INDUSTRIAL POLICY AND CONTEMPORARY ECONOMICS: THE CASE OF THE FRENCH ECONOMY

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INTRODUCTION

Economic theory provides a strong rationale for believing that free competition on the marketplace will lead in most cases, through the process of reallocation of resources, to the most efficient uses of those resources. What is more, empirical analysis in the field of industrial organization seems to indicate that the assumptions on which this prediction rests are consistent with observed facts.

However, one must note that even in a purely neoclassical framework, the possible existence of market failures due to static externalities (indivisibilities of factors or existence of public goods, for example) justifies the intervention of the state in the market mechanisms. The question of the scope of state intervention then hinges around the importance of such externalities in the real world. The search for independence, national security, quality of the environment, etc... are often invoked by state authorities to justify their intervention (or their industrial policy) on the assumption that the optimal amount of these public goods can be produced only under the guidance of the state.

But one must recognize also that because of its static framework economic theory says little about the potential trade-off between allocative efficiency and growth. The question, for example, of the relationship between the size of firms, monopoly power and innovation remains to a large extent clouded in mystery, in spite of a growing literature, both theoretical and empirical, on the question. The existence of such trade-offs is particularly crucial though from the public policy point of view, either in a phase of reconstruction or when growth of the economy is seen as a major goal of public policy (i.e. in cases of economic recessions).

Also, it must be recognized that the theory, because it rests on the concept of efficiency, tells us nothing in terms of what should be produced to ensure maximum welfare. All that it tells us is that whatever is produced (leaving aside the cases of market failures) should be produced under competitive conditions. But if there is a set of social utility functions and if consumers are not indifferent between the different efficient output mixes, governments worry about channeling funds into the "right" industries. The theory is not very helpful in this respect since it assumes away the problems concerning the passage from one efficient situation to another (which is often an important part of industrial policy).

Finally, in democratic countries in which governments face reelection every few years, a great deal of importance is, at times, given by the voters, and therefore necessarily by the power elite, to short run considerations. thus the political process can introduce —in particular when the economy has been affected by a major external shock— a trade-off between what would possibly be an optimal policy in the long run and what is possibly a less wise but politically more palatable short run policy. Thus in the field of industrial policy, a great deal of effort is at times directed by governments toward easing the adjustment processes or toward limiting the short run effects of the reallocation of resources.

Thus the notion of industrial policy stems from the fact that economic theory itself recognizes a limited role for the government; from the fact that because of its static nature, economic theory does not offer clear-cut guidance in areas considered to be important; and from the fact that long run economic goals are often considered to be too elusive or too far removed to be politically advantageous to those in power.

Industrial policy, because it is grounded in the failure of economic theory to deal with certain problems and not in a positive theory that tells us what should be done to achieve the hoped for results at the least cost, is a topic of great frustration for economists. Very often we see policy measures that obviously prevent market forces from playing their role for considerable periods of time without the guarantee or even a rational hope that they will bring benefits in the long run. Industrial policy is also irritating because states that start intervening tend to have a lot of difficulty in stopping their intervention once they have been successful. Thus economists feel much more comfortable with countries that do not pursue aggressive industrial policies (at least explicitly) such as the United States or Germany (market oriented economies in Ch. Johnson terms) than explaining what is going on in countries that are plan oriented or industrial policy oriented.

With this frustration in mind. We will now deal with the specific issue of industrial policy in France and I will try to explain both what public policy markers have been trying to do and what economic theory tells us about France.

The Origin of Industrial Policy in France

The rise of industrial policy in France can be traced to the end of the Second World War. As B. Scott and John MacArthur, authors of a best selling book on France wrote towards the end of the sixties: "While the State has always played a relatively important role in the functioning of the French economy, the nature of its role changed markedly in recent times. Before 1940, the most widely accepted role of the State was that of an arbiter of the status quo. As far as business was concerned the State was widely viewed as the protector of recognized vested interests and the referee of internal forces for change. Then after the War a new consensus grew which assigned a more active role to the State in promoting economic and social changes."

This modification of the conception of the role of the state came about for two main reasons.

The first reason has to do with the presence in the government of the immediate post War, at a time when the main question was how to reconstruct France as rapidly as possible, of people who had been actively engaged in the Resistance movement and were of a leftist political persuasion (Socialists or Communists). There was a widespread feeling among these people that the "right" had not upheld the political independence of France during the War by collaborating with the Germans, as well as that the short sightedness of the private entrepreneur class in pre-war capitalist France and the fact that the state had not intervened to offer general guidance of the economy were responsible for the lack of preparedness when the War broke out. Those people who had graduated from the Resistance movement into the high echelons of government service had given a great deal of thought to economic issues in the context of the National Council of Resistance (an economic umbrella organization of resistance movements during the War). They thus arrived in powerful positions with an economic platform that seemed all the more sensible since the rapid reconstruction of the French manufacturing industry appeared to require immediate government intervention in the economic sector.

