concluded that it "would appear, that once again, government policies are rooted more in the theories of a previous intellectual generation (one that stresses the importance of supply factors in stimulating technological change and industrial innovation) than in contemporary economic thought". Only element 16, which stresses the use of government procurement policy, can be seen as a demand side focus. However, the five proposals in this sector were almost very experimental and based on studies and consultation. The coordination of government procurements was the only more structural market-pull variable which would be emphasized.

3. The policy is exclusively oriented on existing industry and R&D-institutes. New initiatives growing out to new firms are only verbally applauded (el.nr. 21) but not instrumented with real subsidies or other measures (cf. Rothwell and Zegveld, 1982, pg. 77). Again this subscribes to a generating theses that industrial policy in the Netherlands is much status quo oriented. We will present research data on this thesis before explaining why it can be accepted as a general conclusion to our evaluation. For this reason we will focus now on the budget allocation process.

Policy performance.

Our question now is how these proposals were executed. This means that we will concentrate on the allocation of the money. First we compare the stated budgets and their realization for five main policy sectors over the last ten years. This will show us the trends in industrial policy in the Netherlands. A second question will be what can be said about the execution of the proposed measures within innovation policy. Here we shall focus on twelve more explicit subsidies mentioned in the White Paper on Innovation.

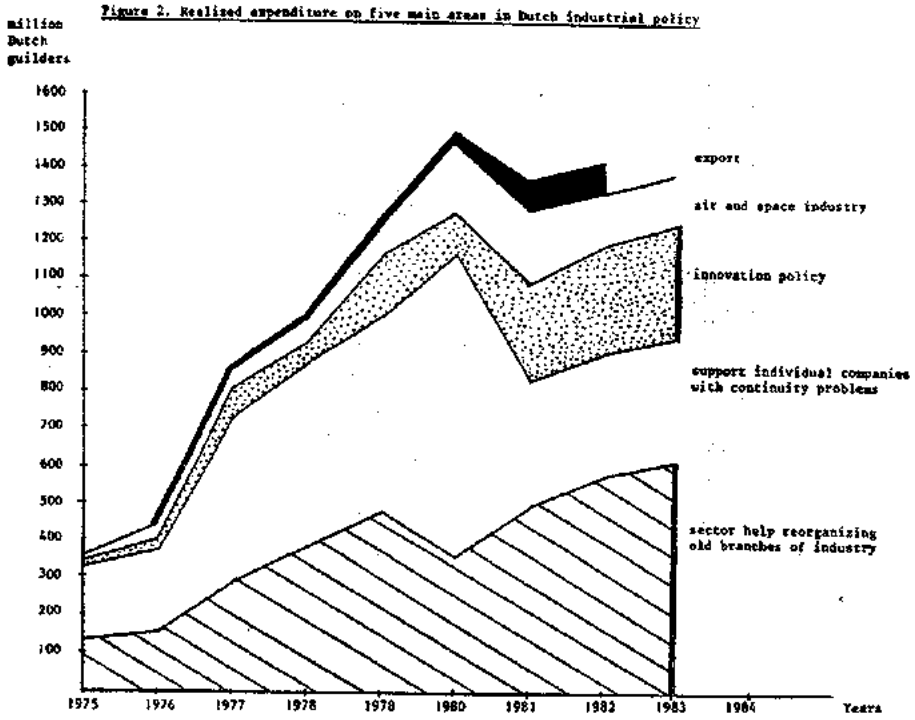
The budget process

Dutch governmental involvement in industry has been growing steadily during the last ten years. The total budget of the Ministry of Economic Affairs increased from 1,2 billion Dutch guilders in 1975 to 4 billion in 1984 (nominal figures on cash, instead of transaction base).

Figure 2 visualizes the real expenditures from year to year for five selected, but most important budget items (for more specific figures see appendix I):

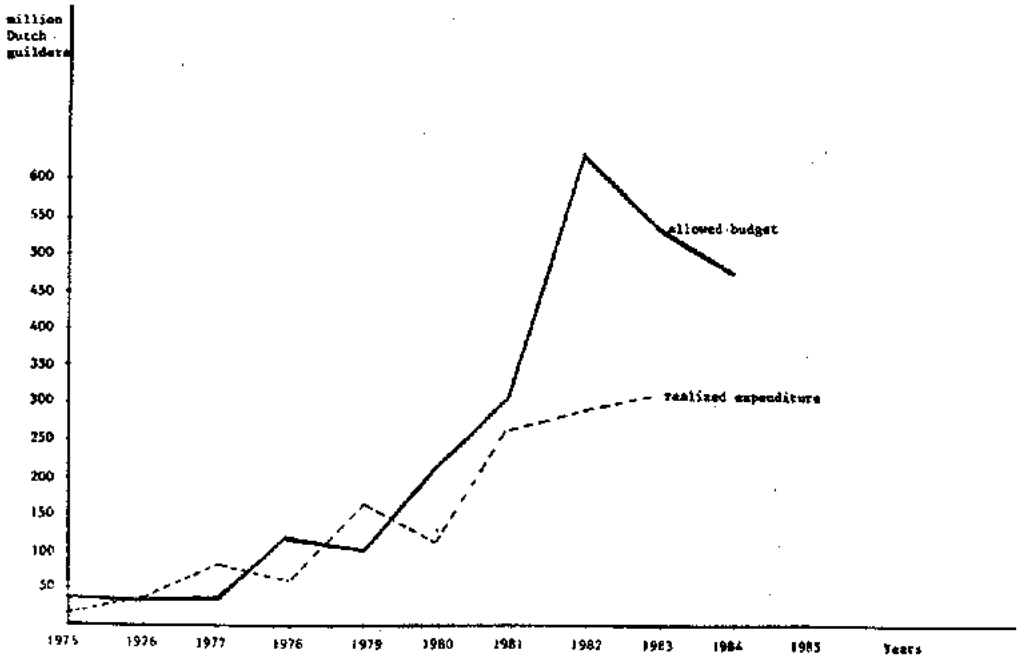
- restructuring processes of almost old branches of industry or sectors with problems of continuity;
- support for individual companies with problems of continuity;
- innovation policy;
- air and space development;
- export policy.

Figure 2. Realized expenditure on five main areas in Dutch industrial policy



From this figure we may conclude, that the money expenditures on defensive areas like support for old and ailing companies or sectors of industry increased until the 1980's. Innovation policies (without air and space support) increased from a marginal share before 1980 to a more important one in the first years of the new decade. At first sight we are inclined to conclude that the execution of the innovation policy turns out to be succesfull. A further examination will show us however that this is only a partial success and that a judgement is too early now. The question which ought to be answered before we pass a judgment is which proportion the real expenditures do bear on the formulated proposals and the stated, allowed budgets. Only a comparison of intended and real expenditures can show us if the policy is succesfull or not. In figure 3 we confront this expected or intended budgets with the real expenditures within the budget item on innovation.

Figure 3. Allowed and realized expenditures on innovation policy



After examination of the proposed and real expenditures in figure 3 we must conclude that the permitted budget after 1980 was not exhausted at all. A considerable amount of money reserved for offensive industrial policy was not spent. The increasing trend in innovation policy expenditures visualized in figure 2 appears to be only a partial success after comparison with the allowed budget shown in figure 3.

When we define the success-ratio of innovation policy as the amount of real expenditures divided by the amount of money reserved for this purpose, and take the more detailed figures from appendix I for this calculation, we can conclude, that innovation policy in the Netherlands between 1980-1983 reached an output performance of 57 procent. Is this ratio an indication of succes or failure? Perhaps the old schoolmaster can give the answer!

But if the money on innovation is spent only for 57%, you will think, what happens to the remaining money? To find this answer, we have to look at the detailed figures in appendix I. After close study of the allowed and realized budgets for the different budget items, we see that in 1980 a surplus on innovation of almost 100 million was allocated to the air and space item, more specifically to one big company, named Fokker, for the development of a new aeroplane, the so called MDF-100 (a co-production with McDonald Douglas from the U.S.A.). In 1982 and 1983 the surplus of 575 million was transfered to the item on support for individual companies with continuity problems.

At least two manifest and complementary conclusions can be drawn from this brief, summative evaluation. First, it appears that the establishment of a new, innovative policy which is (at least partially) payed from existent budgets oriented on long settled interests is very difficult. A new policy has to conquer its place. As long as the interests in an old sector are stronger than the emerging ones the redistributive character of a policy is very hard to implement. Such a contest is not settled by a formal budgetarry proces. Words and budgets will not always converge with practice. A second conclusion stipulates the difficulties in implementing a new policy. This implementation needs an incubation period in which the highly abstract proposals ought to be worked out into real instruments. According to Renate Mayntz (1980, pg. 10) every policy program needs after its adoption by Parliament or other (political) actors, some time for "Ausarbeitung van Massnahmen, der Formulierung von Vorschriften oder Auswahlkriterien, der Bestimmung von Projektträgern usw.". Even a law is "unmittelbar nach seinem Inkrafttreten noch nicht anwendungsfähig". Before the application can be started up several years will pass. Bardach (in Majone and Quade, 1980) also suggests the existence of such a incubation period when he defines implementation as "the social activity that follows upon, and is stimulated by an, authoritatively adopted policy mandate, which prior to implementation is only a collection of words" (pg. 139). According to this author, implementation is a "process of rearranging patterns of social conduct so as to honor the prescriptions set forth in some policy mandate". Because policy formulation is often a straightforward matter, there is inevitably a need for trial and error and pragmatization in a transition process before a policy-instrument

can be applied. Our examination of the innovation policy shows, that after three years of incubation the policy grows to more mature forms. A general thesis may be, that every new policy should be aware of incubation periods and attune its budgets to what is possible rather than to what is wishfull. A new policy with high budgets in the first years of its execution and a rapid decline after some time, will be no more than an optical illusion.

Policy instruments and their outcomes

No policy can be executed without real, appliable policy instruments. As we saw in scheme 1, more than 30 such instruments were announced. Some of them were already existent in 1979 when the White paper on innovation was presented. Others had to be elaborated before they could be applied. From 1979 till 1984 18 measures were operational for the whole or a limited time (Gooren a.o., 1983, pg.45). We evaluated 12 of these instruments on their outcome. These 12 were oriented on industry rather than on R&D-infrastructure. Their character was much like a subsidy, i.e. a distributive transfer of money as an incentive from government to industrial companies on basis of an activity of the latter, wished by the former. Other instruments, like know-how transfer from universities and other research institutes to industry or transmission of information by certain intermediating circuits were left out of consideration in our analysis. From this evaluation that concentrated on output performance (c.f. Maarse, 1983) we can draw some conclusions which will be mentioned here.

1. Between 1979-1984 about 7500 applications from industry were made on a total of circa 30.000 industrial companies in the Netherlands. From the 7500 appliers on this 12 measures, about 4600 received a subsidy for innovative projects and 2900 were rejected. In general this means a 60% promise rate.

2. From the 12 subsidies, 9 were new, i.e. introduced after the presentation of the Innovationpaper in 1979. Three were already existent and intensified. The new instruments appeared to be not so successfull; only 2 of the 9 evoked reactions under target groups of a significant level. Price-subsidies on the costs of external consultancy in marketing studies and introduction of marketing policies in the corporate strategy to 40% of these costs turned out to be successfull. Also price-subsidies on the costs of external R&D-work obtained a high performance. Both subsidies were of a demand-side character and not given to suppliers. The target groups were limited to individual companies with 500 employees or less. Subsidies focussing on forms of industrial co-operation on certain innovative

projects did not reach a high performance. It seems, that innovative activities in small and medium-sized companies are more a matter of individual than joint actions (cf. Geeraerts a.o., 1983)

3. The instrument-mix appeared to be rather dynamic. From the 9 new instruments introduced after the white paper, 4 were already finished after 2 or 3 years. Among them the 2 rather successfull subsidies which were incorporated in a more general subsidy-measure. Ideological reasons can shed light on this dynamicism. Dutch government states regularly that subsidy-measures ought to be terminated in certain time frames because no industrial sector should be supported structurally. This policy is also followed by the European Committee which does not accept that subsidy measures in the European Community will be operational for more than 3-5 years. Since the statement of October 1982, with which the new government headed by Prime-Minister Lubbers started its 4 year government period, another reason also emerged: the political wish to prevent a policy-accumulation by introduction of Sunset-legislation (Korsten, 1982, 1983). It can be questioned however if a new policy, that tries to find its hard core ultimately is served by this dynamicism. Of course every new policy needs some flexibility, and its instruments ought to be adapted to circumstances of implementors and targetgroups. Trial and error are very important learning-mechanisms in this policy stage. Policy accumulation ought to be prevented; a poor policy that can not reach its targets ought not to be continued. But the point is, that after such an incubation period in which a policy can grow to more mature forms a certain stability is of crucial importance for integrating it into corporate strategies and reflection on the policy measures by innovating companies. Scharf (in Mayntz, 1983, pg. 107) accentuates this point when he states that subsidies "vermutlich um so wirksamer sein werden, je dauerhaft sie angelegt sind. Nur dann bieten sie einer genügend grossen Zahl von Adressaten die Möglichkeit, ihr Interesse an den vom Programm geförderten Massnahmen zu entdecken und die eigenen Pläne darauf umzustellen". In the first 5 years of its operation, Dutch innovation policy was constantly in motion and did not garantuee this necessary stability and continuity. Subsidy-measures were coming and going. At the moment (Februari 1985) some measures come to a more mature form, although again recently introduced subsidies were finished and new subsidies initiated.
The reason for accentuating this point here is, that this dynamicism in a policy-mix also influences the effects which can be expected. Innovation subsidies in general, try to initiate innovative projects that otherwise would not be executed by companies. When the instruments are not stable enough, they will not have such effects at all. In judging the possibilities of new projects, companies donot

reckon with these stimuli, because they are not sure that they will exist when they decide to execute the project. As a matter of fact, no additional projects will be started; the project-relevance of the subsidy will be nil. Emerging effects have primarily a free-rider, time or scale character. Free-rider effects will emerge when companies are already innovating and during this process are asking for the grant because they do things whitch can be subsidised. They get the money, but no additional innovations will occur. Time-relevance appears when companies have already plans to innovate but execute this plans some time earlier then planned. Scale-effects occur when industrial firms had already an innovative project, but will bring it on a broader scale or higher level as a consequence of the additional money allocated to them by a subsidy.
What we will conclude here, is that a policy which works with dynamic and short term policy-instruments will not be succesfull in realizing project-relevance. It will not be able to influence or initiate new investments and will cause mainly free-rider, time or scale effects.

4. A fourth conclusion from our evaluation of 12 subsidy-measures deals again with the allocation of the money.
In the white paper on innovation, the government stated that small and medium sized companies were very flexible and had a high innovative potence. For this reason a special accent would be led on this category. From the 12 subsidies, 8 focussed exclusively on small and medium sized companies, but the expenditures of about 40 million guilders on these 8 instruments remained marginal in comparison with the four more general subsidies which reached a performance of 1210 million over several years. From two of these four more general implements, we have data about the part of the money allocated to small and medium sized companies. The first, a technological development credit spent between 1979-1983 a total amount of money of 806 million; 25% of this expenditure was allocated to companies with 500 employees or less. The second more general measure, credits for advanced industrial projects, spent 384 milion between 1980-1983 from which 50% reached these smaller companies. On basis of these 10 subsidies, we may conclude, that the rate of the expenditures to companies with fewer than 500 employees in Dutch innovation policy in comparison with bigger ones can be calculated as follows:

$$\frac{40 + (.25 \times 806) + (.50 \times 384)}{(40 + 806 + 384)} \times 100\% = 35\%$$

This means, that our estimation -based on 10 important expenditure subsidies- can be formulated in a hypothesis which states, that from the stimuli on innovation in the Netherlands about one-third is spent on small and medium sized companies and two-thirds on bigger firms with 500 or more employees.
Contrary to the objectives in the innovation paper, we see that big, leading industries are far more succesfull in allocating government support to them than small, almost leading companies.
The question now rises, which factors can explain that the innovation policy did not reach its goals relating to smaller companies. To throw more light on this question, I evaluated one subsidy instrument in more detail. The third part of this paper deals with this case study.

Part III: The micro-electronic developmentcredit; a case study.

In the White paper on Innovation of 1979, a policy-instrument was announced, which would stimulate the application of micro-electronics in new products and processes by limiting the financial risks of such projects through a development credit. Because the government appreciated a broad application of micro-electronics, the decision was made that every project -executed in firms with fewer than 500 employees where its application would be new- could be offered a development credit from 70% of the project costs, with a ceiling of 250.000 Dutch guilders. The credit had to be payed back only after a succesfull commercialization. The 2-year period of its implementation aimed on support for 100-200 projects, with a total budget of 20 million guilders. The performance was a real failure: only 40 applications came in from companies, 18 of them were accepted, resulting in a total expenditure of one-fifth of the original budget. The question rises which factors can explain this failure. We deal with this question from two perspectives. First we show how a policy that is not designed in connection with an adequate problemdefinition is bound to fail. Second we show that the involvement of more than 50 actors in this policy process results in a cummulation of delay and leads to fragmented decision making.

Connection between problem formulation and policy design.

A policy can be seen as the formulated answer to certain problems. In essence, a problem is a discrepancy between a perceived situation or development and a standard used to judge these (Blommestein, Bressers and Hoogerwerf, 1984, pg. 21). Defining a problem starts with a feeling that things are not what they ought to be, but almost without a clear view on how they can be brought to a solution (Majone, 1980, pg. 9-10). Sometimes this process of formulating the problem as a gap between ideal and practice is a quick and clear one; in other circumstances it costs much more time, the problem appeares bit by bit. In reflection on this difference Mason and Mitroff (1981, pg. 9-13) state that one should distinguish between 'tame' and 'wicked' problems. Most policy problems are of a wicked type; i.e. have no definite formulation and are confronted with different explanations about the causes of the problem, its consequences or possible solutions. According to Carley (1983, pg. 70) the choice of a policy problem and the subsequent definition of that problem are areas "where exogenuous value judgments play a commanding role". For this reason it is of eminent importance that the proces of defining the problem will be followed from hetrogenuous perspectives and actors in the problem-area and not exclusively within the ivory towers of government

departments. A backward-mapping activity (Elmore, 1984) in the problem stage of a policy process will throw more light on the different problem definitions. It will be a first task of policy designers to structure the problem in such a way that crucial actors in the problem field can recognize their problem definition in it. Hoogerwerf (1984 a) accentuates that a reconstruction of the constituent elements of a problem in a cause-consequence scheme can offer an objective causal-theory as a starting point for the solution of the problem. So policy designers, in creating alternative policy plans, should delimit or define the problem in connection with its causal and normative aspects. It is their responsibility that in the end results a tractible problem (Wildavsky, 1979, pg. 15-16; Mazmanian and Sabatier, 1981, pg. 5-7; Hoppe, Van de Graaf and Van Dijk, 1985).

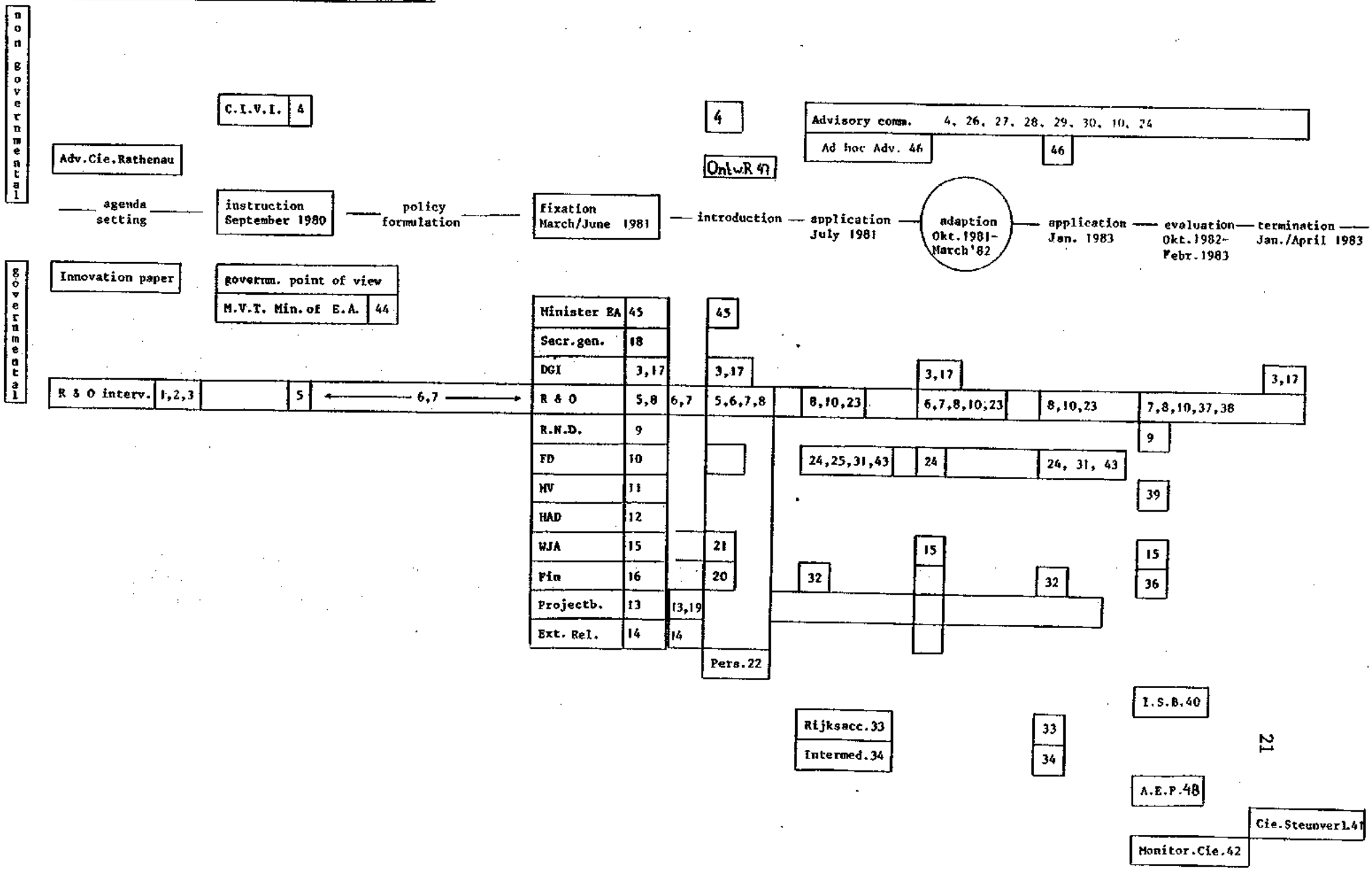
In our case, micro-electronics became a political issue end 1978, when the Dutch government installed an advisory council -named after its chairman Mr. Rathenau- to study threats and opportunities in this field and their consequences for the country. One year later, the commission published its report. One of the recommendations was, that credits should be given to advanced and large scale projects within the micro-electronic (m.e.) area in order to catch upon arrears. At the Ministery of Economic Affairs, civil servants did not agree unanimously with this recommendation and started an interview under 40 big, leading companies and intermediate institutes to inventarize the problem definitions and suggestions for government support from the taret-group itself. One conclusion of these interviews was, that the potential target group also suggested to offer development credits for advanced and risky projects as a stimulus in influencing corporate strategies on m.e. investments. The bureaucracy however could not reach consensus. One party stated that there were already governmental instruments to support industry in this field; more instruments only would harm the consistency of the policy-instrument-mix from the department. The other party emphasized that a new policy brought new instruments to make clear that the governement really offered support to these activities. Of course, the dispute resulted in much delay. After anather competitive agency tried to take over the formulation of the policy, the bureaucratic agency perceived a threat of its field of competence. Another competitive agency tried to take over the formulation of the policy. Protection of the territory (Bardach, 1979) resulted in an accelleration of the policy-proces. The agency declared that this area was theirs and ordered one of the staffmembers to design a policy plan. But what resulted was a policy plan oriented towards small and medium sized companies applying m.e. for the first time in new products or production processes. No further research was done on the question wether this category of firms had the same

problems as the bigger firms -which were interviewed- and if a credit could influence this targetgroup in the same way. From the experiences of an important inermediating actor in this fiel could have been concluded, that smaller firms missed the minimal necessary know-how to introduce m.e.-systems. Also the question rises wether the introduction of a development credit to relative simple m.e. systems -especially under consideration of the condition that only first applications would be supported- was what the commission-Rathenau meant with advanced m.e.-systems which ought to be supported to catch upon arrears of the Netherlands in this area.
We can conclude, that one explanation of the failure of this policy can be found in the poor connection of the problem definition and the ultimate policy program. A causal theory underlying problems and their causes in big companies may not automatically be considered valid for smaller companies. Also the assumptions about the instruments which could influence corporate strategies were based on research under bigger firms and not adapted to the ultimate choice to limit the targetgroup to small and medium sized companies.

