

Finland, the Netherlands, Norway, Sweden, and Switzerland were closer to the German type of cooperative capitalism. Luxembourg probably should be attached to Belgium. But except in a small number of industries, the business climate and consensus turned away from the American style of competitive capitalism. In these states the cooperative type of capitalism reached its peak of development during the 1930s. After World War II, however, it lost its influence steadily, turning more and more to the American type. Surely this process was facilitated by the booming economy, which made cooperation more and more obsolete. Nevertheless, the fundamental shift in *manière de voir*, the conviction that competition offered more advantages than cooperation, needed many years to mature. This shift began to take place mainly during the late 1950s and the early 1960s. However, in Switzerland cooperative capitalism has been preserved until today.

Acknowledgments

I want to thank all who made suggestions and criticized earlier versions of this chapter, the participants of our preconference in Florence in 1992, especially Franco Amatori, Alfred Chandler, Leslie Hannah, and Takashi Hikino.

Group 2

Followers in Western Europe

France: The relatively slow development of big business in the twentieth century

PATRICK FRIDENSON

Initially the second industrial nation, France is still, some two centuries later, the fourth industrial nation. However, it is not covered in Michael Porter's *Competitive Advantage of Nations*, and among French or American business historians of France, nobody ever dared to write a general business history of France. This can be explained in two ways. Despite recent progress, many of the detailed researches necessary for such a synthesis are still missing. On the other hand, earlier literature focused on the performance of the French economy in the twentieth century and was more concerned to give a positive assessment of French business and management than to analyze the dynamics of the French large industrial enterprise.¹ So, it is not an easy task to compare France and its firms with those of the three nations surveyed in Chandler's *Scale and Scope*, and then to review the post-World War II industries. Therefore, this essay cannot aim at exhaustiveness and, given the conflicting views on French business which have persisted among specialists for forty years, it has to be quite personal, maybe even subjective.

The French corporate enterprise since the end of the nineteenth century will be studied here in a Chandlerian perspective, emphasizing that the

¹ Among the literature available in English, see James M. Laux, "Managerial structures in France," in Harold F. Williamson, ed., *Evolution of international management structures*, Newark, University of Delaware Press, 1975 (a pioneering survey); Claude Fohlen, "Entrepreneurship and management in France in the nineteenth century," in Peter Mathias and M. M. Postan, eds., *The Cambridge economic history of Europe*, vol. 7, Cambridge, Cambridge University Press, 1978; François Caron, *An economic history of modern France*, New York, Columbia University Press, 1979; Maurice Lévy-Leboyer, "The large corporation in modern France," in Alfred D. Chandler, Jr., and Herman Daems, eds., *Managerial hierarchies: Comparative perspectives on the rise of the modern industrial enterprises*, Cambridge, MA, Harvard University Press, 1980 (in later works, the last two authors have considerably modified their views).

role of large industrial firms in the creation of wealth has been, first, to provide opportunities for investment of capital and employment of labor; second, to become the learning base for the technological developments and the managerial skills in specific industries; and, third, to become the core of a nexus of small and middle-sized related and ancillary firms.² But in doing so, we have to take account of two peculiarities of the French economy: the continuously high proportion of small enterprises (and the low proportion of middle-sized firms), and the active role of the French state in the economic life, which kept growing till the mid-1980s. This is why I chose to use the recent hypotheses expressed by two Japanese business historians, although the difference between Japanese firms, to which they directly apply, and French ones is obviously enormous. Yoshitaka Suzuki has contended that "the internalized allocation of human resources or the formation of an internal capital market rather than the internalized coordination of the flow of goods through vertical integration might have been a more characteristic feature in the emergence and development of modern firms elsewhere [than the United States]."³ Tsunehiko Yui (relayed in 1992 by the American business historian W. Mark Fruin) has cast emphasis on what he calls the enterprise system. This combines organizational structures within individual enterprises, vertical enterprise groups, trade associations, and governments.⁴ Thus we should fully assess factors external to the firm, including "the organizational arrangements between economic units that govern the ways in which they compete and cooperate" (Fruin).

In line with this perspective, this essay will first detail the slow emergence of big business in France during the Second Industrial Revolution, and suggest some explanations for it. Then it will link its specificity to a peculiar type of management of human resources, and also to the conditions of competition on the French market. Finally it will assess the pattern of modern industrial enterprise in France since World War II. This approach should enable us to answer the basic questions underlying the French case in a comparative analysis: how was the relatively slow devel-

² Chapter 2 of this volume.

³ Yoshitaka Suzuki, *Japanese management structures, 1920-80*, London, Macmillan, 1991.

⁴ Tsunehiko Yui, "The enterprise system in Japan: Preliminary considerations on internal and external structural relations," in *Japanese Yearbook on Business History*, 1991 (Tokyo: Japan Business History Institute). W. Mark Fruin, *The Japanese enterprise system*, Oxford, Clarendon Press, 1992.

opment of large-scale enterprises compatible with a favorable growth rate during most of the years under survey? Did the existence and activities of a state stronger than its other European counterparts (except in Germany) hinder the potential of French large corporations, or did it (like in Germany) contribute to their renewal and expansion?

THE EMERGENCE AND GROWTH OF LARGE INDUSTRIAL ENTERPRISES IN FRANCE

Before proceeding to a review of the development of large corporations, we must face an obstacle, which is itself a result of history: in most sectors (the only two exceptions being stone, clay, and glass and electrical equipment) a significant number of the largest firms were nonpublic, at least till the 1950s. This means it is particularly difficult to get data comparable with those of *Scale and Scope*. Earlier studies, by French scholars, chose therefore to concentrate on the 100 largest publicly held firms (Houssiaux) or even the 30 largest (Lévy-Leboyer).⁵ Recent American research tries to overcome the difficulty. Michael S. Smith has collected data on the 200 largest publicly held firms in France in 1913, and examined among them the 100 largest manufacturing, plus the private firms of "comparable size." Bruce Kogut has done the same for selected years up to the present, for which the business press is also quite thorough.⁶

In France large corporations appeared in the manufacturing sector in two stages: at the end of the nineteenth century, and in the 1920s. The first movers before 1914 came in steel, glass, cement, electrical equipment, food processing, automobiles, and rubber.

In steel the two leaders were Forges et Acieries de Marine et d'Homécourt and Schneider et Cie. Marine-Homécourt was an early example of managerial capitalism. Producing both steel and military applications, it relied on vertical integration through a merger and on a strategy of development of new products.⁷ Schneider was, on the contrary, a family

⁵ Jacques Houssiaux, *Le pouvoir de monopole*, Paris, Sirey, 1958. Maurice Lévy-Leboyer, "Le patronat français, 1912-1973," in M. Lévy-Leboyer, ed., *Le patronat de la seconde industrialisation*, Paris, Editions Ouvrières, 1979, pp. 137-185.

⁶ Michael S. Smith, "The beginnings of big business in France, 1880-1920: A Chandlerian perspective," *Essays in economic and business history*, 9, 1993, pp. 1-24. Bruce Kogut, work in progress.

⁷ Jean-Marie Moine, *Les barons du fer*, Nancy, Presses Universitaires de Nancy, 1989.

firm, a strong case of entrepreneurial capitalism. Like Marine-Homécourt, it combined vertical integration and product diversification – here into heavy industry and armament.⁸ Both had thus their own managerial hierarchies, but they could also rely on cooperative arrangements, the earliest of which was the steel sales consortium of the Lorraine region, created in 1876.⁹

In glass, the French international position was at its best, with Saint-Gobain. Founded in 1665, it was “continental Europe’s leading maker of flat glass” (according to Michael Smith) and had already diversified into inorganic chemicals. During World War I and the 1920s, it diversified into other chemicals. Before 1914 Saint-Gobain had become a highly efficient managerial bureaucracy with organizational capabilities in research, production, distribution, and management.¹⁰ In the same group of industries, a mention should also be made of the French strength in building materials. The leaders were a managerial firm, the Société Anonyme des Ciments Français, and an entrepreneurial firm, the Ciments Lafarge. Lafarge had its own research laboratory since 1887, created with the help of the famous professor of chemistry Henry Le Châtelier, and it was a major tool for its diversification from lime production into cement manufacturing.¹¹

In a new industry, electrical equipment, dominated by American and German companies, two French companies were nevertheless able to reach the stage of the modern industrial enterprise. We have here once more two different strategies. The Compagnie Française Thomson-Houston was born in 1893 as a joint venture between General Electric (40 percent of the shares) and a French company (60 percent). But as early as 1902 GE’s percentage had fallen to 6.5. Initially, the firm had two activities: it

⁸ Claude Beaud, “La stratégie de l’investissement dans la société Schneider et Cie,” in François Caron, ed., *Entrepreneurs et entreprises XIXe–XX siècles*, Paris, Presses de Paris-Sorbonne, 1983, pp. 118–131. Daijiro Fujimura, “Schneider et Cie et son plan d’organisation administrative de 1913: analyse et interprétation,” *Histoire, Economic et Société*, April–June 1991, pp. 269–276.

⁹ Carl Strikwerda, “The troubled origins of European economic integration: International iron and steel and labor migrations,” *American Historical Review*, October 1993.

¹⁰ Jean-Pierre Daviet, *Un destin international. La Compagnie de Saint-Gobain de 1830 à 1939*, Paris, Editions des Archives Contemporaines, 1988. Maurice Lévy-Leboyer, “Hierarchical structures, rewards and incentives in a large corporation: The early management experience of Saint-Gobain, 1872–1912,” in Norbert Horn and Jürgen Kocka, eds., *Law and the formation of big enterprises*, Göttingen, Vandenhoeck und Ruprecht, 1979, pp. 451–74.