The main measures taken immediately after the War were thus:

- the establishment of a planning commission
- the nationalization of a large part of the banking sector
- the nationalization of strategic firms or industries (electricity, gas, coal mining, railways...)
- the nationalization of Renault as a punishment for the behavior of its owner during the War
- foreign exchange controls
- a sweeping ordinance allowing the government to intervene in the price mechanism by controlling prices to prevent black market activities.

These reforms were of paramount importance and to a large extent they still shape the scope and style of state intervention in the economy. All of a sudden, the role of the state as a guiding force in the economy was asserted and considerable means were put at its disposal to further this role.

The second reason has to do with the kind of planning process that was established. The importance of the kind of planning apparatus that France adopted just after the War is important to understand, not so much because of the role of the Planning Commission itself (although its role was extremely important until the end of the 1960's in shaping the development of France), but rather because a great deal of thought was given by Jean Monnet and Pierre Masse, both remarkable men, as to what should be the role and the nature of planning in France and as to what should be the respective importance of the market mechanism and state intervention in promoting economic development. Even if the planning process is not as important now as it was at the time, their ideas have shaped the particular relationship between the state and the business world tat one finds at the root of industrial policy in France.

Basically, an attempt was made to avoid the pitfall of dogmatism in the planning process. As Scott and MacArthur put it:

"Perhaps as much as anything else the ideological basis of French planning has been characterized by a belief in the importance of mutual interest relative to conflicting interests coupled with the belief that discovery of these mutual interests leads naturally toward spontaneous agreement on programs of action to attain shared goals."

"French national planning is designed to supplement the adjustment mechanism of the market place, not to replace it. It is designed to modify market forces in the light of a longer term perspective than that which ordinarily affects market transactions and in particular it is designed to modify the forces which influence investment decisions. By (1) studying the future and (2) developing a broad outline of the implications of national economic policy, it can help to reduce uncertainties about future economic conditions, thereby justifying a longer term perspective in the analysis of investment decisions in public and private sectors alike."

If the state was to use its economic power to implement the plan (and those economic powers were wide since they included regulatory power over private firms, financial incentives and a large public sector), the plan was to remain indicative for the private sector.

The concept of concerted development of the economy in which both state intervention and a large degree of decentralization of economic decision making were made compatible, clearly reflected the political circumstances of the period. Eyeing the Marshall funds available for reconstruction, France could not and did not intend to abandon the free market system. But due to the sizeable constituency of the Left and to the prominent role of leftist forces in the fight against the invader and in the liberation of France, the political elite could not ignore the desire for social change and the call for more state intervention in the economy.

What is more, the business community was not in a position or did not want to challenge the new order of things for several reasons. First, the events that had led to the War, the ensuing débacle and the collaboration of part of the Right with the enemy had not cast the business leaders at large in a particularly good light and they undoubtedly needed to rehabilitate themselves by going along rather than by resisting the new order. Second, during the War they had learned that close links between business leaders and the state could have its positive sides. Indeed during the War, to prevent the total collapse of the economy, the Vichy government had set up "organization committees" in most of the major industries to allocate scarce raw materials among the different firms. Prominent business leaders in each industry had been appointed to these organization committees which had large powers to establish production and investment quotas, market sharing agreements, price fixing devices, etc... After the Vichy government fell, the organization committees were disbanded but trade associations replaced them and worried about how to continue the cartel like agreements that had characterized the previous period among their member firms and how to prevent outbreaks of competition among them. The emergence of the notion of concerted economy meant in this context, that trade associations would take an active part in the definition and implementation of industrial policy and would be able to exercise a fair amount of lobbying on behalf of their members. but it also meant that they would be justified in seeking a consensus on important issues among the firms in their industries and they would exercise a certain control on their behavior. Thus business leaders saw in the notion of a concerted economy advantages in the fact that to a certain extent it gave them the means to shelter themselves, with the benign neglect of the state or occasionally its active support, from the rigors of competition.

Altogether, the immediate post War period gave the French state the means to set policy goals and to fulfill them through its control of the banking sector, through the management of a relatively large public sector and through its wide regulatory powers on the private sector. But beyond those means, the role of free markets in the development of the economy was recognized and it was hoped that a constant dialogue between the state and business leaders as to what was possible in the future, what was desirable and what the likely consequences of the policy goals were would naturally lead the private firms, pursuing their own interests, to cooperate in the fulfillment of policy objectives. Thus the state, if it saw a need to guide the economy, did not discount the virtues of free enterprise and a delicate balance was struck between state intervention and decentralization of economic decisions.

This conception was made very explicit by Georges Pompidou when he was Prime Minister. In 1964, he wrote in "Notre Politique Economique":

"What must our economic policy be?.. In the first place we must emphasize the active role of the State, a role that it cannot abandon to the play of economic laws. This for three reasons:

1. National Reasons: The State must steer the development of the economy in one direction rather than another; it must give priority to certain industries rather than to others.

2. The State cannot rely on economic laws for social reasons, in the sense that it must avoid dislocations at both the sectoral and geographic levels, dislocations which are inevitable and which would create islands of misery or injustice in the midst of general prosperity.

3. A Direct Share in the Economy: The State is all the more led to play a basic economic role by the fact that it has become in France the economy's most important employer and owner... We should add to this the State's direct investment in such areas as roads, school buildings, telephone equipment and national definse which make the State by far the largest customer of private industry...

