THE FUTURE OF THE AUTOMOBILE

THE AUTO INDUSTRY AND GOVERNMENT: ANALYSING NATIONAL INDUSTRIAL POLICIES

by

Daniel T. Jones

Background Paper
International Policy Forum
Eagle Lodge, Pennsylvania, U.S.A.

28 June - 1 July 1981

AN INTERNATIONAL PROGRAM
COORDINATED BY THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CENTER FOR TRANSPORTATION STUDIES

CENTER FOR INTERNATIONAL STUDIES

Future of the Automobile Program

ALAN A. ALTSHULER, CO-DIRECTOR
DANIEL ROOS, CO-DIRECTOR
ROBERT P. GREENE, EXECUTIVE OFFICER

BUILDING W76
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASSACHUSETTS 02139
(617) 253-8540
TELEX: 921 473 MIT CAM

UK-A-81-1-0

THE AUTO INDUSTRY AND GOVERNMENT: ANALYSING NATIONAL INDUSTRIAL POLICIES

by

Daniel T. Jones

Background Paper
International Policy Forum
Eagle Lodge, Pennsylvania, U.S.A.

28 June - 1 July 1981

Science Policy Research Unit
University of Sussex
Brighton, BN1 9RF, UK

Industrial policy is undoubtedly an emotive issue. Whenever it is discussed in an international setting it is immediately obvious that participants from different countries have quite different assumptions and approaches to it. In my experience it is rare that one even begins to bridge the gap between these differing points of view. Quite often what happens is that people end up talking past each other and little common ground is established. The international implications of conflicting national industrial policies will be one of the critical constraints on the evolution of the industry in the 1980s. Understanding and resolving these conflicts depends on finding this common ground and building greater mutual understanding upon it. So far we have not found a useful and acceptable framework which allows us to proceed with this dialogue. It should be one of the tasks of this project, with its unique international dimension, to develope such a framework and to analyse national industrial policies in the light of it. This note is an initial attempt to develope such a framework.

Let us begin by recalling some of the characteristics of the auto industry. It is a classic example of a highly oligopolistic industry; the largest nine firms based in five countries accounted for 83% of total world production in 1978 and the largest two for 39%. Until now the industry has been characterised by an increasingly homogenious product, in which there are substantial static economies of scale in design, production and distribution. New products cost very large sums to develope, the gestation period is relatively long, of the order of five years, and model life is also long, particularly for floor pans and engines. These represent high and growing barriers to new entrants. Although it could not be described as a skill intensive industry, auto production is certainly strategy intensive and organisation intensive; by this I mean that the ability to manage complex structures is at a premium in this industry. There are only a few other industries where this is so important, the aerospace industry being an obvious example. On top of this the industry is undergoing a profound change from being nationally or regionally based to becoming a global industry. This not only opens up substantial new opportunities for reaping economies of scale in design, production, etc., but raises the stakes by an order of magnitude. The costs of staying in the market, which is the essence of competition in such an industry, is much higher than hitherto, and so are the risks. Mistaken or shortsighted decisions may result in elimination from the market with little chance of reentry.

Survival depends on making the correct long term decisions regarding new models, market developments and so on while making sufficient surplus to finance these activities. Even in a world of increased market and technological uncertainty that Klein and Utterback suggest we might be entering, the lesson is the same. Key decisions that determine the survival of the firm are those related to the long term, and not simply to simple return on investment criteria and the next quarter's profit figures. Markets in this case take a too short-sighted view, and indeed lead to a weakening of the ability to compete in the long term. Companies reacting to short-term market signals alone might well end by sacking engineers and R and D staff, as has happened in some cases, upon which future technological competitiveness depends. This does not mean ignoring market signals, far from it, but the relevant market signals for such strategic decisions are changes in long term market shares.

The consequences of such short term business thinking or straight mistaken decisions only of course become evident some time later, by which time the situation may have compounded itself. Further decisions will have been taken that will also have to be reversed. It is usually at this point that governments get involved. Government intervention in such a situation involves a massive exercise of judgement, both about the ability of the firm, even with new management, to reverse these decisions and on the prospects of the industry in general. This is true both of firms that might survive with help and those which the state is concerned to run down as smoothly as possible. In such a situation it is, of course, extremely difficult to regain lost market share, as even with a good product, customer loyalty and the dealership network have to be rebuilt, which is a long and expensive process. In a sense governments become involved when it is almost too late. Given the very severe political and social implications, let alone the economic implications, of the elimination of such a large firm in the national economy the state is bound to become involved. These more macro consequences are, of course, not an input into business decisions. Is it legitimate that they should be? After all, large firms do in fact enjoy a measure of implicit protection from the state.

If short-term market considerations are not the relevant criterion for key decisions in this industry, then this suggests that the focus of attention should be on how these decisions are taken. On the one hand this involves a study of the internal structures of decisionmaking within the firm and the degree to which it is able to respond to uncertainty in the market. The Klein and Utterback part of this project will investigate this. On the other hand such strategies are not taken in isolation by the firm. They involve a whole set of relationships with other actors, such as banks and financial institutions, raw material, component and capital goods suppliers, trade unions and government. The nature of these relationships and how well they function has an important influence on the quality of firm decisionmaking and hence on competitiveness. Of course, an environment supportive of long term decisionmaking is not a substitute for, but rather an adjunct to, appropriate internal decisionmaking. I would call this set of relationships the external decisionmaking framework. How these relationships function and influence competitiveness is a neglected area of analysis.

Traditional approaches to industrial policy look simply at the instruments used, their cost and their effectiveness. International comparisons of industrial policy do the same thing. However, they do so without also considering how other economic institutions function in different countries. The implicit assumption that everything apart from industrial policy is the same is clearly invalid. In Germany you have very close relations between banks and large firms not found in Anglo-Saxon countries, in Japan the large Zaibatsu groups, in Italy large public corporations, and in France close government-industry relations. I would, therefore, argue that it is misleading to compare industrial policies in the traditional manner without also considering the rest of the decisionmaking framework of each country. This then should be the focus of our analysis, and in the light of this we can examine the role of the state as one of the important actors within this framework. For historical and other reasons, in some countries it will be a significant actor and in other countries much less so. Indeed, the absence of adequate private economic institutions in one country had often prompted the state to create a public substitute where the private sector was not able to fill the gap on its own. The involvement of the French state in allocating industrial finance after the war is a case in point, in the absence of a strong domestic industrial banking sector.

The focus of our work in looking at industrial policy should therefore be to analyse it in relation to the overall functioning of the decision-making framework in each country. By looking more closely at the nature and way these relationships work, we can not only identify national strengths and weaknesses, but also some of the important obstacles to structural change in an economy. Such international comparisons are highly illuminating in that they pinpoint weaknesses in a particular country not perceived by observing that country alone. They also serve to make others aware that features of their own economic system which they no longer perceive because they take them for granted simply do not exist elsewhere. What they cannot, of course, do is provide a precise policy menu that can simply be replicated in another country. However, having highlighted the main problems in bringing about structural change in the economy, the experiences of others can point to directions in which to look for solutions. Depending on the particular political and institutional situation in a country, a private solution may be both more appropriate and possible than one involving the state or vice versa. It is important to note here the common denominator here is the problems in achieving structural change rather than the ideological character of the solutions adopted. Because of all the other pressures on the state, a private solution will probably be a more efficient solution, though where private business cannot develope the collective will to implement a solution state involvement will be a close second best.