¹¹ Léon Dubois, *Lafarge-Coppée, 150 ans d’industrie*, Paris, Belfond, 1988. Bertrand Collomb, “L’industrie européenne du ciment au XXe siècle,” *Entreprises et Histoire*, May 1993, p. 100.

was a financial holding company in electrical equipment, and it produced tramways under American licenses and with much material imported from the United States. Although it kept relying on foreign patents (mostly American), it later developed organizational capabilities in manufacturing and embarked on a policy of diversification by turning out many sorts of electrical equipment. By 1913 this managerial enterprise was the second largest of France’s publicly held industrial firms.¹² On the contrary, the Compagnie Générale d’Electricité was a purely European company: mostly French, with some Swiss capital. Its focus was on electrical lighting. Founded in 1898, also as a managerial enterprise, it diversified into electrical manufacturing after 1910. Despite an impressive performance, its attempts to become a multinational before World War I were failures.¹³

“In the food category, the two largest sugar refiners (Société Générale de Sucreries and Raffineries et Sucreries Say) were two to three times the size of Germany’s largest. . . . The largest French brewery (Brasseries Quilmès) was comparable in assets to Germany’s largest. . . . However, the other food companies that made France’s top 100 in 1913 were smaller than comparable German companies,” as Michael Smith has shown. At least Say practiced managerial capitalism.¹⁴

In automobiles, the French industry dominated Europe. The two leading companies, Peugeot and Renault, were family firms. The first mover’s (Peugeot) performance was soon matched by the challenger, Renault. Both developed aggressive multinational enterprises. But they would be overtaken from 1919 onward by a late challenger, André Citroën, who personally managed an entrepreneurial firm.¹⁵

Rubber benefited from the boom of the French bicycle and automobile industries. Michelin competed with the British company Dunlop and the

¹² Pierre Lanthier, “Les constructions électriques en France: financement et stratégies de six groupes industriels internationaux, 1880–1940,” thèse de doctorat d’Etat, University of Paris X-Nanterre, 1988; and “L’industrie de la construction électrique en France,” in François Caron and Fabienne Cardot, eds., *Histoire générale de l’électricité en France*, vol. 1, Paris, Fayard, 1991, pp. 671–727.

¹³ Jules Rapp, “L’histoire d’une entreprise d’électricité: la Compagnie Générale d’Electricité,” Ph.D. thesis, University Paris X-Nanterre, 1985. Albert Broder and Félix Torres, *Alcatel Alsthom. Histoire de la Compagnie Générale d’Electricité*, Paris, Larousse, 1992.

¹⁴ Smith, “The beginnings,” pp. 5 and 12, to which one should add Jacques Fiérain, *Les raffineries de sucre des ports en France (XIXe–début XXe siècles)*, Paris, Champion, 1976, and Céline Girard de Mourgues, “Analyse des affiches publicitaires de bière de 1880 à 1940,” DEA thesis, Ecole des Hautes Etudes en Sciences Sociales, 1992, pp. 8–22.

¹⁵ James M. Laux, *In first gear: The French automobile industry to 1914*, Liverpool, Liverpool University Press, 1976. Patrick Fridenson, *Histoire des usines Renault*, vol. 1, Paris, Editions du Seuil, 1972. Sylvie Schweitzer, *André Citroën*, Paris, Fayard, 1992.

German Continental. A family firm, it quickly became a multinational. Its diversification in road maps and travel guides was successful. A non-related diversification in aviation during World War I was a failure and was abandoned.¹⁶

In two industries, however, modern industrial enterprises were formed only in the 1920s. In aluminum some organizational capabilities came before size. One French company had enjoyed a world monopoly of production (though on a small scale) till 1886. When technological innovation broke that monopoly, four challengers came to birth so as to dislodge the first mover. But their hopes were disappointed. Concentration occurred in two stages. In 1911 the five manufacturers built a sales consortium, l'Aluminium Français. It was so powerful that in 1912, with the help of a German firm, it "began to build a major aluminum complex" in North Carolina, which it had to sell to Alcoa in 1915. Then, between 1914 and 1921, the first mover, which would later be called Pechiney, absorbed three of the four challengers. Now a major firm in aluminum at the world level, it kept as its second core business inorganic chemical products.¹⁷

In chemicals, size had become a major issue after World War I. In 1926, fascinated by the creation of IG Farben in Germany (1925), the Kuhlmann company suggested a French Chemical Union – that is, the formation of a holding company by all the French chemical firms. Kuhlmann was "a venerable . . . producer of inorganic chemicals," to which World War I offered the opportunity to diversify into the production of dyes. The other chemical firms – including Saint-Gobain – finally refused Kuhlmann's proposal, because on one side they did not want to merge into a conglomerate and on the other their views about the role of the French state differed too much (Kuhlmann was said to be too close to the government and to the large Paris banks, Saint-Gobain was steeped in nineteenth-century liberalism).¹⁸ Only in the neighboring industry of pharmaceuticals, where France had then a gap in relation to Germany and Britain, did a major merger take place, as the two leading firms gave birth to Rhône-Poulenc in 1928: this was an obvious consequence of the

¹⁶ André Gueslin, ed., *Michelin, les hommes du pneu*, Paris, Editions de l'Atelier, 1993.

¹⁷ Florence Hachez, "Le cartel international de l'aluminium du point de vue des sociétés françaises 1901–1940," in Dominique Barjot, ed., *International cartels revisited*, Caen, Editions-Diffusion du Lys, 1994 pp. 153–157. Mira Wilkins, *The history of foreign investment in the United States to 1914*, Cambridge, MA, Harvard University Press, 1989, pp. 282–284, 778–780. Ivan Grinberg, *Pechiney: repères historiques*, Paris, Institut pour l'histoire de l'aluminium, 1992, pp. 4–8.

¹⁸ Daviet, *Un destin*, pp. 571–572. Jean-Etienne Léger, *Une grande entreprise dans la chimie française: Kuhlmann, 1825–1982*, Paris, Debresse, 1988.

creation not only of IG Farben, but also of ICI in Britain (1926). After 1928 Rhône-Poulenc was the largest producer of organic chemicals (except for dyes but including pharmaceuticals) in France.¹⁹

Thus, all the evidence available confirms Michael Smith's balanced assessment of French industrial capitalism by 1914. First, "France's largest industries clustered in the same industries that gave rise to big business elsewhere, but they were neither as large nor as numerous as the giant enterprises of the United States, Germany, or Great Britain." Second, whereas "most French industrialists continued to practice personal capitalism, . . . a number of firms managed by their founders (Renault, Michelin, Air Liquide) or by the founding families (Wendel, Schneider, Peugeot [the forerunner of Pechiney], Lafarge) were . . . beginning the transition to managerial capitalism." Only a few firms, Saint-Gobain, Thomson-Houston, the Compagnie Générale d'Electricité, and in older sectors "some of the steel companies" (at least Marine-Homécourt and Schneider) and the Raffineries et Sucreries Say had really moved into managerial capitalism.²⁰

During the course of the twentieth century, as in other countries, most of the first movers stayed among the nation's largest industrial firms by enlarging and renewing their organizational capabilities, with the one major exception of steel, where all firms had to merge into one in 1986. Conversely, few of the challengers gained a lasting access to top positions, the most striking success being BSN in food and kindred products.

It is worth assessing closely the distribution of modern industrial enterprises in France in comparison with the situations in America and Germany. The United States, thanks to economies of scale, developed large corporations first in railroads, then in consumer products (which were sold packed and branded by the millions) and in mechanical engineering. As an alternative, Germany welcomed large corporations first in production goods branches, and only later did they grow in consumer goods branches. This can be ascribed to a domestic market which was certainly smaller and less homogeneous than the U.S. market.²¹

France stands in between. Large corporations were concentrated as

¹⁹ Pierre Cayez, *Rhône-Poulenc 1895–1975*, Paris, A. Colin and Masson, 1988. Michael Robson, "The pharmaceutical industry in Britain and France, 1919–1939," Ph.D., thesis London School of Economics, 1993. Ludwig F. Haber, *The chemical industry, 1900–1930*, Oxford, Clarendon Press, 1971, p. 305.

²⁰ Smith, "The beginnings," pp. 5 and 13–14 (though with a few changes).

²¹ Alfred D. Chandler, Jr., *Scale and Scope*, Cambridge, MA, Harvard University Press, 1990.

elsewhere in food, chemicals, metals, mechanical engineering and electrical equipment. But there were not as many large firms in 1913 in France as in Germany. First, it results from the existence of a dense commercial network in France prior to the growth of large-scale business. This did not motivate entrepreneurs to integrate production and marketing. Second, French firms focusing on consumer goods did not benefit from a wide ranging immigration which in the United States was a strong incentive for the creation of new industries and for installment sales. Although important, immigration into France was easily channeled through existing commercial facilities and small-scale credit, and its expenses mostly fueled the growth of the textile industry (where 250 companies had more than 500 employees in 1914).²² Third, for producers' goods, the number and variety of industrial customers were generally not yet big enough. Fourth, French industry had a strategy of niches, aiming at quality products rather than cheap products and partly reflecting the heterogeneity of the national market. The fact that a number of innovations were devised by individual inventors (photo, automobile, aviation, cinema, radio) also accounts for the French emphasis on quality products.²³ All in all, except in two areas – machine-tool production (in steady decline from the 1880s to the present day) and organic chemicals – the distribution of French large firms was not very different from the other major industrial nations in 1914. In the interwar period France caught up, as we have seen, in organic chemicals. So did it in petroleum.²⁴

However, in order to characterize modern industrial enterprises, size is not enough. Chandler has demonstrated that, especially in capital-intensive branches, organizational capabilities are required. How did French large manufacturing firms behave in that respect? We do not yet have all the historical evidence needed to give a full answer. From what we already know, it seems that French large corporations focused on production capabilities and reached competitiveness there, as evidenced by the various productivity growth figures available.²⁵

²² Yves Lequin ed., *La mosaïque France*, Paris, Larousse, 1988. Michèle Tribalat, ed., *Cent ans d'immigration*, Paris, PUF, 1991. Gérard Noiriel, *Population, immigration et identité nationale en France XIX^e-XX^e siècle*, Paris, Hachette, 1992.