A policy process in a multi-actor context.

We found one possible explanation of the poor outcome in the insufficient connection of the problem formulation and the policy design. Another explaining factor concerns the multi-actor context which this policyprocess passed through.
Grunow (in Mayntz, 1983, pg. 142-168) formulated some hypotheses in explaning the policy outcome in sofar it depends on the interorganizational connections and participating actors. One of his hypotheses states that "die Schwierigkeiten der Implementation und die Misserfolgsaussichten um so grösser sind, je mehr Akteure an dem Implementationsprozess beteiligt sind". A second one is that "Implementation um so schwieriger und weniger erfolgreich sein wird, je heterogener die beteiligten Akteure sind". The needed communication or coordination as well as the increasing chance of disagreements -especially when the heterogenity is high-, causes much delay and adaption of the policy program. According to Cohen, March and Olson (1972) the policy formulation will result in a "garbage can" when too many actors try to participate in it. Pressman and Wildavsky (1979) conclude that a cummulation of delay will follow in the (political) authorization of a policy plan as a consequence of "the complexity of joint action". The authors came to similar conclusions, although they studied diffrent stages in a policy process. In the case on m.e. appliction, I studied the whole policy process and analyzed the involvement of the different actors during this proces.

Scheme 4: Actors in the policy process on ME-credit



From this analysis may be concluded that, what the authors quoted above, said about certain phases can be transported to the whole policy process: a lot of actors playing different roles, and a low level of integration between policy stages will result in a complexity of joint action and a cummulation of delay. From scheme 2 follows that, more than 50 actors participated in the m.e. policy process but in different stages and with heterogenuous responsibilities.
It will not astonish, that different and divergent interests, cognitive maps, occupational orientations or vertical and horizontal bureaucratic relations forming a dynamic balance of power between these actors, form the constituent variables of a complex function explaining a policy outcome.

A closer look on scheme 2 showes us, that the policy process was very fragmented. Many actors participated, but the most of them only in a limited part of the total proces. A sharp distinction between policy different stages can be signalized:

- The agenda setting was prepared by the Rathenaucommission and integrated in the first policy paper on innovation; its meaning was at that moment not more than a declared intention to be researched by interviews (1.2) and followed by much dispute (3,5).
- In his reaction on the recommendations of the Rathenau commission the Minister of Economic Affairs (44) said he would initiate a credit measure. Through the pressure of an external actor (4) and the perceived threat of a territory, one of the office-managers (5) ordered two (6,7) of his staff-members to formulate a policy plan. This policy development appears to be a straight forward matter, without consulting external actors.
- The fixation of the formulated policy plan is an illustration of the way bureaucracies operate. Thirteen actors had to authorize the proposals before the Minister signed it. In spite of the note that the paper brought a speedy despatch, it was 3 months under discussion. Actors in the bureaucracy tried to defend their positions through a strategy of joint responsibilities.
- The introduction of the policy after its acceptance, was executed by actors who played their roles in earlier stages (6,7) or as office-chiefs during more stages (5,8). The real policy application -i.e. the judgement of credit applications from individual companies- was in essence an activity of new actors who did not participate in the policy formulation (23, 25 and the advisory committee). For this reason, after the first applications policy adaption was necessary. Policyformulation and implementation were not integrated on the actor level.

- In the policy termination finally, participated again different actors. Because a new political trend of de-regulation was put on the political agenda, the implementing agency certainly could forget that the policy could be prolonged.

When a lot of policy-analists declare that a policy proces can not be divided in phases or different sequential stages -for which they have good reasons- such a conclusion may not be drawn from an empirical actor-oriented policy-analysis like the one we present here. The policy proces from this perspective is so fragmented in different persons, participating in different stages during the process, that the responsibility for the whole policy process disappears. With this empirically grounded conclusion, I think that a second explanation of the failure of the micro-electronic development credit can be found in its low level of integration of actors involved in different stages of this policy.

Epilogue

Until the 1980's, the outcome of Dutch industrial policy was heavily defensive. This status quo orientation resulted in large support for already existent old ailing sectors or individual companies with continuity problems at the end of life cycles. The outcome was, partially, the consequence of a solidarity between different interest groups in this area: employers, labour-unions and political parties. New emerging sectors or companies could not mobilize the political support needed to reorient this policy. Innovation items could conquer only a marginal position on the annual budget of Economic Affairs. Further, innovation expenditures before the 1980's appeared to be of a technology-push character, primarily allocated to military, air and space or prestige oriented R&D.

At the end of the 1970's public opinion changed as a result of pioniering studies about the position of Dutch industry on micro-electronics and their application, its international competitiveness and strategic choices which had to be made. This resulted ulimately in a political agreement that a new course had to be embarked on. Greater advantage would be gained from innovation oriented policy and exploitation of new opportunities in selected areas like biotechnology or micro-electronics. An explicated policy was presented in a white paper on innovation (1979) and summarized in this paper in a goal-tree presented on page 10. After a close look on this scheme, one conclusion could be drawn: technology-push factors were still much more stressed than market-pull variables. This accords with Rothwell and Zegveld's (1982, pg. 74) statement that the policy-theory was rooted in the "theories of a previous intellectual generation".

The implementation of the policy proposals followed in the first years of the 1980's. The annual, nominal budget on innovation increased absolutely as well as in relation to other budget items. Also real expenditures grew steadily. But after a closer look on the confrontation of the allowed budgets with the realized expenditures, we found that the successratio was not so high: between 1980-1983 the innovation budget on cash basis appeared to be allocated only for 57%. In 1980, the remaining money was reallocated to a big aeroplane company. Following Freeman (1982), we would call this reallocation a consequence of the preferential treatment of an influential 'lobby' area. In 1982-1983 a surplus of more than 500 million Dutch guilders was spent on the item of support for individual companies with continuity problems, esp. to restructuring processes in the steel industry.

Our conclusion here was, that a new policy has to conquer its place, especially when it has a redistributive character. Old sectors with entrance on the department of Economic Affairs and the political decision arena appeared strong enough to slow down the implementation of a new policy. But also incubation periods, time needed to elaborate policy proposals and setting up implementation structures, caused delay. Every new policy should be aware of such gestation periods and be modest in its pretenses to arrange large scale effects in the short term.

The evaluation of 12 more specific innovation measures showed us, that only one-third of the expenditures reached small and medium sized companies. This was considered contrary to the intentions and stated objectives in the Innovation paper to give priority to these categories. Another detail worthwhile summarizing was that the instrument-mix was rather dynamic. The Sunset-legislation and ideological choice to offer only short-term subsidies however have important negative consequences. The short-term application will not cause real project effects in companies in initiating new investments. We stated, that only free-rider, time or scale effects will follow in this circumstances.

Finally, we focussed on a case study. The proces-evaluation on the micro-electronic credit showed us, that the partial success of the innovation policy in the first years of its execution cannot be exclusively explained from the trial and error or learning character in the incubation period. Explanations can also be offered from a policy perspective and actor context. Our case study showed, that a poor policy-theory or insufficient connection between the problem definition and policy design also caused failure. The wickedness of a problem, the defactorizing of solvable problemparts and the backward-mapping on targetgroups are crucial activities in designing a policy program. In our case they were absolutely unsufficient practized.
A second lesson from the case study deals with the multi-actor context of a policy process. When more than 50 actors participate, in different stages of a policy process, without responsibility for the whole process or its outcome, the ultimate policyprogram results in a "garbage can". The integration ratio showed to be very low. Policy designing and its application to the targetgroup were the responsibility of completely different actors. The heterogenity in interests, cognitive maps, occupational orientation, power and influence resources etc. between this actors will constantly shift during the proces. Without a clear project management in such situations, a policy is bound to fail.

Appendix I

Tabel Allowed (A) and Realized (R) budgets industrial policy (x Dfl. 1,000)

Instruments \ Year	1975 A	1975 R	1976 A	1976 R	1977 A	1977 R	1978 A	1978 R	1979 A	1979 R	1980 A	1980 R	1981 A	1981 R	1982 A	1982 R	1983 A	1983 R	1984 A
I. Support individual company																			
≥ 500 employees											375.702	797.026	311.000	311.034	27.582	305.702	36.890	302.637	19.633
< 500 employees											9.000	9.812	21.000	21.154	21.528	35.301	21.783	28.364	23.306
total	102.400	193.785	101.200	220.000	100.000	435.824	122.500	490.269	431.950	522.782	384.702	806.838	332.000	332.188	49.110	341.003	58.673	331.001	43.739
II. Sector policy																			
sector policy (ex. shipb.)	32.600	48.414	35.283	54.657	268.228	73.939	103.777	161.535	127.423	126.459	212.503	135.212	140.958	143.816	166.235	292.177	288.023	422.046	370.867
shipbuilding	85.150	84.736	87.700	96.625	108.500	217.196	298.092	222.164	365.647	355.667	343.680	224.459	224.482	349.289	294.318	275.428	322.708	198.481	260.072
total	117.750	133.150	122.983	151.282	376.728	291.135	401.869	383.699	493.070	482.326	561.183	359.671	365.440	493.105	460.553	567.605	610.731	620.527	630.939
III. Innovation policy																			
advanced ind. projects	-	-	-	-	50.000	43.695	53.050	6.889	11.968	39.472	90.844	21.233	144.128	49.608	289.678	85.528	157.903	92.531	146.156
development credit (TOK)	17.871	9.752	30.735	33.346	33.339	35.154	52.622	49.527	74.730	119.187	110.603	85.488	142.827	203.016	244.690	107.765	267.744	209.674	299.222
industrial proj. (NIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.500	82.500	100.000	-	p.m.
productivity	4.994	3.613	4.744	3.118	4.493	7.594	15.621	3.497	14.344	3.778	10.274	5.057	11.037	6.278	13.714	7.912	11.771	6.721	8.744
RAD subsidy (Instix)																			
Subtotal	32.865	13.365	35.479	36.464	37.832	80.443	121.293	59.913	101.042	162.437	211.721	111.778	297.992	258.902	630.582	283.705	537.418	308.926	454.122
Air & Space	12.600	13.200	26.300	34.700	31.500	46.724	51.463	62.408	46.923	83.072	98 296	204.188	174.556	212.006	220.806	141.000	215.706	137.512	230.112
total	45.465	26.565	61.779	71.164	69.332	127.167	172.756	122.321	147.965	245.509	310.017	315.966	472.548	570.908	851.388	424.705	753.124	446.438	884.234
IV. Export policy																			
exportstimulation	-	-	-	900	-	1.105	30.000	1.723	57.188	13.987	6.920	26.250	104.203	80.707	159.952	84.045	172.176	n.a.	n.a.

Appendix II: Exchange-rate of English pound and U.S. Dollar to Dutch guilder between 1975-1984.

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
£	5,5956	4,7743	4,2838	4,1507	4,2575	4,6243	5,0260	4,6652	4,3284	4,2741
$	2,5327	2,6423	2,4540	2,1636	2,0061	1,9863	2,4978	2,6728	2,8572	3,2103

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Multinational Strategies and National Subsidies.

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The subject of this paper is the multinational corporation (see footnote) and the way in which it might be expected to respond to the industrial and subsidy policies of European governments. There are several reasons for fastening on this perspective, the most obvious being the almost self-evident proposition that multinational corporations (MNCs) are likely to be the most 'subsidy conscious' private enterprises operating in Europe. Examining the experience of the MNC also permits an examination of the 'politics of the firm'. When it comes to industrial subsidies the most obvious perspective for the political scientist is to analyse state subsidy structures (see Wilks 1984a,b) but a suggestive literature is emerging which also promises insights from an examination of the firm as an economically efficient hierarchy capable of pursuing a political strategy. An additional benefit of introducing the MNC into a workshop discussion is that it directs attention to the increasingly permeable barriers around the European nation states and to pan-European phenomenon, such as the international integration of capital in Europe.

The paper is arranged in four sections. The first section advances a series of arguments which broadly support the view of the multinational as a 'subsidy conscious' actor. The second section discusses some of the theoretical interpretations of this phenomenon, ranging from the public choice school, which draws market orientated conclusions, to the dependancy school, who advocate assertive state control. The third section questions whether the MNC can be seen as a a singular, homogenous actor and points to the importance of its internal dynamics and corporate strategy. The fourth section makes some concluding comments stressing the research problem embodied in defining government-industry relations <u>not</u> as a problematic

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Note: this term is used for convenience and familiarity. A more technically correct term, preferred by the United Nations, is 'transnational enterprise'.

of government regulating a market but as a relationship marked by bargaining between a series of little understood, imperfectly co-ordinated bureaucracies.

The 'Subsidy Conscious' tendancies of Multinational Corporations.

There are a variety of a priori reasons for suggesting that some corporations rather than others would be conscious of the gains to be made from subsidies. In one subset would be grouped private sector companies formally dependant on government either because they are in crisis and on a subsidy 'life support machine' (eg. BL or Arbed Saarstahl), or because they do the majority of their business with government. In the latter category would fall the defence corporations which make up the American 'military industrial complex' and whose highly successful pursuit of subsidy gave rise to analysis of 'Pentagon Capitalism' (Melman, 1970), or the 'contract state' (Hague et al, 1975). In a second subset could be placed companies which are not 'state dependant' but might be expected to have an interest in maximising subsidies simply because they are 'out for what they can get'. Such companies, which Grant (1984, p.10) might call "capitalist aggressive" would recognise subsidy opportunities as part of their operating environment. It is with this latter category of firms that this paper is primarily concerned.

Multinationals might be expected to be especially subsidy conscious for a range of reasons which relate both to the scale of their operations and to their internal organisational dynamics. The following six, rather diverse, sources of 'subsidy consciousness' could be distinguished.

First, a MNC operating in Europe has a huge choice of subsidy regimes. Assuming that the proposed investment is internationally mobile the permutations of incentives, aids and subsidies is infinite. Among

the major categories of subsidy instruments are:

- cash expenditures
- preferential credits (soft loans)
- tax expenditure
- subsidy equivalent of regulatory measures
- subsidy elements in public purchasing
- subsidy equivalents of tariffs and non-tariff barriers

(see OECD, 1983a, para. 43)

Each European state offers some mix of the above with considerable variation as to regional specificity, the balance between capital and labour subsidy and the preference for cash or tax concessions. Several surveys of the range of incentives are available (OECD, 1983a,b; Allen and Yuill (eds) 1982). All implicitly emphasise the complexity of the field and the range of options available to the discriminating investor. There have, of course, been quite determined efforts by the OECD and the EC to limit subsidy competition. The EC has, for instance, negotiated a non-proliferation treaty on regional aids which is designed to restrict undue competitive advantage for national undertakings but also to reduce the potential for 'competitive bidding' between countries for internationally mobile investment (although the Commission is very reticent about this latter problem). Thus the 1979 agreement on regional aids, currently being re-negotiated, delineates five 'Principles of Coordination of Regional Aids' the most important of which establishes ceilings of aid intensity. The least developed areas, in the Republic of Ireland and the Mezzogiorno, are entitled to give up to 75 per cent net grant equivalent of investment (EC Official Journal, C 31, February 1979) with a sliding scale for more prosperous regions. Clearly, however, the diversity in subsidy regimes presents MNCs with the opportunity to maximise subsidy benefit for any given investment.

Second, MNCs may not have to seek subsidies, they have subsidies thrust upon them. It can hardly be said that governments are reticent in

advertising their aid regimes and large potential investors will find themselves showered with blandishments. They will receive high level ministerial delegations, fulsome publicity material and specific offers relating to intended investments. The competition for investments is not only inter-country, there is considerable internal competition. In Britain there is lobbying from local authorities, regional associations, new towns, regional departments (Scotland, Wales and N.Ireland) as well as national government. In recent times the proliferation of local authority promotional endeavours has smacked of desperation. There is something pathetic about Merseyside's Development Office advertising the delights of the area on American West Coast Television.

This British promotional medley has given rise to considerable disquiet (see Scottish Affairs Committee, 1980; Hogwood, 1981) and prompted the establishment of a 'Committee on Overseas Promotion' (COP) in the Department of Industry's promotional agency - the Invest in Britain Bureau (IBB). COP attempts to eliminate wasteful competition but, as Brech and Sharp (1984, p.11) confirm "the IBB has relatively weak coordinating powers". Inter-state competition has verged periodically into acrimonious rivalry. The Irish Development Agency (IDA) and the Scottish Development Agency (SDA) have had bitter exchanges over the alleged 'poaching' of investment, but the game is played across Europe. In their thorough investigation of the strategies of American multinationals in Scotland Hood and Young found that:

> at headquarters and affiliate level, executives appeared very conversant with the incentive packages offered by by different areas in Europe ... the vary fact that these corporations are subject to persistent competitive approaches from other European countries (notably Ireland) may well confirm that MNE investment decisions are, at some point in time and in some circumstances, sensitive to incentive packages
>
> (Hood and Young, 1979, p.210)

Whilst there may be a suspicion that in practice MNCs are offered exceptionally attractive investment packages there is for the most part

no distinction made in European subsidy regimes between national and foreign-owned companies. Indeed, 'national treatment' commitments, designed to head off discrimination against foreign-owned companies, are a keystone of the OECD agreement on multinationals (see OECD, 1984). There are some exceptions, including the traditional French prejudice against, and British prejudice in favour of, foreign multinationals. British subsidy policy provides a particularly interesting exception. In July 1979 the new Conservative government reviewed policy for selective assistance to industry. It made criteria more rigorous but also made significant concessions to 'internationally mobile projects'. A Department of Industry document explained that "internationally mobile investment has to be won in the face of fierce competition from other countries" (DoI, 1980, para 26). The implications of this change were only slowly realised. They emerged in debates over the Nissan investment in Tyne and Wear when comparisons were made between aid available to Nissan and aid available to the purchasers of the Glasgow Bathgate lorry plant being sold by BL. Asked "why should an indigenous motor industry employer receive less favourable terms than those on offer to the Japanese?" Norman Tebbit, the Industry Secretary, replied that "different regimes of assistance are available for those projects which are internationally mobile and those which are not". Asked by Peter Shore "what is the justification for treating Japanese and other companies more favourably than British firms?" Tebbit accused Shore of xenophobia and added,

> of course there is a justification for offering particularly attractive terms to bring to the country internationally mobile projects which otherwise might go to another part of the EC and have free access to our market but would not provide jobs
>
> (Hansard, 61, cols 300,302, 6 June 1984).

British government also analyses its discretionary selective financial assistance by nationality of recipient. Figures indicate that foreign companies have increased their share of such help. In 1981-82 foreign

companies received 47 per cent of regional selective assistance (about £50 million) and 54 per cent of national selective assistance (about £21 million) (IBB, 1982, p.15). Such subsidy competition stimulates subsidy consciousness and emphasises the irrationality of the process. Brech and Sharp (1984, p.101) conclude their study with the thought that "it is vital that Britain should support the EEC efforts to limit multilaterally the amount of subsidy offered per job. The auction that currently takes place between community countries for internationally mobile projects is ludicrous and self-defeating".

A third reason for suggesting that MNCs will pursue and receive subsidies is that on the whole MNCs are concentrated in capital intensive and technology intensive industrial sectors (Hood and Young, 1979a). Capital intensiveness makes MNCs more sensitive to capital subsidies and, for the most part, European subsidy regimes concentrate upon capital rather than labour subsidies. Again, taking the British example, there has been consistent criticism of the bias towards capital-intensity incorporated in policy instruments such as the regional development grant. Some now notorious absurdities occurred in 1975-76 when North Sea oil terminals were awarded grants of about £150 million, a 'cost per job' in one case of £300,000. These investments could, geographically and technically, have been placed nowhere else and simply represented a 'windfall profit' for the oil companies involved (see Northcott, 1977, p.73). Similarly, the 'high tech' nature of many MNCs makes them sectorally attractive to governments keen to establish a presence in innovatory 'sunrise' sectors. Their importance as vehicles for the transmission of technology makes multinationals like Fujitsu, IBM or Univac particularly attractive to government. There is the general appeal of 'state of the art' technology; there is the attraction of contributing to a general sectoral capability and there is the 'demonstration effect'. Attracting several high tech firms gives an air of dynamism and the promise of external economies reputed

to be typical of Silicon Valley (and now Silicon Glen).

The fourth reason for supposing MNCs to be 'subsidy conscious' derives from the recent literature on the MNC as an organisational and economic entity. Economists have naturally found it difficult to account for the growth and survival of MNCs employing the tools of neo-classical economics. In a world of perfect markets the MNC would simply not exist and the phenomenon has therefore historically been explained by a combination of 'ownership specific advantages' (basically oligopolistic advantages), and 'location specific advantages' (such as access to cheap labour, raw materials and proximity to the market). More recently economic analysis has focused on a different but complementary perspective, that of 'internalisation'. At the risk of over-simplification internalisation theory points to the inefficiency of the market in executing certain transactions. When it comes to setting prices, controlling quality, ensuring legal compliance and finding contractual partners markets in practice can be very costly. Such transactions can often be performed more efficiently within the firm by means of ownership and authority relations exerted through hierarchies of control. The argument also applies par excellence to the exchange of proprietary knowledge, intermediate technology and 'know-how'. It can be virtually impossible to place an accurate, or indeed any, price on an intermediate industrial process or an intangible management skill such as how best to organise a (Japanese style) 'quality circle'. Knowledge of this sort gives the firm an advantage, and acts as a public good within the firm, but cannot be realised as a tradeable commodity outside the firm - it is not susceptible to patenting, licensing or contractual sale.