It is often argued, for instance, that the close relations between large German firms and industrial banks, through both being large shareholders and board members and the provision of long term finance, greatly facilitates precisely the kinds of long term decisionmaking discussed above. Likewise, the close relations between the manufacturing and banking components of the Japanese Zaibatsu perform a similar function. In the absence of such a structure, the French attempted to create a state substitute, initially through the Plan and later through the activities of the Ministry of Industry. Another example is the mobilisation of opinion or encouragement of a consensus about the appropriate position of a country in a rapidly changing international division of labour and its implications for firm strategies. Both in France and in Japan this function is actively undertaken by the state, through the Plan and the Ministry of Industry in France and the Long Range Vision and the MITI Industry Structure Committees. In Germany this function is to an extent carried out privately through the strong and influential industry associations. In parentheses this illustrates the often remarked similarity in the structure of industry in Germany and Japan, and in the approach of government to industry in France and Japan. Has Japan, therefore, got the best of both worlds as is often argued?

It is a quite separate matter to argue that the auto industry is in some way a strategic industry essential to the industrial fabric of any advanced nation. It is often alleged that the upstream linkages with the steel, aluminium, machine tool, metal goods, automotive component, electrical equipment, rubber, glass, and more recently the electronic industries, make it a strategic industry. However important the auto industry is to their survival, the direction of such resources towards companies which do not exhibit dynamic behaviour is questionable in the long run. Undoubtedly there are severe short term, and possibly long term, employment and balance of payments implicatons that have to be taken into consideration by the state in deciding on a particular course of industrial policy. More subtly, the implications of technological dependence and loss of control with foreign ownership of domestic firms also pose choices for governments. We would like to begin to throw light on these choices in the course of our research. These are certainly considerations governments have to take into account, though they are additional to the questions of promoting structural change in the economy that we are concerned with in this paper.

From such a study of industrial policy in general, and in the auto industry in particular, much can be learnt about how the external environment of the firm can facilitate or hinder structural change. In this vein I have elsewhere analysed the industrial policy options open to the UK and in the appendix to this paper the history of government-industry relations in the European auto industry.[1] It is, of course, how one manages structural change, not only to promote international competitiveness, but also to alleviate the social and political consequences, that is the critical issue facing the auto industry, particularly in a period of limited economic growth. Even in the USA, whose industry has been isolated from the international economy until recently, this must increasingly be the focus of concern rather than continuing to indulge in the luxury of

---

[1] Daniel T. Jones, 'Catching up with our competitors: the role of industrial policy', in C. Carter ed., Industrial Policy and Innovation, London: Heinemann, 1981.

mediating the conflict between domestic interest groups. There are therefore two facets to industrial policy, the offensive policy seeking international competitiveness and the defensive policy slowing down the process of decline. By focusing on the problem of structural change we also avoid the rather sterile debate about discriminatory policies versus horizontal or general policies. The question is which type of policy is more effective in the circumstances. Likewise, we must remember that the auto industry also consists of smaller component firms and policies that are suitable for the giants are often not so for smaller firms. For instance, policies to promote the exploitation of different radically new technologies will include policies to create new technology-based firms as well as finance for big research programmes in the auto companies.

Throughout this paper I have emphasized the importance of structural change. I do so because in a world of slow economic growth in general, and near maturity in the developed auto markets, if the existing structure becomes ossified this leads very quickly to economic stagnation. This stagnation in turn gives rise to even more serious economic divergence between the main producing countries, which soon become intolerable and leads to political conflicts. It is not an exaggeration to say that if this political conflict is not resolved, it poses great dangers for the continued functioning of the world economy, on which contemporary living standards in the west depend. Being such a substantial industry in total world production and trade, the auto sector is at the centre of these events.

Regaining this economic dynamism entails both the right kind of behavior in firm decisionmaking, as outlined in the Klein-Utterback paper and the recent article by Hayes and Abernathy in the Harvard Business Review.[2]

---

[2] Robert H. Hayes and William J. Abernathy, 'Managing Our Way to Economic Decline', <u>Harvard Business Review</u>, July-August 1980.

It also necessitates the transformation of the industrial structure of advanced economics in the face of new challenges. This transformation involves the introduction of new products, new production methods, a redistribution of resources from one industry to another, and the adaptation to changing trade patterns. In a world of continued economic divergence and slow growth, the focus of concern must be long term decisionmaking and structural transformation, and not the pursuit of short run market equilibrium.

At a later stage in our research we will also have to turn our attention to what kind of action is necessary at an international level in the light of what we have already discussed. So far we have been concerned with national policies to promote structural change. Continued differential performance between auto producing nations will entail action to at least contain the conflicts this will give rise to. Doing this without at the same time sacrificing economic dynamism is almost impossible. However, even if these measures to promote structural change are successful at a national level, we may need to find ways of resolving a number of issues. These might include some of the following very tentative list.

° Is there a need to find an international mechanism whereby the winners can compensate the losers, thereby helping the losers to leave the industry. Both the successful producers and nation states who realise survival is too expensive have a common interest in facilitating exit. However, there is no consensus on the need for such compensation or how to do it. Were such a mechanism to exist, national states may be more willing to countenance exit than hitherto.

° Can restraint by the more dynamic and successful producers, who would otherwise come to dominate the world industry, be channelled into bringing a more dynamic element into the less successful economies via foreign direct investment? For instance, the challenge of the Japanese has already resulted in a rethinking of business behaviour in North American and Western Europe. A further step would be to learn from the experience of the Japanese skills applied within our own domestic environment.

° Once countries become significant exporters, is there still a case for infant industry protection? How does one ensure this is dismantled when no longer justified?

° Just as it is one of the roles of the nation state to represent the common interest of the citizens of that country where these differ from the private interests of the companies concerned, is there a distinct global interest that differs from that of nation states? Can one apply the public interest argument on a global scale? If so, how does one begin to think about mobilizing a consensus on what it is and a mechanism for operationalising it?

I fully realize that what is presented here is a rather technocratic approach to analysing industrial policy. It is precisely because the analysis of a more political kind immediately leads to conflicts of ideology, and hence nowhere, that it is so written. By doing so one addresses the problems that confront us all. Ideological considerations are appropriate in resolving domestic conflicts and in deciding how to arrive at domestic solutions. However, the thing that unites us all are the problems. It is here we need to seek common ground. I hope this paper has gone some way to doing this.

APPENDIX I

GOVERNMENT-INDUSTRY RELATIONS IN THE EUROPEAN AUTO INDUSTRY

(Extracted from Daniel T. Jones, Maturity and Crisis in the European Car Industry: Structural Change and Public Policy. Sussex European Paper No. 8, Brighton: Sussex European Research Centre, 1981).

France led Western Europe in the development of the car industry in the 1920s. Strong domestic firms emerged in a period of high protection, in the form of tariffs and quotas, which were only removed in 1959 (see Table 17). The only foreign entry in the interwar period was Ford, who was unsuccessful. The Matford venture broke up and Ford decided to build a new plant at Poissey. After a disastrous start after the Second World War and a failure to compete in the small car market Ford sold out to Simca in 1954. The government acquired its own national champion when Renault was nationalised in 1946, ostensibly because of wartime collaboration but fuelled by political bitterness arising from the harsh treatment of trade unions by Louis Renault before the war[10]. Throughout the 1950s and 1960s the industry was dominated by Renault, Peugeot, Citröen and Simca. Chrysler attempted to enter in 1963 by taking control of Simca, but never managed to integrate Simca with its UK and Spanish acquisitions. Finally Peugeot emerged as the force to rationalise the French industry, by acquiring Citröen in 1974 and Chrysler's European operations (including Simca) in 1978.