²³ Laux, *In first gear*. Emmanuel Chadeau, *L'industrie aéronautique en France 1900-1950. De Blériot à Dassault*, Paris, Fayard, 1987.

²⁴ Takashi Hotta, "L'industrie du pétrole en France des origines à 1934," Ph.D. thesis, University Paris X, 1990. Cayez, *Rhône-Poulenc*. Daviet, *Un destin*.

²⁵ Maurice Lévy-Leboyer, "La grande entreprise: un modèle français?" in Maurice Lévy-Leboyer and Jean-Claude Casanova, eds., *Entre l'Etat et le marché. L'économie française des années 1880 à nos jours*, Paris, Gallimard, 1991.

The construction of organizational capabilities in marketing, management, and research was comparatively slower. Suffice it to say that before World War I, industrial research capabilities had already been formed outside of large corporations, as in silver jewelry, and in leading firms of aluminum, rubber, cement, automobiles, glass, and inorganic chemicals.²⁶ As for human resources, it is worth noting that as early as 1906 the Schneider company had a full personnel department (in the United States, the first one had appeared at NCR in 1901).²⁷ A number of large industrial enterprises had already developed sales departments: in metallurgy (Pont à Mousson), glass (Saint-Gobain), and in new industries such as automobiles, tires, or electrical equipment.²⁸ We also mentioned earlier multinational activities.

The very idea of organizational capabilities was present in French public discussion from the early 1900s; for example, in the metals industry, the salaried entrepreneur Henri Fayol kept lecturing on such matters. In 1916-1920 these lectures were turned into a book. Fayol advocated the necessity of strategic planning and long-term views as specific functions of top management. He called for functional structures. He would make up for strict managerial and accountancy control by allowing some autonomy to middle managers.²⁹ However, although well publicized, even after his death in 1925, and although relayed by the growth of management consultancy in the interwar years, Fayol's views were slow to spread into industry.³⁰ Some recent historians even argued that his impact abroad (notably at the Harvard Business School) was greater than in France.³¹

This leads us to conclude that the adoption of formal managerial structures in large corporations before 1914 proceeded slowly. The pioneers

²⁶ Marc de Ferrière, *Christofle, deux siècles d'aventure industrielle 1793-1993*, Paris, Le Monde Editions, 1995. Muriel Le Roux *L'entreprise et la recherche: un siècle de recherche industrielle à Pechiney*, Paris, Rive droite, 1996. François Caron, "La capacité d'innovation technique de l'industrie française. Les enseignements de l'histoire," *Le débat*, September-November 1987. Gueslin, *Michelin*.

²⁷ Fujimura, "Schneider et Cie."

²⁸ Marc Meuleau, "De la distribution au marketing (1880-1939). Une réponse à l'évolution du marché," *Entreprises et Histoire*, May 1993, pp. 61-62.

²⁹ Tsuneo Sasaki, *Henri Fayol*, Tokyo, Bunshindo, 1984. Donald Reid, "Fayol: from experience to theory," *Journal of Management History*, 1, 1995, pp. 21-36, and "Fayol: excès d'honneur ou excès d'indignité?," *Revue Française de Gestion*, September-October, 1988, pp. 151-159.

³⁰ Aimée Moutet, 1995, *Les logiques de l'entreprise. L'effort de rationalisation dans l'industrie Française 1919-1939*, Paris Éditions de l'École des Hautes Études en Sciences Sociales, 1997.

³¹ Robert R. Locke, *The end of the practical man: Entrepreneurship and higher education in Germany, France and Great Britain, 1880-1940*, Greenwich, CT, JAI Press, 1984.

were certainly, as one could have expected, the railways. But their structures were partly influenced by those of the state administration (which, as Jürgen Kocka observed long ago, was also felt in German industrial business).³² Beyond the railways, we know only of three detailed cases, all typical of the U-form: the Saint-Gobain company in glass and chemicals, Fayol's Commentry-Fourchambault-Decazeville company in metallurgy and mining, the Schneider company in steel and armament.³³ The three of them had already impressive managerial hierarchies.

The first evidences of a large company adopting organizational structures resembling the American M-form were in 1930–1932 at Alsthom (electric equipment), a company which had close relations with General Electric and whose top managers had been to the United States; in the 1930s at the French subsidiary of Standard Oil, the Standard Française des Pétroles; and in 1936 at Saint-Gobain, as a new CEO took office and tried to reorganize management structures to cope better with the strategy of diversification and to increase economies of scope. It is worth remembering that the new CEO was an alumnus of the Harvard Business School and had been in contact with colleagues and followers of Fayol. In 1937–1938, the Renault company, in the car industry, decentralized its departments, but did not go further in the direction of U.S.-style managerial structures.³⁴

The spread of the M-form, after reaching Pechiney in 1947, really waited for the 1950s, and moreover the 1960s (as a consequence of the merger wave) and even the 1970s.³⁵ Several remarks should be made here. As in Britain, management consultants, a number of them members of American firms, were influential in convincing French firms (for instance Pechiney in aluminum, Rhône-Poulenc in chemicals and pharmaceuticals)

³² Georges Ribeill, *La révolution ferroviaire, La formation des compagnies de chemins de fer en France (1823–1870)*, Paris, Belin, 1993. François Caron, *Histoire de l'exploitation d'un grand réseau: la Compagnie du chemin de fer du Nord 1846–1937*, Paris, Mouton, 1973.

³³ Daviet, *Un destin*. Donald Reid, *The miners of Decazeville*, Cambridge, MA, Harvard University Press, 1985. Fujimura, "Schneider et Cie."

³⁴ Richard F. Kuisel, *Ernest Mercier: French technocrat*, Berkeley, University of California Press, 1967. Marc Meuleau, *Les HEC et l'évolution du management en France (1881–années 1980)*, thèse de doctorat d'Etat, University Paris X, 1992, pp. 781–784. Lévy-Leboyer, "La grande entreprise," p. 408. Jean-Pierre Daviet, "Stratégie et structure chez Saint-Gobain: un modèle français dans les années 1930?," *Entreprises et Histoire*, April 1992, pp. 42–60. Fridenson, *Histoire des usines Renault*.

³⁵ Gareth P. Dyas and Heinz T. Thanheiser, *The emerging European enterprise: Strategy and structure in French and German industry*, London, Macmillan, 1976.

to turn to a multidivisional structure.³⁶ But there were also genuine French attempts, as in the electronics industry of the 1960s, where both Thomson and CSF created French equivalents of the M-form, derived both from an intense product diversification strategy and from long-lasting contacts with American partners such as General Electric.³⁷ However by the mid-1970s it is believed that the adoption of the M-form in France was less complete than in Britain.³⁸ We may point to two reasons. In some cases, like at Pechiney, the shift to the second stage of the M-form in the late 1960s was halfhearted and managers achieved a structure which bore marked differences with McKinsey's design.³⁹ In a few other cases, like at Renault (1976–1984), the M-form failed, mostly because, in a little-diversified firm, it duplicated levels of decision and control, and was hastily abandoned in the wake of a major managerial and financial crisis in 1985.⁴⁰

THE SPECIFICITY OF HUMAN RESOURCES

More specific of France is the management of human resources at the top level, as it forges a small managerial elite. Here the general tendency of French big business is different both from Great Britain and Germany. French managers cannot be shown as "exceptionally under-educated," as the British have been.⁴¹ But the employment of *grandes écoles* graduates and university graduates, although it grew considerably during the century, always remained at a lower level than graduate recruitment in Germany. If one does not consider only large manufacturing firms, but the entire French industry, highly skilled engineers represented 0.5 percent of the industrial working population in 1913, and 7 percent in 1980.⁴²

We have to look first at how French entrepreneurs of large corporations

³⁶ Cayez, *Rhône-Poulenc*. Martine Muller and Félix Torres, *L'identité d'un groupe: Lafarge-Coppée 1947–1989*, Paris, Lafarge-Coppée, 1991.

³⁷ Patrick Fridenson, "De la diversification au recentrage: le groupe Thomson (1976–1989)," *Entreprises et Histoire*, April 1992, p. 33.

³⁸ Geoffrey Jones, "Great Britain: Big business, management, and competitiveness in the twentieth century," Chapter 4, in this volume.

³⁹ Elie Cohen et al., "Les structures de Pechiney," unpublished report, Paris, Ecole des Mines, 1971.

⁴⁰ From research in progress by the author. A similar reversal happened at Hitachi, in Japan in the 1970s.

⁴¹ Jones, "Great Britain."