Once the weight of the State in economic life has been appreciated, how does one define its role? The State must first of all set the major long range objectives that is to say establish the plan. The State must then, through all the means at its disposal, particularly the control of credit and the fiscal advantages and penalties which it can accord or impose, orient economic activity in the direction of the major objectives...

If this is where the role of the State lies, it is still obvious that the role varies in importance at different times. In periods of crisis either recession or tension, as in periods of difficult change the State is called upon to intervene more... This sometimes leads the State, despite itself, to intervening right down into the details as it is doing for example in the so-called critical areas. On the other hand, it is desirable in normal times, with the economy cruising smoothly, for the State to reduce its role to a minimum, a minimum which is already quite large. During these normal periods, the State must watch that it does not intervene for the sake of intervening. On the contrary, it must try to restrain its intervention and leave as much room as possible for private initiative."

These characteristics of the French approach to the management of the economy have survived to this day. It is within this context that French industrial policy has evolved. These characteristics probably do not seem exceptional to a Japanese audience, given the extent of the collaboration between the State and business leaders in setting policies and in implementing them in Japan. One must note however that they constituted, at the time they were established in France, a clear break with the pre War past of the country and an equally clear break with the German post War approach to economic development.

RECENT DEVELOPMENTS IN INDUSTRIAL POLICY

Having briefly described the context of State intervention in the French economy, it is now time to turn to the explanation of the main features of the industrial policy that was pursued.

If we look at industrial policy from an historical perspective, four periods must be distinguished:

From 1947 to 1961, the main goal set by the government was the restoration and expansion of production facilities. The development started with heavy industries such as coal, electricity, steel, cement and transportation and then moved to the manufacturing industries.

From 1962 to 1974, the emphasis was on increased efficiency, given the integration of France into the EEC, and the development of new technologies.

From 1974 to 1981, the emphasis was on the best way to confront the problems derived from the oil crisis. The concern was with both rising unemployment and ways to alleviate the problems it created and with ways to bring about the necessary reallocation of resources among industries.

Since 1981, the emphasis has been on more state intervention (with the new nationalization program) and on ways to deal with the growing trade disequilibrium by increasing the efficiency of firms which by itself should limit the continuous rise in unemployment.

I. *1962–1974*

Two main features characterize the period that extended from 1962 to 1974: a concern with promoting efficiency in the industrial sector and an attempt to promote innovation and technological independence through ambitious government sponsored projects.

A. *The Concern with Efficiency*

When France joined in the creation of the E.E.C. at the beginning of the 60's, the French industrial sector was characterized by the fact that it was lowly concentrated both in terms of plants and in terms of firms, in comparison to American or German industry. It appeared obvious that a number of plants in many industries were of suboptimal scale and that even the large firms had not rationalized their production in such a way as to have minimum costs. Both the business leaders and state authorities were thus very concerned about the effects of incoming international competition on French industrial sectors. Two complimentary reasons seem to explain the French situation at the beginning of the sixties. First, during the reconstruction era (between 1947 and the beginning of the sixties), demand had expanded rapidly and there had been relatively little pressure on firms (France was heavily protected by tariff barriers) to adopt the most efficient techniques of production or scales of operation. Second, as we mentioned earlier, trade associations had come to play an important role as a liaison between the bureaucracy and their member firms and had often behaved as cartel organizations trying to maintain industry structures and to limit competition in their respective industries. To a large extent one can assume that the lack of competition at the domestic level, coupled with rapidly expanding demand, were responsible for the apparent lack of efficiency of the industrial sector.

The State was then left with two options to facilitate the necessary rationalizations. The first (and this is not the option that it chose) would have been to clamp down on cartel agreements and promote an energetic competition policy (thus following the example of Germany). The market pressures would then have forced inefficient firms to disappear or merge with other firms or to modify their production techniques. The second option (the course that the state authorities decided to follow) was to engage in a very active pro-merger policy. This policy implied on the one hand that in 1965 and 1967 administrative orders were issued that enabled any merging firms to reevaluate part of the assets that they acquired. (Thus they were offered a tax deduction for merging). Besides this general measure which applied to any merger (whether vertical, horizontal or conglomeral) in any industry, the state authorities used their influence to promote specific mergers between industry leaders. Thus during this decade a merger between three leading steel producers reduced the number of major firms in the industry from seven to five. In 1966, all the firms engaged in the computer industry were encouraged to form a joint venture through state subsidies. Similarly, the state encouraged major mergers in the aluminum industry (Tréfimétaux and Péchiney), in the chemical industry (Ugine and Kuhlman), in the fertilizer industry, in the oil industry, etc...

The underlying reasons for the aggressive pro-merger policy of the sixties (and of the beginning of the seventies) lie both with the bureaucracy and with the business elite. The business elite and trade organizations favored, for reasons that are easily understandable, mergers over competition which was held to be "destructive" or "excessive" whatever its level. Through mergers they could acquire market power and they could hope, to a certain extent, for the "easy life" which as everybody knows is the best monopoly profit.