Hostility to foreign firms has been a continuous feature of government policy towards the car industry in France. The state was unsuccessful in blocking Chrysler's takeover of Simca between 1958 and 1963 because the shares were already partly foreign owned. In 1964 de Gaulle rejected General Motors, and Ford's plans to build assembly plants in Strasbourg. Both the assembly plants were subsequently located across the border in Belgium (General Motors) and Saarlouis (Ford), although General Motors was allowed to set up an automatic transmission plant in Strasbourg. The government also blocked Fiat's attempt to take over Citröen in 1969 and the Bosch takeover of SEV Marchal in 1971. Although no official permission is required for foreign firms to purchase up to 20 per cent. of the shares of a French firm, once they try to go further they have to obtain the permission of a committee of the Ministry of Finance. This committee had the powers to block any take-over that it considered harmful to French interests or contrary to the government's industrial strategy. New rules, published in 1980, relax this requirement by only requiring prior notification, with the freedom to proceed after two months have elapsed[11]. Mergers will only be blocked in future if they endanger public order, public health or the country's defence interests. This relaxation only applies to firms from other EEC member states. Initially the French government was actively seeking to attract the proposed new Ford assembly plant to the Lorraine, an area of high unemployment with the rundown of steelmaking. However, after top level pressure from the French manufacturers and a rival proposal to locate a number of components plants there, the government backed down. Shortly afterwards Ford in any case abandoned these plans.

Wherever possible a French solution was sought to take over ailing firms. With the Peugeot takeover of Chrysler the government achieved its objective of an entirely domestically owned industry. With the continuing problems at Citröen, arising from the loss making commercial vehicle subsidiary, Berliet, and their concentration on advanced but unprofitable engineering, it became clear that a solution had to be found. Peugeot was seeking ways to improve the domestic base and a deal was struck with the government whereby Peugeot took over Citröen with some temporary financial aid, in exchange for Renault taking over Berliet. Because of the importance of the motor industry for French exports the industry has always been of central concern in industrial policy terms. An indication of the importance of close government-industry relations in France was the acquisition of Jean-Paul Parayre by Peugeot from the Ministry of Industry. Apart from being a very promising high flier the particular contribution he brought to a previously highly secretive private firm was experience in dealing with government and a more public and international profile for Peugeot. Faced with the task of restructuring the rest of the French car industry, outside Renault, Peugeot will be increasingly drawn into a closer dialogue with government, particularly if it begins to face difficulties, either from a downturn in the market or in rationalising plants.

The government has also been actively involved in the restructuring of the French components industry, which has historically been weaker than elsewhere. Ferodo became the chosen instrument to take over SEV Marchal after Bosch was refused permission to acquire it in 1971. Later Ferodo took over the Paris-Rhone-Cibie group and again became the chosen instrument to block the attempt by Lucas to take over Ducellier. The Lucas takeover was initially blocked by the state, and after a legal battle which is still unresolved, Ducellier remains jointly owned by both Ferodo and Lucas. If further court action does not give Lucas majority control it will have little option but to concede effective control to Ferodo. In a similar situation Fiat was forced to retreat after only being given permission to take a 49 percent share in Citröen.

Renault's success has given it an important degree of independence from day-to-day intervention from the government.

The heads of the company are appointed with close government consultation, formally by the Cabinet, to whom it reports on the company's plans once a year. Not surprisingly the personalities chosen reflected government priorities at the time. Pierre Lefaucheux was a left wing businessman sympathetic to Monnet's planning exercise and Pierre Dreyfus was himself a senior civil servant. The relationship with government is based on an informal dialogue, with the government approving the basic strategies and removing obstacles to achieve it. The former included encouraging the development of smaller cars and exports and the latter of removing the constraints of having to make dividend payments to shareholders (see the much lower profits of Renault in Table 12) negotiating favourable tax treatment and alleviating the burden of social security payments. All of these enabled Renault to restrain price increases and increase its market share. Renault had direct access to the government at the highest level and was able to achieve a favourable resolution of some conflicts with other government departments and the Plan. These occurred over the speed of expansion, the location of new plants and more recently over the choice of a foreign firm for electronic components. It is difficult to estimate the precise amount of financial aid Renault has received from the state in previous years, though it is perhaps significant that its latest expansion plans in the US have been financed on the open market. There is no doubt that if Renault should encounter financial difficulties the state would provide the necessary funds to support it. On the other hand Renault is still increasing its share of the French market and will be a very strong competitor world-wide if it develops much closer relations with Volvo and makes a success of its takeover of American Motors.

Perhaps the most significant government intervention for the French car industry is the limitation, backed up by threats of the imposition of quotas, on Japanese car imports. Together with the relaxation of price controls French firms have been free to raise domestic prices to raise funds to meet the investment programmes and restructuring. While the real price of new cars remained roughly constant in Germany and the UK, in France they rose by 9% between 1970 and 1978. A healthy home market in which the domestic producers retain a considerable degree of freedom and control is a major advantage for French firms competing for a place in the world oligopoly of the mid '80s. There have been some calls by the French manufacturers for government aid to support research and development activities, following the Italian example. So far this has not yet materialised.

In many respects the context in which French government intervention is taking place in the car industry is very favourable. The French car industry has been very competitive internationally and there has been little need to redistribute resources out of the car industry. This might change as Peugeot rationalises the three different model lines and distribution channels. The quality of top decision makers in the car firms has also been very high. Not only is this important in itself but one of the important routes to the top positions in the car industry, as in any other, has been through the Ministry of Industry. For this reason the Ministry of Industry manages to recruit some of the best talent available and give them extensive exposure to the problems of developing strategies for particular industries. Promotion to influential positions is rather quick and the staff of the Ministry is exceptionally young when compared with the rest of the French civil service. The subsequent move into industry means that leading industrialists, at least in the more publically oriented companies, share the same philosophy and outlook of the officials in the Ministry responsible for their industry. Developing a consensus on the appropriate strategy is therefore greatly facilitated. For this reason the recruitment of Jean-Paul Parayre signalled an important change in the role of Peugeot in the car industry. Once a very secretive, private company located well away from Paris with as little contact with the government as possible, it has from then onwards taken on a new role as a major internationally oriented corporation with the task of reorganising much of the car industry in France. The shift in stance of course did not happen overnight and was a gradual process following the takeover of Citröen in 1974.

Although not always able to get its way the Ministry of Industry very clearly has certain strategic objectives for the car industry, the prime one being to end up with at least one, if not two, of the big surviving firms in the world car league in the mid '80s. Renault had no desire, and was not persuaded by the government, to take over the taks of reorganising the weaker French firms but instead its task was to establish an international base, particularly in the US market. The government have made it clear that, while they have not directly funded the takeover of American Motors, they would underwrite any losses if this went seriously wrong. We have already outlined the riskiness of this venture. Peugeot, on the other hand, had to expand in one way or another if it was to survive in the big league and the government was quite prepared to help it do so. Although there will undoubtedly be problems in absorbing its acquisitions the government will, if necessary, step in to help. Should Peugeot's position become critical the government would have little hesitation in either providing the necessary funds or merging it with Renault. If Peugeot survives its domestic, and European, rationalisation and has sufficient funds to support Chrysler, either financially, or by supplying engines and designing models, then France will end up with not one but two world league firms with a presence in the European and US markets. Should Chrysler collapse in the US Peugeot might be able to draw on government assistance to take it over if it did not have sufficient funds internally. Likewise the government would look favourably on any French takeover moves towards British Leyland or Seat.

In conclusion government policy towards the car industry in France consists of a close dialogue between the firms and the government, involving a series of bargains over time. The dialogue is greatly facilitated by a consistent and clear set of objectives on the part of the state, the common background and interchange of personnel and the willingness and ability to underwrite strategic objectives that may have a short term cost. All this of course takes place in the context of a rapidly growing economy and industry, where successful firms retain the initiative. Retrenchment in less favourable circumstances would not seriously undo the strong presence the French have achieved in the car industry.