⁴² Jean-Pierre Daviet, "L'industrie et les défis de l'entreprise," *Les Cahiers Français*, March–April 1992, p. 75.

are trained, then at which career pattern brings them to top positions. Both are quite different from developments in Germany, as the following statistics show. In 1990 top managers at work in the 200 largest firms had entered an enterprise for the first time at the age of twenty-five in Germany and of thirty-two in France, a difference of 24 percent.⁴³ These differences could also be found for earlier dates in the twentieth century. These numbers show that in France, contrary to Germany, a majority of large corporations leave to the state the task of selecting their future leaders. In 1990, 45 percent of the CEOs of the 200 largest French corporations had been detected inside the French state. There are two types of exit from civil service to business. Since the 1880s and moreover the 1900s, a fraction of the most brilliant alumni of the schools which train state engineers leave immediately for a corporation. The most frequent adepts of this strategy are the top-ranking alumni of the Ecole Polytechnique, particularly the engineers of the Corps des Mines, and, since 1945, the alumni of the National School of Administration (ENA). The other exit is that of high-ranking civil servants who at a further stage of their career make a similar decision.⁴⁴

This majority selection pattern has four implications. First, these schools bring to their students a very general education. Before World War II, the share devoted to economics was minuscule and business administration was ignored. Roger Martin, the CEO of Saint-Gobain between 1970 and 1980, testifies with regret: "In my two years at the Ecole Polytechnique and my other two years at the Ecole des Mines, I believe I never heard the words enterprise and market."⁴⁵ Since the end of World War II, this gap was finally corrected. Yet the training given by these schools, even the supposedly technical *grandes écoles*, remains rather polyvalent, a feature of consequence for both management and mobility.

Second, this education is widely divorced from research as these schools

⁴³ Michel Bauer and Bénédicte Bertin-Mourrot, "L'Etat, le capital et l'entreprise au sommet des grandes entreprises. Les 200 en France et en Allemagne," *Revue de l'IRE*, Fall 1992, pp. 31-70.

⁴⁴ Christophe Charle, "Le pantouflage en France (vers 1880-vers 1980)," *Annales ESC*, September-October 1987, pp. 1115-1137. Hervé Joly, "L'appartenance aux grands corps administratifs comme filière d'accès au sommet des grandes entreprises dans la France de l'après-guerre (1945-1989)," DEA thesis, Ecole Normale Supérieure, 1989. Michel Bauer and Elie Cohen, *Les 200*, Paris, Editions du Seuil, 1987. Also Carroll D. Smith, "The longest run: Public engineers and planning in France," *American Historical Review*, June 1990, pp. 657-692, and Bruno Belhoste et al., eds., *La France des X*, Paris, Economica, 1995; Jacques Lesourne, ed., *Les Polytechniciens dans le siècle 1894-1994*, Paris, Dunod, 1994.

⁴⁵ Roger Martin, "Editorial," *Entreprises et Histoire*, April 1992, p. 3.

are located outside universities. This brings about another major difference with Germany, where in 1990 more than 50 percent of the top 200 CEOs held a Ph.D. Training for research began to appear in the curricula of the French schools only in the 1960s.⁴⁶

Third, the base for recruiting top CEOs in twentieth-century France is small. To be sure, the number of the students in these schools since the late nineteenth century has increased, especially since the 1970s, but even thus the schools yield a number of applicants for top management positions which remains smaller than the base supplied by the cadres of German business.⁴⁷

Fourth, the career profiles of top French CEOs directly derive from this process of training and selection. Most are generalist managers. They are distinguished for their strategic vision, their organizational abilities, and their networks (including old-boy networks). They may work at such positions successively in very different sectors. Two specific state bodies excel in supplying these generalist top managers: the Finance Inspection and the Mine Corps.⁴⁸ Paradoxically, the spreading of the M-form after World War II – which I analyzed earlier – reinforced this profile of generalist manager. Specializing top managers in strategy, planning, and control did not necessarily require, as interpreted in France, people with a direct experience of one core business of the industrial enterprise.

This predominance of generalist managers makes it possible for them (contrary to German top managers) to enjoy a rather high mobility from one company to another and from one branch to another – even in unrelated sectors. It thus looks as if French large corporations value adaptability and networks more than technical competence as the key feature for most CEOs.

This very distinctive pattern of selection, career, and mobility for top managers is a source of great hierarchical distance with both the other managers and the labor force. Most managers know that they will never be able to reach top positions if they had not attended one of the few state schools I already alluded to. Hence periodic outbursts of discontent by cadres who complain that they are not associated to the key moves of their company.⁴⁹ Most French top managers have no direct experience of shared

⁴⁶ Hervé Joly, *Patrons d'Allemagne*, Paris, Presses de Sciences P., 1996. On the slow introduction of research in French *grandes écoles*, cf. for instance Claude Quivoron, "Evolution de la formation des ingénieurs chimistes et rôle de la recherche," *Culture technique*, June 1991, pp. 127-179.

⁴⁷ Joly, "Patrons III." Bauer and Cohen, *Les 200*.

⁴⁸ Emmanuel Chadeau, *L'économie du risque*, Paris, Olivier Orban, 1988.

⁴⁹ Muller and Torres, *L'identité*.

work with either other managers or workers. Even some of the nonstate *grandes écoles* gradually modified their curricula to make them less specialized, more general, in order to increase the career potential of their graduates. Such a change happened at the major French business school, HEC, between 1953 and 1960.⁵⁰

This two-tiered structure of the majority of French large corporations – generalists at the top, specialists below – has been recently discussed by historians and sociologists in two directions: does it prevent French big firms from being modern? does it make them less efficient than major foreign competitors?

To the first of these two questions the answer is a qualified no. As the training of a majority of French CEOs is that of an engineer, even if it is a state engineer, they are quite often able to combine the general approach which is in the tradition of their schools with an interest for the “modern” values of technological competence and productive efficiency as desired characteristics of industrial organizations.

To the second question the answer is more delicate. Most scholars suggest that there is no clear correlation between business performance and the importance of academic knowledge brought into the firm. Even in physics and mechanics (although perhaps not in electronics), it is not certain that research is the main engine for innovation. Some experts even argue that the reverse is true: innovation, born from market demand and from the imagination of feverish tinkerers, might well be the source of inspiration for research.⁵¹ As for training, its main input might be to test characters and to bestow legitimacy to the graduates rather than to acquire specialized knowledge.⁵² If one followed these theories, the French dual structure of management could not be considered as so much of a handicap.

Let us look now at the rest of the labor force. The picture that emerges is not successful. By 1914, at most 3 percent of the workers had received a vocational training.⁵³ In the following years, apprenticeship was not developed to the same extent as in Germany. French industrialists kept hiring massively rural labor and foreign workers. This labor policy in the long run had three major consequences. It probably slowed down automation, as it did not make the substitution of capital for labor so urgent.

⁵⁰ Meuleau, “Les HEC et l'évolution.”

⁵¹ Thierry Gaudin, *L'écoute des silences*, Paris, UGE, 1979, pp. 22ff.

⁵² Claude Riveline, “A quoi sert le savoir en gestion?,” *Gérer et comprendre*, March 1993, pp. 86–87.

⁵³ Jean-Pierre Daviet, “La France était-elle en retard en 1914?,” *Les Cahiers Français*, March–April 1992, p. 9.

It increased the already striking hierarchical distance, as employers thought of authoritarian and centralized discipline as the “one best way” to control this unskilled and semiskilled labor force. It proved a disadvantage in terms of flexibility and quality from the 1970s onward. Only a minority of firms were keen on developing a corporate patriotism or a more skilled labor structure. This is of course rational, with the predominance of generalist top managers. It is also in keeping with the slow emergence of personnel departments. A real policy caring for human resources started at best in the 1950s, at worst in the 1980s, and continuity in such an effort was not always the case.⁵⁴

Let us now consider the foreman, who is the cornerstone of the modern factory, say in the United States or Japan. In France, he does not play a central role. His education is limited, all the more as an attempt by the state to increase it had to be abandoned in 1906. Managerial hierarchies often dispossess him of his know-how. So he is left to the supervision of men and shop floor work units. It is only gradually that companies offer him further training and theoretical education. And the possibilities of promotion are restricted.⁵⁵ More flexibility came from self-taught engineers and cadres. They would account up to the 1970s for as much as 30 percent of the white-collar workers with the relevant status. Their influence was ambivalent. They could make up for the lack of specialized knowledge which characterized top managers and the insufficient flow of graduates from the *grandes écoles*. But they felt even more than the technical graduates the distance to top management.⁵⁶ And, like the vast unskilled and semiskilled work force, this was a factor behind the prolonged existence of the U-form structure in a number of large corporations after World War II.

The main conclusion of this section is that the diffusion of the large corporation in France did not change the dual pattern of recruitment till at least the mid-1970s. Till then universities produced graduates mostly for the civil service and a few extra diplomas for graduates holding already the title of alumnus of a *grande école*.

⁵⁴ Tristan de la Broise, *Pont-à-Mousson*, Paris, Inter Editions, 1988, pp. 220–224. Meuleau, “Les HEC.”

⁵⁵ Philippe d'Iribarne, *La logique de l'honneur. Gestion des entreprises et traditions nationales*, Paris, Editions du Seuil, 1989, pp. 21–55, 114–122. Sylvie Vandecasteele, “Comment peut-on être contremaître?,” in Yves Lequin and Sylvie Vandecasteele, eds., *L'usine et le bureau*, Lyon, PUL, 1990, pp. 93–108.

⁵⁶ Luc Boltanski, “Les ingénieurs autodidactes,” in André Thepot, ed., *L'ingénieur dans la société française*, Paris, Editions Ouvrières, 1985.