The bureaucracy on the other hand was staffed mainly by engineers, from elite schools, who had little or no training in economic theory and therefore had very little sympathy for the abstract concept of competition. They were thus easily impressed by the arguments put forth by some business leaders; i.e. that technical economies of scale were very important in their industries and that therefore the survival of the industry hinged on the creation of very large firms which would be able to compete on the international market with foreign giants. They did not give much thought to the possibility of management diseconomies or scale, at least in certain industries, beyond a certain size. What is more, they were not trained to make a distinction between correlation and causality and tended to assume that if German and American firms were more efficient, exported more and were more progressive, it was because they were large. Hence they held the view that to make French firms efficient it was necessary (and sufficient) to make them large and that merger policy was the fastest way to achieve that result.

The merger policy of the sixties, which was continued until the middle of the seventies, was very successful in terms of increasing concentration of industry. A merger wave of unprecedented proportions occurred between 1965 and 1975. However, as far as it can be assessed, it mainly affected large firms (merging with other large firms or with smaller firms in some cases) which were the most likely to be of an optimal scale to start with.

B. *The Attempt to Promote Innovation and Technological Independence*

The second major concern of the state during the sixties (and the first part of the seventies) was to promote the development of technologically advanced industries. Political as well as economical reasons were at the root of this concern. At the political level, the technological advance of the United States (for example in the computer industry) was deeply resented by the political elite. On the one hand, France could not avoid buying foreign technology when it happened to be far ahead of what was available in France. On the other hand, as happened with computers when the U.S. government vetoed, in 1966, the sale to France of two particularly large and advanced computers, France could not be truly independent politically if it had depend on such imports. At the economic level, it was of course hoped that the development of France technology in various promising fields would lead to substantial increase in exports and would in the future contribute significantly to economic growth. Finally, the French having a long and well recognized tradition of scientific achievement and some of the best elite engineering schools in the world, it appeared that it could hope for significant successes if enough money were devoted to R and D in high tech industries.

Starting in the middle of the sixties, state authorities launched a series of major projects aimed at placing France in the league of the most technologically innovative countries. The state authorities set goals to be achieved and a time horizon to achieve them. It also heavily financed the R and D of public and private firms involved in the areas of interest and used a combination of massive public investments and a somewhat protectionnist procurement policy to enable domestic manufacturers to gain experience in the production of sophisticated equipment, to take advantage of economies of scale in production and to base their future development on the export markets or a secure (and at times highly lucrative) home base.

One of the most impressive cases in this area concerns the telecommunications industry. Until 1968, France was notoriously under equipped in telephones and its domestic industry was lagging technologically, so that most telephone exchanges installed were foreign conceived and manufactured. On top of that, to save money, the French (nationalized) telecommunications agency tended to buy obsolete exchanges so that not only consumers had to wait a considerable time to get a telephone (up to two years), but more often than not they had to put up with bad connections, dead lines, etc. State authorities then decided both to equip France with an up-to-date telecommunications system and to support the birth of a strong and aggressive telecommunication equipment industry. Public investments in telephone lines and telephones increased at a rate of 18 to 20% a year between 1968 and 1970 (as opposed to 3 or 4% previously) and at a rate of 40% after 1970. Considerable funds for R and D were given to French private manufacturers. At the beginning of the eighties, the French telecommunications industry was clearly both technologically dynamic and economically efficient. The trade surplus for the industry was roughly two billion Frances per year.

Another example of such an approach is provided by the nuclear power plant program launched toward the end of the sixties. The goal in that case involved the diversification of our sources of energy and the development of a French technology that could compete with American technology (mostly developped by Westinghouse and General Electric). But another goal was to specialize a few French firms in nuclear power plant engineering and in the production of nuclear power plant equipment (boilers and turbo-alternators) so that they could then export their know-how and they production, since it was assumed that sooner or later many countries would follow the trail opened by France and invest heavily in nuclear power plants.

For various reasons, the idea of developing a French technology was abandonned early (at the beginning of the seventies), and President Pompidou decided to build light water reactors (i.e., to rely on the original General Electric technology). Framatome was given a monopoly on boilers and the turbo-generator industry was concentrated, with CGE becoming the main supplier of electricity generating equipment. It was hoped that the concentration of manufacturers would enable them to benefit from scale economies in production. When the oil crisis broke out the rate of investment in nuclear power plants was considerably increased. More than twenty plants were built during the seventies and they provide nearly half of the electricity consumed at the domestic level. Thus EdF is the electric company that operates the largest number of nuclear power plants in the world and its experience, together with that of its suppliers (they have had a fairly close relationship in R and D) has enabled them to considerably improve the design and the technology of nuclear power plants. As a result the French electric industry is now independent of American technology.

As far as exports are concerned, the results have been mixed. On the one hand, France exports a fair amount of nuclear power plants and turboalternators. But on the other hand, several factors have contributed to slow the world demand (or the increase in the French share of world demand) compared to what was originally anticipated. The rise of environmental concern in the developed countries and the financial crisis which has plagued many developing countries since the first oil shock, together with the recent decrease in the price of oil have made investments in nuclear power plants less desirable or less feasible than they once were. The existence of a cartel at the international level among the main electricity generating equipment manufacturers implies that the penetration of the world market by the main French manufacturer is not directly dependent on its competitiveness.