What we have here is an attempt by economists to develop a more sophisticated theory of the firm - generally a woefully neglected area. Internalisation theory was developed (Coase, 1937), and can be used, in relation to national firms but its explanatory power is particularly

applicable to MNCs (see Buckley and Casson, 1976; Rugman (ed), 1982; Casson (ed), 1983; Williamson, 1981). Although internalisation theory is as yet relatively unrefined it represents a very welcome development. It comprises a body of analytic theory which is prepared to accept what the more politically aware economists have been willing to accept since Berle and Means (1932), namely that industrial concentration is the order of the day; the departures from the canons of perfect competition are so extreme that neo-classical theory may have only abstract relevance; and that economic and industrial policy has to recognise the economic and political power of oligopolistic industrial groupings. Thus attention is directed to the question of efficiancy in hierarchies, as one recent survey argues:

> thus emerges a rudimentary economic organisation, the firm, centrally characterised by the authority relations and the hierarchical direction of production. The driving force behind its emergence is efficiency: economic agents arrange production within firms - they substitute authority relations for market relations - in order to reduce transaction costs and produce more efficiently
>
> (Moe, 1984, p.143).

Clearly there is a convergence here between the work of industrial economists and the emphasis given by business historians to the evolution of 'management hierarchies' and the importance of 'M -form' (Multidivisional form) of industrial organisation (Chandler, 1977; Chandler and Daems (eds), 1980).

What do these theories imply for the propensity of MNCs to pursue subsidies? They suggest two sources of increased subsidy pursuit. On the one hand internalisation theories suggest that the success of MNCs rests increasingly on two factors; the quality of its internal organisation and the ability to devise a suitable long term corporate strategy. The planning of what to internalise, and the efficiency with which internal transactions are conducted are as important as conventional decisions about prices, wages and markets. Thus the MNC which successfully survives in today's highly competitive global market will embody a rationalist, calculative hierarchy whose forté is the anticipation and exploitation of sources of advantage and which controls and integrates a range of subsidiaries spread across

a number of countries. The hierarchy also has discretion. Managerial room for manoever is substantial. Since many of the relevant market transactions have been brought 'in house' they can be controlled and amended in a more flexible fashion. If subsidies are available a rationalist organisation of this nature would, almost by definition, pursue them.

On the other hand, given that MNCs must have corporate strategies in order to give purpose to the pattern of internalisation, then such strategies are open to interpretation by government. Strategies are flexible and can be influenced. Thus, for instance, the strategic decisions by Ford and General Motors to supply Britain from continental car plants have increased import penetration ('captive imports') by over 20 per cent and have stimulated UK government negotiation with the companies. In this and similar cases government is presented with an obviously adverse strategy which it is virtually invited to rectify by means of subsidy. Both government and the MNC hence have an incentive to bargain over amendments to flexible strategies, a phenomenon that prompted Hood and Young to remark that "such circumstances would in themselves justify the policy-maker keeping very close to corporate staff in the US" and to endorse a 'company specific' approach "simply because the (multinational) corporation invariably has more strategic alternatives open to it than indigenous firms" (Hood and Young, 1979, pp.64 and 211).

A fifth tendancy influencing MNCs towards subsidy consciousness lies in the fact that Japanese and American multinationals are, when operating in Europe, genuinely stateless. As Stoffaës rather glumly remarks, "the European market is used more efficiently by Japanese and American multinational firms than by the European firms themselves" (Stoffaës, 1984, p.292). Thus the non-European MNCs do not have the loyalty to, or simple familiarity with, any one European state and could therefore be expected to apply a more utilitarian approach to planning their European operations. Although they may initially find the UK more welcoming, for

reasons allied to language and culture as well as policy, they do not have the moral and material pressures of a domestic workforce, financial institutions, shareholders and government expressing a preference for investment 'at home'. There are also, however, more tangible reasons for such MNCs to adopt a wider European perspective.

When it comes to nationalised industries and sectors in difficulties there is an inevitable tendancy of governments to help national rather than foreign firms. In sectors like motor vehicles MNCs are thus competing with a series of 'national champions'. Peugeot and Renault receive soft loans, Renault receives state equity, as did BL. Fiat, Alfa Romeo and Volkswagen have all received preferential assistance: it is therefore comprehensible if GM and Ford attempt to negotiate favourable assistance packages when making new investments. As part of this phenomenon there are indications that the larger MNCs are concerned to maintain cordial relations with governments by diversifying across Europe and employing a 'country neutral' location strategy. A company like IBM which wishes to sell in all European markets prefers to balance its investments in order to spread the benefits of its presence and avoid too ostentatious a preference for, or prejudice against, any large European country. Whilst this behavious does not lead to subsidy pursuit per se it does indicate a Europe-wide scanning of the environment which could hardly fail to take note of competitive subsidy regimes.

A sixth reason for supposing MNCs to be 'subsidy conscious' is the observed fact of some dramatic subsidy auctions. The motor industry offers several recent examples. Thus we can point to Nissan's investment in Tyne and Wear, GM's Austrian engine plant and Ford's now aborted proposal for a new assembly plant in Portugal. But perhaps the most remarkable example was Ford's negotiation with several European governments during the Summer of 1977 over the location of its new engine plant. The plant

was eventually located at Bridgend in South Wales after Ford had negotiated a secret, but allegedly very generous, subsidy package. It was widely felt that Ford preferred Bridgend in any case but had played governments off against one another to secure the best possible subsidy bonus. The conclusion reached by Dunkerley et al. was that:

> Ford's trans-national organisation allows it flexibility to avoid unfavourable state regulations at the same time as exploiting those offering positive advantages. This flexibility is enhanced by a highly centralised decision making structure capable of considerable manoeuvrability within existing parameters
>
> (Dunkerley et al, 1980, p.25).

More recnt analyses cite authoritative sources who claim that the Labour Government eventually offered a grant package of £148 million on a total capital cost of £180 million, a subsidy of 82 per cent. What is more, the promised job creation of 2,500 never materialised. The work force is said never to have exceeded 1,800 (TURU, 1985, pp.6,7). The cost per job of assistance to this highly profitable Ford subsidiary was therefore £82,222. This sort of determined pursuit of maximum subsidy is unlikely to be typical, the evidence is understandably hard to come by. It does demonstrate, however, that elaborate, extensive and very expensive subsidy auctions do take place.

Interpretations of Multinational Subsidy Proclivities.

The study of MNCs has gone somewhat out of fashion since about 1978. The spate of populist and alarmist studies of how MNCs were about to render the nation state redundant subsided as it became clear that the internationalisation of capital was a gradual process in which MNCs had only a partial ability to convert their economic power into political influence. In the Anglo-American literature study of multinationals has become confined largely to a specialised group of industrial economists (see Casson (ed), 1983) and to development specialists (see Kirkpatrick et al, 1984). As far

as the developed economies are concerned the interest of political scientists has declined. For the most part multinationals have been treated not as a seperate and distinctive phenomenon but as a particular example of a more general problematic such as the internal politics of the firm; the firm as political lobbyist; the politics of industrial concentration; the power of capital to control labour; or the problems of devising an industrial policy.

We can, however, glean from the literature some suggestions as to the political behaviour of MNCs in relation to subsidies. There is, for instance, the analysis offered by the 'public choice' school; by the 'meso-economic' school and by the 'dependancy' school, each of which suggest that multinationals have the opportunity to pursue subsidy although they vary in interpretations as to whether they do so and vary in their conclusions about political impact and policy responses.

The more populist versions of the public choice approach can be tedious in their one-dimensional advocacy of greater competition and relience on an individual utility maximising image of behaviour. The school is, however, increasingly influential and its propositions are attractive to market obsessed governments. On the subject of government's relations with individual firms the public choice analysis of transactions within a political market posits politicians offering favourable treatment to firms in order to 'buy votes', and firms pursuing governmental assistance in order to maximise their profits. The analysis has been applied to the supply of, and demand for, government regulation (Stigler,1982; Peacock (ed), 1984) but it is also applied specifically to subsidy proliferation by Burton. He argues, in an argument reminiscent of Brittan (1977), that "democratic political systems contain an inherent bias towards subsidisation of industry" (Burton, 1979, p.41), largely because they are motivated to maximise voter support. The basic hypothesis seems to be that politicians believe that they can

buy votes in given constituencies by subsidising strategically located firms. This tendancy is reinforced by 'fiscal illusion' (benefits are clear and concentrated, costs are ephemeral and dispersed) and by other equally non-economic motives. Rowley, for instance, alleges that

> some politicians may wish to curry favour with the top management of monopolistic enterprises, given the uncertainties of political life, in the expectation that future employment opportunities may be made available in their post-political careers
> (Rowley, 1982, p.52).

The effect on profit seeking firms is to offer them an alternative source of revenue so that they divert energies to lobbying for subsidy and become 'subsidy maximisers'. On the international scene domestic subsidy creates a new hidden form of protectionism while "compeition via subsidies to attract the new plant investments of major international companies has become naked to the point of virtual indecency" (Burton, 1979, p.57). In a more recent restatement of his argument Burton (1983) reiterates this analysis stressing again the 'rent seeking' (ie. subsidy seeking) behaviour of enterprises, particularly those in declining industrial sectors. But while in 1979 he was stressing the need for Britain to move to a social market economy in 1983 he is critical of continued Conservative interventionism and advocates the avoidance "as far as possible" (p.74) of selective interventions.

While it is difficult to take Burton seriously in his bizarre misrepresentation of voter behaviour and political motivations he is interesting as one observer who is willing to emphasise 'subsidy maximising' firm behaviour. He appears to be suggesting that firms move from an economic to a more explicitly political calculus when confronted with subsidy inclined governments. Rather than performing as market logic would require - namely incorporating subsidies into market calculations as eg. reducing factor costs, facilitating market access or reducing operating overheads - and <u>then</u> making a profit maximising decision; he is actually

suggesting that the firm will aggressively pursue subsidies for their own sake. They will change their organisation, promote skilled lobbyists rather than competent managers and re-orientate their activities. Instead of subsidies modifying market pressures, as they are intended to do, they over-ride the market. Rather than responding to competitive pressures, firms respond to indications of government approval. This is a bold position which at least represents an extreme case argument, although it might be noted that this is a general theory of firm behaviour and not related exclusively to multinationals.

An alternative set of propositions is offered by the amny economists who have written on the social and political implications of corporate concentration and oligopolistic competition. This diverse field can be broadened to encompass Baran and Sweezy (1966), Galbraith (1969), Utton (1982) and Hannah (1976), but the writer who has given most attention to the role of MNCs and to the policy implications of international oligopoly is Stuart Holland. This school can be termed the 'meso-economic school' following Holland's label for the

> multi-product, multi-company and multi-national enterprises whose size and spread span the gap between micro and macro economics. The firms themselves have been variously described as monopolies, oligopolies, leader firms or the 'planning system'
>
> (Holland, 1976, p.29)

In Britain the literature is agreed that the industrial economy is highly concentrated with about 40 per cent of industrial output produced by the 100 largest firms. Grant and Nath (1984, p.60) even cite a Cabinet Office study which speculates that up to 70 per cent of manufacturing output is <u>controlled</u> by the top 100 firms. At the European level there is also evidence of considerable and increasing concentration. EC figures reveal that the 40 largest firms produce a fifth of manufacturing output:

Table 1. Concentration in EC Manufacturing Industry

	share of ... largest firms in total turnover %			share of ... largest firms in total employment %		
	10	40	280	10	40	280
1972	6.3	15.6	31.0			
1974	7.3	17.5	32.6			
1976	8.5	19.4	36.2	8.5	20.6	36.9
1978	8.0	17.9	33.1	9.1	20.1	37.0
1980	8.3	18.7	35.8	9.4	20.4	37.5
1981	8.7	19.2	36.6	9.6	20.4	38.1

(source: European Commission, 1984,p.197)

Analyses vary as to the causes and implications of such concentration. At the very least there is agreement that large firms are in many important respects independant from market pressures. Their behaviour cannot be analysed using the standard tools and models of neo-classical economics. Large firms may pursue growth rather than profits, may create markets by manipulating consumer demand, may take a very long term rather than a short term profit horizon, may cross-subsidise and may act in economically non-rational ways, depending on the priorities of senior managers or management cadres.

Holland goes further than much of this literature in identifying distinctive advantages available to MNCs. His main concern is the progressive irrelevance of traditional forms of national industrial policy. Without an adequate theory to explain the workings of the 'meso-economy', he argues, industrial policy is based on irrelevant theoretical foundations and the instruments of industrial policy are rendered powerless or simply counter-productive.

With respect to subsidy Holland argues that MNCs are relatively disinterested. Drawing conclusions from the extensive examination of firm's reactions to regional incentives undertaken by the House of Commons Expenditure Committee he argued that:

> the theme emerging from evidence to the Committee (is) that ... assistance frequently was seen as a bonus rather than as an important factor in the location decision. In practice, in the case of multinational companies, regional aid can mean massive handouts to some of the wealthiest c mpanies in the world

his conclusion was that "the Committee should consider new forms of selectivity in regional policy for leading national companies and multinational firms" (Holland, 1973, p.689). The British Conservative government have, of course, recently redesigned regional incentives in exactly this fashion. Holland thus feels that the ability to attract subsidies is a relatively marginal consideration for most multinationals. Their opportunities to maximise revenue through passing on cost increases, through minimising tax burdens by transfer price manipulation and through the exploitation of low wage production locations far outweigh the modest benefits available as subsidies. Thus "evidence from British and US MNCs shows that the scale of regional incentives which they discount in Britain has been staggering" (Holland, 1976, p.44).

It is certainly a common response by firms to empirical inquiry about location decisions that financial incentives make relatively little difference. Northcott's study stressed proximity to the market as an important consideration for MNCs and several of his sample companies argued either that incentives made no difference or that "they would not undertake a new project unless it was viable even without grants" (Northcott, 1977, p.68). In their study of multinationals in Scotland Hood and Young also found considerable disparity, including a group of MNCs

> characterised by views that regional incentives had no influence whatsoever on locational planning since they were seen as 'purely temporary and volatile', and decisions of the magnitude made by corporations required <u>much</u> more fundamental justification
>
> (Hood and Young, 1979, p.182).

On the other hand, interpretation of survey material is difficult and the study authors gained the overall impression "that regional incentives were in general of much more importance than many corporations were prepared

to admit" (Hood and Young, 1979, p.209). Thus, while Holland's thesis receives some empirical validation it cannot be claimed that the logic behind it has been validated or that it has been tested more than partially. It remains a productive hypothesis which, if accepted, would require administrative control over MNCs rather than any attempt to affect behaviour by generalised subsidy structures.

A third perspective is to be found in attempts to apply developmental concepts to the European experience. The insights generated by various strands of the 'dependancy school' have been employed to analyse European integration and 'core-periphery' relations in the peripheral European economies. In the analysis of structures of dependance the integration of economies through the activities of MNCs is regarded as an important and multi-dimensional factor. The MNC is said to impose a hierarchical division of labour with lower order activities located in peripheral economies. Multinational capital will foster sympathetic local political formations, perhaps taking the form of a client 'comprador' class; it will extract surplus and will inhibit the potential for self-perpetuating indigenous development. The debates are intense and a considerable amount of empirical work has been undertaken on the role of MNCs in less developed countries (see Kirkpatrick et al, 1984, chapter 4). To apply such theories to the peripheral economies and regions of Europe provides a stimulating perspective which puts subsidies into a distinctive context. The deliberate choice of multinational investment as a path to industrialisation and development through a generous incentive policy is thus regarded as having profound effects on the nature of class relations, economic policy and the direction of development. In this context the case of the Republic of Ireland is particularly interesting.

Since 1958 Ireland has pursued a policy of 'industrialisation-by -invitation' (Stanton, 1979, p.104). The major incentives are generous

capital grants (up to at least 60 per cent), and tax concessions (zero tax attributable to profits on export sales up to 1981, subsequently 10 per cent corporation tax). Whether policy has been successful on a broad canvass is beyond the scope of this paper, it has, however, been strikingly successful in attracting foreign capital into the Republic; "in the decade 1960-70 74 per cent of industrial development came from overseas" (Schaffer, 1979, p.239). The Irish Industrial Development Authority (IDA), which negotiates grant packages, has become an important state institution with steadily expanding activities, hence:

Table 2. IDA Activity

new job approvals	1960-69	42,500	
new job approvals	1970-79	192,380	(49% from overseas)

Overall average grant percentages of capital costs:

	foreign controlled	indigenous
1975	22.4	27.5
1977	38	36.2
1979	45	31.8

(source, Hood and Young, 1983, p.80)

Schaffer confirms that the incentive policy was the most important factor in attracting industry (as opposed, for instance, to the availability of a cheap labour pool). He also argues that the administrative discretion typical of Irish administrative culture, combined with adept MNC bargaining, produced a distinctive political process and some very favourable outcomes for MNCs, hence:

> the instrumentation of the new (incentive) policies set up new rules and prizes: successful access to favours of government development institutions. There was then a coincident domination of an 'access game' by foreign enterprises. The game was discretionary and complex. At the same time it was extraordinarily and demonstrably generous to the winner, the favoured and successful applicant, in what it gave him and in what decisions it left in his hands
>
> (Schaffer, 1979, pp.240-41).

Hood and Young's sample survey confirms the declared importance of incentive structures. Comparing the responses of MNCs located in Ireland and in the British regions shows that incentives are a far more important factor in Ireland:

Table 3. Location Determinants in the UK Assisted Areas (AAs) and the Republic of Ireland.

	Govt. financial assistance				tax structures			
	total no.	%	AAs %	Ireland %	total no.	%	AAs %	Ireland %
Very Imp.	40	33.3	27	65	15	12.5	-	75
Imp.	14	11.7	12	10	4	3.3	3	5
Not Imp.	59	49.2	54	25	91	75.8	88	15
N/A	7	5.8	7	-	10	8.3	9	5
	120	100	100	100	120	100	100	100

Imp. = Important (source, Hood and Young, 1983, p.257)

note: based on a comprehensive questionairre and interview programme over 1981-82.

Thus two thirds to three quarters of the MNCs in Ireland said that financial and tax incentives were 'very important' in their location decision. These firms could be said to be the subsidy maximisers and from the dependancy viewpoint the over-reliance of the Irish industrial economy on such firms has been regarded as producing distortions in the short term and insecurity in the longer term. Seers concluded that, while Ireland's industry had performed dynamically up to 1980,

> the capital has been predominately foreign in origin, so that levels of output and employment in this sector could be affected by changes in the worldwide policies of a number of corporations over which the Irish government would have virtually zero influence
>
> (Seers, 1980, p.308)

This analysis poses the question in the Irish case as to whether preferential treatment given to multinationals, added to their other inherent advantages, is likely to produce dependant industrialisation.

Hierarchy, Strategy and the Multinational

There is disagreement on just how distinctive MNCs are. From one viewpoint they can be seen simply as large private enterprises, from another the larger MNCs can be seen as a remarkably stable group of global companies with relatively few entries or exits over extended time periods. Analysing this latter phenomenon Taylor and Thrift point to distinctive 'cohorts' of, respectively, large regional multinationals and a group of 'global' corporations. They identify complex organisational changes and gaps which make entry to such groups difficult and they suggest that

> the weight of the argument developed on the evidence from industrial economics is that multinationals are a group of enterprises set apart from other types of business organisations, which may enjoy seperate and distinctive forms of development (Taylor and Thrift, 1982, p.19).

The ability of multinationals consistently to succeed and to prosper is based on a combination of economic and political advantages. There is no space in this paper to review either the economic literature or the debates over mercantalist versus supra-nationalist interpretations of the MNC's relations with states. What should be emphasised, however, is that MNCs are quintessentially political organisations. They distribute and redistribute resources between states according to managerial discretion and corporate strategy in a system governed partly be economic constraints but governed also by authority relations in a managerial hierarchy.

While economists have always accepted 'external control' as the defining feature of a multinational affiliate it is only recently that the importance of the internalisation of transactions within the multinational has been recognised. The most authoritative contemporary economic theory of the multinational thus incorporates internalisation as one of three key features (the others being ownership and locational advantages, see Dunning's 'eclectic theory of the multinational' in Dunning, 1981). The importance of transactional analysis to the understanding of the growth of

the firm was noted above. Chandler (1977) has demonstrated how the growth of American large firms can be explained by the greater efficiency of hierarchical coordination by management over market coordination by contract. At the same time Williamson (1975) has analysed the circumstances in which authority relations within the firm - and the evolution of 'firm governance' - will substitute for the market. He establishes circumstances in which open contracting in the market leads to gross inefficiency due to human and to organisational factors. The human factors include bounded rationality (à la Simon), and opportunism (defined as "self interest seeking with guile" - Williamson and Ouchi, 1983, p.16); the environmental factors are uncertainty/complexity and small numbers of transactions. Williamson is thus directing attention to the internal organisation of the firm and to the way in which transactions can be controlled more efficiently within the firm than within the market. For economists this is a new research project:

> the firm as a production function needs to make way for the view of the firm as a governance structure if the ramifications of internal organisation are to be accurately assessed
>
> (Williamson, 1981, p.1539 - emphasis in original)

The sentiment is one that political scientists could cheerfully subscribe to.

The 'new economics of organisation' has given rise to great excitement (Moe, 1984), and great controversy (Francis et al, 1983), and is having an impact on policy analysis (see Geroski and Jaquemin, 1984). As yet, empirical applications are modest but in relation to MNCs there appears to be a potential for analysing the internal operation of managerial discretion, integration, location of decision making and evolution of corporate strategy. Take, for instance, the issue of corporate strategy.

For a MNC current theory suggests that it gains cost advantages from internalising transactions. But, by the same token, for an extensively integrated MNC, the level of internalisation is high and must itself be controlled in the absence of market signals. In short, the MNC has to

evolve its own internal plan or strategy in order to allocate resources, to control activities, to identify volumes of purchases and sales, to identify technological applications and so on. The importance of internal strategy and planning is therefore central. Put at its most forceful it is not a strategy in the market, it is a strategy instead of the market; for Chandler and for Williamson the hierarchy of the firm substitutes for the market. Again, it is not that the MNC will probably have a comprehensive strategy, internalisation theory asserts that it must have a comprehensive strategy. The strategy is not designed simply to exploit a particular advantage, in important respects the strategy is the comparative advantage.

Simply to assert the importance of 'corporate strategy' leaves a more clearly defined but still substantially unexplored research field. It is necessary to analyse corporate policy in global corporations just as it is necessary to analyse industrial policy in governments. An understanding of corporate policy could lead to elementary changes in government's dealings with multinationals. It is, for instance, unproductive to offer investment incentives if the 'policy' of the company is to take decisions on purely commercial criteria, discounting incentives. Similarly, discussion of corporate expansion plans with local management is pointless if corporate policy is to make all investment decisions in the US headquarters. At the same time, reification should be avoided. Just as government bureaucracies suffer dysfunctions, and policies are often contradictory, so the multinational strategy, while achieving minimum levels of efficiency, is likely to be ambiguous in design and imprecise and confused in application. As Williamson (1981, p.1550) points out

> merely to transfer a transaction out of the market into the firm does not, by itself, assure that the activity will be effectively organised thereafter. Not only are bounded rationality and opportunism ubiquitous, but the problems presented by both vary with changes in internal organisation.