THE ORGANIZATION OF INTERFIRM MARKETS

The growth and competitive success of the French larger industrial firms naturally depended on their adjustment to the behavior of the other economic institutions present on the national market. The relationships of French modern industrial enterprises to other industrial firms, to the service sector, and to government have indeed been organized during the twentieth century in ways which are partly specific to the French nation.

This is already true of the relations between industrial firms themselves. They take into account, as historians and economists have shown, two French peculiarities: the weight of large corporations in the economy is a bit lighter than in the other leading industrial nations, and simultaneously there is a relative lack of middle-sized firms. France has not yet been able to deliver satisfactory statistics on concentration during the twentieth century, so we can only estimate that the first 100 industrial enterprises contributed to 12 percent of industrial production in 1913, 16 in 1929, 27 in 1955, and 50 in 1975.⁵⁷ This significant, but still moderate growth reflects in part the smaller number of merger waves than in the United States (or in Britain) during this century. The works by Naomi Lamoreaux and Alfred Chandler stress the importance of the three merger waves (the 1900s, the 1920s, the 1960s) in shaping the configuration of corporate enterprise in America.⁵⁸ France had only two comparable merger waves: in the 1920s and in the 1960s. It is well worth noting that the mergers of the 1960s developed not only under the influence of increased international competition (due to the coming of the Common Market), but also under the pressure of the French state, which was advocating a policy of "national champions" to face foreign corporate giants. The absence of any merger wave before the 1920s could never be entirely caught up by France.⁵⁹

All these elements may be ascribed to the smaller size of the French capital market, to which we shall later return in detail, and to the relatively limited number of new investors. By 1913, the largest French corporation, the Compagnie de Saint-Gobain, operating in both glass and chemicals,

⁵⁷ Daviet, "La France," p. 5; and "L'industrie," pp. 75-76.

⁵⁸ Chandler, Jr., *Scale and scope*. Naomi Lamoreaux, *The great merger movement in American business, 1895-1904*, Cambridge, Cambridge University Press, 1988.

⁵⁹ The most comprehensive survey remains Fernand Braudel and Ernest Labrousse, eds., *Histoire économique et sociale de la France*, section IV, vol. 1, 2, 3, Paris, PUF, 1979-1982. On mergers, see also Lévy-Leboyer, "La grande entreprise," pp. 373-374.

would have only 1,926 shareholders.⁶⁰ French savers came to buy shares massively in the 1920s, partly in the context of the merger wave. Thus they had very little experience of stock fluctuations, and were greatly shocked by the impact of the Depression of the 1930s. The frustrations they expressed then discouraged for many years new people to enter this group. The shareholders themselves aired distrust at business leaders of the large corporations, which in turn led part of them to accept the nationalizations because they felt that business leaders were cheating and despising them.⁶¹ The further growth of the number of the shareholders would happen only from the late 1950s onward, and even more from the mid-1980s onward. The social basis necessary to sustain the capital requirements of large corporations was thus slow to assert itself and the second phase of its growth was delayed in comparison to other major industrial nations.

But this development of big business cannot yet rely on a sufficient number of performing mid-sized firms, contrary to Germany where numerous medium-scale enterprises are a key resource for competitiveness, both as generating wealth in their own right and as suppliers or subcontractors. In 1991 the ratio of the number of German mid-sized firms to the French (i.e., companies between 100 and 2,000 wage earners) was on average 1.62; even more preoccupying was the ratio for companies only between 1,000 and 2,000 wage earners: 2.18. Part of this lag depends on problems of control and transmission of capital, and on the impact of the French tax system on them.⁶² Also, only a minority of post-World War II creations of medium-sized firms have been in traded activities.⁶³

The success story of SAGEM, a French electronic equipment manufacturer, in the 1970s and in the 1980s is a case in point. A mid-sized firm, SAGEM was a first mover in electronic telexes where it successfully competed with the German company Siemens. Then, using economies of scope, it diversified into the production of minitels (phone network terminals) and of TV decoding boxes, then into car electronics. With 15,000 employees

⁶⁰ Daviet, *Un destin*, p. 648. At the Parisian Gas Company in 1889 1,047 people held 81 percent of the shares: Lenard Berlanstein, *Big business and industrial conflict in nineteenth-century France*, Berkeley, University of California Press, 1991, p. 29.

⁶¹ Lévy-Leboyer, "La grande entreprise." Daviet, *Un destin*.

⁶² Jean Gandois, ed., *France: le choix de la performance globale*, Paris, La Documentation Française, 1992, pp. 27-28. Michel Bauer, *Les patrons de PME entre le pouvoir, l'entreprise et la famille*, Paris, Inter Editions, 1993, pp. 217-237.

⁶³ Bertrand Dechery, *Competing for prosperity: Business strategies and industrial policies in modern France*, London, Policy Studies Institute, 1986, p. 118.

in 1992, it is obviously no longer a medium-sized firm.⁶⁴ It is but one example of those mid-sized firms which can provide critical leverage for France to remain a major industrial nation.

Given this discrepancy, how did larger firms interact with the others during this century? We shall focus on three issues: the geography of the smaller ones, the alternative between make or buy, and subcontracting. They all point to the same question: how far could larger firms become the core of a network of related activities? The geography of small and medium-sized firms gives only one – yet major – case of industrial cluster, the Paris region. There (like in the Ruhr), from the end of the nineteenth century till at least the 1950s, the growth of large-scale companies in metallurgy and in mechanical engineering created outlets for smaller firms which supplied them both in specific products and in specialized know-how. The issue of the supply and subcontracting relationship is much more complex (and historians' current knowledge much more fragmented). In several industries, clusters and nexuses have indeed existed: in the automobile industry since about 1908, in the aircraft industry and in electrical equipment since the mid-1920s, in materials building for an even longer period. In electrical equipment this nexus often took the shape of groups where firms were connected by personal links or by subtle types of control. In other sectors cooperation was purely informal, and firms exchanged information and other services.⁶⁵

In a second stage, some larger firms turned to vertical integration, reinforced by subcontracting. The rationale was often distrust about quantities, regularity of delivery, quality, and prices – that is, transaction costs. After World War II, integration generally declined step by step, in favor of purely commercial contracts between larger firms and suppliers, on a short-term basis, which was a major source of uncertainty and dependence for the suppliers. Only during the 1980s, under the influence of the Japanese model, did such relations evolve to real partnerships, including, in mechanical engineering, allied networks of small and medium-sized firms.⁶⁶

⁶⁴ Pierre Faurre et al., "La compétitivité française dans l'électronique," *Entreprises et Histoire*, May 1993. Michèle Thouverez-Brochot, "Internationalisation et compétitivité des moyennes entreprises industrielles françaises," *Entreprises et Histoire*, June 1994, pp. 9–19.

⁶⁵ Ginette Kurgan-Van Hentenryk and Emmanuel Chadeau, "Stratégie et structure de la petite et moyenne entreprise depuis la Révolution industrielle: rapport général," in Herman van der Wee and Erik Aerts, eds., *Debates and controversies in economic history*, Leuven, Leuven University Press, 1990, pp. 173, 182, 184, 187. Michel Lescure, *PME et croissance économique*, Paris, Economica, 1996.

⁶⁶ For the auto industry, see Fridenson, *Histoire des usines Renault* and Christophe Midler, *L'auto qui n'existait pas. Management des projets et transformation de l'entreprise*, Paris, Inter Editions, 1993. For mechanical engineering, Gandois, ed., *France*, p. 28.

So, we can draw three conclusions. On the whole period, network relationships did exist, but were limited chronologically and geographically. This may be one of the reasons underlying the current insufficient number of medium-sized enterprises, as dependence and sometimes antagonism were not propitious to their dynamism. The same characterization applies also to the relationship between some larger firms and some of the larger firms that were their suppliers, which became confrontational in some sectors (contrary to Germany).

When one turns to the issue of competition between firms on the same markets, the picture that emerges is much more distinctly that of quite frequent cooperation. The conditions of competition were not so different from Germany. Like other European States, France had no laws that limited or controlled the industrial and commercial cartels and ententes which proliferated after the 1870s. Only one article in the French Penal Code of 1810, article 419, made it illegal to influence prices. In 1852 it had been used by the French state as a veritable antitrust law against the largest French coal mine. But after 1870 French jurisprudence weakened its impact; a very ambitious antitrust action undertaken during World War I (about calcium carbides) led to a general acquittal, and in its aftermath the article was amended in 1926: coalition became fully lawful.⁶⁷ An elaborate network of industrial and commercial ententes, "less powerful than German cartels but probably second only to them in quantity," was patiently assembled in various branches.⁶⁸ Ententes and cartels, national or international, were particularly efficient in building sales facilities and organizations. Thus they often created some of the marketing capabilities which I have shown to be missing in a number of early large corporations in France. They were also a substitute for the relative shortage of managerial resources. For instance, the French Aluminum Cartel of 1911 and, after World War I, several trade associations created laboratories and technical departments.⁶⁹

⁶⁷ Charles Freedman, "Cartels and the law in France before 1914," *French Historical Studies*, Spring 1988, pp. 482–487. Robert O. Paxton, "The calcium carbide case and the decriminalization of industrial ententes in France, 1915–26," in Patrick Fridenson, ed., *The French home front, 1914–1918*, Providence, Berg, 1992, pp. 153–180.

⁶⁸ Paxton, "The calcium carbide case," p. 153.