If the development of the telecommunications and the nuclear power industries are outstanding examples of achievements of the large project approach which was the hallmark of the industrial policy approach of the sixties and the beginning of the seventies, they are not the only examples that come to mind. For lack of space and time, it is not possible to review here all of these projects. However, a few others can be mentioned, such as the development of the Airbus plane through a joint venture between the French aeronautics industry and other European industries; that of the Ariane launcher at the beginning of the seventies (1973) and that of the extra rapid train (TGV)...

One must, however, note that the heavy support of the state and its involvement in such projects was not necessarily a guarantee of success. In some cases, French industries were not able to catch up technologically with the most advanced foreign nations. In other cases, the problem was not with the technological but with the commercial aspects of the venture. Among the unsuccessful projects, the Concorde airplane adventure is the most well-known (the plane was technolgically advanced but unprofitable to run). Another unsuccessful project involved the development of a French process for the transmission of color television images, the SECAM process. Although the process was developed the French were unable to sell it to other nations. Also to be mentioned is the heavy support (both in terms of subsidies and in terms of preferential public procurements) given to CII (the main computer firm) to develop an integrated line of large frame computers and which resulted in both a technological and a commercial failure. In all of these cases the French state, although it had spent huge amounts of money, got little in return.

Altogether the experience of the larger, state-supported industrial projects of the 60's and of the beginning of the 70's leaves us with the impression that in some areas more attention was devoted to establishing the technological superiority of the French industry than to developing its commercial capacities. Many observers of the French scene have tried to explain this phenomenon.

Among the reasons often invoked is the fact that the most senior people in government bureaucracy, as well as top french business leaders were (and are) for the most part graduates of the elite engineering schools, rather than economics or business graduates. Thus it has been argued that they tended to be more concerned with technical virtuosity than with the careful study of the commercial aspects of the ventures they were engaged in. They seem to have assumed that more advanced or better products or equipment would necessarily prevail in international competition.

A related factor might be that the state apparatus offered a great deal of protection from economic competition, at least on the domestic market level, to the firms on which it relied to develop the most advanced technologies. Public research centers collaborated with domestic private firms to define the domestic needs and the means to solve technical problems. Thus various public agencies came to regard the private firms with they were dealing for these large projects as partners rather than as independent (profit maximizing) potential suppliers. What is more, because the concentration of French industry in the areas involved (such as computers or electrical equipment) had been considered a prerequisite for the success of the projects, each agency or governmental organization involved was dealing with one or at most two potential suppliers. Thus the state agencies which were given investment funds to support these large projects were as dependent on their suppliers as those suppliers were dependent on the agencies' investments and requirements. Whether they wanted it or not, state agencies had to extend preferential treatment to the chosen leaders in their procurement policy and it was very hard for them to put pressure on their suppliers to get favorable price conditions. As a result, in several areas, the suppliers benefited from a very lucrative and highly protected domestic market and did not have much incentive to become as efficient or as aggressive (commercially or from the point of view of innivation) as they possibly might have been. Available evidence suggests, for example, that such a mechanism was at work in the computer industry.

II. *1974–1981*

In retrospect, the main feature of the 1974 1981 period seems to have been a break with the industrial policy approach of the previous period. The break was not complete, but it was significant enough to justify further comments. The development of research in the field of industrial organization in France, a certain disappointment with the results of past policy and concern about the best way to reallocate our resources following the first oil shock played an important role in bringing about the aforementioned change, together with the personnality of Mr. Barre who was Prime Minister between 1975 and 1981.

From the point of view of research in the industrial organization field, a number of studies of the French manufacturing sector had been conducted in the early seventies. While some of the studies focused on productivity comparisons across industries, others dealt with the relationship between market structures and economic performances of firms. It would be too long to review all of this literature here, but some of the main conclusions of those studies can be mentioned.

First, it appeared that contrary to a widely held assumption, the inter-industry (and inter-firms) differences in profit rates were significantly and positively related both to concentration and barriers to entry, as holds true in other economies such as the United States, for example. In other words, it appeared clearly that when firms were in a position to dominate an industry (or in a position to enter a market sharing agreement), they tended to set price above marginal cost as a profit maximizer or a limit pricer would do. This could be interpreted as consistent with the fact that, contrary to a popular belief in the bureaucracy, extensive state intervention in the economy and international competition resulting from the fact that France was integrated into the Common Market were not strong enough to force firms to behave as if they were in a competitive environment.

What such studies pointed to therefore was that one of the tenets of past industrial policy (i.e. that concentration on the supply side was not a problem because it would not lead to misallocation of resources) was not borne out by the facts. Incidentally, the monopoly profit rates observable in concentrated industries were probably underestimated in the studies, since they were computed from the financial statements of the firms and thus did not account for the share of monopoly profits passed on to the workers. Yet subsequent studies showed that wage rates were significantly higher in the concentrated industries than in others and thus that workers did share in the monopoly profits.