The problems this poses in dealing with MNCs can be illustrated by the two issues of location of strategic decision making and of internal

administrative control.

The existance of a strategy implies some central design and decision-making capability which has, in turn, certain implications for organisational structure. Both Williamson and Chandler testify to the advantages of the 'M -form' corporate structure. Unlike the 'U-form', which incorporates functional divisions into a unitary hierarchy, the M-form involves a multi-divisional structure of product or geographical divisions coordinated by a headquarters staff. The divisions have, in theory, considerable operational autonomy but the headquarters is responsible for evolving, coordinating and controlling the strategy. The literature on multinational business organistion is agreed that American corporations tend to be highly centralised, European less so and Japanese relatively decentralised in their decision making (see, for instance, Garnier,1984).

With centralised decision making comes the necessity for detailed control over multinational affiliates. There is, again, a considerable literature on the scale and intensity of control which confirms firstly, that external control is widespread and secondly, that it is often less than effective. Management text books pay considerable attention to functional and geographical control strategies (see, for instance, Fayerweather, 1982; Robock et al, 1977). Such textbooks are, incidentally, fascinationg in their discussion of 'political risk analysis' (ie. risk of government exerting control over the enterprise) and in their cold-blooded, dispassionate analysis of ways to avoid, minimise or counter such risks (see, eg. Robock, et al, 1977, chapter 12, 'The Countervailing Power of International Business'). Centralised external control gives rise to a series of potential dysfunctions, including 'executive frustration', for instance:

> a senior US subsidiary vice president seems to have voiced the concern of many when he narrated the following episode: 'The opening of regional headquarters in Brussels has taken away much of our decision making power and authority. ... we voiced strong objection to an advertising programme that the regional headquarters proposed ... our objection went unheeded and the advertising campaign turned out to be a disaster. We are also having problems recruiting managerial personnel

> because the job lacks any real challenge and decision making authority'
>
> (Negandhi and Baliga, 1981, p.112)

The indications are that in order to overcome control problems MNCs are moving away from blunt controls over resources (eg, giving permission for investments or dictating technology) and towards 'subtle controls'. Mature MNCs are turning to the creation of an 'administrative context' which "may be defined as the net effect on managerial behaviour of influence mechanisms such as executive compensation, budgetting systems and career progression patterns" (Prahaled and Doz, 1981, p.194). In other words, 'corporate culture' is important in understanding corporate strategy and control.

One important aspect of that culture is the attitude of businessmen to state intervention. US businessmen are regarded as being remarkably hostile to the state and Vogel has argued that "American multinational corporate managers could transfer the suspicion of government of their forefathers to the international arena" (Vogel, 1978, p.78). The rejection of state intervention has been seen as a 'classwide rationality' of the US corporate elite (Useem, 1982); it finds echoes in empirical work such as Hood and Young's (1979, p.188) discussion of a

> frequently cited issue, namely conservatism amongst management at corporate headquarters. Attention was frequently drawn to to the fact that the parents of many of the (Scottish) sample firms were located in the conservative mid-West of of the US. Discussions of the UK environment and government policy thus often turned towards the bias in the perceptions of US management.

In applying such arguments to the issue of MNCs and subsidy four propositions emerge. First, for the large, global US corporations which are especially important in Britain and Ireland, the key decisions which subsidy regimes seek to influence are governed by a mandatory corporate strategy. Second, that strategy will be constructed either regionally in Europe or centrally in the US by a seperate, specialised directive staff.

Third, in order to influence decisions government officials must understand the main features of the strategy and negotiate directly with the directive staff. Fourth, negotiation will be impeded by differing strategic objectives and by the innate suspicion of governmental 'interferemce' typical of the US business elite.

Such analyses are not new. Similar conclusions about firm organisation have been incorporated into radical critiques of the MNC. Thus Vaitsos (1980) writes that:

> corporate internalisation has created large zones of administered economic systems within which the notion of market has little if any meaning (p.30),

adding that

> if it is to be managed effectively worldwide corporate integration requires a highly centralised and hierarchical decision making structure ... These (multinational) firms have developed into the most centrally planned, monitored, controlled and managed economic entities in the world economy (p.34)

Vaitsos goes on to argue that the interaction of the bureaucracy of the firm negotiating with the bureaucracy of the government produces a position in which "the state assumes discretionary positions to match similar discretionary policies of firms", hence firm discretion over location means that "corporate integration leads to competitive bidding by the states whose markets are internalised by such firms" (p.36).

Vaitsos' conclusions on centralisation and integration are subject to debate but they now appear far less controversial than they would have seemed in the mid-1970s. There has been something of a theoretical convergence which stresses the importance of the managerial hierarchies of the large firm. While there remains considerable disagreement over the normative bias of the economic theorising on hierarchies (see especially Bauer and Cohen, 1983; Francis, 1983) there is at least some certainty that empirical examination of the MNC is grounded on strong theoretical foundations and promises to offer crucial insights into the political behaviour of a woefully under-researched set of economic actors.

Conclusion.

There is subsidy competition between European nations and the combination of competition, with the pressures for subsidisation of declining national industries, has resulted in considerable subsidy escalation. A recent study provides the following comparison, and it must be assumed that more up to date figures would indicate a continued increase:

Table 4. Share of direct subsidies (tax relief excluded) in gross investment, %

	1970	1975	1977
FRG	5	7	7
France	8	11	11
Italy	7	14	13
Netherlands	6	9	12
Belgium	11	17	20
UK	11	20	12
US	3	2	2

(source, Jacquemin (ed), 1984, p.144).

While there is evidence that MNCs are 'subsidy conscious' there is far less evidence that they are 'subsidy maximisers'. The increase in subsidy is therefore more likely to be a function of public policy than of MNCs maximising subsidy opportunities. In other words, the limited available evidence suggests a process of causation in which states approach firms offering subsidy rather than vice versa. But once MNCs identify subsidy as compatible with their strategic concerns they are likely to prove formidable bargainers.

I have argued elsewhere that subsidy is a normal, proper, indeed inevitable tool of government (Wilks, 1984a). In the case of MNCs, however, it is clearly not sufficient in itself to secure desirable policy outcomes. The logic of the MNC's international integration and strategy is that subsidy will indeed become simply a bonus and government agensies need to establish some administrative control in order to guarantee that the benefits subsidy is intended to produce indeed materialise. Governments need to understand corporate strategies, to bargain amendments in them (in which

process subsidy may be important), and to establish some process of post hoc accountability. How this is done, in terms of policy objectives or administrative instruments (such as planning agreements or inward investment review agencies) is a subject for another paper. What must be emphasised is, that when it comes to multinationals, subsidy cannot be analysed solely in terms of altering market pressures but must also be seen as a bargaining counter between two (or more) complex, hierarchical organisations.

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POLITICS AND BUSINESS IN THE U.K., 1974-1984: FROM CORPORATE TO COMPANY STATE?

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POLITICS AND BUSINESS IN THE U.K, 1974-1984: FROM CORPORATE TO COMPANY STATE ?

The dominant paradigm in the analysis of government-business relations in Britain has remained that of an unbridgeable gap between the two sides, incongruence of goals and values shaping decision making, and a marked antipathy of business to politics (Moon, 1971; Hansard Society, 1976; Gamble, 1981). Checkland (1971: 204) , for example, has noted the antagonism of British business to state help and subsidy, rooted in a historical tradition of independent entrepreneurship , whilst Wilks, in a recent survey of reactions to Government policy responses to the economic crisis in the 1970's, is led to stress the absence of a "remotely technocratic dialogue " between government and business as a source of policy failure on joint ventures, endorsing Wright's observations on the " three cultures of government, bureaucracy and enterprise " (Wright, 1982: 4 ; Wilks, forthcoming).

What these, and similar perspectives emphasising the lack of integration between political and business cultures amount to is a diagnosis of an industrial malaise in Britain that is at its roots sustained by deep (and class based) antagonisms between government and the two sides of industry

accounting for the peculiar resistance of Britain to the "blandishments of corporatism " , (Shonfield,1974 Schmitter, 1976; Schmidt, 1982), and the speratism and relative autonomy of the political and market spheres (Lindblom, 1976, Bell, 1976) . Such an institutional separation of politics and business have contributed to a renewal of interest in normative theories of government focussed on the functional needs of the economy for more integrated forms of functional interest representation, (i.e, neo- corporatist political theory) , and a faith in the possibility of institutional changes in the presently chaotic arrangements for representation of business as one possible line of attack on political troubles underpinning the poor performance of the British economy (Ionesco, 1984; Gilmour, 1974 ; Jessop, 1979 ; Cawson, 1982; Grant, forthcoming *). At the very least, such perspectives and diagnoses have helped to re-focus attention on the meta-politics of representation: questions of who should be represented around the bargaining table, how , and with what effects on economic order (for a discussion of this problem in relation to the influence of " distributional coalitions " within the European Community, see Willis, 1984).

Although separatism and relative autonomy may have been reasonable descriptive labels for the institutions of public and private governance in Britain up until the early 1970

's , there are a number of reasons for doubting their adequacy as a depiction of present and developing relationships, not the least of which is the impact of economic recession on the European economies in promoting a more accomodatory and pro- market stance towards business. In marked contrast to the dichotomous relationship presented from the former perspective, empirical evidence in recent years has revealed growing interdependence and interpenetration between business and government , and a considerable trade in ideas and personnel between the public and the private sectors of the economy. State interventions to promote more competetive markets have also increased in scope , with a consequential loosening of the ties between national governments and economic aid to the declining (and domestic) industries. Finally, recent theoretical work has also pointed to the importance of greater attention to the role of " private governance ", to coin Lackoff's phrase (Lackoff, 1976) , and the pivotal role of intermediary organisations and associations in mediating between public and private enterprise (Schmitter and Lehmbruch, 1981). One consequence of these developments has been to point the need for a more dynamic model of the interaction of political and business culture, and the influence of both of government and market based authorities, on the political environment of economic decision making (Willis, 1985).

In this general overview of developments in

government-business relations in the U.K , the impact of changes in economic policy and policies of governance on business culture will be considered, and the case for a more dynamic and interactive model of government-business relations sketched.

It will be argued that government policy has not only asssumed, but also contributed to an enlargement of the role of private associations <u>and</u> individual firms in the governance of the economy . A gap between the culture of governments and government bureaucracies and business culture has remained an obsessive concern in many attempts to uncover the causes of policy failure and problems of " ungovernability ". Contrary to this presumption, it will be argued that a major focus of interest may be the symbiotic nature of the relationship between government and trading interests, and the expanding role of " private governance " in the management of the British economy.

Whether these tendencies towards what we have elected to term, following Ganz (1979) , the "company state ", are likely to contribute to greater dispersion of the freedoms associated with the decentralised and pluralistic state, or detract from these, are left as an agenda for research . However, from the evidence on the emergent partnership between government and business, and emergent patterns of subsidy and self- regulation of business, there do appear to

be new and complex interdependencies between the public and the private sectors. Against these trends towards enlargement of the spheres of "private governance "we condider it fair to ask how far the dominant paradigms of government- business relation in Britain (both liberal and neo- Marxist) have provided anadequate analytical frameworks for understanding changes and tensions in industrial policy and industrial organisation . In particular, the erosion of the division of responsibilities and roles between hierarchically organised systems of government , and their functional equivalents in private markets, suggest the need for the construction of new paradigms for market and political choice and a search for more comprehensive and relevant criterion for assessing the efficacy of the boundaries drawn between the two. The alternative agenda, of course, may be is for a retreat from the specifically political problems of economic order, and a retreat into or reconstruction of older ideologies of capitalist markets.

The overview of theory and evidence on the emergent institutions and policies of private governance is in three parts. After a brief overview of the different available theoretical perspectives (Part I), and some of the principal features of government efforts to promote " enterprise culture, and business responsiveness to this (Part II) , the paper focusses on changes in business

culture and the political mobilisation of business (Part III) . Particular attention is paid here to evidence on the variability of government- business relations between sectors of industry, between firms of different types, and over time, and between different policy arenas and policy types.

Finally, in Part IV , we suggest some theoretical implications for general theories on nation building. It is concluded that developments in the relationship between government and business in Britain are profoundly paradoxical viewed within presently held paradigms on the relationship between government and business, politics and markets, and contradict the widely held conviction that Britain is increasingly tending towards the era of "strong " government and the centralised, unitary state. Indeed , although clearly not federalistic or consociational in character, industrial policy in Britain bears the stamp of compromise and the survival of pre- Union constitutional rights at the periphery, characteristic of what Rokkan and Urwin have dubbed " the union state " --that is, Britain stands one step down from the " unitary" state in terms of centralisation tendencies and territorial integration (Rokkan and Urwin, 1984; but see Page, 1984).

To state our main conclusion by way of a prologue, programmes involving subsidy to industry, and the de-

regulation of the private sector (or more accurately, a shift to self- regulation) have both taken place within, and contributed to further complexity within, systems of governance that are highly decentralised, and characterised by the " maze " rather than the "mace" to adopt Rose's characterisation of the territorial dimension of the British policy process (Rose, 1983) .

WELFARE CRISIS AND THE INDUSTRIALISATION OF GOVERNMENT.

The industrialisation of government is a term that has been coined within the British Civil Service to describe a managerial revolution in the public sector. The term implies an effort to close the gap between political and commercial decision making through a variety of means - the recruitmentm of personel from the private sector of industry (especially commerce) into the command posts of the Civil Service and the Nationalised industries, the importation of market principles and criterion into decion making on public investment and procurement, and, at the level of service delivery, in the the development of " user friendly " services.

Tables 1 and 2 abstract from statistical sources (both government, and non-governmental) in order to derive some indicators of trends in government intervention in the economy and the organisation of business in the U.K for this period , and related changes in business climate and

industrial relations. Some of the quantitative measures currently available (especially for the latter) leave a great deal to be desired, given changes in the " technologies" of political pressure that have occured historically (Tilly, 1979; Perrone, 1981) However, the trends descernible, which have been generally in the direction of a more decentralised approach to industrial policy in the U.K , and greater reliance on the private market for regulating economic behaviour of firms, do not seem thoroughly consistent with a model of government-business relations in Britain assuming antagonism between government and business. To be sure, the attempt to break down the barriers between government and business have been discriminatory : the CBI has long been discounted by governments to the Right, and there has been a tendency towards the exclusion of labour organisations from the previously established tripartite institutions (for some comparative trends see ILO, 1985, and our other workshop paper) .

Although the most dramatic expressions of the industrialisation philosophy are in the attempts to stimulate ' enterprise culture' and the colonisation of the the command posts of the Civil service with managers drawn from industry and commerce (mainly the latter), the drive has been consistent at most levels of government and the economy . Important developments include programmes aimed at

encouraging co-management, management buy-outs, and share ownership , the stimulation of small business enterprise as a response to structural unemployment, and the growth of co-operatives.

The political presssures and responses of business are examined in greater detail in our other paper (Willis, 1985b). However, a significant out-growth of these policies has been the rapid growth of novel forms of enterprise involving partnership arrangements between the public and private sectors, and the importance of support from established businesses in encouraging new investment. For example, co- operatives have shown an above average rate of growth within the manufacturing sector since 1979 , notoriously a depressed sector of the British economy. As those participating in start- up schemes generally lack business expertise, an important factor aiding growth and survival has been the support provided by established business through local co-operative agencies (CDA's) and Local enterprise boards such as the Greater London Enterprise Board (GLEB). A study carried out by the Co-Operative Advisory Group (CAG) for example, shows the co-operative sector to be expanding rapudly, against a secular decline, forming at the rate of 125 new co-operatives annually . Although the total " value added " to the economy seems unlikely to be enormous (there are presently 750 co-operatives registered with CAG, acccounting

for 6000 workers and an annual turnover of £200m in 1984, the rate of capital formation is not insignificant given the general decline in manufacturing.

--Tables on key indicators
about here.

Many things can be read into changes in summary indicators customarily employed in charting the health of the economy, and survey and other evidence confidence governments performance in managing this. Moreover, economic indicators and forecasts frequently prove to be more important for their short- run political implications, (as barometers of political opinion that markets hold of government policy) than their value in the long run in charting the actual performance of the economy .(See apppendix) There is for example the problem of distinguishing between the effects of market related changes in capital flow, and profits , and fluctuations in the measure of confidence or support offor the Conservative Party indexed in the flow of contributions to the party (Pinto- Duschinsky, 1979) . Since the onset of recession, financial support from all but the top companies has been highly volatile. On the other hand, party

political support has always been more volatile, and limited in scope and importance, than the participation of business in governing associations and decentralised agencies of government (for example, participation at the grass roots in Conservative Associations, representation on consulative bodies, and local Chambers of Commerce, membership of trades associations, staff employed in specifically political or policy oriented functions). ***

The evidence on business involvement, and willingness to be involved in a closer partnership with government is mixed. However, what can be unequivocally concluded is that the idea of clearly differentiated and insular " sides " of industry and government , each with their distinctive positions and roles, is seriously misleading.

Problems of Explaining the Break with Welfare Consensus

The close links between the re-prioratisation of market values and objectives of economic growth, and the growing fiscal crisis in the welfare states has been the subject of a growing body of literature (O'Connor, 1976; Habermaas, 1976; Scharpf, 1978; OECD 1979; Trilateral Commission, 1976, Offe, 1979, Mishra, 1984), and, unfortunately for our purposes, has rarely been posed as a matter of relationship between individual economic actors.* The range of questions that can be raised from empirical evidence on policy trends and the impact of government led enterprise at the level of

the individual firm and economic actor or nonetheless daunting : what accounts for the apparent shift away from regulation to self- regulation, and the apparently weak opposition of private enterprise in most cases to that role; what accounts for the ineffectual opposition and in some cases modest support amongst organised labour , for Conservative Government privatisation programmes and the reduction of public services, or for the increasing support gained for what might be termed the " industrial-achievement - performance " model of welfare, and continuing drift away from redistributive social policy objectives among trade unionists ? What is it, in the relations between government and private enterprise, that led to the collapse of corporatism and the " social contract ", and yet has left most of the tri- partite institutions established intact, and politically active ? Are the ambivalent attitudes towards public subsidies and taxation a part of the structural contradictions of a politicised economy, or the result of " fiscal ignorance " ? or a reflection of the successes of a Conservative Governments campaign against high levels of public spending, and a growing acceptance of a "public burden " model of welfare and public expenditures evident in the "too-few -producers " debate (Bacon and Eltis, 1976) and the more recent efforts under the Thatcher administration to " push back the frontiers of the welfare state" ? If the answer to the latter question and a few

others, lies in the dominance of a culture emphasising private enterprise, then how can the present level of support for public expenditure amongst some private enterprise groups be accounted for- do the differences amount to political cleavages arising from an economic and structural differentiation between two types of industry (core and periphery) , or, are the differences more cultural in origin : to use Wyn Grant's terms, between " tripartite " and capitalist aggressive firms (Grant, 1984) ?

A central issue here is the underlying causes of the break with consensus politics and corporatist systems of government since the mid- 1970's. The re-surgence of ideological politics and the politicisation of business appear to have been among the more paradoxical outcomes of Conservative commitments to reduce government interference in the economy, and there has been a renewal of interest among both political scientists and economists in the issue of the governments role in relation to markets (e.g Shonfield*, Lindblom*, Hirschman*, Olson* , Ouchi*) . A priori theories and normatively based judgments on the correct strategies for government managment of the economy abound. However, there has so far been a lack of agreement on the explanation for these discontinuities and divergencies in policies , or the reasons for policy failures. The overview of comparative evidence on the growth of grant- economy, and the causal importance of

government-business relations and the political activities of business should try to throw some light on these issues.

These, and a number of other questions that can be raised from summary indicators of the changing climate of government and business relationsin Britain, clearly point to the value of a more detailed considerationof the culture of business, and the meaning of government intervention in private enterprise from the perspective of the businessman. A summary of the best evidence available on these points is given in section III. However, before approaching this task, it is useful to provide a brief descriptive background to the types of innovation that have been attempted in government- business relations, and the reciprocal involvements in governmental and business decision making on issues of national economic investment.

The Government as Legislator on Business

A classical liberal conception of government as neutral arbiter intervening in economic affairs in response to acknowledged market imperfections has been largely replaced in the development of the post war welfare states by a more positive conception of the role of government. In what has been described as a ' ratchet effect' (the British economy lurching after policy directions established by parties of the Left and the Right when in

government) , policies and legislation since the mid 1970's have been widely depicted as contributing to economic traumas (Tufte, 1979). However, a closer inspections of the various strands in the development of industrial policy, suggests that the extent of continuity in programmes of support to industry can be obscured by attention to the dramatic , and to the gloss placed on the use of policy instruments by political rhetoric. For example, important continuities are discernible in attempts since the mid 1970's to restructure the welfare state in favour of objectives of economic growth (under the Labour Government) , to achieve "government by consensus" (under the Heath administration) to establish social-contract, under the Wilson/Callaghan (Labour)administration , and most dramatically in the anti-welfare state and pro-market policies of the Conservative Administration since 1979. However, the scope of legislative activity having implications for business has continued to increase.

How have governments conceived their function vis a vis business ? One indicator is the volume of legislation devoted to influencing business behaviour or business environment. Bearing in mind the importance of attending to substantial variations in the use of policy instruments (or deliberate under- utilisation of these) , Table 3 below provides a classification of the targets of government, analysed in terms of the extent to which legislation has

been restrictive, supportive, enabling or promotional.

summary of major legislative and
administrative changes about here

Legislation can be either positive or negative in relation to business investment : that is, it can seek either to extend governmental influence, or to remove the constraints imposed by previous legislatures; it can seek to regulate or de- regulate; it can seek to substitute for, complement, or encourage private investment in industry. Finally, legislation might be categorised in terms of the " prime beneficiary " of interventions (consumer, investor, manager, small or large buiness, public or private enterprise etc) .

Contrary to the dominant paradigm (shared by some elements of the business community) , much legislation appears to be supportive or promotional, rather than restrictive , and, with some important exceptions in the restrictions imposed on conglomorates amd monopolies, have contributed to the establishement of programmes that are predominantlky market led. In fact, since 1971, there have been some 108 pieces of legislation discriminating in favour of small businesses alone. Business groups seem more willing to enter into policy debate, though often in a pre-emptive fashion [e.g

responses to the Gower report on the regulation of the stock exchange, or the opportunism of the Building Societies on legislation to end the legal professions monopoly on house conveyancing]. With some notable and some heroic flops (provisions for job- spitting, proposals to secure a greater proportion of Local Authority education budgets for business related uses, and the shelving of the reform of Local property rates are cases in point) , government measures have generally been viewed by politicians as helpful to business, and worth following with more of the same thing.