⁶⁹ Jean-Pierre Daviet, "Trade associations or agreements and controlled competition in France, 1830–1939," in Hiroaki Yamazaki and Matao Miyamoto, eds., *Trade associations in business history*, Tokyo, University of Tokyo Press, 1988, pp. 269–295. Hachez, "Le cartel"; Emmanuel Chadeau, "International cartels in the interwar period: Some aspects of the French case," in Akira Kudo and Terushi Hara, eds., *International cartels in business history*, Tokyo, University of Tokyo Press, 1992, pp. 98–113. Charles E. Freedman, *The triumph of corporate capitalism in France, 1867–1914*, Rochester, University of Rochester Press, 1993, pp. 112–128.

Two qualifications should be added here. Some sectors always stayed outside cartels, most strikingly the auto industry, or could only sustain unstable trade agreements, as the chemical industry, where ententes were numerous, but specific and sometimes short-lived. Some cartel agreements produced a good outcome as in the aircraft industry, some others, as in iron and steel industries, curtailed innovation and discontented consumer industries (contrary to Germany).

This brings us to a parallel with Germany after World War II. It took Germany twelve years (1945–1957) to pass a legislation on competition, which was only in part inspired by American rules. In 1950 the French government finally decided not to send to parliament an antitrust bill which Jean Monnet and his Planning Commission had drafted. A majority of French politicians wanted to keep as much interfirm cooperation as possible in times of hardening international competition. In 1952 and 1953, the French government issued two decrees against restriction of competition and collusive agreements. This was a limited step.⁷⁰ Only in the 1970s and the 1980s was the protection of competition strengthened.⁷¹

A second major issue is the relationship between French large industrial firms and the financial sector (banks, stock exchanges, trading companies). With the banks, it is certainly a different relationship from those – each quite opposite – prevailing in Britain or Germany. To assess it, we shall take into account the revisions introduced by recent research, and distinguish between small and medium-sized businesses and large corporations. The behavior of the French banking system matters all the more as, in opposition to the nineteenth century, industrial firms resorted more and more to credit and to the stock market and less to self-financing.

Contrary to what was earlier believed, the French banking system was generally rather adequate and satisfactory in the provision of short-term credit to small and medium-sized businesses. There was only one exception, in the 1920s, where these businesses experienced a financial gap, a lack of financial facilities.⁷² Long-term investment facilities became available, however, only more recently, first in the 1960s, then in the 1980s. It should be observed that before there was not simply a hesitation on the

⁷⁰ Matthias Kipping, "Concurrence et compétitivité. Les origines de la législation anti-trust française après 1945," *Etudes et Documents*, 6, 1994, pp. 429–55. Volker R. Berghahn, *The Americanisation of West German industry, 1945–1973*, Leamington Spa, Berg, 1986, pp. 155–181.

⁷¹ Hervé Dumez and Alain Jeunemaitre, *La concurrence en Europe*, Paris, Editions du Seuil, 1992.

⁷² Lescure, "Les petites et moyennes entreprises."

part of banks to commit themselves in such matters and an absence of relevant organizational facilities, but also a strong reluctance from small entrepreneurs to accept bankers among their board members.⁷³ As for the financing of the creation of small and medium-sized businesses, there is indeed a lag between France and the United States. Venture capital appeared in the United States during the 1950s. In France it really took off during the 1970s, and its second period of intense growth came in the mid-1980s.⁷⁴

If we turn now toward large corporations, recent research suggests that between 1880 and 1914 a rapprochement between banks and industrial firms was visible in a number of sectors like steel, chemicals, electricity, and telephone, whereas other sectors preferred to rely mostly on self-financing and other banks retreated from industrial activities. As industrial investment intensified in the 1920s, a number of banks answered industrial firms' requests for advice, expertise, and investment, notably the Banque Lazard and the Banque de Paris et des Pays Bas, which were both tempted to adopt the German or Belgian model of the universal bank.⁷⁵ After World War II, with a further increase in industrial investment, self-financing was once again the usual solution, supplemented by either emissions of shares and bonds on the stock market or long-term loans from quasi governmental financial corporations. From the early 1960s to the early 1980s, the picture entirely changed, and French large corporations borrowed heavily from banks. This debt economy was mostly a short-term debt. Thus it led to a greater fragility of French large corporations (in 1980 short-term debts would represent 50 percent of Saint-Gobain's balance sheet!), most of which were clearly undercapitalized. This development of bank credit was made possible by a strict division between financial institutions: on one side lenders, on the other borrowers. However, in the 1980s large corporations gave a priority to the reduction of their debts, contrary to small and medium-sized enterprises. They increased their own resources.⁷⁶ French investment banks during

⁷³ Bernard Desjardins et al., "Les banques françaises ont-elles aidé les entreprises?," *Entreprises et Histoire*, December 1992, p. 89.

⁷⁴ Jean Lachmann, "Evolution du capital-risque en France," *Entreprise et Histoire*, December 1992, pp. 35–48.

⁷⁵ Eric Bussière, *Parihas, l'Europe et le monde 1872–1992*, Antwerp, Fonds Mercator, 1992.

⁷⁶ Jean-Pierre Daviet, *Une multinationale à la française, Saint-Gobain 1665–1989*, Paris, Fayard, 1989. André Straus, "Structures financières et performances des entreprises industrielles en France dans la seconde moitié du XX^e siècle," *Entreprises et Histoire*, December 1992, pp. 19–33. Desjardins et al., "Les banques."

a third wave of investment in the industry (after those of the 1900s and 1920s) in the 1960s and early 1970s, adopted a more diversified and sometimes more cautious strategy in the 1980s.⁷⁷ Resort to foreign banks (including American private investment banking houses) increased also considerably during the course of the twentieth century.

On the whole, I would rather be tempted to argue, on the basis of available scholarship, that, although its American and German counterparts could raise large amounts of capital more quickly and often at a lower cost, the French banking system itself, although less sophisticated, was not such a major limit to industrial financing in France. On the other hand, the model of the German universal bank was never completely adopted in France. The relationships of bankers to industrialists remained alternately the supply of services and the partnership (whether forced or voluntary).

In addition, as we just hinted, the financial market was small. To a large extent, the size of French firms was long limited by the mediocre size of the French stock exchange. As late as 1985 the value of the French stock market was one fourteenth of its American counterpart, a disproportion which was much larger than the gap between the national products and incomes of the two nations.⁷⁸ This situation had significant consequences. Up to the 1940s, many firms were forced to develop holding structures in order to reach more easily for available capital. The larger ones began, largely through retained earnings, to develop their own financial capabilities in the 1920s, which they would considerably extend from the 1960s onward, as a substitute to a sufficient partnership of the financial market.⁷⁹ Therefore, the size of the market cannot be only analyzed as a limitation. It was also an incentive to new forms of firms and to new organizational capabilities in financial matters for large corporations: holding companies, more durable than most American ones, financial joint agencies, later industrial groups' banks. To be fair, a distinction should be made between the period up to 1914 and the years after. Before 1914, the French stock market, however small, opened itself to industrial firms. But most firms did not try to enter it as they were not accustomed to taking such an initiative. Only a few firms intervened

⁷⁷ Bussière, *Paribas*. Desjardins et al., "Les banques."

⁷⁸ Personal communication from Maurice Lévy-Leboyer.

⁷⁹ Patrick Fridenson, "Renault face au problème du franc et du risque devises 1957-1981," in Maurice Lévy-Leboyer, ed., *Du franc Poincaré à l'écu*, Paris, Comité pour l'histoire économique et financière de la France, 1993, pp. 583-592. Karine Ohana, *Les banques de groupe en France*, Paris, PUF, 1991.

on the market: most electrical equipment companies, and expanding firms like Schneider, Saint-Gobain, or Peugeot. After 1914 and till 1945, enterprises became more eager to move into the stock market, but the state managed to occupy a large part of the market because of its own financial needs.

In terms of services, another important issue is to know whether French large industrial firms could rely for their exports on the organizational capabilities of general trading companies (as, say, the Japanese and Koreans, but even the Germans and British). Of course, this did not matter for the industries of luxury goods. For the other sectors, preliminary research shows mixed evidence. We know at least of one general trading company since the 1880s: Louis-Dreyfus.⁸⁰ France was able to develop trading companies working in colonial Africa, in Latin America, in Asia, and in prerevolutionary Russia, but generally they were "more efficient on the import side of external trade and were even selling raw materials to third countries."⁸¹ So, both in the domains of commodities and of finished products French manufacturers ready to export may not have had enough services of large trading companies. From the 1960s onward a few of the large corporations decided to develop their own subsidiaries in that field to try and partly overcome this weakness.⁸²

Last but evidently not least comes the question of the state. We have already dealt here with several aspects of its role toward large corporations, and it is not possible to give now a full picture of the other aspects. Let us focus on three points which are relevant to our study. The state tried to protect French firms against foreign competitors and multinationals. From the 1880s till the 1960s it set protective tariffs. It kept a close control of foreign investment and started to impose quotas of French-built components.⁸³

The regulation of the economy was not favorable to the improvement of competitiveness. The state strongly hampered the competitiveness of the French industry by imposing fifty years of price control, from 1936

⁸⁰ Claude Boquin, "Le pied marin en affaires," Paris, Ecole de Paris du Management, 1993.

⁸¹ Pierre Chalmin, "International commodity trading companies in Europe," in Shin'ichi Yonekawa and Hideki Yoshihara, eds., *Business history of general trading companies*, Tokyo, University of Tokyo Press, 1987, pp. 289-291.

⁸² Ohana, *Les banques de groupe*.