Government efforts to promote a strong domestic car industry in Germany in its early stages were insubstantial and ineffective. Tariffs were not high by French or British standards (see Table 17) and foreign companies, such as General Motors and Ford were accepted and welcomed. In the face of such competition the very much smaller German firms, either individually or after their merger into Auto Union, failed to emerge as strong domestic challenges. It was only during the Nazi period that the government had an impact on the industry, through foreign exchange controls, controls on imports, export requirements, controls on wages and pricing and programmes to standardise components and utilise interchangeable parts. The two foreign firms were by then well established and in a good position to respond to these directives. The only thing that they could not offer the Nazi regime was a national champion who could symbolise German industrial power to the world. The government then called on Dr. Porsche to design a small car for the masses and created Volkswagen in 1937. Previous design studies by Ford and General Motors for a similar sized car were dismissed in favour of creating a new German company that could stand on its own in competition with the foreigners[12]. Germany at last had its national champion, created by the government, though it did not enter civilian production until after the war and the collapse of the government that nurtured it.

After the war the British occupation government refused Ford permission to take it over. By the late 1950s Volkswagen was obviously very successful with its 'Beetle' and the government was ideologically committed to non intervention and free market principles. Volkswagen was therefore left alone and suffered very little direct intervention in management decisions. This was little changed in 1961 with denationalisation, as outlined in Appendix 1. The most critical time for Volkswagen was in the first half of the 1970s when the painful transition had to be made from a one model strategy, with a heavy reliance on the US market. We have earlier described the sequence of events in Volkswagen between 1971 and 1975. To set a previously highly successful company off in a different direction demands a great deal of the top management. Such a public company, still partly state owned, cannot do such things in private and part of the problem was that even if management understood what was needed and thought they could solve the problems, they needed to build a consensus for such action to be possible. It was not only necessary to convince the banks and shareholders, including the Federal and Land governments, but also the trade unions who were more powerful on the Supervisory Board than their numbers suggested because they found allies in the representatives of the Bank für Gemeinwirtschaft and the Socialist governments at a Federal and Land level. Also as so much of the debate was conducted in public and as political parties and trade unions respond strongly to public opinion a consensus also had to be found amongst the general public before major steps could be taken. At one stage Leiding actually wrote to the wives of Volkswagen workers explaining the seriousness of the company's position.

During this critical transition period at Volkswagen successive company heads brought particular skills and not others. Rudolf Leiding solved the problem of new models to replace the Beetle and was a superb design engineer, though he was not successful on the production side or in judging the evolution of the market. In addition he was openly hostile to the Supervisory Board and badly mismanaged relationships with the trade union, I G Metall. His successor, Toni Schmuckler, successfully established good working relationships with the union leaders and managed to get agreement to the redundancy programme, and subsequently when the market improved agreement to build an assembly plant in the US. The abrasiveness of Leiding in his dealings with the unions in a sense was a necessary education process for both sides, for the unions about the seriousness of the situation at Volkswagen and on the management side about the need for a consensual working relationship with the unions on major policy decisions. The involvement of the government was in a sense minimal, although the Socialist party in power was concerned that the conflicts within Volkswagen should not get out of hand, especially if the economic consequences of failing to agree on how to resolve the problems could subsequently be blamed on the government. Therefore the Federal Chancellor, Helmut Schmidt, played an important part in breaking the deadlock and convincing the parties involved to find better working relations, and in the process removing the Chairman of the Supervisory Board and the Chief Executive. Thereafter new working relationships were established. Even the package of regional aids to ease the layoffs proved unnecessary when the market turned up again in 1976.

In the postwar period the resistance to foreign takeovers was provided by the big banks and not the government, who were committed to the free market ideology. In the mid '60s and again in the mid '70s elaborate precautions were taken by the bankers to frustrate a possible takeover of Daimler Benz. Large blocks of shares in both Daimler Benz and BMW are held by individual families as well as by the banks. A further block on foreign takeovers in the components industry was provided by the Federal Cartel Office, which successfully opposed a merger between GKN and the Sachs group, both making clutches, shock absorbers etc. After three years of investigation and litigation, reaching the Supreme Court, GKN withdrew without an appeal to the Federal Economics Minister. The merger was blocked to prevent GKN becoming a dominant force in the industry in Germany and to halt the spread of conglomerate mergers. Here there is a real conflict between the objectives of creating a strong European components industry to compete with American firms and the anti-trust policies of certain countries judged solely on national criteria. Not only are there important differences in the scale of operations of the European and American components firms but the size of the research and development effort required and costs of introducing new products in components is increasing as fast as in cars.

Another strand of intervention peculiar to Germany is the involvement of Länder governments in rescuing firms in trouble. Again this is not the same kind of direct intervention as ,for instance ,the British government rescue of British Leyland. It should be seen as one actor in a situation where a consensus among the interested parties is the crucial factor. In the case of the attempt by the Bremen Land government to rescue Borgward in 1961 there was a widespread feeling among industry experts, the banks and public opinion generally that the situation had gone too far and could not be put right simply by cash injections.

At that time there was a more receptive public reaction to bankruptcies; the more recent rescue of AEG-Telefunken shows that this is no longer the case. Although the rescue did not succeed because the Land government could not convince the banks,part of the plant was subsequently used to produce commercial vehicles. A similar example, that of the reconstitution of BMW with the aid of the Bavarian Land government, was successful. Opinion in the banks and amongst observers of the industry was optimistic about the long term prospects of BMW, despite the rather shaky condition of the firm at the time. The Land government was then able to join with the leading banks to provide the necessary credit guarantees. In this case, although the Land government provided a political role in mobilising support for a Bavarian car firm,the deciding factor was the attitudes of the banks and leading family shareholders.

So far government funding of basic research and development has been of symbolic rather than material consequence. Out of about DM 1 billion spent by the industry on R & D the government contributes about DM 60m. a year. The joint venture between Daimler Benz and Volkswagen is also relatively unimportant, and has not led to co-operative production of components,etc.

The most striking thing about the relationship between the government and banks in Germany is both the lack of direct government involvement in strategic decision making and the importance of the consensus building process in any situation where the government might become involved. The government does not in any way have a set of strategic objectives for the car industry and devotes less resources to monitoring the day to day changes in the car industry than for instance the French. It is not called upon to develop in house expertise and has been rarely called upon in postwar years to exercise its judgement about firm-specific strategy decisions. Also,in contrast to the French, where the main focus of discriminatory intervention decisions is an increasingly powerful Ministry of Industry, there is no central ministry responsible for industrial strategy. A most important source of discriminatory power is the Ministry of Science and Technology, which of course is not normally involved in rescue cases. Major discriminatory spending decisions, when they occur, are almost entirely the responsibility of the Ministries of Economics and Finance.

There are three reasons why such intervention has not been necessary in Germany, the first being the overall success of the German economy and the car firms and the relatively smooth way in which resources move from one industry to another. The second reason is the very favourable social bargain between the unions and management; the involvement of the unions in the decision making process, while it does place added burdens on management, also reduces the uncertainty about a strategy once it has been agreed, ensuring for instance a positive attitude towards technical change and relocation of production. Undoubtedly the centralised union structure makes reaching such co-operative working relationships easier and facilitates the building up of a substantial professional and research staff at union headquarters. The unions are therefore not bargaining in the Supervisory Board with any informational disadvantages. The existence of such a Supervisory Board also acts as a check on the quality of management, as shown by the ousting of Leiding at Volkswagen. In many ways the situation at Volkswagen is a rather special example,where not only the banks and the unions but also government representatives sit on the Board. Firms without this government representation do not have to conduct their affairs quite as publically as Volkswagen. The third reason,then,is the existence of a framework of consensus building amongst the main interested parties that is conducive to taking long term decisions. The industrial banking tradition is likewise oriented to a longer time horizon than for,instance,British bankers. The banks, unions and management together are the main actors in this process, while the government from time to time comes in to try to mobilise the consensus in a particular direction. Rarely is it able to take the initiative independently.