Business responses to legislation

Even a cursory overview of the evidence on the growth of the subsidy economy and business responsiveness to this suggests considerable variations between different sectors of the economy , and it is difficult to establish any common patterns . However, in general terms, government emphasis on a more selective approach , and the avoidance both of " automatic " programmes of subsidy and comprehensive centrally planned interventions, appear to be general trends in the European polities, and have increased both the degree of decentralisation in administrative structures and the degree of administrative discretion . In principle at any rate, both have been favourable to business- are " user friendly ". How even are the response of business ?

The outstanding developments to be explained politically are the de-politicisation of economic policy, especially in decentralised programmes involving direct aid to industry , and the politicisation of business. Both parties have been concerned to promote an environment less restrictive of business enterprise since the early 1970's .

Table 3 Financial Support to industry about here.

lthough much of the pro- business legislation since 1979 has been of a countervailing nature , in the sense that it has sought to remove restrictions on business imposed by previous governments, there has also been a plethora of schemes providing positive support to business, especially small businesses (for example, the Business Expansion scheme whereby funds invested in unquoted companies attract 50% tax relief, schemes affecting return on capital such as the Venture Capital Schemes, Investment Interest Relief, Enterprise Allowance; schemes seeking to encourage the diversion of investments placed by the large financial institutions towards small business, such as the Loan Guarantee Scheme, in which government guarantees up to 80-% of loans to small businesses; and schemes giving financial assistance to individual sectors of industry (such as the Small Engineering Firms' Investment Scheme (SEFIS) which

meets up to one third of the cost of advanced capital equipment , recently re-introduced, and which is to be extended to include the textile industry.

Paradoxically, the net result has not always been perceived as particularly helpful to business. A number of schemes have been viewed as merely cosmetic or as having mainly favoured (or been exploited by) well established corporations and the City (eg. the criticisms advanced of SEFIS by the Union of Independent Companies (which speaks for small manufactures) . The general attitudes of businessmen to government have also continued to be on the whole fairly negative. An index of the gap between policy intention and response of business has been provided by recent survey evidence on small businesses in the EEC countries .

Table 4 Survey of Business Confidence
in Government about here

On a ranking of the business environement on six dimensions (labour, prices, taxation, finance, legal discrimination, economic activity) , the U.K ranks ninth overall, with only Italy providing a more unfavourable assessment (though the U.K was top of the league on favourable taxation).

Policies of Governance:

There has been a significant shift in the quality of legislation away from regulation towards positive support for economic enterprise, and the adoption of "commercial " principles. Whilst regulation of business has increased in stringency within the EEC, in marked contrast to supra-national policies, the main thrust of government policy at the national level in Britain has been a shift away from regulation, to self - regulation (with some important exceptions in relation to the Pharmaceuticals industry and anti- monopoly legislation)). Both the major parties have been concerned to promote an environment less restrictive of business enterprise since the early 1970's , with a pronounced shift in favour of the decentralisation of decision making and market-led investment in industry (e.g in regional policy ; housing and land-use ; and the concern to combat inflation by restoring market disciplines and incentives rather than through an explicit prices and incomes policy . However, the Conservative Administration since 1979 has taken the "industrialisation " of government furthest, most dramatically in legislation for the "privatisation" of the public sector.

summary of the estimated costs of privatisation
about here

Much of this legislation can be accounted for by the autonomus influence of the " New right " within the Conservative party (Bosanquet, 1984; LaGrand, forthcoming) , as doctrinaire, or intellectually founded policies, rather than as a response to articulated business interests, or concerted pressure group activity . However, little is known of the informal influences of business on policy. Radical critics ofconventional liberal analysis of power, focussing on beneficieries of the rules of the game rather than overt political action , and adopting a more three-dimensional model of power (Lukes, 1971, Saunders, 1981, Simey, 1982) have sought to consider the significace for understanding of the structure and distribution of power of things not done (the none- decisions).

A more obvious explanation , which amounts to much the same, is that the policies of the new Right emphasising the providential powers of markets over those of governments is a cynical cover- up for impotence (or a realistic acceptance of the futility of national solutions to international problems) . The inability of British governments to develop a coherent and acceptable legislative framework for industrial policy, incomes, profits and industrial relations have been attributed to the veto power of entrenched economic interests groups, both on the side of

Labour and Capital , and in the growth of multi- national companies (and internationalising domestic industries), on the local economy. Thus, willy nilly, governments have been pressed into an international "subsidy competition" in attempts to attract inward investment and to back national champions in the sunrise industries. Wilks paper for the Politics of Industrial Subsidies workshop (Wilks, 1985) suggests a number of factors in the internal organisation and operating environment of MNC's promoting subsidy consciousness. The parallel competition for " de- regulation " of markets seems to be a fit a similar logic.

An index is the absence of legislation in areas generally accepted as crucial to the management of the British economy .The failure to grasp the nettle of overseas investments by British finance, and the growing dependency of British investment on foreign ownership have been particularly contentious areas of non- implimentation of legislation . Of course, there were powers under the 1975 Industry Act, but these have never been used, by no means an isolated example of non- implimentation that strengthens the case for a consideration of cases of " non- decision" and the " anticipated reactions " theory of British policy making. Nor have the effects of greater freedom for business investment decisons been judged to be wholly beneficial for British industry. The abolition of exchange controls, in 1979, for example , inspired by and thoroughly consistent with a free-

market ideology, have had dramatic consequences on re-investment patterns that have been held to be largely counter-productive in terms of investment in indigeneous firms.

Table 5 and 6 on the growth of Overseas investment and pensions funds about here

De-regulation of industry has been another contentious issue, especially under the Thatcher administration since 1979, and legislative proposals have prompted opposition from business, as well as support (for example, the intention to remove restrictions on the activities of Building Societies; the reform of National Insurance Premiums). However, the de-regulation and de-nationalisation lobbies amongst business have so far failed to grow to be the significant political force they have become in America . Indeed there are pro-regulation and pro-state industry lobbies within the private sector (** examples , support for Trade Standards that help maintain an advantage in home markets for British based firms; support for further public investment in British Rail).

Finally, and examined in greater detail in our other paper, the lack of adequate provision for the monitoring and appraisal of programmes involving selective assistance to industry , and the adverse effects of subsidies aimed at

attracting inward investment have been taken as an index of the declining sovereignty of government over economic development- a symptom of the replacement of the authority of the mace by that of the maze- the network of policy communities evolving and colonising decentralised systems of government.

The Government as Money-Holder,

Given observations of some trends in the control of markets and finance advberse to indigeneous firms, it is worth considering the relationship between pressures for an increased role of government as money - holder, and changes in the structure of markets. For example, the increasing concentration and interdependence of industries in the U.K. Various measures of financial interdependence show that the network of economic relations between the largest firms is becoming more inclusive (eg. the market value of company stock held by financial institutions) [*]. What has been the impact of such structural changes in industry , and countemanding policies on coalitions of interest groups and the wider political agenda?

Vested interests in the expansion of the public sector , both in and outside government, have increasingly been viewed as a major cause of uncontrolled public expenditure

growth and "overload" of the Western economies, and the British economy in particular (**Trilateral Commission, 1976; Scharpf,1976 Wilensky,1979; Rose and Peters,1978 Bacon and Eltis ,1974 Olson, 1980). Moreover, the belief that such growth has diverted productive resources to unproductive sectors of the economy has become a significant underpinning of government economic policy (both Labour and Conservative). The upshot has been "tax-welfare backlash", and a growing conviction that the reduction of the size of the public sector is a means of stimulating growth of the British economy . Although the formula of diversion of public revenues in subsidy of private enterprise and, consistently with market ideology, a dramatic reduction of public subsidy to industry has been rationalised as pro-market , thepromotion of " enterprise culture " , the new antidote, has met with both criticism and resistance in the private sector. One explanation for the incipient Keynsianism of representatives of British business (such as the CBI) is the realisation of the extent of public- private sector interdependencies, and the adverse effects on markets of draconian cuts in public spending.

A measure of the value of government capital spending and procurement policies in the nationalised industries and the public sector, and the extensive impact of public expenditure cuts on the private sector can be gained from the summary tables below, the last taken from the most

recent Government Expenditure White paper (22.1.85). The results of more detailed estimates of the extent of interdependence, produced by the Policy Studies Institute, are discussed below.

Tables summarising the value of public expenditure about here

a) Government as money-holder: the proportion of GNP spent by government has continued to grow, and along with it taxation, despite the attempts of made by both Labour and Conservative administrations since the mid 1970's to maintain government spending within economic limits, and the commitment of the Conservative government since 1979 to the reduction of public expenditure.

A variety of factors might be advanced to explain this failure to reduce public expenditure to the desired level, including resistance of public sector unions, demographic trends affecting social security, and the erosion of the Government's revenue basis resulting from attempts to privatise the costs of social welfare and economic restructuring (See epecially, Klein, 1984) . For example, it has been strongly argued that the recent undervaluing of shares in the flotation of public enterprise such as

Telecom, and the use of redundancy payments to combatovermanning in British industry have been important in creating new constituencies of interest for more market-oriented policies (although it has to be noted that, whilst clearly a useful adjunct to Conservative government privatisation programmes, these tactics may have secured short term political gains, at the expense of long term political support). On the other hand, the adoption of a more market- oriented approach to industrial subsidy to regional economic development, which has been to the detriment of the depressed areas, has been aided by a political geography entrenching government support (on the Conservative side) in the more affluent regions (See Willis, forthcoming).

(b) private interests in public expenditure: the extent of the dependence of the private sector on the public sector has also been an important political factor contributing to anomalous reactions to privatisation programmes. According to one important recent survey estimate, (Harlow , 1984) Public corporations take some 70% of their goods and services from private industry (I3 billions in 1979/80). It has been estimated that about one third of private industrial sectors receive a substantial part of their turnover (around 10%) from the public corporations. A consequence of the sheer size of the public corporations has been a capacity to exert a powerful infuence on the

direction of technical change, product development and the structure of private enterprise . Whilst this has clearly been resented by business, the alternative approach emphasising more open and competetive purchasing policies (often at the expense of British contractors) , has hardly been appreciated (examples, defence contracting , eg the Trident contract)

(c) The government as employer: the public and the private sector are often viewed as rival . However, in recent privatisation programmes seeking to increase the role of the private sector in providing services, including social services, commercial services to industry , and some curious hybrid forms of commercial undertaking with social overtones , government has not only remained a major employer, but also increased its role at the margins in subsidising the labour market, particularly in special programmes for the unemployed and unemployed school leavers.

Table on special programmes about here

A further feature of government interventions in the labour market that has been clearly pro- business, is the combination of " carrot and stick " (subsidy, and forced redundancies) dictated by government economic doctrines on the relationship between high labour costs, unionisation,

and poor economic competetiveness. For exampl, employment subsidies have generally be pitched at below market- rate . The lack of concerted opposition to such undercutting of labour market prices has been noteworthy, and has been moderated by high unemployment .

days lost by strike action about here

Although the downward pressure exerted on wages (through displacement effects) have been construed as contributing to increased efficiency and improved factor mobility , the long term effects on industrial relations have been argely ignored. The economic costs of the miners' strike alone , has been sufficient to negate much of the value to industry of a government dedicated to market principles. The effects of a hard line against union power in inspiring business confidence are more incalculable. For example, ICI has recently signalled its confidence in the future of the coal industry (and in more predicatable supplies of coal in the future) in giving the go ahead to plans for the conversion of its private electricity generating stations to coal.

The Government as Expander of policy fields

The commitment of the Conservative Government since 1979 to the reduction of government interference in business, and to increasing the autonomy of business-- or the promotion of " enterprise culture " as Margaret Thatcher has summed

Conservative economic policies, has been based on a profound belief in what can be achieved through markets, but should not , then, be viwed as necessarily reducing the involvent of government in business, no more than in the " hidden hand " of Laissez Faire economics. Rather, government measures seeking to support the operation of markets, and to provide incentives to industry to produce goods and services , have contributed to an expansion of the sphere of government, albeit within a more decentralised administrative system.

What conclusions can be drawn so far on the transformation of government- business relations ?

The uneven hand of government has been a factor contributing to policy dissent, including within the Conservative Party's own backbenchers , and among the 'wets " among industrial leaders (particularly prominent in the consesnsus politics of the CBI). For example, by comparison with government resources devoted to providing subsidies to private enterprise , those devoted to the regulation of industry remains small (e.g the largely ineffectual role of the Wages Councils in enforcing minimum industrial wages; the non-enforcement of legislation designed to promote safe working practices and environmental pollution). Although business interests in general have generally supported de-regulation, these departures from the consensus politics

of the welfare state era have received mixed support.

Finally, in assessing the sometimes radical claims advanced by students of social policy concerning the extent of avoidance by busness of wider social responsibilites, has to be set the growth of social awareness among some , mostly the larger and nationally prominent firms, and the development of social accounting in the firm. There have also been some notable successes in co-operation between public and private agencies. For example, there have been substantial successes in the field of environmental health in comparison with countries such as the United States more dependent on regulation (Vogel , forthcoming) . Indeed , in some areas the welfare responsibilities of the individual firm have expanded significantly and controversially under government stimulus : for example, in the development of corporate occupational health insurance, and in job-creation and community enterprise schemes.)

Government preferences for meeting social needs through the market have also drawn business more closely into policy debate. For example, under the "job creation " programmes first introduced by the Labour Government, but massively expanded by the Conservative administration since 1979, large companies (such as the Association of British Travel Agents and the supermarket group Sainsbury's) now act almost routinely as management agents for government funded

schemes (example : the Youth Training Scheme (YTS) run by the Construction Industry Training Board , that have diverted YTS funds for the first year of heir apprenticeship schemes.

The upshot of these developments is that government and business have become even less sharply differentiated than in previous periods, the role of bodies such as the Manpower Services Commission (a Government Quango based in Sheffield, charged with much of the responsibility for interpreting and monitoring government manpower policies and job creation schemes) has continued to expand into new areas, whilst the pressures on business to take an enlarged role in govenment and acknowledge public responsibilities has increased. Moreover, the continuation of special programmes to create jobs in the private sector, through a variety of employment incentives to industry, has contributed to the continuing increase in the importance of government in the field of employment as an indirect employer- contributing to an expansion of the " policy networks " bringing together government and business officials - a growth of what Richardson and Moon have dubbed the " unemployment industry " (Richardson and Moon , 1985 and in preparation) .

CORPORATISM AND SOCIAL CONTRACT

The development of an enlarged social role for business under the stimulus of government financial incentives , has contributed to highlight the absence of clear co- ordinating structures between government, industry and organised labour in comparison with some other Europen countries, especially in wage bargaining, and prices and incomes policy, and the co- management of industry. Whilst a business culture generally hostile to etatiste corporatism has so far persisted, perhaps because of rather than despite the failures of the Heath (Conservative) administration and the Labour Parties "social contract", and against significant pressures coming from memebership of the European Community , the last two decades have nevertheless seen an increasing demand from business for a more positive lead from government in some taboo areas (e.g in industrial relations, wages settlements, trading relations with other countries , and industrial investment and product development) . However, there have been important variations in the political responsiveness of different sectors of industry, and between large and small firms . A more discriminating analysis of the costs and benefits of government intervention for different businesses, and in different economic environments, seems to emerge as crucial to furthering understanding of industrial policy, and the patterns of support and opposition to this.

What have been the effects of decentralist trends and pressures for an increased role of private associations in governance ?

The question has been addresed from a number of angles : the structure of interest representation, types of governing structure within industrial organisation , evolving legal frameworks, inter- organisational structures, and , less commony outside the field of industrial sociology, the culture of business organisations. In this section , we provide a brief summary of the evidence on business culture and attitudes influencing participation of business in politics.

Is there a common business identity or ideology?

It is difficult to give a simple answer to this question; much, after all, depends on the perspective that one adopts. However, even Marxist observers identify differences between what they term 'fractions' of capital. In general, businessmen do share some ideological traits, but there are also important differences of outlook and perspective.

Let us consider the similarities of outlook first. Businessmen generally support an economic system based on free enterprise, although they may differ about the desirable extent of government intervention. Even businessmen in nationalised industries tend to be market

oriented in their outlook. The overwhelming majority of businessmen are Conservative voters. There are businessmen who are Social Democrats, Liberals or Labour supporters; the current chairman of ICI is a Social Democrat in his personal life, and the chairman of one of the country's larget food processing companies appeared on a recent Labour party political broadcast attacking the Conservative Government's industrial relations policies. However, such individuals are the exception rather than the rule, and attract disproportionate attention because of their deviant behaviour. The best available evidence suggests that around 80 per cent of businessmen support the economic policies of the Conservative Party, with around nine per cent supporting the Alliance parties. Support for Labour policies is negligible. (Grant, 1983, 176-77).

Political donations by business firms are directed overwhelmingly to the Conservative Party or right-wing pressure groups of various kinds, although it should be stressed that the majority of firms give no political donations. There has been an increasing tendency recently for firms to make small donation to the Alliance parties as well as a larger donation to the Conservative Party. Some firms apparently take the view that a non-socialist opposition party would be preferable to a Labour opposition committed to socialist policies.

Discussion of differences between businessmen tend to focus on the perceived gulf between 'finance capital' and 'industrial capital', often reformulated in terms of a division between an alliance of finance capital and British-based transnationals interested in overseas investment, and medium-sized and smaller companies interested in domestic investment. The problem with this formulation is that there is little overt conflict between finance and industry in Britain (See our indicators of economic interdependence above). There have been some tensions between large and small firms, particularly where the larger firms dominate a given market, or where smaller firms supply larger firms. Perhaps some of the most serious tensions have been retailers and their suppliers (such as food manufacturers). The increasing market power of the leading retailers in Britain has aggravated the underlying tensions inherent in this relationship.

However, perhaps the most serious difference has been an ideological one, or at least a difference about the political strategy that business as a whole should follow. It may be crudely characterised as a tension between 'wet' and 'dry', or between 'tripartite' and 'capitalist aggressive' firms (see Grant 1984). The 'tripartite' firms tend to favour working in partnership with government and the unions; the 'capitalist aggressive' firms favour a more distant, sometimes combative relationship. The 'tripartite'

firms are more likely to be strong supporters of associative activity by businessmen, whereas the 'capitalist aggressive' firms are likely to be unenthusiastic about it. The 'tripartite' firms are more likely to favour reforms such as the introduction of proportional representation, or the use of incomes policies; the 'capitalist aggressive' firms are more likely to favour the kinds of policies followed by the Thatcher Government.

For example, ICI may be said to be a good example of a tripartite firm. It has always been a strong supporter of associative activity of businessmen, having been very active both in the CBI and a large number of sector and product associations. It does not make political donations as a matter of company policy, but its leadership has tended to be moderate in its political outlook. When Sir Michael Clapham of ICI was CBI President from 1972- 1974, the organisation went through the most moderate phase in its history. The ICI chairman at the time of writing, John Harvey- Jones, is a Social Democrat in his personal life.

GEC fits the mould of " capitalist aggressive firm " . It has shown little enthusiasm for associative activity, resigning from the CBI and subsequently from the Engineering Employers federation as well. Its government relations have been conducted on highly personal basis by its managing director, lord Weinstock, and have been characterised as a

resolute defence of the interests of GEC. However, although GEC initially enjoyed warm relations with the Thatcher government (cool relations with ICI and the Government culminated in a battle in the courts at the end of 1984) , GEC's combative defence of its own interests led to friction with government over the privatisation of telecommunications.

One must not overdraw the contrast between tripartite and capitalist aggressive firms. Many firms (perhaps the majority) fall into neither category, although they also tend to be the more politiclly quiescent firms. One is talking about 'tendencies' rather than clear cut factions; firms that take a 'moderate' position on one issue may take a 'hard line' position on another. Nevertheless, this tension is always present in business politics, particularly in the internal politics of the CBI; often it is subterranean, apparent only to the eye of the experienced observer in terms of sudden swirls on the surface of business politics. From time to time, it does surface, particularly in disputes about electoral reform or incomes policies, or at times of crisis in the CBI, such as Campbell Adamson's inadvertent attack on the Conservative Government just vefore the February 1974 election or Terry Beckett's speech promising a 'bare knuckle fight' with the Thatcher Government in 1980.

One point that needs to be stressed is that whereas the 'tripartite' tendency was generally dominant in the late 1960s and early 1970s, the 'capitalist aggressive' tendency has been dominant since the mid 1970's. These changes in the outlook of businessmen mirror changes in the ideological outlook of the Conservative Party; we would not like to speculate what the pattern of cause and effect was (although, if pressed, would give priority to the changes in the Conservative Party). However, unlike the Conservative Party, where the formerly dominant 'wets' have been largely driven out of government and stripped of effective political influence by the Thatcherite 'dries', the 'tripartists' have not been totally defeated within such organisations as the CBI. They have won occasional victories on such issues as proportional representation (to which the CBI is formally committed) and have persuaded the CBI to exert a restraining infuence on some aspects of government policy.

Political culture of businessmen

In discussing political culture, it is particularly important to be aware of differences between businessmen, particularly between small-scale businessmen (who are the numerically dominant category) and large-scale businessmen (who exert the greatest influence on an economy which is one of the most highly concentrated, if not the most highly concentrated, in the world). Even among small businessmen, there are likely to be considerable differences in outlook.

Consider, for example, the different social pressures faced by the proprietor of a small shop in a Yorkshire mining community; the owner of a small engineering workshop carrying out small batch production runs on a subcontract basis in the West Midlands; and the Sikh owner of a Sari workshop in London. The last example is not a frivolous one: many small businesses in Britain are now owned by members of enterprising ethnic minority groups.

Nevertheless, it would be foolish to pretent that businessmen in Britain do not share some values. The literature on government-industry relations in Britain stresses the distance that is perceived to exist between the outlooks of government and business. Businessmen generally adhere to a liberal ideology and do not, to borrow Vogel's (1978) phrase see the state as 'their' state. Although there are exceptions to the general rule, their preference is for a non-interventionist state and for as much autonomy as possible to take the course of action which they udge to be the best one for their businesses. The emphasis is on keeping away from the state, rather than developing a working partnership with the state.

Even if they do not like particular policies , British businessmen are prepared to obey the lawful commands of governemnt. However, as our emphasis on the notion of the

company state suggests, there are often "ways around" awkward legislation which remove any need for direct defiance. One mechanism is the exertion of influence over the implimentation of legislation through statutory instruments. In practice, this is made easier by a prevalent bureaucratic tradition of close consultation with business, particularly over the implementation of policies. In many technical areas - which can be of considerable importance to the profitability of a business - policy is often largely shaped through a process of consultation between government and business. A classic example is the making of quality control regulations affecting the food processing industry. (See Coates, 1984).

In summary , if businessmen have a common expectation of government it is that government, however good its intentions, is unlikely to properly understand the needs and priorities of business. This problem is often seen as being rooted in the separate career structures for civil servants and businessmen in Britain (compare France or certain features of the Japanese system), but this is really a symptom of a deeper lack of understanding betweeen government and business. It is of interest that an organisation called the Industry and Parliament Trust has been formed iwth the specific objective of bridging the gap between industrialists and government.