⁸³ Raymond Poidevin, "La peur de la concurrence allemande en France avant 1914," in 1914. *Les psychoses de la guerre*, Rouen, Publications de l'Université de Rouen, 1985, pp. 77-84. André Gueslin, *L'Etat, l'économie et la société française XIXè-XXè siècle*, Paris, Hachette, 1992.

to 1986. The consequences on financial reserves, competition, and performance of such a policy are obvious.⁸⁴ Let us simply remark that since the early 1950s German large corporations did not endure price control. Beyond its own effects, price control was also the result of state sensitivity to the short-term concerns of peasants, small shopkeepers, or civil servants; which were often antagonistic to the long-term needs of industry.

From World War I onward, the state started to promote "national champions" in sectors deemed strategic by the military or by the politicians. It gave orders, loans, subsidies, and other facilities to existing large firms. It also set up mixed companies (as in chemicals for dyes, then for oil) or state-owned enterprises (in chemicals for nitrogen, then for potash).⁸⁵ This policy was reinforced after World War II, and was long shared by other European powers. It did provide an additional basis for the development of large corporations in France. Yet the promotion of national champions had at least two drawbacks. It often led to conglomerates, which later had great difficulties refocusing on their core businesses. In addition, the concept of competitiveness which governments defined was primitive, and often ignored the necessity of improving organizational capabilities and of weaving clusters of performing small and especially medium-size enterprises around large-scale firms. The degree of state intervention considerably increased after 1945, but this change has to be examined in detail within a review of post-World War II performance and competitiveness of French big business.

ORGANIZATION AND PERFORMANCE OF LARGE INDUSTRIAL ENTERPRISES SINCE WORLD WAR II

Patterns of convergence

Two major challenges faced the French larger industrial enterprise during those years. There was the legacy of World War II: defeat, destructions, military occupation, and temporary loss of touch with international technological change. Then there was the reinforcement of international competition, with the European Coal and Steel Community, soon followed by

⁸⁴ Hervé Dumez and Alain Jeunemaitre, *Diriger l'économie. L'Etat et les prix en France (1936-1986)*, Paris, Editions L'Harmattan, 1989.

⁸⁵ John F. Godfrey, *Capitalism at war: Industrial policy and bureaucracy in France, 1914-1918*, Leamington Spa, Berg, 1987, pp. 157-180. Hotta, "L'industrie du pétrole." Daviet, *Un destin*, pp. 569-570.

the European Economic Community, finally evolving into a European Single Market: a move desired and actuated by French governments. The overall record of the French economy can be summarized by two brief statements. Both real GDP per hour worked and output per person-hour in manufacturing improved considerably (although there was an apparent slowdown in the 1980s). Yet the size of French industry in 1992, according to a 1993 survey by the Ministry of Industry, was half the size of its German counterpart.

Three major trends of convergence characterize the French large corporations: a greater convergence with other industrial nations, a differentiated competitiveness and organization in the key industries, and the mixed record of state intervention. All these reduced French exceptionalism.

The most obvious element of convergence was the decline of personal capitalism and the gradually smaller importance of family capitalism. Of the latter trend there are famous examples: the replacement of a family chairman by the salaried manager Roger Martin in the fabricated metal products firm Pont-à-Mousson in 1964 (and he and Pont-à-Mousson would take over Saint-Gobain in 1969) or the gradual substitution of managers for family members in the top positions of the Peugeot automobile company in the 1960s.⁸⁶ Similarly, within the steel industry, the de Wendel company was unable to maintain its branch leadership. The nationalizations of 1944-1948 (for aircraft engines and for the Renault automobile company) and of 1982 (at least for steel) brought important contributions to this process as they promoted a type of managerial capitalism. In addition, what was called in the 1950s "the French management gap" greatly diminished: the state and the chambers of commerce invested in modern business education, and most large industrial firms invested in the recruitment of managers (although certain weaknesses linger in some areas of marketing).⁸⁷

The second area of convergence was the growth of foreign direct investment in the French economy. However, the movement was not unidirectional. Some major foreign players had to leave the field. In electrical and electronic equipment General Electric sold off its financial holdings in Thomson in 1953. In 1969 Thomson broke the "principal

⁸⁶ Roger Martin, *Patron de droit divin*, Paris, Gallimard, 1984. Jean-Louis Loubet, *Automobiles Peugeot. Une réussite industrielle 1945-1974*, Paris, Economica, 1990.

⁸⁷ Robert R. Locke, *Management and higher education since 1940: The influence of America and Japan on West Germany, Great Britain, and France*, Cambridge, Cambridge University Press, 1989, pp. 199-211 and 243-250.

agreement" signed in 1919 by which General Electric provided it with technical knowledge. In 1964, General Electric reentered French business when it took control of the national computer champion, Bull. But it quit Bull in 1970, as it came to the "early conclusion that the computer business was IBM's." In the automobile industry, Ford sold its subsidiary in 1954 (and came back in 1970 only on a limited scale: the production of gearboxes), Chrysler did the same in 1978, and Fiat had sold its controlling interests in 1963.⁸⁸

The entries of foreign firms outweighed the exits. The most important case was in pharmaceuticals. In 1967, the German first mover, Hoechst, took a controlling interest in the French challenger (to Rhône-Poulenc), Roussel-Uclaf, and acquired the majority in 1974. This was a far-ranging change for both the corporate culture of the company and the entire French pharmaceutical industry.⁸⁹ In addition the Japanese began to invest in France, starting with consumer electronics. A number of foreign companies already present in France before World War II increased their commitment. The French subsidiary of IBM provides us with a remarkable example. Initially, it was devoted to sales and assembly only. After World War II, with the computer revolution, it made the three-pronged investment in production, marketing, and management, and even in research.⁹⁰

The last area of convergence has been the intensity of French industrial investment abroad, especially after 1960. In the 1960s France was even at the third rank among OECD nations for foreign industrial investment, slipping nevertheless to the sixth position in the 1970s. Its targets were mostly other industrial nations. Conversely, it exported a high amount of goods, and ranked between third and fifth in world exports during the period.⁹¹ French industry was indeed exploiting economies of scale and

⁸⁸ John Kay, *Foundations of corporate success: How business strategies add value*, Oxford, Oxford University Press, 1993, p. 10. Chantal Le Bolloc'h Puges, *La politique industrielle française dans l'électronique*, Paris, Editions L'Harmattan, 1991, p. 45. James M. Laux, *The European automobile industry*, New York, Twayne Publishers, 1992. Mira Wilkins, *The maturing of multinational enterprise: American business abroad from 1914 to 1970*, Cambridge, MA, Harvard University Press, 1974.

⁸⁹ Richard F. Kuisel, *Seducing the French: The dilemma of Americanization*, Berkeley, University of California Press, 1993. Jacques Robin, "La culture d'entreprise dans l'industrie pharmaceutique française de Clin-Midy à Roussel-Uclaf," in Jean Gatty et al., eds., *Identité et culture d'entreprise*, Paris, ADITECH, 1989, p. 87.

⁹⁰ Jacques Vernay, *Chroniques de la Compagnie IBM France 1914-1987*, Paris, IBM France, 1988.

⁹¹ Charles-Albert Michalet, "Panorama général de l'industrie française dans l'économie mondiale: 1950-1975," in [Christian Stoffaers, ed.], *L'industrie française face à l'ouverture internationale*, Paris, Economica, 1991, pp. 11-16. Gérard Lafay, "Evolution de la spécialisation de l'industrie française dans les échanges internationaux," *ibid.*, pp. 17-19.

scope. But this export and multinationalization drive incurred some problems. A number of large companies had not sufficient organizational capabilities or lacked competitive vigor, and, a little like the Japanese auto companies at their beginnings in the United States, had disastrous experiences. More generally, this international expansion became a major incentive for organizational learning in the French corporations, and prompted them to improve their organizational capabilities. During this drive joint ventures became much more frequent. They were "especially fragile" on the U.S. market, but more solid elsewhere, as we shall see for the aerospace industry.⁹²

However, two characteristics still differentiated the French experience from other nations: the close relationships between government and business fostered by the *grandes écoles* education and an acceptance, even a willingness, to nationalize or to found national enterprises. They were reflected in the government's policy of creating national champions in the capital-intensive, technologically advanced industries which had become dominated by global oligopolies. Members of the elite policy-making group did so by merging and reshuffling an industry's national leaders. Then, if such reshuffling failed to improve performance, the government took over the enterprise and further restructured it.

The reshaping of product portfolios

In France, as in the United States, Britain, and Germany and its smaller neighbors, nearly all the enterprises that dominated major industries – chemicals, pharmaceuticals, glass, electrical/electronic equipment, metals, motor vehicles, rubber, and oil – became the learning bases for industry-specific organizational capabilities, well before World War II. The leaders, particularly in the high-tech industries, not only maintained the capabilities in their existing product lines but expanded into closely related industries where their learned capabilities gave them a competitive advantage.

After World War II such growth through diversification became increasingly carried out by mergers and acquisitions rather than internal investment and product development. Often, as in the case of American firms, enterprises entered businesses where their learned core capabilities gave them little competitive strength. In the 1970s and 1980s they

⁹² Mira Wilkins, "French Multinationals in the United States: An historical perspective," *Enterprises et Histoire*, May 1993, pp. 14-29.

reshaped their product lines so as to focus on those whose production and distribution rested on such competencies. This restructuring was carried out through selling, buying, and swapping operating divisions. A comparable reshaping of product portfolios occurred in the United States (as discussed in Chapter 3); but there the government played no role. In France the government's role was critical and was shaped by its policy of promoting national champions.