The British car industry was highly protected by tariffs from 1919 to the implementations of the GATT tariff cuts of the 1960's. However, this was not accompanied by a hostility to foreign firms and both Ford and General Motors established a presence in the market in the 1920's; in particular, Ford became the leader in terms of production efficiency with the opening of the Dagenham plant in 1931. The previous market leaders were slow to react to the challenge of Ford and the process of concentration was temporarily reversed during the 1930's. Although prompted by the Ford challenge, the defensive merger between Austin and Morris in 1952, the two largest domestically owned firms, was not followed by any substantial rationalisation or integration.

During the 1950's and 1960's BMC grew with the rather buoyant market, and the more difficult problems of integrating the disparate parts of the organisation were pushed into the background. Instead, a rather optimistic strategy of maintaining two model lines and separate distribution networks was chosen. The Mini, introduced in 1959, was a great technical success, but never itself made any money for BMC, and was not followed by a really successful middle market model to challenge the Cortina. The process of achieving higher production through restructuring and streamlining the company was aggravated by the aquisition of new companies in the mid '60s. When the market slowed down in 1967 the historic weaknesses became apparent again. In the meantime a commercial vehicle producer, Leyland, had taken over Standard-Triumph and was aggressively expanding through aquisitions. It is not the place here to detail the precise sequence of events that took place in these two firms in the 1960's. We can summarise by concluding that the major weaknesses lay in the area of management, particularly when contrasted with Ford during the same period, and in the area of industrial relations.

The advent of the labour government of 1964 marked a shift away from the predominantly non-discriminatory industrial policy of the past, towards more direct intervention in particular sectors or firms. Although the government had in the past been involved in attempts to restructure particular industrial sectors, such as in cotton textiles, these were very much the exception to its basic approach to industrial policy[13]. Already before the Labour government came to power the Conservatives created the National Economic Development Office and committees for particular industries and the Department of Scientific and Industrial Research was playing a more active role. Labour turned the latter into a Ministry of Technology and gave important responsibilities for overall industrial policy to the newly created Department of Economic Affairs, the department responsible for drawing up a National Plan. After the failure of the National Plan and the gradual demise of the DEA many of these functions were transferred to the increasingly important Ministry of Technology. The Department of Trade, which was the standard bearer of free trade and non-discriminating intervention in Whitehall was down-graded in importance during this period. Another new institution that was created by the Labour government was the Industrial Reorganisation Corporation in 1966, which was to 'promote or assist the reorganisation or development of any industry' and to promote 'industrial efficiency and profitability'[14]. The main argument for the creation of the IRC was the premise that production units in many sections of British industry were too small to compete with the best in

Europe and North America. The Treasury, traditionally the main decision-making centre for financial disbursements to industry, was fighting a rear-guard action to recapture the functions hived off to the DEA. At the same time it was less able to resist calls for large scale spending on particular sectors or companies because of the strong political support within the cabinet.

In this context leading politicians, including the Minister of Technology and the Prime Minister, became concerned to see a merger between BMC and Leyland, something that had been discussed from time to time in the past between the two firms[15]. Essentially the intervention in this case was one of persuading the heads of both companies to find a formula for accommodating the top management of both firms in a new board and senior management structure. When such a formula was found in 1968 the IRC was involved in providing a loan of £25m, but otherwise it did not directly involve any other ministries as such. The politicians basic assumption was that some form of merger was necessary and inevitable, though almost no detailed study was made of what would have to be done to make the merger work and what the potential benefits were. This was left to the management to work out later. The rather naive approach of the politicians was underlined by the fact that they wanted to hurry the merger through to maximise the benefits of the 1967 devaluation of sterling. This view misunderstood the time lags involved in the car industry and the difficulties of merging such large organisations, let alone the unresolved problems that led to British Leyland's difficulties in 1968.

Although the merged British Leyland made a profit in the boom years of 1971 and 1973 the problems of running such a large and diverse company, quite apart from the integration of the constituent parts, became apparent again in 1974. It was clear that some form of assistance would be required. The newly re-elected Labour government set up an enquiry by its think tank, the Central Policy Review Staff, while the House of Commons Trade and Industry Committee also investigated the future of the UK car industry [16]. Slightly earlier in 1975 Lord Ryder, who was then the head of the reconstructed IRC, now renamed the National Enterprise board, also prepared a plan for British Leyland[17]. It was on the basis of this plan that the company was rescued from bankruptcy by nationalisation. The Ryder plan was much shorter on detailed analysis of the problems that led to nationalisation than the other two reports, and its appeals for substantial government funds was based on very optimistic forecasts (particularly in the light of the findings of the other reports) of increased production and market shares. It further compounded the problems of British Leyland management by centralising decision making and creating one large car division employing over 100,000 people. This proved to be a fundamental mistake. Management was already dangerously overstretched and a fragmented British Leyland suffered worse than most from the particularly British problem of organisational diseconomies of scale, discussed earlier. The Ryder solution was, in effect, a continuation of the thinking that was used to justify the original merger in 1968, i.e.,emphasising the potential economies of scale in an integrated production operation rather than tackling the problems of achieving that scale through improved productivity.

The next two years saw a further deterioration in the position of British Leyland, which the Ryder strategy failed to halt, and increasingly acrimonious relationships between the parties involved. British Leyland's market share fell from 30 percent to 24 percent in a period when the total market increased by 12 percent. The actual plan itself was framed in vague terms and it was not clear where the point of ultimate accountability lay. The National Enterprise Board, which was supposed to monitor the progress of British Leyland and report back to the Secretary of State for Industry became increasingly identified with its chairman's strategy and more and more involved in management decisions: Effectively,the NEB became another level of management and the scope for delays in taking decisions, breakdowns in communication and passing the buck increased. Management morale suffered and so did relations with the trade unions. The government became increasingly uneasy about spending such large sums of money without any visible signs of progress and was forced to rethink its whole involvement by a prolonged toolmakers strike in 1977. The high public visibility of the company made the task of management more difficult and hardened the positions of the protagonists on every issue when what was needed was the development of a consensus within the firm on how to achieve a less fragmented structure and higher productivity.

It was not until Michael Edwardes took over as Chief Executive in late 1977 that the situation at British Leyland began to come under control. He was given the political backing to cut the number of plants and to shed labour where necessary. One of his first decisions was to decentralise decision making and introduce explicit performance targets for each of the major units of the company. He also won greater independence from the National Enterprise Board in his day-to-day decision making. After some tough confrontations with the trade unions over pay claims, plant closures and the introduction of new work practises, the first fruits of his strategy are beginning to emerge (see Appendix I). Edwardes was also helped in implementing his strategy by the election of a Conservative government in 1979, which was pledged to take a tougher line with nationalised industry deficits. In fact, this tougher stance was more important symbolically than in reality; when pressed the Conservative government was also willing to provide additional funds to British Leyland.