If businessmen are concerned about the lack of understanding shown by government, or the ignorance of politicians about business (very few have a mainstream business background), then they are even more concerned about the state of the political system as a whole. The expectations that businessmen have of the political process are generally negative. They are concerned about what has happened to the Labour Party, and about the behaviour of left-wing Labour local authorities, although they probably console themselves with the thought that Labour is unlikely to return to power again in its present condition. More generally, they see the political environment as increasingly influenced by anti-business organisations, not so much trade unions (which do have some kind of interest in the continued existence and prosperity of a particular industry), but environmental organisations and animal welfare groups. The latter have become increasingly militant and violent in the actions which they have taken against busineses which, they allege, support cruel experiments on animals. There are also, from a business point of view, worries over trends in public opinion, such as 'chemophobia' which involves a heightened awareness of the risks of chemical production which is not balanced by an appreciation of the benefits.

Political behaviour of business organisations

Firms seek to influence public policy through five main routes: 1. Through organisations encompassing all business firms or business persons within their stated domain, e.g., Confederation of British Industry, Institute of Directors, Association of British Chambers of Commerce. 2. Through organisations serving particular industrial sectors or product groups (a minority of these ar exclusively concerned with collective bargaining and related functions). 3. Individual lobbying by firms, coordinated by government relations divisions.
4. Through consultants or professional lobbyists, particularly used by firms not large enough to maintain their own government relations divisions. 5. Through contacts with political parties, especially the Conservative Party, although this is a relatively unimportant channel.

Business organisations may generally be catgorised as 'insider' groups in the sense that they place emphasis on their sense of resonsibility; stress contacts with the civil service, ministers and, to a lesser extent, the legislature, rather than public appeals; and base their lobbying on persuasion through the use of expertise rather than the deployment of sanctions. There are exceptions to this rule, organisations which engage in strident attacks on government, but they are relatively rare. For all their misgivings about the political system, businessmen could not

be said to be alienated from it.

Specialist government relations division are particularly likely to be found in very large companies; nine of the ten largest companies have them. Such divisions are relatively rare outside the top hundred manufacturing companies. Among manufacturing companies, the government relations function is particularly well developed among four industrial groupings: chemicals, tobacco , electronics, and oil . The first three industries mentioned are subject to considerable government regulation and to substantial criticisms of environmental and other pressure groups, thus creating a need for an " in house " government relations function. In the case of firms producing electronic products, the imortance of government as a customer, and of various schemes of government aid, enhances the significence of the relationship with government in a rather different way . Industries in which a government relations function is rarely found in major companies including retailing, food processing and construction. Apart from construction, in which even some large firms are still family owned, and in which government relations are carried out on a personal basis by a board member, these industries do not have a high political profile. (For further information on government relations divisions see Grant 1981 and 1984).

It must be stressed that firms do not make an 'either or' choice between having a government relations division and working through an industry association. Many firms have a government relations division and are also very active in industry associations and the CBI. An important sutdy by Slatter (1983) shows that very few firms rely solely on government relations divisions for the conduct of their contacts with government. Slatter sent a questionnaire to the top hundred industrial companies, plus the major nationalised industries and leading companies in the financial services sector, obtaining an overall respoinse rte of 66 per cent. As Table ** shows, 44 per cent of responding companies worked only through industry associations, as against 38 per cent who worked through a combination of industry associations and their own government relations divisions, a minority of this category making some use of consultants as well. Only five enterprises worked solely through their own government relations divisions, of which for were nationalised industries. It is therefore clear that business interest association activity remains important even to the largest firms.

Table ** about here 1

Percentage of firms influencing the decision-making process by various methods

egardless of the particular combination of methods used, it should be made clear that the largest firms in the economy enjoy direct access to ministers, up to and including Prime Ministerial level, when they require it. Thus, for example, when ICI announced a third quarter loss in 1980, the company's chairman went in advance to 10 Downing Stret and warned Mrs. Thatcher how bad the results were going to be. Such high-level contacts do not mean, however, that companies necessarily get their own way; at the time of writing ICI is locked in a court battle with the government over what it alleges was a tax decision which gave preferential treatment to its competitors.

Economic reactions of businessmen

As far as investment policy is concerned, a wide range of government incentives are available to businessmen, even under the Thatcher Government. Indeed, the Government has considerably expanded spending on scientific and technological assistance, introducing a new Support for Innovation scheme. However, the relevant literature suggests that many businessmen do not know of the existence of these incentives; when they do know about them, they often do not make use of them; and when they do use them, it usually does not lead them to make decisions which are different from those that would have resulted in the absence

of the incentive (see Grant's paper for the Willis workshop at the joint sessions).It has also been suggested (Massey, 1976), that large firms have been succesful in shaping industrial incentives schmes to meet their own needs.

Nevertheless, some firms make extensive use of government grants for capital formation, that carry with them strong obligations to cooperate with government investment and trading policies, particularly some larger firms in capital intensive or technologically advanced industries. However, it must be stressed that the bulk of investment capital is derived from retained profits (and not from the banks or the stock exchange). This does, of course, make investment susceptible to fluctuations in profitability.

There are incentives available in the area of product development, particularly since the Conservative Government has placed increased emphasis on innovation policy, i.e., the successful pursuit of new developments through to the launch of new products in the market place. However, product development is essentially a matter for firms, particularly in consumer oriented industries where there are heavy advertising and promotional costs associated with the launch of a new product.

Although business organisations display a general antipathy to economic interventions by the state, they are prepared to

endorse particular interventions, especially where they bring substantial benefits to their members and impose relatively few obligations on them. An important example of this phenomenon has been regional policy, where government has paid out large sums of money to capital intensive projects such as oil refineries to locate in places where they would probably have located in any case. Not surprisingly, the CBI has been a strong supporter of the retention of regional aids, and outspoken in its criticisms of the announced reductions in aid mentioned above. .

As far as more general aspects of territorial policy are concerned, business organistions strongly opposed the devolution of authority to Scotland and Wales proposed by the last Labour Government. However, they welcome the additional lobbying opportunities provided by the existence of distinct government departments in Scotland, Wales and Northern Ireland. It should be noted that because of Britain's 'union state' governmental structure (to borrow again Rokkan and Urwin's term), there are a considerable number of distinctive Scottish business organisations, often with considerable resources, although they are usually affiliated to their English counterparts.

Commitment to agreements with government and trade unions

With certain important exceptions, e.g., the dairy industry, responsibility for the implementation of policy is not delegated to business interest associations in Britain. Business associations play a significant role in the formulation of policy and subsequent legislation on issues that affect them, and perhaps an even greater role in the drafting of regulations to implement such legislation. However, the task of enforcement is usually left to government bodies of various kinds, including quasi-governmental agencies (such as the Office of Fair Trading or the Health and Safety Commission) or to local authorities (as in the case of food standards).

However, there has been a paradoxical tendency under the Thatcher Government for an increase in the policy implementation responsibilities of business interest associations. This tendency has three distinct sources. First, there has been the above noted political desire to involve business representatives more closely in the development of policy, particularly organisations which are seen as representative of small businesses. The chambers of commerce have been the principal beneficiaries of this tendency and have become involved in such tasks as vetting applications under urban aid schemes. Second, there have been a number of areas in which public provision has been withdrawn, but it has been recognised that matters could not

be left entirely to the operations of the market. An important example is training policy, where most of the statutory training organisations set up by employers' associations which channel public funds to their mejbers. (Rainbird and Grant, 1985). In other areas, existing state-sponsored arrangements have acquired new responsibilities. For example, the Joint Committee of the Milk Marketing Board and the Dairy Trade Federation has had the responsibility of negotiating prices for milk used for manufacturing (the Joint Committee is established by a statutory instrument). Because the Government has recently abolished its system of controls for retail milk, it is likely that this collective arrangement between a business interest association and a state-sponsored cooperativ will also become responsible for fixing liquid milk prices in future. Third, there are areas in which the Government has recognised the need for a new regulatory framework, but prefers to achieve this objective with as little direct government involvement a possible. The most impoortant example is in relation to the establishment of a new regulatory framework for the City of Lond or, more precisely, the financial services sector. The final details have not been announced at the time of writing, but it appears that two quasi-govern,ental regulatory agencies will operate through existing City trade associations, which will be required to take on self-regulatory functions.

Business interest associations are much less involved in agreements at the macro-economic level under the Thatcher Government than they were under the Heath Government of 1970-74 or the Labour Government of 1974-79. When they did make such agreements, business associations usually adhered to them often to the cost of their members. The CBI organised a successful voluntary prices initiative for fifteen months from 1971 to 1972 (Grant and Marsh, 1977), but this was followed by statutory price controls imposed by the Government, which, businessmen felt, did not take sufficient account of the sacrifices already made by CBI members. This feeling of disappointment contributed to an internal crisis in the CBI in 1974 which eventually led to the departure of the director-general of the organisation who had engineered the prices initiative. Nevertheless, the CBI's experience did not prevent the Retail Consortium cooperating with the Labour Government in the so-called 'red triangle' scheme to limit price rises on basic foodstuffs. More importantly, in November 1975 the CBI and the TUC met with the Government at Chequers (the Prime Minister's official country residence) to agree a white paper setting out a new industrial policy strategy. It has to be said, however, that in many respects the CBI inhibited the development of the strategy, particularly at the level of the firm (see Grant, 1982).

As far as relations with the unions are concerned,

collective bargaining in Britain outside of the public sector is now largely conducted at the firm or plant level. Some industries do have 'framework' agrements (e.g., chemicals) and there are a few industries where there is still effective industry wide bargaining (e.g., construction, dairy processing). However, in many industries, sector agreements have either collapsed altogether or no longer enjoy the significance they once had (e.g., engineering, most of food processing).

One of the motivations for the foundation of the CBI in 1965 was to improve relations with the TUC. However, relations between the two organisations have often been strained and are a best hesitant, although at any given time they can vary from an almost complete breach to cordial cooperation on particular issues. The TUC ws particularly annoyed by the CBI Council's refusal to endorese a 'new technology' agreement that had been negotiated with the TUC by the CBI leadership because of a revolt by CBI 'backwoodsmen' concerned about the industrial relations implication of the proposal. (See Richardson 1982). More recently, however, relations have improvd with the CBI and TUC agreeing a twenty-point programme to reinvigorate the tripartite National Economic Development Council.

The CBI has been embarrassed by recent attempts by individual unions to join the organisation. After the leader of the TUC-affiliated Electrical, Electronic, Telecommunications and Plumbing Union had addressed a meeting at the CBI annual conference on 'no strike' deals, he suggsted in a CBI videa film of the conference that his union could become a member of the CBI. CBI officials described the initiative as 'daring' and suggested that perhaps the union might be regarded as an employer in so far as it had a staff. However, the idea of having even a 'hard right' union such as the Electricians as a member was too much for businessmen to stomach, and the idea was dropped. However, another major union, the white-collar ASTMS, has subsequently claimed to have found a way round the problem. Its general secretary is a chairman of a company in which the union is involved in order to assist new small businesses. This company intendes to affiliate to the CBI, which means that the general secretary of one of Britain's largest unions would then be eligible to participate in the work of the CBI.

The rise of political consultants

As Table ** shows, very few large firms rely solely on consultants for their political activities and onlya minority admit to making any use of them. However, consultants can be important for medium-sized firms that cannot afford or justify their own government relations

department. Some trade associations delegate their Parliamentary work to consultants or some small associations with intermittent worklaods operate largely through consultants.

It would appear that the number of consultancies, and their use, is increasing. Indeed, concern has been expressed about the abuse of parliamentary facilities by some lobbyists and about consultancies run by MP's themselves, and these matters are currently being investigated by the Select Committee on Members' Interests. Many of the consultancy firms are members of the Public Relations Consultants Association and are required to adhere to its code of practice. Details of PRCA members providing political consultancy services are given in Table 2 (Appendix 2). It should be noted that there are only three PRCA members who could be said to specialise in government relations (with at least another three outside the PRCA); in most cases, political services are provided by specialist departments within larger public relations companies.

A specialist government relations consultant who was interviewed categorised his work under two main headinsgs, 'intelligence' and 'operational'. Under 'untelligence' three main tasks were carried out:

I Monitoring - checking Parliamentary papers, reports by party research departments, political journals etc. for material relevant to clients.

2 Intelligence - providing background information and interpretation, sometimes providing digests of material for clients.

3 Research - a need for more in depth research might arise from the results of monitoring or from the discussion of future plans. This work was usually done by freelancers in the case of this particular consultancy.

Three main tasks were carried out under the 'operational' heading:

i) Counselling - a question of keeping the client in the picture, he may then want more feedback or to talk to a sympathetic MP>

ii) Passive representative - getting the client together with MPs, civil servants, pressure groups.

iii) Active representation - where there is a specific objective in mind; getting something raisd, launching a piece of legislation or trying to check or stop it.

Apart from the factor of size to which attention has already been drawn, the person interviewed thought that a consultant could have a number of advantages over an 'in house' division specialising in government relations. In terms of the internal politics of a firm, a government reltions

director could be regarded with suspicion. He might lack freedom of movement within the company. There might also be highly confidential materials which would not be widely distributed internally, but could be shown to a trusted outsider. A consultant could bring greater breadth to the task, because he was simultaneously handling a wider range of problems. An outsider had more scope to be speculative in forecasting.

Political risk analysis has not developed in Britain to the extent that it has in the United States; there is no Association of Political Risk Analysts. However, companies do subscribe to various service that look at possible future trends, and the political element is certainly one that is incorporated into forward corporate planning.

<u>Summary</u>

The general trend seems to be towards greater involvement by business in political questions. This trend has not been reversed or even halted by the Thatcher Government; indeed, privatisation and the shedding of state functions raise issues which have to be considered by firms, both individually and collectively. Moreover, the trend towards greater regulation of business in he environmental, consumer protection, safety and health areas continues unabated, if only because of European Community initiatives.

This greater involvement has been accompanied by a greater political sophistication on the part of firms, particularly in terms of the development of government relations divisions and the more extensive use of political consultants. There have also been some rather slow moves towards the rationalisation of business association activity (e.g., in insurance, foundries and food processing). At the peak level, confidence in the CBI seems to be waning. A recent poll showed that 47 per cent of managers thought that the CBI's influence over government has waned; 30 per cent of those interviewed thought that the Insitute of Directors, which is more ideologically sympathetic to the Thatcher Government, had more influence on government policies than the CBI. (Financial Times, November 2nd 1984).

The contemporary British businessmen therefore need a more sophisticated awareness of political developments than his predecessors (the feminine gender is not used because there are few women in senior positions in British business) and will often need a special 'in house' or external political capability to assist him in making business decisions. Whether this amounts to a 'new businessmen', or requires a 'new politician', is an issue that can be pursued in discussion.

EXPLAINING THE POLITICAL MOBILISATION OF BUSINESS

We began this review with some reflections on the declining relevance of the dominant paradigm of government- business relations assuming a cultural gap between politics and business. To what extent have efforts of governments to close that perceived gap and to develop tax and subsidy regimes more favourable to enterprise contributed to a change in the basis of that relationship ?

Both the major political parties since the early 1970's, and the Conservative administration in particular since 1979, have been concerned to create an environment more favourable to business, have given priority to economic, over social policy objectives in government investment programmes , and have sought to introduce commercial principles into the management of the public sector. The effects have been, somewhat paradoxically, to politicise market arrangements and polarise economic interest groups around lobbies that have been noted in the past for their apolitical stance, drawing business groups into new if relatively closed political arenas and,debates- often in a way that cut across traditional party - political platorms.

Attempts of the Conservative administration under Thatcher since 1979 to introduce a "portable " pension scheme in the 1983/4 pariamentary session , aimed at dislodging the

paternalistic nature of the company schemes that blossomed in the 'sixties and seventies provide a good example. Inspired by a neo- liberal ideology and concern to promote enterprise culture , and with the practical concern of aiding the greater mobility of management and skilled labour to newly developing industries, the scheme has met with mixed reactions in the business world. The scheme has attracted little support from the employers associations, some opposition from the company pensions industry (curiously allied by some policy experts concerned with the effects on the distribution and ownership or control of wealth accumulated from personal savings), but energetically lobbied for by the large and politically powerful insurance groups appreciative of the large potential market for portable pension schemes . Thus a policy that began almost on the basis of an a priori theory of pension rights and incentives in a capitalist economy has become rapidly politicised as it confronts the complex of economic intersts aligned with existing arrangements. Much similar could be said of the unintended political effects of other business reactions to economic policies seeking to restore market enterprise to an already socialised economy.

Explaining Divergency

Factors potentially of importance in explaining changes in the orientation of business groups to government aid

include (i) the development of more open economies and the problems of securing a competetitive advantage against the newly inustrialising nations (Olson, 1984; Annell, 1981). Another set of factors,(ii) the institutional interests in business (Salisbury,) are both national and local in origin . Important historical factors in Britain have been the development of a paternalistic outlook of traditional business interests towards local community affairs (Dearlove, 1979). Some encouragement to closer ties between public and private bodies has been provided by central government grant aid to Local Government schemes involving the co- production of community services in partnership between voluntary organisations and business: for example , under centrally funded Urban Aid programmes established in the late early 1970's in the wake of concern with the extent of urban deprivation in the decaying inner- areas of the older urban centres , and more recently under the Commuity Enterprise programmes in response to youth unemployment, all favouring an ideology that has been for the development of the pluralistic self- help, or welfare society, rather than the centralised welfare state (NCVO, 1979; OECD, 1979 ;Hadley and Hatch, 1980) (see below, and Appendx 2) .

Thirdly, (iii) changes in the politics of the organisation of work (Sabal, 1984), and broadly based participatory movements have contributed to increasing presssures for the

democratisation of industry and co- management , contributing significantly to the politicisation of areas of business activity traditionally beyond the political pale in British industrial relations (note, for example, the recent response of the Institute of Directors to EEC directives on worker involvemnt in management)**. Needless to say, the general environment of business decisions has also become more politicised through the growth of countervailing " public interest" groups, such as the environmental lobby and " insider " groups such as the " amenity " groups, and what Rhodes has termed " public interest " groups such as Local Authority Associations , cutting across traditional party politics on many issues arising from economic policy . The political impact of the wider dissemination of information on the economy and electoral responses to macro-economic changes has also been of importance here(Alt, 1979; Willis, 1983, 1985).

Finally,(v) we would suggest a cluster of factors that might be described as the " latent political functions " of the organisation of the market . The secondary political goals of Business Associations are a well explored example of the way in which pre- existing institutions, formed for quite other purposes, may develop a latent political role (originally, of course, many of the Business associations in Britain have been antagonistic to such a role). The evolving logic of business organisation in an era of rapid

technological change (product diversification, industrial concentration and interdependence etc) may also have unintended political repercussions : for example, attention has been paid to the political consequences of the increasing concentration and inclusiveness of business in the U.K (markedly so in comparison with the United States) and the latent political implications of the economic strategies of business itself, for example, the increasing proportion of new investment and ownership of capital stock in the hands of multi-national companies (Useem, 1983; Moran, 1984).

Factors in the politicisation of the British businessman

At least four sources of political conflict over policy on grant -aid to industry seem particularly germane to the U.K context (we leave aside here membership of the Common Market, but see Sargent, 1979; Buksti, 1980, Willis, 1984, 1985):).

(a) the role of government in inducing larger coalitions of interest among competing pressure groups . The growth of the "consumer lobby" and public interest groups and the widening of the political interests of the public service professions (e.g lobbies for the control of socially harmful products) have also been major factors contributing to the politicisation of business investment decisions, and

have tended to contribute to an escalation of demand for government regulation, and, from industry, for government subsidy in compensation for the adoption of more socially desirable methods of production.

(b) public expenditure providing implicit subsidies to industry and the growth of the tax state : the burden placed on business by the growth of the public sector and the public system of welfare has been a major political issue , and efforts to oppose further increases in the proportion of the costs falling to profits and capital gains tax a major rallying point for business , especially the burden of local taxes on commercial premises. However, the extent of corporation tax is lower than many other European countries and has been offset by various concessions to business by way of subsidies and tax relief. Both are subject to 'fiscal illusion '. **

Whilst political pressures from business to reduce tax has been pronounced at the level of local government, (Appendix 2) there is no equivalent of the anti-tax leagues in the United States, and the larger financial interests (e.g Banks) have more often than not employed techniques to achieve "tax- efficiency" within the existing framework of legislation , rather than political pressure to protect their interests. Moreover, theextent of potential opposition to the growth of the public system has been offset by the

value of the public sector as a market for the private sector , and the extent of transfer payments , creating its own "pro- expenditure " lobbies within the private sector (for example, the electronics industry; armaments; the building and construction industries; information technology.) [*].

c) the <u>successes</u> of state enterprise : in the past, state enterprise and state shareholding (such as municipal enterprise) has carried a socialist tinge and has been generally resisted by business. The largely negative response to the creation of the National Enterpise Board is a case in point.** However, a variety of factors have contributed to change attitudes amongst businessman to participation in state- funded enterprises , including the success of some state enterprises, the growing appreciation of the value of government as a source of risk capital, and the adoption by government of commercial principles .Generally though, the business community, and Conservative governments, have remained profoundly ambivalent in attitudes towards the idea of state enterprise , especially where this has created a monopoly situation. An example might be Conservative government attitudes towards the British Technology Group (BTG) formed through a forced marriage of the national Enterprise Board and national research development Council in 1981 ** .

Office, the Treasury, in the management of the Nationalised Industries, and , more controversially still, in the management of the public sector and oversight of the government programmes of privatisation . Whilst these development have been conceived of as an effort to " de-politicise " the civil service and to bridge the perceived gap between government and industry, the effect has been to further politicise business. Moreover, the unrepresentativeness of business and concern with an extension of competetive advantage through government posts (the majority of Conservative MP's with business backgrounds tend to be from finance or services such as market research or advertising) , has contributed to some conflict within business, as well as the civil service , to changes in the traditional relationship between business and government.

The lobby for the promotion of overseas trading interests is an example. The awareness that overseas projects tend to be carried out by Government ministries and government sponsored corporations has led to an increasing awaremess of the value of government diplomacy , and pressures for preferential treatment for British industry (for example, the lobbying and promotional activities of the Council of the Export Group for the Construction Industry) whilst the advantage has been enjoyed by all sizes of industry, recent discriminatory practices in charging for the costs involved

(eg, for trade fairs) have been at the expense of established business.

Old Institutionalisms verus New Cleavages

How far have efforts to promote enterprise culture and to industrialise government contributed to change the caste of characters and interests in the familiar political arenas and agendas of British politics ?

The institutionalisation of economic-class based interests and cleavages in the British political system along a left-right continuum has been a long taken-for -granted feature of the British political System , deeply influencing party political platforms on economic issues and hampering consensus politics. Whilst old conflicts continue to play a major role in shaping the economic agenda: hostilities between organised labour and management, the partly thawed but still "frozen " cleavages of class, North and South, some newer institutionalisms fashioned by the tripartite consensus on the mixed - economy in the 'sixties has continued to exert its influence , and has been given a fresh impetus by an enhanced awareness of the economic value of selective incentives and government infrastructure investment. Whilst this has not amounted to an all pervasive culture supportive of concerted policies for the control of the economy characteristic of the social market economies

such as Germany and Austria, or the fully fledges etatiste corporatism of the French " contract state " , government interventions have clearly contributed to a hightened awareness of the public- private sector interdependencies.