Another finding along the same line was interesting. It appeared that in France, contrary to what has been observed in the U.S., the profitability of a firm is inversely correlated with its size (when the concentration of markets, growth rate of the industry and risk factors affecting the firm are held constant). Thus, although large firms benefit from the discrimination against small firms that exists on the capital market, they seem to end up with higher average costs than smaller firms. These results, by the way hold not only for French firms but also at the European level when one compares the profitability of firms from different industries and different countries. The reasons underlying negative relationship between absolute size and profitability are not immediately obvious. Perhaps it is due to the fact that managerial talents are scarcer in France (and in Europe) than they are in countries like the U.S. and that, as mentioned earlier, engineers rather than businessmen tend to head large firms. Whatever the reason may be, it thus appeared that the structural policy of the sixties and early seventies (i.e., the promotion of mergers) might have resulted not only in a lessening of competition but also in an increase in X inefficiencies in the industrial sector.

These findings were themselves consistent with other investigations focusing on mergers and in particular on their determinants and effects on the performance of firms. These studies indeed revealed that firms which had merged did not seem to be more profitable, to grow more rapidly, to be less risky after their merger than they had been before it. Their performances were not different from the performances of similar firms that had not merged. If anything, they tended to be slightly less profitable, although that effect was relatively weak.

It is then appropriate to ask oneself why stockholders continued to engage in mergers during most of the 60's and the beginning of the 70's, if mergers did not lead to an improvement in the (real) performances of the firms involved. The answer seems to be that one of the motivations for mergers was the immediate financial gains that shareholders were able to get from such concentrations. These gains (which took the form of large increases in the rate of return on the stocks of the merging firms at the time of the mergers) came from the 1965 and 1967 merger laws that enabled merging firms to get a tax deduction through the reevaluation of the acquired assets.

Altogether, this leaves the impression that if some beneficial reallocation of resources took place through the merger movement of the sixties (small inefficient firms tended to be acquired more often than small efficient firms) for the most part the merger movement did little to increase the efficiency of the French industrial sector.

Whether such empirical evidence made a lasting impression on the intermediate levels of the bureaucracy in charge of industrial policy is debatable. However, it must be noted that Mr. Barre, a professor of economics, was appointed to the Prime Ministership in 1975. As an ex-academician, he undoubtedly felt that the relatively low level of competition on domestic markets (fostered by the benign neglect of restrictive business practices and the rapid increase in concentration brought about by past policies) had not pushed French firms to be as cost conscious, to innovate as fast, to be as commercially aggressive as they would have been had they faced a more competitive environment. These side effects were seen as particularly damaging for the future of the French economy at a time when the sudden change in relative prices and the depressed state of the major Western economies implied that international competition was bound to become fiercer and when at the domestic level, a massive reallocation of resources among industries was needed. Besides his academic background, his past experience at the EEC Commission had made Mr. Barre familiar with the potential benefits accruing from an active competition policy. Indeed one of the fields in which the EEC Commission has been the most successful is the enforcement of articles 85 and 86 EEC Treaty. Article 85 prohibits concerted practices by European firms that lead to restriction of competition or of trade among EEC countries. Article 86 prohibits the abuse of dominant power by firms at the European level.

Besides its belief in the appropriateness of competition to foster economic efficiency the Barre government, while it was seeking ways to reduce the endemically high inflation rate in France, did not favor price controls. Although price controls (allowed by the 1945 Ordinance) had been a frequent feature of government intervention in the business sector in the past, the Prime Minister believed that it was a very cumbersome and in the long run inappropriate way to control inflation. But beyond this, he also believed that price controls tended to reinforce the power and the stability of cartels. As admissible price increases were established industry-wide, business leaders in each industry were led to seek a consensus among firms of the industry on their minimum demands. This process in turn fostered cooperation rather than competition among firms. What is more, once a maximum price increase had been granted, firms were under pressure to apply it for fear that the bureaucracy might realize that it had been too generous and might in the future take a harder line in negotations.

Thus the government believed that competition policy would not only enable the French economy to become more efficient, but would also prevent abusive (and inflationary) price increases. While economic theory suggests that indeed competition and efficient allocation of resources are linked, it does not offer a strong basis for believing that inflation is primarily due to lack of competition.

In any event, Mr. Barre embarked on a more liberal course than his predecessors. After a short period of price and wage freeze designed to break the mechanism of inflationary expectations, price controls were abolished even in the industries that had lived with such controls for a considerable number of years. It should be added that this policy was not popular with the business community, as might have been expected. Cases in which the leaders of an industry pleaded with the Minister of Finance to avoid the lifting of price controls on their products because they feared that this lifting would prompt outbreaks of competition were not infrequent.