After taking over Rootes in 1967 Chrysler failed to invest sufficient capital and management expertise to both rebuild the product range and integrate it with its other European acquisitions, Simca in France and Barrieros in Spain. By 1975 both the Chrysler corporation in the US and its UK subsidiary were making heavy losses, the latter not for the first time since being taken over. Early that year various possibilities of government loans, through Finance for Industry, or selective assistance under the Industry Act, were explored, though these were overtaken by events. By November Chrysler US gave the British government an ultimatum; either take over Chrysler UK completely, take on 80 per cent. shareholding or see it closed down within four months[18]. Despite the obvious signs that Chrysler UK was in trouble the government was taken by surprise. In the ensuing round of bargaining between the government, represented by the Secretary of State for Trade and Industry, various alternatives were evaulted by the Department of Trade. The Department of Industry's Industrial Development Advisory Board, an independent board of advisers, reinforced the Department's own assessment that Chrysler UK alone looked unviable. Neither British Leyland or the National Enterprise Board would consider taking on Chrysler UK. Therefore, initially, the Department favoured letting Chrysler UK go into liquidation, buying up the valuable parts such as commercial vehicles and selling them off later, and some form of import controls. In the ensuing debates in the Cabinet a combination of hostility to the thought of import controls, from Harold Lever, plus hostility from the Scottish office at the implications of closing Linwood in Scotland, combined to open up a new option, that of underwriting Chrysler UK's losses for a limited period. Although fought bitterly by the Department of Industry, because it would considerably undermine its industrial strategy, it proved more attractive in the short term; the cost at £72.5m would be less than half the cost of complete closure and the unemployment consequences could at least be put off to some future date. In the long term the overcapacity in the UK remained unresolved and further pressure was put on the recovery of British Leyland. However, despite the political rumpus at the time the scheme was passed by Parliament. The monitoring of this aid package was done within the Department of Industry and not by the National Enterprise Board.

It is often argued that the manipulation of the car market as a tool of demand management caused considerable uncertainty for car producers and reduced the growth of demand for cars. Jones and Prais (1980) do not find statistical evidence for any greater instability in UK demand and the frequent inability of UK companies to exploit a growth in demand tends to undermine this as an explanation for the poor performances of the UK car industry. Instead of import controls being introduced as part of the Chrysler rescue package the government encouraged the Society of Motor Manufacturers and Traders to negotiate a voluntary export restraint agreement with the Japanese. This has now been in operation since 1976, and will probably continue into the future. In common with other European countries the UK also has an extensive system of regional support measures. The dispersion of the car industry to the North West, South Wales and Scotland was a direct result of a refusal by the government to sanction expansion on existing sites in 1963. Subsequently other investments in the regions, such as the Ford engine plant in South Wales and the De Lorean sports car plant in Northern Ireland have also received substantial sums of money in the form of capital grants.

In conclusion the British experience of government intervention in the car industry was a process of coming to terms with the growing divergence between the performance of the UK car industry and its main competitors and at the same time a painful learning process in discriminatory intervention. It is difficult to disentangle the direction of causality of these two developments. The perception lag, mentioned earlier, was certainly there in both the government's and the companies' failure to see how deep seated the problems underlying this poor performance were and hence they based their forecasts and solutions on over-optimistic foundations. The changing ideol-logical background of successive governments was not of fund-amental importance for this industry, though it frustrated the accumulation of experience in anticipating and dealing with firms in trouble and any continuity in the organisational framwork, particularly with regard to the IRC and NEB.

The greatest difficulty in operating a discriminatory policy is the independent assessment of the prospects for survival of the company concerned. In both the British Leyland and Chrysler case the government, including its advisers - such as Lord Ryder - were heavily dependent on the companies for their assess-ment and information. Although access to adequate information is obviously essential it is also important to be able to look beyond the particular perspective of those inside the company in coming to an independent assessment of its prospects. Without the consensus forming framwork for arriving at an accepted strategy for a sector, as in Germany with the banks and to an extent the unions, the government has to develop the capability for identifying the long term direction of a partic-ular sector, if only to avoid the contradictory situation of backing two horses where there is only really room for one. The short term assessments of the British banks would have condemned the car industry to a very rapid contraction, whereas the intervention so far has, at a cost, ensured a larger presence in the world motor industry than would otherwise have been the case. Developing such a longer term view of the direction in which a particular sector should go is quite a different task from representing the interests of the industry within the government machine, i.e., the role of the sponsoring departments, and would more naturally be the task of an organisation like the IRC or NEB,which is at least one step removed from the day-to-day political pressures of government.

The Italian market was highly protected by tariffs and quotas until the '60s , and the quota on Japanese car imports - agreed prior to EEC entry - is still in force. In addition other measures to discourage imports have been used from time to time, such as discriminatory car taxes favouring small cars, in which the Italian industry specialised, and foreign exchange deposits for importers during financial crises. As in France, the direct entry of foreign companies was actively resisted, both before the Second World War and afterwards. Ford attempted to establish a plant in 1929 and again was prevented from entering via the purchase of Lancia by Fiat acquiring it in 1969[19]. Whereas in France the hostility towards foreign firms was not always so successful,it did result in a number of French firms surviving, whereas in Italy the industry is dominated by one firm, Fiat. Also in contrast to the French firms, Fiat has not emerged as one of the stronger car producers in Europe after the opening up of the European market. The only other car producer of any consequence is Alfa Romeo, which came under state ownership in 1933 and is now part of the IRI group.

Alfa Romeo became an important instrument of regional policy when it set up a new assembly plant in the south in 1968. Fiat has also established plants in the south, including the join venture with Peugeot to produce light vans. The last major motor plant to be opened in the north was the Rivalta plant outside Turin in 1967.

To understand the background to industrial intervention in Italy one has to see particular decisions as the result of a complex series of political bargains between the different factions within the Christian Democrat party, often decided as a precondition for the formation of the next government. Thus political bargaining extends also to the nationalised holding companies, such as IRI, to the trade unions, and at times the Communist party. It is especially difficult to identify the precise nature of the bargain struck on one particular issue at any point in time as there are many sides to each deal that either relate to quite different policy areas i.e. promises of future support etc.

Fiat is in the peculiar position of being one of the few large corporations in Italy still in private hands. In addition the Agnelli brothers, who control Fiat, have not always seen eye to eye with the Christian Democrats, so relationships with the government have often been strained. Fiat has received little direct support from the state in its attempts to link up with other producers in Europe; indeed, it has not sought government support of any kind. Two factors may signal a change towards more government involvement. First the Agnelli brothers are withdrawing from day-to-day management in Fiat and second, as a result of an official report on the state of the Italian car industry, the government has announced that the industry, and Fiat in particular, will be a major recipient of a £760m programme of aid for industries in trouble between 1980 and 1983[20]. Coupled with the setback in its international strategy of withdrawal from Seat and the intractable problems of increasing productivity and reducing over-manning in Turin, this may lead to increasing state participation in the running of Fiat in the future. State funds would initially be used to finance research and development and the modernisation of the Fiat model programme by 1985. The Prodi report is full of targets that should be aimed at, rather in the manner of the Ryder report, but says little about how to cure the absolutely critical problems of overmanning and social deadlock in Fiat and inadequate scale in Alfa Romea. Solving the problems in Turin depends on a political solution being reached both within Fiat between the unions and management and, also nationally between the Communist party and the ruling Christian Democrats. With the instability of existing governments it is almost impossible for Fiat, with its very high visibility to consider dismissing large numbers of workers without precepitating a political crisis. Although to an extent Fiat will survive through joint ventures in components with, for instance, Peugeot and Alfa Romeo it is unlikely that any foreign firm would consider taking over Fiat until these social problems are resolved.