Finally, changes in the structure of the market ownership, notably the tendency toward oligopopoly , has contributed to moderate the extent of conflict between diffferent industries resulting from government policies of selective aid (See Willis, 1985).

CONCLUSIONS : towards the company state ?

The main conclusion arrived at in this survey on the impact of government policy on private enterprise is that the evidence is not consistent with a theory emphasising cultural distance between government and industry as a major factor contributing to industrial malaise in Britain. The gap arising from the different time -horizons, knowledge , and criterion employed in decision making may them have been technically bridged to some extent, though patterns of interdependence and concentration of ownership of British industry , and, between the public and the private sectors, the increasing exchange of personnel between government an industry . Moreover, government policies have consistently strained to develop subsidy regimes and regulations favourable to private enterprise and the sunrise industries, and have contributed in no small way to the

development of relatively decentralised and highly complex administrative systems linking a variety of firms and sectors: the development of the authority of the " maze " rather than the " mace " in industrial policy making. Finally, not considered in detail here , though increasingly subject to public subsidy and pressures for increased public accountability in their investment decisions, the dominance of Conservative ideology of free enterprise, coupled with the powerful protection of commercial competetive practices in British company law, has contributed to the relative autonomy of business in investment decisions(Ganz, 1976).

What we are suggesting then is that the problems of steerage in the British economy in government attempts to stimulate investment derive from a major shift in the centre of gravity in British politics away from the tri-partism and latent corporatism of the 'sixties and early ' seventies, and towards the " company state " : a distant, but by no means hostile relationship between government and private enterprise based on principles of private governance , in which government has sought to treat the management of the economy not only <u>as a business</u>, but as <u>the responsibility of businessmen</u>- in this respect, the harbinger of the corporate or the company, rather than the corporatist state.

THE USE OF SUBSIDIES AS PART OF THE CONSERVATIVE GOVERNMENTS' PRIVATISATION STRATEGY IN BRITAIN 1979 - 85

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This is a working paper which is part of a wider study: it is not for quotation without the author's permission.

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SECTION I

THE SCOPE OF THIS PAPER

In May 1979 the Conservatives won the general election in Britain, and came to power committed to a programme of privatisation. This paper[1] links into the second aim of the Workshop. Section II is an empirical survey of the different types of subsidy that have been made available both to the private sector, and by it, during the period between May 1979 and February 1985. The aims here are to bring together a lot of scattered material, and to analyse the different forms of subsidy. This is a large subject. Although many topics are raised not all can be dealt with in a paper of this length. Some of the developments described in Section II have important implications for writers analysing the nature of the relationship between government and industry in Britain. It is these issues which are tackled in the final Section of this paper. Section II uses a typology of subsidies and Section III discusses issues of relevance to a comparative approach to the study of industrial subsidies. Hopefully this paper will thus also contribute to the discussion of these issues that together constitute the Workshop's first aim. However, before proceeding it is necessary to offer brief definitions and discussions of privatisation, the public and private sectors, and subsidy.

Since May 1979 the term 'privatisation' has been much in evidence. It usually refers to three attempts by the Thatcher Governments to 'roll back the public sector' - the sale of parts of the nationalised industries; contracting out public sector services like school cleaning to the private sector; and opening up the nationalised industries to competition from the private sector. In very broad terms, 'privatisation' can be seen as a term used to describe a set of policies which aim to limit the role of the public sector, and increase the role of the private sector, while improving the performance of the remaining public sector.

This immediately raises the issue of what is meant by the 'public sector' and the 'private sector'. This is a complex and much discussed subject.[2] For the purposes of this paper the 'public sector' is used as

a term to describe those organisations created directly by government or by local authorities. Their status is usually statutory or at least heavily dependent on the parent authority. They are financed mainly and usually entirely from public funds. Their work is directly linked to public policy, and their organisational structure is such that they are accountable to, and controlled by, ministers or local authority councillors. The public sector thus includes government departments, local authorities and quasi autonomous non-governmental organisations (quangos) like the Arts Council.

In this paper the 'private sector' is used as an umbrella term to describe what remains. It thus covers not just privately owned or publicly quoted companies, but interest groups, pressure groups, the voluntary sector, charities, and the range of trusts, enterprise agencies and similar bodies that have emerged in recent years. In practice, some of these organisations - like companies in which government holds part of the equity - straddle the boundary between the public and private sectors.

Since 1979 there seems to have been an overall strategy to promote privatisation on a far wider front than is often appreciated. Certainly other policy initiatives seem to have had similar features to the three types outlined in the second paragraph above. There is no space here to discuss the nuances of these features, but it seems that since 1979 there have been seven different identifiable forms of privatisation.[3] First there has been the sale of government-owned assets - everything from council houses to British Telecom. Secondly, there have been policies designed to relax state monopolies, thus exposing individual public sector organisations to increased competition, both between themselves (long distance coach v. rail), and with the private sector (bus v. bus). The third form of privatisation has been the attempts to force public sector organisations to contract some of their work out to the private sector. Typical examples here have been the contracting out of hospital cleaning and laundry, and of local authority refuse collection.

Much of the empirical material in the following Section is drawn from the fourth and fifth types of privatisation. There have been concerted efforts by the Conservative Government to encourage the private sector to help to provide services that have frequently been seen as being

the preserve of the public sector. Examples here include homes for disturbed adolescents, the mentally ill and handicapped, nursing homes for the elderly; private schools and hospitals; arts sponsorship; and advisory services for small firms. The fifth form of privatisation has been the process of leveraging private sector investment in to complete projects in deprived areas like the inner city. Subsidies have been particularly important in this context.

The sixth type of privatisation has been the attempt to imbue the public sector with private sector business management techniques by such means as accountable management units, corporate plans and the secondment of experts from the private sector to help run government schemes and quangos. People from the property industry have played an important role in administering the different forms of subsidy. The final form of privatisation concerns some services provided by the public sector where changes have been introduced with regard to charges. Since 1979, there have been many changes in the pricing structure of welfare services to reduce the burden on the public sector finances by charging higher fees for prescriptions, glasses and so on.

Subsidies are notoriously difficult to define. It is possible to argue for example that some public purchasing contains an element of subsidy. It may not be the case with pens or paperclips, but there have been elements of subsidy present in government purchasing of advanced aircraft and warships.[4] This paper takes a subsidy to be a commitment to provide financial support for a scheme that would not otherwise have gone ahead. A scheme can be either an investment project, general support for a company or organisation, or the provision of a service. A crucial part of the definition is that subsidies enable schemes to proceed which the market would not otherwise have allowed. Circumstances vary: sometimes a subsidy is equal to a large part or the whole cost of a scheme, and sometimes it only amounts to part of it. Most subsidies are taken to be payments from the public sector. However this paper does not restrict them in this way because an important part of privatisation has been the way in which the Thatcher Administrations have tried to change the role of large private sector companies by enlisting their support to help Whitehall provide services. Keeping the definition general allows subsidies from the private sector to be included.

Since 1979 the Government has used subsidies in a variety of ways in order to promote its privatisation strategy. Section II distinguishes between four different types of subsidy:

(i) Direct Subsidies: these are the subsidies where a Whitehall department, quango, or company makes money directly available to a firm or organisation in the form of some kind of grant.

(ii) Indirect Subsidies: these are the subsidies where a government department, agency, or major firm spends money on a project itself to help a scheme go ahead, but the finance is not given direct to the firm that benefits from the investment. A common example is investment in site improvement to enable an investment project to proceed.

(iii) Safety-net Subsidies: these are the subsidies where a Whitehall department, quango, or big company commits itself to spend money in certain circumstances. The commonest example is where a firm or an organisation is guaranteed against loss for a period of time if it invests in a specific project. If the project succeeds the subsidy is not needed, although success was only achieved because of the existence of the safety-net.

(iv) Subsidised Services: these succeed where a service is provided to a firm or other organisation by a government department or agency, or by a major company. The service is either cheap or free, the cost being borne by the provider. The organisation or company that benefits thus receives a subsidised service.

Part of the point of this paper is to analyse some aspects of the relationship between government and industry under the Thatcher Administrations. As a result Section II uses examples of subsidies to companies, and in II(c) below some action-orientated trusts and non-profit-making companies. Subsidies of various kinds to individuals and community groups are excluded. (Examples respectively of these have been the sale of council houses at a price below the market value, and grants under the Urban Programme to inner city groups. Subsidies made available to companies from EEC sources,[5] or by local authorities[6] are also omitted

unless they relate to an important aspect of the whole process. Although it is not always possible, an attempt is made to concentrate on what has actually happened and not to fall into what could be termed the 'privatisation trap' - almost perpetual speculation about what might, or ought, to happen next. The specialised world of the conservation of old buildings is also taken to be outside the scope of this paper.[7]

The point of these exclusions is to focus on the approach of the Thatcher Administrations towards the relationship between government and industry during the 1979-85 period. Concentrating mainly on central government and individual companies makes it possible to highlight the ways in which, and the extent to which the Conservatives have relied on subsidies whilst promoting the overall privatisation strategy.

SECTION II

THE RANGE OF SUBSIDIES USED

This Section examines the different types of subsidy identified above under four headings. This emphasises the variety of projects which attracted some form of subsidy during the period of Conservative government after the 1979 election. It must be acknowledged however, that dividing the subsidies up in this way does present an over-precise picture of the situation. Many schemes have gone ahead because they contain several different elements of subsidy. Projects in the Corby Enterprise Zone for example have taken advantage of the EZ scheme and regional aid, as it was made a Development Area in 1980 after the steel works closed.

(a) Central Government Subsidies for Private Sector Investment Projects

These are projects that have been carried out by the private sector. They have been mainly financed from conventional private sector sources, but there has been some element of subsidy which has reduced the overall cost of the scheme to the firm concerned.

There are various forms of direct subsidy which have been paid direct to the company. The most obvious example is the long standing regional

aid programme which was revised in November 1984.[8] A three tier system was placed with a two tier one. This meant that 15% Regional Development Grants (RDGs) were offered for new plant and buildings in Development Areas. In addition, discretionary grants under Section 7 of the 1972 Industry and the 1982 Industrial Developments Acts were still available. One of the main criteria was that the applicant had to show that without assistance the project would not go ahead. This selective financial assistance was available in both Development and Intermediate Areas. Regional aid has now been expanded to cover many service industries as well as the manufacturing sector.

Other direct subsidies include some of the grants made available by individual quangos for specific projects which would not otherwise have gone ahead. The Highlands and Islands Development Board (HIDB) for example has offered grants of up to 30% of the project's cost and up to 35% if the building was not eligible for RDG, and interest relief grants to defray costs. Similarly the Development Commission, which has been concerned with areas of rural depopulation in England, has offered grants to help convert derelict rural buildings into workshops.[9]

The above schemes have been area based, but the 1972 Industry Act established under Section 8 a series of nation-wide schemes to support specific industries. The Conservative Government continued this policy after 1979, albeit at a lower level. The Micro-electronics Industry Support Programme is an example of such an approach. Grants of up to 20% are available for investment in the development and application of new technology for automatic processing projects in industry. One of the aims is to reduce imports.[10] Other nation-wide schemes include the energy-saving ones; and agricultural development, and investment grants.

It is with the indirect subsidies towards private sector investment projects that the Conservative Government has been at its most innovative. The first example is Enterprise Zones (EZs).[11] The basic idea behind these has been that a zone could be declared within which there would be minimal bureaucratic controls so that industry could flourish. The dynamism of Hong Kong could thus be transplanted into Britain's inner cities. Once a zone was declared, the owners of existing and new commercial and industrial premises were able to take advantage of certain

benefits for a ten year period. Some are beyond the scope of this paper.[12] What is important in this context is that EZs bring exemption from paying rates, development land tax, and industrial training levies. In addition capital investment on industrial and commercial buildings attracted 100% tax allowances up until 25th March 1985, while they were being phased out in the rest of the country.[13] Taken together these advantages of investing in an EZ constitute an important indirect subsidy as the investing company is able to avoid several expenses that it would have had to pay in another part of the country. The impact of the scheme has been rather complex.[14] It appears that rentals within EZs and around their borders have adjusted themselves in the market place to take account of the lower total costs within the EZs. Nevertheless, the changes do constitute a significant form of indirect subsidy.

Important changes have also taken place in the housing field. The 1980 Housing Act introduced a number of schemes aimed at attracting private sector house builders back into inner city and similar areas, which they had come to neglect in the 1960s and 1970s. There have been a variety of different special programmes, including shared ownership, improvement for sale, and leasehold for the elderly. Not all of these involve a subsidy element, but some do. In Manchester for example, Wimpeys proceeded with the St. Johns Garden scheme because of the reduction of the land cost element within the total cost of the project. There was an indirect subsidy in the sense that the cost element to the builder - the market value of the site - was reduced to make the economics of the scheme a viable proposition from the builder's point of view.

The Conservative Government has laid particular stress on building low cost starter homes for first-time buyers as part of the drive towards a property-owning democracy.[15] There has been one scheme whereby a local authority can retain ownership of the land, but license a firm to build houses for sale on the site. When the purchaser buys the house from the builder the local authority transfers the freehold to the new buyer. Again there has been an indirect subsidy in the sense that the builders have not had to consider the land cost element within the overall package. In 1980/1, 21 authorities used this approach.[16] Another scheme has been the part-own, part-rent approach called shared purchase. Here the local authority has been able to buy the house from a builder. The

purchaser takes out a mortgage to buy part of it while renting the remainder from the council. There has been an element of indirect subsidy here because the local authority involvement has provided a financial input from the public sector which changes what the market would have delivered thus enabling builders to build for sale where they would not otherwise have been able to do so.

Another form of indirect subsidy has been site preparation and land renewal. Much of this must be excluded from the discussion as it is concerned with landscaping and recreational development. However some land renewal schemes have been important as they have involved site preparation and the provision of infrastructure for housing or industrial development. When the Welsh Development Agency (WDA) and the Scottish Development Agency (SDA) were established in 1975, part of their brief was to bring derelict sites back into use. In 1981 Urban Development Corporations (UDCs) were given the same task when they were established in the London and Liverpool docks. Since 1979 there have thus been four quangos working in this sphere.

The basic approach is to buy the land, clear the site, and put in the necessary sewers, roads, telecommunications and other infrastructure. This can be quite straightforward in some cases, but there are other examples where the existing dereliction and the nature of the site has made it much more expensive. This happened with the Liverpool Garden Festival where the long-term aim after the Festival ended was to develop industry and houses on the site. Both the Merseyside Development Corporation (MDC), and the London Docklands Development Corporation (LDDC) have laid great stress in their spending during the 1980s on land renewal.[17] A good example in London was the 22 acre site at Beckton[18] where the LDDC prepared the site and, using one of the housing schemes described above, licensed Wimpey, Barratt, Broseley and Comden to build 601 houses and flats over two years at prices varying between £20,000, and £28,000. This was not a site that the house builders would have chosen as each property had to be expensively piled. LDDC was able to use its resources to carry out this task. The house builders thus received an indirect subsidy as LDDC removed the land and site preparation costs from the builders' calculations of their costs. An unattractive proposition was thus transformed.

Outside the dockland areas in England Derelict Land Grants (DLGs) have been used in a similar way to help improve land. Bryant Homes for example, wanted to develop a 50 acre site at Willingsworth in the West Midlands, but were put off by the poor surrounding environment. Sandwell MBC used a £74,626 DLG to improve the area by developing a linear park.[19] This was an indirect subsidy in the sense that it was only as a result of the local council's scheme that the company felt sufficiently confident about selling the houses at the prices they had hoped to, to proceed with the scheme. Since 1979 DLGs have been 100% grants in Derelict Land Clearance Areas (DLCAs), and in Assisted Areas. The 1980 Local Government, Planning and Land Act changed the system so that it was possible for DLGs to be given to private firms, nationalised industries and statutory undertakers as well as to local authorities.[20]

Soft loans also come under the heading of indirect subsidies. These are loans to the firm and have to be repaid, but the rate of interest charged has been below the market rate. This has meant that the company has been able to save on what it would have had to pay, if it had been charged the full market rate of interest. Sometimes a soft loan has been made available because a normal loan could not be obtained from a conventional banking source. On other occasions when all the finance for a project could not be obtained from the private sector, a public sector agency has made a topping up loan available, but at market rates. WDA, SDA, HIDB, and the Tourist Boards have all operated soft loan schemes, usually as one part of an overall package.[21] Whatever variant has been applied soft loans can be seen as indirect subsidies as they amend what the market had produced and enable projects to proceed.

The last example of an indirect subsidy is the lease or sale of specific sites. Several options have presented themselves. The land can be sold at the market rate, or cheaply - thus containing an element of indirect subsidy. Leases can be for varying lengths of time - 50 years, 99, years, 199 years or 999 years. They can be cheap, or at market rates. They can be on the basis of one single payment at the start of the period, or of regular payments throughout. They can contain revision clauses so that the public sector agency can claw back some of any future increased value on the site. There is thus considerable scope to sell land cheaply or to provide cheap and/or lengthy leases. The potential

developer knows that the pressure is on the quangos to generate private sector investment. The terms of a lease are negotiable. They can be fixed at whatever level is needed to ensure that the developer is tempted sufficiently to proceed. In some circumstances these factors all seem to combine to give the developer a strong negotiating hand. Overall there is thus considerable scope for indirect subsidy to ensure that an investment project which would not have gone ahead on the basis of market conditions, does.

This is a difficult area to write about.[22] It delves into the whole confidential relationship between quango and client, with anxious ministers and civil servants hovering in the background. In many cases the sale or lease of land has taken place on the basis of prevailing market rates. There is an incentive here for quangos as some have been able to keep income earned in this way and recycle it, thus circumventing government expenditure controls. However it has been a politically sensitive subject in the past. There was for example much public criticism of the terms of some of the leases agreed in the early 1960s between the old London County Council and individual property developers.[23] The confidentiality and sensitivity of this whole topic makes it impossible to assess its precise importance. Nevertheless, it seems clear that it has been an important aspect of the whole approach to generating private investment on unlikely sites in the period after 1979.

The third type of subsidy identified in Section I was the safety-net subsidy. There have been occasions when these have come into play with regard to private sector investment projects. The Department of Trade and Industry (DTI) inherited a loan guarantee scheme started in the 1970s.[24] It has been aimed at small firms that cannot provide security for loans, or which are just starting and would have had difficulty in obtaining loans as they have had no track record. The firm has paid 3% of the loan to the DTI which has guaranteed 80% of the loan from a participating private bank up to a maximum of £75,000. The SDA has also operated a loan guarantee system. A parallel approach has been developed in the new house building field.[25] The scheme whereby a local authority can build under licence on land owned by the authority was outlined above. The house builder has then offered the houses for sale. Some contracts seem to have included buy-back arrangements, so that the local authority has

agreed to purchase the houses if they are not sold, thus adding them to its rental stock. These safety-net subsidies have been designed to promote activity that would not have taken place in such a way that the banks and builders in these examples have not been involved in heavy losses. They have thus been attracted into schemes they would otherwise have ignored.

Finally, subsidised advisory services have been used to help promote the success of private sector investment projects. A number of government agencies have offered business and accounting advice to existing firms which are in trouble, or expanding; and to firms that are hoping to start up. Examples include the SDA, the WDA and the Council for Small Industries in Rural Areas (CoSIRA). These are long-standing examples. However other initiatives have been introduced since 1979. The DTI established a Business Improvement scheme in England in November 1984, and the Industry Department for Scotland had previously set up Better Business Services in Strathclyde.[26] These two schemes have provided a package of different facilities covering such fields as management planning, financial re-structuring, business plans, sales strategies and translation services. They have been aimed at small firms who generally pay 45% of the cost, the remainder being met by a subsidy channelled from the ERDF. Some of these services are thus free, and some are grant-aided. Either way, it becomes a subsidised service which has saved the company taking advantage of the scheme some or all of the full cost of the advice.

(b) Central Government Subsidies for Joint Public/Private Sector Investment Projects

Projects of this type have been prepared and put together as packages largely by public sector agencies. For the most part they have been marketed as potential investment projects for private sector organisations. They have thus mostly been conceived and prepared in the public sector, and often it has been the public sector that has taken the lead in carrying them out and managing them. For the funding organisations in the private sector these schemes have been seen purely and simply as investment projects.

Probably the most important initiative to promote direct subsidies for joint public/private sector investment projects has been the Urban

Development Grants (UDGs). These were introduced in 1983 as a result of FIG's study of a similar scheme in the United States - the Urban Development Action Grant. UDG schemes are prepared by local authorities working with individual developers. Projects are put to the DoE. If approved the local authority pays the developer an agreed amount, and is reimbursed through the UDGs up to a maximum of 75% of its contribution. The aim of UDGs is to promote economical physical regeneration of urban areas. They are only granted where the assessors are convinced that the scheme would not otherwise go ahead. Most of the funding for each scheme comes from the private sector. The public sector contribution is the minimum necessary to ensure that it does proceed. There are no limits to the type of scheme that can be submitted: commercial, industrial, retail, housing, or recreational ones, or a mix, are all possible. These are not nation-wide schemes though. They can be applied for by EZ authorities, and those named under the 1978 Inner Urban Areas Act.[27]

UDGs are direct subsidies because the point of the scheme is to invest just that amount of public sector finance that will ensure that investment that would not otherwise have taken place, does in fact go ahead. Because the scheme has been drawn widely it is difficult to give typical examples. However, one batch of the UDGs was granted in May 1984.[28] They totalled £4.2m which when matched with £17m of privately raised finance meant that a total of more than £21m was being levered in. These ten included houses for sale, industrial units, offices and warehousing.

The SDA has also developed this approach of putting together a package and going out and knocking on doors in the private sector to find financiers interested in an investment project. Perhaps the best example so far has been the Scottish Exhibition Centre.[29] The SDA conceived this idea as a desirable project which could be located on derelict land in the Glasgow docks. It worked it out in detail, attracted interest from local authorities and the private sector, and set up a company in which it took an equity holding to complete the scheme and manage the Centre. Once again the private sector was levered in as a result of direct subsidy. HIDB has also expanded its use of equity holdings as a means of sharing the risk and helping to finance expansion schemes since 1979. In 1979 it had shares in 64 companies: by 1983 this had increased to 97.[30] In many cases the use of equity appears to be a direct subsidy, as

quangos have been plugging gaps that the market will not fill of its own accord.