The counterpart to the liberalization of pricing decisions by firms had to be a strengthening of competition law. This was achieved by a 1977 law which established the "Commission de la Concurrence", an independent administrative body which has large powers to investigate cartels and abuses of market power and makes recommendations on fines or appropriate reliefs to the Minister of Finance, with whom rests the ultimate power to sanction anti-competitive behavior and/or to force firms to modify such behavior. The 1977 law also empowers the Minister of Finance to direct the Commission de la Concurrence to investigate mergers that may have an anti-competitive effect. If the Commission finds that the restriction to competition entailed by those mergers outweighs the advantages they may enable the firm to achieve from the point of view of economic and social progress, the Minister can then upon the recommendation of the Commission prohibit the firms from merging or impose conditions for the realization of such mergers.

The system established through the 1977 law is still in existence. If it has worked very well as far as cartels, price conspiracies, etc. are concerned, it has proved to be much less satisfactory in the area of merger controls. To the extent that for such controls only the Minister of Finance can refer a case to the Commission, the success of the policy largely rests with him. Successive ministers have shown little enthusiasm to refer cases to the Commission, often because the mergers which were most potentially damaging to competition were supported (or initiated) by the Ministry of Industry. It should be noted, however, that the number of mergers each year has substantially declined since the middle of the seventies.

It should also be added that the 1977 bill on competition policy met with considerable criticism from the business community. Business leaders actively lobbied against some of the provisions of the bill (such as the provision that enabled victims of cartels to seek compensatory damages on the basis of the findings of the Commission de la Concurrence). Support for the competition bill was lukewarm among rightist politicians (who, in principle, supported the Barre government) so that certain important provisions of the bill were voted by Parliament thanks to the implicit support of the Socialists and the Communists. If those parties did not necessarily agree with the underlying philosophy of the bill, they, at least, welcomed the curbing of the abuses of private monopolies.

While it was promoting a generally liberal policy, Barre government tried to facilitate reallocation of resources among industries. Thus, while it supported R and D investments in a limited number of promising fields such as bio-industries, energy saving devices, industrial robots, etc., it also considered that in crisis industries such as steel, shipbuilding, heavy chemicals and textiles, drastic reductions in the level of production and employment, as well as specialization of firms, were necessary and that the state should not prevent the painful process of reallocation of resources from occuring. This policy, which was called "industrial redeployment" in France, however could only bear fruit in the long run and short run political considerations (France was split in half between the right and the left which meant that the government always faced the possibility of losing the elections as in nearly did in 1978 and did in 1981) could not be completely ignored. Thus, if crisis industries were not artificially protected from the inevitable, the government occasionally stepped in to ease the tensions they were experiencing.

As the concern with our ability to finance imports grew, the government considerably increased its financial help to firms which wanted to export (for example, through insurance against the risk of default by foreign buyers). In 1981, the year in which the political majority changed, public aid related to exports was larger than public subsidies to private investment and amounted to nearly half of the public subsidies to R and D.

One of the main failures of the Barre policy was the inability to spur investment in the private sector. From this point of view the abandonment of price controls which had been expected to lead to an increase in profit margins of firms (which it did) and hence to an increase in investments did not lead to the expected result. Private firms confronted with shrinking demand, more severe international competition on export markets and rapidly increasing labor costs at home did not attempt to expand their scales of operation. Since the government, because of its liberal philosophy (and perhaps also because it did not have the resources) was not inclined to massively increase public demand, unemployment rose rapidly, setting the stage for the political change of 1981.

A final feature of the 1974–1981 period worthy of mention is the fact that public financing of private firms (whether through public subsidies to R and D, investments, exports, etc., which amounted to 1,300 Billion Yen per year, or 1.75% of GNP) was heavily concentrated on a small number of large industrial groups. A report commissioned by the government toward the end of the seventies to assess who was getting what in the very complex system of public aid, showed that six groups in high tech industries (Thomson, Dassault, CII-HB, CGE, Creusot Loire and SNIAS) received half the total subsidies allocated to private industry. Although the aforementioned report was never made public, its main conclusions were leaked to the press and sparked a controversy on the relationship between the largest firms in the private sector and the state.

III. *1981 and its Aftermath*

As everybody knows, France underwent an important political change in 1981 when the right was defeated both during the presidential election and shortly afterward when the National Assembly faced reelection. It is obviously too early to pass judgment on the significance of the change from the point of view of industrial policy and we will not attempt to do it here. So, comments will be limited to two main points: the question of nationalization and the apparent trend in recent industrial policy.

The nationalization of the large banks that were still in private hands and of a dozen large industrial groups was one of the first and most spectacular moves taken by the new government when it came to power. This made a deep impression on the international community and was often considered as a sign that the new coalition intended to establish a centrally planned economy in France.

The nationalization movement was partly rooted in the traditional rhetoric and ideology of the left, which was characterized by a deep distrust of the capitalist and financial classes and a belief that state intervention is necessary to promote a development of the economy consistent with the long run "real" welfare of the people and an equitable distribution of income. Thus, to a certain extent the nationalizations had an important symbolic value in signalling the change in philosophy between the previous government and the new one. One of the areas in which the symbolic value of the nationalizations is obvious is the banking sector. Not only were the most important banks already nationalized, but the remaining banks were subject to stringent regulations by the government. So it is difficult to argue that the state did not have the means to promote its economic policy through the banking sector or to prevent potential "abuses" by major banks even in the absence of nationalization.