Another example of the political bargaining process is the agreement between Alfa Romeo and Nissan. On the one hand it was an attractive way to begin to solve the volume problem of Alfa Romeo and to increase employment in the south. On the other, it provides additional domestic competition for Fiat and could hinder its long term survival, with the much greater employment implications involved. The battle between the two groups was fought out in many different fora, within the Communist party and trade unions, within IRI, within the Christian Democrat party and within the government up to Cabinet level. After complete deadlock in the Cabinet for many months the issue was only resolved by a decision of the then Prime Minister to accept the deal. Even now the instability of the government position does not guarantee that a new government may not at some stage reverse the decision. A genuine division of philosophies about the wisdom of allowing foreign entry, and particularly the Japanese, versus the increasingly unviable situation of Alfa Romeo was the issue at stake, though personal and factional interests also played an important part.

In assessing the record of government intervention in the car industry what is important is not the precise policy instruments used and the exact amount of public money involved. These have in any case evolved in particular national environments and in themselves are only part of the framework within which different industries react to change. In a period when the car industry is going through a major shake up throughout the world firms are struggling to adjust to the new circumstances and struggling for survival and a place in the eventual world car oligopoly of the mid '80s. Within this overall context of change individual countries and firms are having to react to particular pressures for structural change and having to come to terms with growing differences in economic performance, both generally and in the car industry. We have already indicated how short term market signals are not appropriate indicators of who should survive and who should not in this industry. However, in the longer term, company decision makers and governments have to come to terms with underlying trends in performance. What is interesting in the context of this study is the ways in which government-industry relationships in particular and the consensus-forming framework in general have facilitated or hindered the transformation process within an industry or firm and /or postponed coming to terms with these underlying trends.

The consensus-forming framework in Germany proved very effective in aiding Volkswagen to transform itself from a one model producer to an important competitor in the world car industry. Although the struggles between the different actors and the learning process took place within the Supervisory Board strong external pressures from the government and the Socialist party on the one hand and from the banks on the other helped to focus the minds of those involved on reaching agreement on what had to be done. The political leaders were also able in this case to break the deadlock that prevented a solution being agreed. Although very serious for Volkswagen at the time the learning process was eventually completed within the five years up to 1976 and government has not had to intervene since. One important lesson from this experience is that the resolution of quite fundamental problems cannot proceed without a measure of agreement from the workforce also. The one exception to this so far is in France, where the dialogue preceeding the determination of a particular strategy takes place with less participation from the formal representatives of the workforce than in any of the countries studied. A major test of the close dialogue between the government and the car firms in France has not yet occurred and so far the firms themselves have performed well. Such a test could come if Renault found itself in difficulties or Peugeot was forced to rundown its manpower and close some of its factories.

The government that has had to face up to the most difficult adjustment problems so far of the countries studied is the British government. We have seen how at the beginning of the involvement of the state in 1968, and to an extent again in 1975 with both British Leyland and Chrysler, the politicians and policymakers did not have the experience or the appropriate framework adequately to tackle the problems. However, the state was fairly quick to realise the full extent of the problem and by late 1977 was prepared to back a more realistic solution. The implementation of the new strategy was carried out in the face of initial hostility and then grudging acceptant from the workforce. Attempts formally to integrate the unions into the process of defining an agreed strategy have not had much success. A similar situation of confrontation between the two sides of industry exists in Italy. Although there are some signs of a growing realization of the extent of Fiat's underlying problems from some trade union leaders only the first shots have been fired in the learning process so far. Whether some form of agreement can be reached and how long this takes will be the determining factor in Fiat's survival in the future.

WESTERN EUROPE: A CHRONOLOGY OF MERGERS AND GOVERNMENT INTERVENTION.

UK

1911 - Ford establishes an assembly plant in Manchester.

1915 - McKenna duties of 33 percent. are imposed to save shipping space for war materials and remain in force until the mid 1950s.

- Discriminatory taxation is introduced on larger cars.

1925 - General Motors fails to takeover Austin, but succeeds in taking over Vauxhall.

1931 - Ford opens a major new plant at Dagenham.

1945 - Restrictions are imposed on the home market to promote exports, through a high purchase tax, severe credit restrictions, high petrol taxes, and a rationing of raw materials. Foreign exchange restrictions hamper the establishment of overseas servicing facilities, thereby severely harming the reputation of British cars abroad.

1952 - Austin and Morris merge to form the British Motor Corporation (BMC).

1953 - Ford buys Briggs Bodies.

1955 - Rootes takes over Singer.

1960 - Jaguar takes over Daimler.

- Ford buys out the minority shareholdings in Ford UK.

1961 - Leyland takes over Standard-Triumph.

1963 - The refusal of Industrial Development Certificates for plant expansion forces manufacturers to locate new plants in South Wales, the North West and Scotland.

1964 - Rootes is saved from bankruptcy by Chrysler, who take over 30 percent. of voting shares and 50 percent. of the non voting shares. It promises the government that this would not lead to foreign dominance.

1965 - BMC takes over Pressed Steel, a major supplier of car bodies.

1966 - BMC takes over Jaguar.

1967 - Leyland takes over Rover.

- The government agrees to Chrysler taking full control of Rootes with a 70 percent. shareholding, while the Industrial Reorganisation Corporation (IRC) holds 15 percent. and guarantees are obtained for British board members.

1968 - The government at the highest level plays a leading part in promoting the merger of Leyland and BMC to form the British Leyland Motor Corporation (BLMC). The IRC provides a £25m. loan and the merger is hurried through to maximise the benefits of the 1967 devaluation.

1970 - BLMC is given a £10m. revolving loan by the IRC to purchase British machine tools.

1973 - Chrysler buys the remaining interests in Rootes.

1975 - BLMC collapses and is nationalized. The Ryder report recommends the injection of £2,800m. from 1975 to 1982, £1,000m. from government funds.

1976 - The government is presented with an ultimatum by Chrysler - take it over or it will close in 3 months. Job losses are estimated at 55,000 and balance of payments losses at £200m., mainly from the CKD kit contract with Iran. It is sensitive to the political reaction of the Scottish Nationalists to closing the Linwood plant and the government, against the advice of its experts, funds losses from 1976 to 1978 by up to £72.5m., providing loans of £55m. and credit guarantees of £35m.

- A voluntary export restraint agreement reached with Japan to limit Japanese imports to under 11 percent. of the UK market.

1977 - The Ryder plan for BLMC fails and the government calls in Michael Edwardes, who begins the long delayed rationalization of the company. BLMC and Renault set up a working group to study joint component production, but nothing materialized.

1978 - Peugeot-Citröen takes over Chrysler UK and existing oblications to the government under the 1976 rescue plan.

- The government wins the European competition for a new Ford engine plant, located in South Wales.

- BL announces the closure of a number of plants, with 12,500 jobs lost.

1979 - The Conservative government agrees to increase government funds for BL from £1,000 to £1,205m. A further rationalization involving plant closures is announced with 25,000 jobs lost in 1980 and 1981; in addition to the 18,000 lost in 1979. BL announces a licencing agreement to build a Honda car for sale throughout the EEC from 1981.

<u>Germany</u>

1925 - Ford establishes an assembly plant in Berlin.

1928 - Fiat establishes an assembly plant.

- General Motors takes control of Opel, acquiring the remaining 20 percent. in 1931.

1932 - The Ford plant in Cologne starts production, reaching 100 percent. local content in 1933 under government pressure.

- Four German companies form Auto Union (Wanderer, Horch, DKW and Audi) in response to the General Motors takeover of Opel.

1930s - Various government programmes are introduced to achieve interchangeable parts, to require and promote exports and to develop common industrial standards.

1937 - Volkswagen is created by the state, though civilian production only begins postwar.

1949 - Volkswagen is returned to German ownership. Heinrich Nordhoff takes control. The British refuse Ford permission to buy Volkswagen.