There have also been a number of examples of indirect subsidies to promote joint public/private investment projects. Prominent among these have been the advanced property building for let programmes carried out by such quangos as EE, WDA, and new town development corporations like those in Peterborough and Milton Keynes. In general terms what has happened with these schemes has been that the quango has worked out a project, done the detailed preparation of the plans, and put together a package. It has then gone to conventional private sector financiers with specific proposals for advanced factory units of various sizes at different locations. Where agreement has been reached it has included such features as the quango organising the building, carrying out the lettings, managing the estate and collecting the rents. In these circumstances private sector investment has been attracted partly as a result of the indirect subsidy from the quango paying the costs of all the preparation of the project. Since 1979 EE has involved Legal and General, CIN, Barclays, Midland Bank and the Church Commissioners in these schemes.[31]

One important type of safety-net subsidy has been one part of some of the private sector investment project packages that have been put together. One of the techniques that some quangos have used to attract private sector investment in has been to offer a rental guarantee for perhaps the first five years of the factory units. This means that before they commit themselves, private sector financiers can work out the figures on the basis of knowing that they will receive at least a minimal rate of return in their investment. In addition it should be stressed that the involvement of a quango in a package can act as something of a safety-net in helping to convince private investors that a project is viable. The SDA has been responsible for Scotland's equivalent of UDG - LEG-UP. By mixing loans and equity - not grants - and insisting that half the cost of a project should come from private sources, the SDA has injected confidence into potential projects.[32]

Subsidised services have also been aimed at joint public/private sector projects. Business advice is an important complementary service to the provision of advanced units. Whereas SDA and WDA provide the

service and the units to let, EE have only provided factories to let. Some of the firms renting from them have failed partly, it seems, because of lack of business and accounting expertise. A Bill introduced into the House of Lords in February 1985 carries a clause extending the Scottish and Welsh position to England. After it becomes law it will give EE the power to run advisory services. Again, this is a form of subsidy as the quangos involved have borne - and in the case of EE will do - the cost of providing the service.

The SDA has also developed a subsidised service with its Self-Build scheme. The aim of this has been to attract small firms like accountants, that need offices, into the Clydebank EZ. The SDA has put together what amounts to a complete design package. It has provided mains services, access, car parking and landscaping. Once agreement has been reached a fixed price buys site ownership, car parking spaces, detailed design drawings to the clients' requirements, business advice, and even access to mortgage finance. A subsidised service thus appears to be included in the sale of the land.[33]

(c) Private Sector Subsidies:

Since 1979 there have been a number of examples of private sector firms subsidising other private sector companies. This particularly developed after the riots in Liverpool, Brixton and other places in 1981. Michael Heseltine, Secretary of State for the Environment, took senior executives from the 26 major financial institutions on a coach tour of Liverpool that summer to try to convince them that major investment opportunities were going begging in the inner cities. One of the outcomes was a series of initiatives by big companies aiming to help small firms. BAT Industries and Shell are examples of companies that have carried out conversion work on premises they own to provide small workshops. If these are provided at rentals at or below the market rate, then this is a form of indirect subsidy. Most of the big banks have special units to provide small firms with advice in areas of high unemployment. This is a form of subsidised service. These developments are complicated as a variety of factors have been present. In the first example BATs have probably acted partly to try to make up for the fact that they have been laying people off. In the second, the banks' case, action is probably

partly explained by their hoping to pick up extra customers.

There have also been examples since then of private sector firms becoming involved in 'subsidising' public sector organisations. As a result of the coach tour round Liverpool referred to above, Heseltine established the Financial Institutions Group (FIG) in the DoE. It was given the job of examining ways in which private sector investment could help declining areas. It was staffed by people seconded from the 26 major institutions, thus giving the DoE free access to specialised expertise and knowledge.

Another important area where this practice has developed has been sponsorship in fields like the arts. There are many examples of companies like Mobil Oil sponsoring exhibitions, theatre productions, concerts, opera, festivals and other events. It can be difficult to disentangle whether the organisation putting the event on is public sector or private sector. Some theatre companies are the latter, while some galleries are public sector for example. The Association for Business Sponsorship of the Arts (ABSA), which had nearly 100 members in 1983, estimated that business sponsorship of the arts in Britain in 1982 was worth about £13½m.[34] In the climate of public expenditure cuts, and the abolition of the metropolitan councils and the Greater London Council, with the consequence of further cuts in arts funding, the Government has encouraged ABSA. ABSA's role in trying to expand business sponsorship has 'subsidised' the public sector, and has contributed to the Government's attempts to promote plural funding of the arts. The aim has been to limit public sector expenditure and rely to a greater extent on other sources. It is in this context that business sponsorship has been significant.

Apart from the limited examples above, the main point to stress under this heading is the support that major private sector companies have given to the emergence of trusts, charities, and other non-profit-making limited companies that have emerged in recent years. The Government was involved with big firms and public sector organisations in establishing Business in the Community (BIC) in 1982. BIC, civil servants and local chambers of commerce have all worked together to help create local enterprise agencies. By May 1984, 162 had been established in the United Kingdom as a whole. They run managed workshops, offer business advice, and do a variety of

other things to stimulate small firm growth.[35]

Also at the national level the Government helped establish Inner City Enterprises (ICE) in 1983 as a result of work done by FIG. The argument was that there was a need for an organisation to act as a catalyst to encourage the investing institutions to support viable property developments in inner city areas designated under the 1978 Inner Urban Areas Act. £1m was raised by the 48 participating financial institutions to finance ICE. ICE has not acted as an investor. It has aimed to work with local authorities and developers in seeking out schemes that are viable, but which conventional funding organisations may be sceptical of. It tries to smooth out the wrinkles and ensure that profitable schemes find investors. It thus offers a highly specialised subsidised service.[36]

An important development under this heading has been the emergence of action orientated trusts at the local level which have acted to implement schemes to alleviate local problems which have been neglected by local and national government. During the last decade, and in particular during the early 1980s, a bewildering variety of these organisations have emerged. Some have been oriented towards individual refurbishment projects, whereas others seek a continuing role in a local area. The aim may be to recycle buildings, promote tourism, or create job opportunities. Examples include the Wirksworth Project, Pennine Heritage, the Community of St. Helens Trust, and voluntary groups in the countryside recreation field.[37] A variation at the local level has been to create organisations that link private industry, the voluntary sector and local authorities. In the North-West the Government established Groundwork Trusts in the summer of 1983.[38] These organisations have supplemented the local authority role in clearing up derelict land. Although this is not a statutory service, they have nevertheless carried out schemes designed to further Government policy. The experiment is to be extended nation-wide.

These public/private sector organisations have grown in number and scope during the 1980s. They provide a variety of services for industry, and in effect assist central and local government and quangos like the Countryside Commission by carrying out tasks public sector agencies lack the resources to complete. Part of the privatisation strategy appears to have been to take every opportunity to increase their role. From the perspective of

this paper, the significant point to draw out is the variety of subsidies that major private sector firms have made available to help these organisations to grow. They have made direct grants to local enterprise agencies. They have made gifts in kind of old office furniture, and discarded computer equipment. Another important example of indirect subsidy has been seconding people to work full time for entreprise agencies. There are probably some examples of safety-net subsidies in the form of financial guarantees. There certainly have been examples of enterprise agencies accepting subsidised services from big companies. Glasgow Opportunities for example has secondees, but it also has arrangements whereby it can 'borrow' the services of a firm's accountants or engineers on an occasional part-time basis, as the need arises.

These public/private sector organisations have become increasingly important to Whitehall during the early 1980s. They exist largely because of private sector subsidies. Other examples could be quoted to show that it is not just big companies that provide support. Smaller firms have helped to subsidise enterprise agencies, as well as town development trusts, Groundwork Trusts and others at the local level.

(d) Other Central Government Subsidies to Promote Privatisation

Section I above outlined the argument that since 1979 there have been seven separate forms of privatisation. Section II has so far concentrated on the fourth and fifth varieties which were identified. This heading briefly fills out the picture with examples to show how subsidies have been used to promote other types of privatisation. The process of selling nationalised industries involves costs of advertising, commissions and contributions to pension funds. These become hidden subsidies if the cost is not passed on in the sale. Similarly where assets are sold at below the market value there is a subsidy involved.[39] This can become very convoluted. When EE sell an advanced unit built on reclaimed land to a sitting tenant, an element of subsidy relating to the land renewal cost is passed on. Similarly if refuse collection equipment is sold cheaply to the firm taking on the service, then part of the subsidy is the fact that the local authority will have to invest in new equipment in order to provide the service again itself.[40] The existence of the Manpower Services Commission (MSC) has had an important buttressing effect. Its

programmes have meant that cheap labour has been available to a wide variety of organisations. This has been an important factor in expanding the increased activity of the public/private groups described in Section II(c) above.

SECTION III

CONCLUSIONS

Section II has examined the range of direct, indirect, and safety-net subsidies, and subsidised services that have been used in the last six years or so in Britain whilst promoting the privatisation strategy. Particular emphasis has been laid on the use of different subsidies in the context of private sector, and joint public/private sector projects. However, measuring these subsidies is complex. It is possible to pick out figures for direct subsidies. For example the SDA calculated that it offered £5.67m worth of LEG-UP finance towards the first 38 projects which collectively were valued at £26.78m.[41]

However, it is more difficult to assess the impact of indirect subsidies. One study of twelve enterprise agencies has worked out that the average annual budget of an agency has been £77,000, most of which has been provided by the private sector mainly in the form of secondees.[42] It is impossible to assess the value of the work of these twelve enterprise agencies. In addition many schemes appear to contain several separate elements of direct and indirect, and perhaps other forms of subsidy. For example a project may attract UDG on a site in an EZ where land renewal costs have been borne by a quango or DLG. Long and/or cheap leases are an additional problem confronting those trying to assess the value of different elements of subsidy in a particular scheme. Some are hidden - or at least unappreciated. Although it is thus difficult to come to precise conclusions about the scale and impact of indirect subsidies, it is possible to analyse the range of those that have been made available.

The Conservatives' approach to subsidies can perhaps be summed up as pragmatic willingness to spend as little as is needed to promote private sector investment. The difference between the Conservative Administrations

and the preceding Labour Governments has been one of emphasis. The latter were more prepared to subsidise losses in declining and expanding sectors as well as having their investment incentive schemes, as under Section 8 of the 1972 Industry Act. The Conservatives have reduced subsidies to loss makers and have laid a greater emphasis on the private sector. In particular they have devised a wide variety of techniques to promote private sector investment in neglected and declining areas, and joint schemes with the public sector: these have been the focus of Section II(a) and (b) above.

Four particular features of the post 1979 approach stand out. First, there appears to have been more emphasis on indirect than direct subsidies to companies. Second, there has been a move away from automatic grants to selective, discretionary ones. Thirdly, the Government has aimed with the direct grants to achieve a 'high gearing ratio': that is as small amount of public sector funding as possible, to attract a much larger sum of private finance. Equal amounts are seldom allowed through, but one part public to say, four parts private, is more the norm of what is aimed at. This illustrates the point about spending the minimum amount necessary to ensure that a project proceeds.

The fourth feature to stand out has been an increasing attempt to duplicate the so-called 'Covent Garden effect'. What happened was that an initial investment programme had a knock-on effect of encouraging others. The market thus took over and generated a much larger amount of investment than the initial project. The same thing has happened at Camden Lock, in Birmingham's Jewellery Quarter, and in Stockport's Economic Enterprise Area.[43] It is also implicit with the UDCs in the Merseyside and Liverpool docks, and in the SDA's 'area approach'. The speculative construction by private companies of industrial and commercial properties for let in the Isle of Dogs and Clydebank EZs are further examples. LDDC's promotion of private sector housing on sites that it has bought and improved has also had a spin-off encouraging further house-building in its area, but on land it does not own.[44] ICE has also looked for schemes that would have a similar knock-on effect.

In a sense the difference between the Conservative and Labour approaches is summed up by the use of different words. In the late 1970s there was

much talk of public sector schemes 'pump-priming' private investment. In the 1980s the vogue word is 'leverage'. With pump-priming, the initiative was largely left to the private sector. Providing advance factories for let in steel closure areas like South Wales for example, primed the employment pump, but did not by itself lead to new jobs. Private sector reaction was needed. With leverage, the approach is to lay much greater emphasis on a complete and viable job-creating package. Pump-priming, has a ring of being optional about it, whereas leverage is about levering a completed project into a declining area where it would not have gone ahead but for the subsidy. Under Labour there was a greater willingness to leave it to the market to put the project together, with quangos and the Government helping where necessary.

Although the political rationale underlying this approach has been an emphasis and a reliance on the private sector, this strategy has in fact been, in part, highly interventionist. It seems possible to distinguish between 'reactive subsidies' and 'initiating subsidies'. Reactive subsidies are those, perhaps like some of the RDGs, where there is little scope for discrimination as the guidelines are fairly clear, and their being granted or refused is fairly predictable and automatic. With the initiating subsidies like the UDGs, there is considerable scope for discrimination and discretion. With the reactive subsidies, civil servants and those in quangos can virtually sit back and wait for applications. However, with the initiating subsidies they only become options if public sector organisations like the SDA play a positive role - often taking the initiative - in helping to put together a development package which is then sold to private sector investing institutions. This is not an arm's length activity. It is a 'hands on' interventionist approach.

With both types of subsidy, but particularly with the initiating ones, the promotion of privatisation depends in part on intervention. The use of subsidies commits Whitehall to a continuing process of intervention to amend and 'improve' what the market decides. It is the same with getting industries ready for sale. Rejuvenating British Leyland may have a different end from the heady days of the Ryder Report in the mid 1970s, but the means to that end of selling it off, involves a similar process of intervention. The simple image of 'rolling back the boundaries of the public sector' masks a reality that is both complex and subtle.

Paradoxically enough, the promotion of privatisation depends in part on intervention, and government playing a continuing role, as with the leverage of private sector investment, and the continuing search for the Covent Garden effect.

However, it is important not to get the use of subsidies out of proportion. They have been one technique which the Conservative Governments have used to help promote some of the forms of privatisation.[45] In particular this approach has gone in parallel with attempts to limit the role of the public sector, and leave the rest to market forces. The housing field is a good example. Heseltine limited the role of local authorities, and sponsored new legislation to try to reduce problems for builders like the cost of land, thus attracting the private sector back into the vacuum. In addition he and his successors at Environment have released more green field sites for new housing when reviewing structure plans.[46] This has all added up to a completely new balance of forces which released market pressures onto the big house building firms and the building societies. The overall result has been a bigger role for the private sector in the new house building sphere. This has been partly the result of subsidies and intervention, and partly because of the influence of market forces.

The house building example illustrates a point of wider significance. The whole privatisation strategy is aimed at getting the private sector to play a greater role in carrying out tasks which have previously been seen to be the preserve of the public sector. Various techniques have been used to encourage industry to carry out this role - tax relief for gifts to enterprise agencies and for seconding people to charitable trusts, the promotion of a climate in which companies are encouraged to assist groups like enterprise agencies, the release of market forces as in the house building industry, and the use of subsidies. The Government seems to hope that such moves will encourage secondments, sponsorships, the provision of services and investment in projects earning marginal rates of return in deprived areas.

One aspect of this has been that the privatisation strategy has created opportunities for groups. The Government has actually been responsible for establishing some - BIC, enterprise agencies and Groundwork

Trusts for example and has encouraged previously established ones like ABSA and the House-Builders Federation (HBF). ABSA has been given the task of administering the Government's Business Sponsorship Investment Scheme to attract new money into arts sponsorship, and the HBF appears to have been influential in determining the location of land release. Across a broad front the Government seems to have been taking advantage of groups in this kind of way.[47]

Without getting involved in the wider debate about the different forms of corporatism, the evidence from this paper suggests that there are elements of corporatism present in the approach of the Conservative Government since 1979. Although the unions have not been involved, the Government has set up public/private organisations across a wide front; has involved groups as intermediaries in seeking to control the links between the public and private sectors; has imposed a centralising strategy; and has combined private ownership with elements of control, and strong influence over what companies do. Yet it must be acknowledged that within this some groups have been very independent and pursued their own approaches. Because privatisation is experimental there are also opportunities for groups to influence the policy making process. The building societies for example, appear to be pushing against an open door in helping to redefine the regulations that have limited what they can do.

Footnotes

1. I am most grateful to the Nuffield Foundation for a grant enabling me to carry out an interviewing programme on which this paper draws; and to those who have given of their time in being interviewed.

2. See the sources cited in the discussion of this subject in S C Young, An Annotated Bibliography On Relations Between Government And Industry In Britain 1960-82, Economic and Social Research Council 1984, pp 131/2; and The Changing Boundary Between the Public and Private Sectors, paper presented to the PAC, York, 1982.

3. See S C Young, The Nature of Privatisation, paper to be presented to the Political Studies Association (PSA) conference in Manchester, April 16-18, 1985: pp 2-4 discuss some of the main issues surrounding the problem of defining privatisation and pp 4-14 examine the seven different forms of privatisation outlined here. In some respects this ECPR paper that you are reading overlaps with, and is complementary to, the PSA paper referred to here. On privatisation as a whole there are excellent bibliographies in D Heald, Public Expenditure: Its Defence and Reform, Martin Robertson, 1983; and in M E Beesley and S Littlechild, "Privatisation: Principles, Problems and Priorities", Lloyds Bank Review, July 1983, pp 1-20.

4. See S C Young, An Annotated Bibliography, op cit, pp 185-7, 475-9 and 484-8.

5. Basically, loans, grants and soft loans are available to companies from the European Investment Bank, the European Commission, and the Coal and Steel Community. Funds for infrastructure projects are available to some public sector agencies from the European Regional Development Fund (ERDF). The details are summarised in "Funding For Construction", Architects Journal, 22-29/8/84, pp 82 and 85.

6. On local authority aid to industry see K Young and C Mason (eds), Urban Economic Development - New Roles and Relationships, Macmillan, 1983; and Architects Journal, ibid, pp 82 and 86.

7. See Architects Journal, ibid, pp 82, 86 and 89; and A Dobby, Conservation and Planning, Hutchinson, 1978.

8. See press 29/11/84.

9. Architects Journal, op cit, p 89.

10. See the annual reports under the 1972 Industry Act, and the 1982 Industrial Development Act.

11. Two rounds of Enterprise Zones have been announced - in 1980, and 1982. There are now 25 - at Invergordon, Tayside and Clydebank in Scotland; Londonderry and Belfast in Northern Ireland; Delyn (North-East Wales), Milford Haven, and Swansea in Wales; and at 17 locations in England - Tyneside, Hartlepool, Middlesborough, Workington, North-East Lancashire, Speke (Liverpool), Salford/Trafford, Wakefield, Rotherham, Scunthorpe, Glanford, Telford, Dudley, Corby, Wellingborough, North-West Kent, and the Isle of Dogs (London docklands).

12. Other benefits include fewer requests from government for statistical information; priority being given to firms within EZs for some customs facilities; no requirement for planning permission so long as the project conforms to the published scheme for the whole EZ; speedy administration of any other planning controls; and exemption from having to supply Industrial Training Boards with information.

13. On the changes introduced to the tax allowances on capital expenditure during the 1983-6 period, see "Tax Efficient Construction", Architects Journal, 9/2/83, p 57.

14. See the reports published in 1982 and 1983 by Roger Tym and Partners who were appointed to monitor the EZ experiment for the DoE. There are lists of references in Enterprise Zones: Bibliography No 203, DoE/DTp Library, 1981, 10 pp; and the Supplement, 1983, 19 pp.

15. On these programmes in general see Taking The Initiative - A Survey Of Low-Cost Home Ownership, HMSO, 1984; and K Maxwell, Joint Initiatives Between Public and Private Sectors, Planning Exchange, Glasgow, Occasional Paper No 10, 1984.

16. Bringing In Business, DoE (not HMSO), 1982, pp 10/11.

17. MDC, Initial Development Strategy, MDC, 1981; MDC, Annual Report 1983/4, MDC, 1984, pp 7, and 15/16. Between 1981 and 1984, LDDC paid about £50m for 1250 acres and spent more than £61 on servicing it - LDDC, Annual Report 1983/4, LDDC, 1984, pp 30 and 48/9.

18. See Financial Times, 10/3/82; and LDDC, Annual Report for 1981/2, LDDC, 1982, pp 6, 15, 17 and 28.

19. Bringing In Business, op cit, p 12.

20. The details of the amounts paid in grants to different organisations inside and outside the DLCAs and Assisted Areas are very complex: see Architects Journal, op cit, p 84. Technically, as DLGs could be made direct to companies after the 1980 Act, they should be included as a direct subsidy earlier in this Section. However, for convenience they are dealt with here in one place.

21. Architects Journal, ibid, pp 83, 89 and 90.

22. There are thus no footnotes for this and the preceding paragraph.

23. See for example, O Marriott, The Property Boom, Hamish Hamilton, 1967.

24. See Beating Unemployment: A Practitioners Handbook, Community Initiatives Research Trust, 1984, pp 50 and 56-7.

25. Homes Within Reach: A New Approach For Local Authorities, House Builders Federation, undated - ? 1983/4.

26. Initiatives, February 1985, p 10; and Better Business Services, Industry Department For Scotland, undated - 1983/4?

27. There are 60 authorities in England, Scotland and Wales now named as partnerships, programme authorities or designed districts under

the 1978 Act: see Architects Journal, op cit, p 81. Less than half the EZ authorities are on this list: see footnote 11 above.

28. Planning, 571, p 3.

29. SDA, Annual Report 84, SDA, 1984, p 52.

30. See respectively 14th Annual Report, HIDB, 1979, pp 89/90; and 18th Annual Report, HIDB, 1983, pp 52/3.

31. See DoE, Bringing In Business, op cit, pp 16/17; and English Estates Annual Report 1983/4, EE, 1984, p 30.

32. SDA, Local Enterprise Grants for Urban Projects, SDA, 1984.

33. Clydebank Task Force, Self Build, SDA, 1984.

34. ABSA, Sixth Annual Report and Financial Statements 1983, ABSA, 1983, p 6. See ABSA's 1983 Yearbook for a full survey of support for the arts from its members.

35. See BIC, Newsletters; and the May 1984 Directory of Enterprise Agencies.

36. See Property Journal, April 1984, pp 9-11; Financial Times, 21/7/84; and ICE, Inner City Enterprises PLC Annual Report 1983/4, ICE, 1984.

37. See respectively Civic Trust/Wirksworth Project, The Wirksworth Project, the authors, 1984; S C Young, The Changing Boundary Between The Public and Private Sectors, op cit, pp 27-41; ibid; and N Mays (ed), The Voluntary Sector In Countryside Recreation, Countryside Recreation Advisory Group, 1984. T Gibson, Counterweight: The Neighbourhood Option, Town and County Planning Association, 1984 has a wide range of examples of projects.

38. Town and Country Planning, August/September 1983, pp 8/9.

39. Examples of controversial pieces that argue this are in New Statesman 2/11/84 and 7/12/84. See also Committee of Public Accounts, 10th Report, HC 189, Session 1981/2.

40. Geoffrey Drain argues this for example in NALGO News, 2/4/82.

41. SDA, Annual Report 84, op cit, p 50.

42. L Geach and D Mundy, The Impact of Local Enterprise Agencies in Great Britain, Centre for Employment Initiatives, 1985, p 4.

43. See S C Young, The Changing Boundary Between the Public and Private Sectors, op cit, pp 19/20; and Bringing In Business, op cit, p 14.

44. LDDC, Annual Report 1983/4, op cit, p 24.

45. See S C Young, The Nature of Privatisation, op cit, Section IV.

46. See J Herrington, The Outer City, Harper and Row, 1983.

47. See S C Young, Privatisation, Planning and the Changing Role of the Public Sector, Croom Helm, forthcoming.