But the nationalizations were not only based on ideological considerations. Looking back at the industrial policy of the sixties and the seventies, the left considered that the greatest successes had been achieved in areas such as telecommunications, electricity, armaments or aeronautics, in which nationalized firms or public agencies had played a crucial role by embarking on ambitious long run investment programs and by coordinating the policies and shaping the structure of their suppliers. On the contrary, they felt that in areas in which the public sector had played a less important role in promoting demand and shaping supply, state intervention (mostly through subsidies) had not been conductive to as much economic progress (such as in the machine tool industry or to a certain extent the computer or steel industries).

Thus the lessons of the past seemed to indicate to the new government that in certain areas in which massive investments and some coordination of decisions were required, either because the industries concerned were high technology industries of strategic importance for the development of the economy as a whole (such as electronics, new materials or bio-industry) or because the industries concerned had to completely rethink their future (crisis industries such as heavy chemicals, steel or shipbuilding) the private sector, if it was left to its own devices, was less able or willing to develop the kind of long term strategy that public firms, unencumbered by short run profit maximization considerations, could engage in. Whereas through the sixties and the early seventies the public sector had been able to rely mostly on its buying power to promote its industrial policy designs, the situation was different in the early eighties as some of the industries which held the key to the future or were the subject of concern did not primarily or exclusively cater to the needs of state organizations. Thus the nationalization of the most important firms in those sectors was considered necessary to the implementation of long term strategies. Furthermore, these nationalizations seemed all the more natural since, as we saw earlier, some of those firms were already heavily dependent on public subsidies and absorbed a major part of state financial aid to the private sector.

It thus may be said that to a large extent the nationalizations of 1981, which increased the share of the public sector in manufacturing from 18% to 30%, were an attempt by the government to secure the means to duplicate in a few sectors the kind of industrial policy that had been followed during the DeGaulle and Pompidon eras.

In the wake of the nationalizations in the industrial sector, the government unveiled its industrial development plan. At the general level, public spending on R and D is to be increased from 1.4% of GNP annually to 2.5%. At the sectoral level, a major effort will be made to use the leverage given by the newly nationalized firms to develop the electronics industry which should become the third largest in the world by 1986. This effort is considered as crucial both because of the huge commerical deficit in this area (11 Billion Francs in 1982 and 8.1 Billion Francs in electronic consumer goods alone) and because the French manufacturing sector appears underequipped in electronic machine tools, which is one of the reasons for which the French economy lacks competitivity. The goal the government set for itself in this area is to increase output at the rate of 9% per year, to have a trade surplus in 1986 and to increase employment in the sector by 80.000 people by that year. The public firms in the sector (Thomson, Matra, CGE and CII) are to be specialized and together they should produce the whole range of electronic products, starting with electronic components and down to computers, electronic consumer goods, etc... Altogether the investments required to carry out that plan amount to 140 Billion Francs (3,500 Billion Yen) of which 60 Billion Francs will be provided by the state.

Similarly, by using a combination of concentration and specialization of nationalized firms and of aggressive public spending on R and D, the government launched development projects in other technologically promising areas such as new materials, bio-technologies, etc...

In the crisis industries for which the government has also increased its influence (such as heavy chemicals or steel) through nationalizations, major reorganizations are to take place, again based on concentration and specialization of firms in order to rationalize production.

Such a policy, of course, implies a retreat from the promotion of competition that was the hallmark of the previous government at least in the new public sector. But it also means that in the rest of the economy, public policy makers rely more on the introduction of the most technically advanced equipment in production units than on the discipline of competitive markets to bring about a decline in the unit costs of production of French firms. Thus, although the government claims to be as concerned with competition policy in the private sector of the economy (if for no other reason than because it is concerned by the rate of inflation) as its predecessor was, it appears that so far it has made relatively little use of the 1977 competition legislation. If competition policy has remained active, it is mostly because cases can be referred to the Competition Commission by other groups of institutions than the Ministry of Finance (such as consumer organizations, courts, local governments, etc.). One may also venture that private business leaders who are under strong pressure from public authorities to refrain from laying off workers, so as to prevent the already high level of unemployment from rising, are able to convince the government that they can contribute to its short run public policy goal only if they can shelter themselves from the rigors of the competition law.

CONCLUSION

Altogether we may say that the basis of French industrial policy has changed very little since the beginning of the post War period. State guidance or interventions in the market mechanisms, a fascination for technological achievements and little faith in the virtues of the competitive process have been the hallmark of that policy, except during a relatively brief period of time in the second half of the seventies.

The most obvious weakness of such a policy is that little effort is devoted to ensuring that firms minimize their costs and when the issue of efficiency is dealt with it is generally in simplistic terms that equate large size with low costs.

For an economist it is easy to criticize such a policy because it seems to ignore some of the most basic teachings of economic theory. While it is our role to voice such criticisms in order to alert public policy makers on the potential costs of their course of action, we should also recognize that the relevant question for them is not what would be optimal in the long run but rather what is the best feasible course of action. In this respect, the study of the industrial policy of a country reflects as much the values of the society as it does the economic acumen of its leaders.

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