1961 - Volkswagen is partly denationalized; Niedersachen hold 20 percent. of the shares, the Federal government 20 percent., the rest privately.

- Borgward collapses despite efforts by the Bremen land government to help.

1958 - Daimler Benz acquires an interest in Auto Union.

Mid-1960s - The three largest banks frustrate a bid by General Motors to take over Daimler Benz.

- An agreement is reached between Volkswagen and Daimler Benz to pool patents and co-operate in basic research and development.

1965 - Volkswagen acquires Auto Union to prevent Chrysler from buying it. Rudolph Leiding takes over and begins to develop new models.

1967 - BMW acquires Glas and is reconstructed with the help of the Bavarian Bayern Land government.

1968 - The head of Volkswagen, Heinrich Nordhoff dies and is replaced by Kurt Lotz.

1969 - Volkswagen takes over NSU to prevent Fiat or Honda buying it and to acquire Wankel engine technology merging it with Auto Union to form Audi - NSU.

1971 - A new Supervisory Board created in Volkswagen. Kurt Lotz is fired as new models to replace the Beetle are unsuccessful. Rudolf Leiding takes over and begins the transfer of new models from Audi-NSU.

1973 - Fiat ends production in Germany.

1974 - After severe disagreements amongst the Volkswagen Board the Federal Chancellor, Helmut Schmidt intervenes and secures the replacement of the Board Chairman by Hans Birnbaum, whose past position in the nationalized steel firm, Salzgitter, provided him experience at dealing with politicians and trade unionists on the Board. He was determined to keep the Board out of management affairs.

1975 - Because of disagreements on the Volkswagen Board and his failure to secure agreement to hold down costs and establish a plant in the US Rudolf Leiding resigns. He was however very successful in introducing new models, such as the Golf, which secured the longer term future of Volkswagen. Toni Schumuckler ex Ford Germany, took over and began to cut the work force by 25,000. A generous package of regional policies to the effects of cushion layoffs was proposed but not subsequently needed.

- Elaborate arrangements were made by the Deutsches Bank to ensure that Daimler Benz could not fall under foreign ownership.

1976 - Final agreement is reached to establish a Volkswagen plant in the US, to begin production in 1978.

1978 - After a three year battle with the Federal Cartel Office GKN was refused permission to take a controlling 50 percent. interest in the Sachs group of component firms.

1979 - Further expansion of Volkswagen underway in north and south America.

- The Government Economics Ministry receives undertakings from the motor manufacturers to reduce fuel consumption by 10-12 percent. by 1985 in return for voluntary monitoring, publication of progress reports and fuel efficiency figures.

- Gerhard Prinz takes over from Joachim Zahn, who headed Daimler Benz for 14 years.

France

1913 - Ford establishes a French company.

1919 - General Motors bid to takeover Citröen fails due to government opposition.

1926 - Ford establishes an assembly plant at Asniers.

1934 - Fiat establishes an assembly plant.

- Ford merges with Mathis, producing cars in Strasbourg (Mathis owns 40 percent. and Ford 60 percent.).

1938 - Ford and Mathis split. Ford builds factory at Poissy, beginning production in 1939.

1946 - The state nationalizes Renault. Pierre Lefaucheux, a left wing businessman takes over.

1954 - Simca buys the Poissy plant from Ford.

1958 - Chrysler buys Ford's 15 percent. share in Simca.

1959 - Quotas on cars are removed.

1963 - Chrysler takes full control of Simca with a 63 percent. shareholding.

1964 - The state turns down Ford and General Motors' proposed assembly plants in Strasbourg, Ford goes to Saarlouis and General Motors to Belgium. General Motors builds an automatic transmission plant in Strasbourg.

1966 - Renault and Peugeot agree to pool patents and to co-operate in research and development.

- Controls on inward capital flows and foreign exchange are partially relaxed.

1968 - Fiat takes a 15 percent. share in Citröen.

1969 - Fiat allowed to take a 49 percent. share in Citröen but is denied a majority share by the government, subsequently selling out in 1973.

1970 - French Ferodo takes over SEV Marchal (both electrical component producers) to prevent Bosch entering. The government blocks Bosch by refusing permission to invest in France.

1972 - Chrysler has full ownership of Simca.

- The government encourages co-operation between Renault and Peugeot, which leads to joint ventures in component and engine production.

1974 - The government encourages Peugeot to take over Citröen, with a £115m. loan, and Renault takes over the loss making Citröen commercial vehicle subsidiary Berliet. The loan was subsequently paid back ahead of schedule 2 years later.

1975 - Bernard Vernier-Palliez (an internal promotion) takes over from Pierre Dreyfus (an ex civil servant) at Renault, and reverses trend towards diversification.

1977 - Jean-Paul Parayre (an ex civil servant) becomes head of Peugeot-Citröen.

- Ferodo takes over the Paris-Rhone-Cibie group.

- The government allows a 30 percent. price increase for cars. The government warns the Japanese Ambassador to curb Japanese imports and the Japanese share of the market falls from 3 percent. in 1977 to 1½ percent. in 1978.

1978 - Peugeot-Citröen takes over Chrysler Europe (Simca).

- Renault takes a 22.5 percent. stake in American Motors.

- Lucas is eventually unsuccessful in its bid to takeover Ducellier, the electrical component producer. The government blocks the deal and leaves Ferodo and Lucas in joint control.

- The government allows greater price freedom.

- Renault and Bendix establish a joint venture to produce electronic components.

1979 - The government seeks to attract the new Ford assembly plant (eventually the plan is abandoned) and Renault and Peugeot put forward alternative plans for four component plants in Lorraine.

- Renault takes a 20 percent. stake in Volvo and a 20 percent. stake in Mack trucks in the US.

- The industry presses the government for help in subsidising R & D.

1980 - Peugeot and Thompson sign a deal to produce electronic components.

Italy

1922	-	Ford establishes an assembly plant.
1920s	-	Citröen and other foreign assemblers are driven out of the market by the high tariff on parts.
1929	-	Ford is prevented from building a factory on land already acquired by Government law.
1933	-	The state acquires Alfa Romeo.
1939	-	Fiat opens the Mirafiori plant in Turin.
1955	-	Fiat takes a share in Autobianchi.
1957	-	The government introduces a law obliging IRI to place 40 percent. of its investment in the south.
1959	-	Fiat establishes the first modern assembly plant in the south for light commercial vehicles.
1963	-	Fiat takes control of Autobianchi.
1964	-	A discriminatory tax is introduced against larger cars.
1966	-	Fiat designs the Tolyatti plant in the USSR.
1967	-	Fiat buys Unic from Simca.
1968	-	Alfa Romeo builds a new plant in the south, which begins production in 1972.
	-	Fiat fails to gain control of Citröen because of government refusal in France.
	-	Fiat signs a deal with Poland to establish Polski-Fiat.
1969	-	Fiat takes over Lancia, frustrating a possible takeover by Ford and Ferrari.
1972	-	British Leyland acquires Innocenti.
Early 1970s	-	Fiat decides to diversify out of cars and into commercial vehicles, construction equipment and automated production systems, and raises car prices to raise the necessary funds.
1973	-	Fiat sells its interests in Citröen.
1974	-	IVECO is formed from Fiat-Unic in France, Fiat and Magirus Deutz in Germany.
1975	-	British Leyland pulls out of Innocenti.

1976 - The Libyan government takes a 9 percent. share in Fiat.

1979 - Fiat takes full control of IVECO.

1980 - The government agrees to fund research and development in Fiat.

- After much disagreement the government agrees to the establishment of a joint venture between Alfa Romeo and Nissan to produce a new car in a new plant near Naples.