In chemicals an early move toward such product realignment came as early as 1960 when the CEO of the aluminum giant Pechiney suggested that the four companies other than the market leader, Rhône-Poulenc, (i.e., Pechiney, Saint-Gobain, Ugine, Kuhlmann) should merge their chemical divisions. This did not succeed. Only a joint venture between Pechiney and Saint-Gobain (which would have preferred Kuhlmann as partner) was achieved. That joint venture rationalized and modernized its capabilities, but this was not enough. In 1969 Pechiney sold its share of that chemical unit to Rhône-Poulenc. In 1971, the glass giant Saint-Gobain also turned its share in the joint venture over to Rhône-Poulenc, receiving payment in a significant block of Rhône-Poulenc's securities. Rhône-Poulenc's CEO then suggested a merger between his company and Saint-Gobain Pont-à-Mousson. The size "would be a little bigger than Britain's ICI." The project, which met hostility from several top executives within Rhône-Poulenc, was vetoed by the president of the republic, Pompidou.

But Rhône-Poulenc's increased strength in chemicals was more apparent than real. Moreover, although it had successfully made the postwar move into antibiotics, antihistamines, and silicones, it had to rely on licenses from American patents for the most strategic products and on the continued production of products dating from the beginning of the century. Also there was a discrepancy between the growth of the market and conversely the diversification of products and its managerial capabilities. Top management was weak and became dominated more by former high-ranking civil servants than by industrialists. Moreover, the firm had kept the corporate culture of a medium-sized company and it was insufficiently structured. This had two consequences: an enormous development in artificial textiles thanks to technology transfer (the licenses of Du Pont's Nylon and ICI's Tergal), which was very profitable but which made the whole group vulnerable to any downturn in textile prices and accentuated its fragmented character, and a cosmetic adaptation of its strategy and organization structure to world competition. Heavy losses came between 1979 and 1982. The nationalization of 1982 brought about a refocusing

on chemicals, a much better top management, and an aggressive international policy, exploiting economies of scope and including the purchase of divisions of three major U.S. chemical companies. The group now has five core businesses: organic and mineral intermediaries; chemical specialties; fibers and polymers; agrochemicals; and pharmaceuticals, the last-named being the most profitable.⁹³

In these same few years Pechiney had also expanded and contracted. In 1971 the national champion policy led to the merger of Ugine, Kuhlmann, and Pechiney. The new firm was thus the sole producer of aluminum in France, entirely controlling its production and fabricating. But the merger had made it more of a conglomerate with seven different industrial divisions. The nationalization of 1982 was followed by portfolio restructuring through the divestiture of its activities in steel, dyes, and other chemical products. Shorn of these activities, the group focused effectively on aluminum products. After purchasing two U.S. companies in the 1980s, it became the world's third largest aluminum producer behind Alcoa and Alcan. The high level of debts which was partly a consequence of the expansion led to further divestitures in 1995, as the company revised its definition of its core business.⁹⁴

In electrical equipment and electronics, we find again two first movers of the pre-World War I years: Thomson and Compagnie Générale d'Electricité, both expanding through diversification before having to refocus on their core businesses. Thomson combined internal growth and a bold strategy of acquisitions. It developed its electrical equipment business and its other specialties: consumer appliances, electronics, and telecommunications. It also enlarged its size by mergers, particularly with Brandt (mostly consumer appliances: 1966) and with CSF (electronics and telecommunications: 1967-1968). These two mergers considerably increased Thomson's research and marketing capabilities. Thomson's top management was replaced by the executives of the smaller company, Brandt. In 1969 the new management initiated the negotiation with the Compagnie Générale d'Electricité of what has been called the Yalta of French electronics. By this deal Thomson exchanged its electrical equipment business (organized in a joint venture since 1928, named Alsthom) for CGE's consumer appliances and data-processing division.

Although the intention of this swap was to have each company refocus

⁹³ Cayez, *Rhône-Poulenc*. François Quarré, *Rhône-Poulenc, ma vie*, Paris, Economica, 1988.

⁹⁴ Dechery, *Competing*, pp. 87-91. Georges-Henri Soutou and Alain Beltran, eds., *Pierre Guillaumat, la passion des grands projets industriels*, Paris, Rive droite, 1995.

on core capabilities, Thomson was soon expanding both through becoming multinational in 1974 and moving in 1975 into telecommunications. But the heavy losses resulting from the telephone business and the excessive growth of its top management, combined with lack of planning and budget control, brought it into crisis. Again as in chemicals, nationalization in 1982 brought the appointment of new top management, considerably improved the managerial capabilities and induced a refocusing on the company's major businesses: industrial electronics and consumer electronics. This strategy led to numerous divestitures in minor sectors, and to a second swap with Compagnie Générale d'Electricité in 1983 in which Thomson traded its ailing telephone business for CGE's military and consumer electronics divisions. Then followed a policy of acquisitions, particularly in consumer electronics (Germany's Telefunken in 1983, Britain's EMI, and America's RCA-GE in 1987). The U.S. government vetoed Thomson's attempt to buy LTV in defense electronics. Thus Thomson reached world size: it is the world's second largest maker of defense electronics, and the fourth largest of consumer electronics. However, these two markets decelerated in the late 1980s, as the cold war wound down and as the Japanese all but completed their conquest of global consumer electronic markets. Thomson may be overcoming its precarious position by improving its managerial capabilities in consumer electronics and by developing joint ventures in defense electronics. But the market prospects obviously call for major initiatives, and very difficult ones.⁹⁵

The Compagnie Générale d'Electricité has had, on the whole, a better performance. This may be due to financial resources supplied by the nationalization of electricity plants in 1946, the specificity and profitability of its successive core businesses inside electrical equipment and electronics, a very decentralized structure, and an earlier professionalization of its top management. After nationalization in 1982, it not only obtained Thomson's telephone business, but at the same time also divested itself of its construction and public works which represented 20 percent of its turnover. It then acquired in 1986–1987 the European business of ITT after the liberal French government of 1986 had vetoed an agreement between CGE and AT&T for the U.S. market. The intense difficulty met in integrating Thomson's telecommunication division after 1983 prepared

⁹⁵ Sébastien Clerc, "La religion de la taille critique: Thomson de 1944 à 1974," *Revue Française de Gestion*, September–October 1988. Fridenson, "De la diversification."

management for a much more successful takeover of ITT's subsidiary: integration was carried out more quickly, but more cautiously, and American bureaucratic corporate culture was replaced by CGE's polycentric style of responsibilities for unit managers. Thus CGE reached the second rank among world telecommunication makers. In its other core business, power and transport systems (which includes nuclear power), the company formed a joint venture with Britain's GEC, GEC-Alsthom, which has become a major world player comparable with Siemens and Mitsubishi. In 1986 the company became again a private enterprise. In 1991, the firm changed its name to Alcatel Alsthom, a symbol of its regained industrial identity with respect to its two core businesses.⁹⁶

From the industries reviewed, we may divide the history of the national champions' policy in two successive stages, where the state played two successive and opposite roles. As a French consultant put it, "Concentration into diversified conglomerates in the 1960s [was] largely a result of a government-inspired approach, implemented by the financial-technocratic establishment. Divestment and new specialization in the 1980s were in part made possible by the new role of the state as a shareholder. Management however played a much more significant role." France's large corporations then had "much more homogeneous business portfolios."⁹⁷

In two other high-tech industries, aerospace and computers, which government both considered as strategic for defense and even independence, government intervention had simply to tackle the issue of French decline and finally resorted to international cooperation.

In computers, the market was large, rapidly growing, and very profitable. Nevertheless Bull, a business machine company founded in 1931 that became the French first mover in the 1950s, lost ground after 1960, when it was the world's third-largest firm behind IBM and Britain's ICL. This decline may be ascribed to four causes. Its technical capabilities soon reached their limits, as the successors of the highly competitive Gamma 60 range failed to live up to their reputation. Then the company fell prey

⁹⁶ Broder and Torres, *Alcatel Alsthom*, pp. 202–467. Pierre Le Roux, "Histoires de fusions," unpublished seminar paper, Ecole Polytechnique, May 17, 1991. Laurent Citti, "Un grand groupe industriel et l'innovation: Alcatel Alsthom," in Philippe-Jean Bernard and Jean-Pierre Daviet, eds., *Culture d'entreprise et innovation*, Paris, Presses du CNRS, 1992, pp. 137–145.

⁹⁷ Le Roux-Calas, "L'entreprise." Léger, *Une grande entreprise*. Grinberg, *Pechiney*, pp. 10–18. Jean-Yves Quenouille, "1995: comment définir le Pechiney de demain?" *Direct News*, November 28, 1994, pp. 1–2.

to successive owners (four in eighteen years), which broke its identity. The first of these takeovers (by GE) infuriated so much the French president, General de Gaulle, that the French government itself set up a challenger, which not only failed and had to merge with Bull, but in the interval made Bull's domestic market position more vulnerable. Finally, between the mid-1960s and the early 1980s, the company followed a defensive strategy, based on the occupation of captive markets. The management which the ultimate owner, the French state, appointed in 1983 fared no better. It followed a global "wish-driven" strategy for which it "simply lacked capabilities." It therefore had to accept the entry of the Japanese firm NEC into its capital and a last resort agreement with IBM. On the whole, Bull's performance and its organizational capabilities from 1960 to the early 1990s were not satisfactory. This was a fate common to the domestic computer manufacturers of the principal European powers. But this observation does not exonerate the French state and Bull's top management from their own responsibilities in this trend.⁹⁸

For the aerospace industry, the postwar story is quite different. The situation in 1945 was absolutely disastrous, despite nationalizations (with mergers) in 1937 and 1945: almost no markets outside the French army and the French airlines, no up-to-date technology, no finance. The path to resurrection was long and marred by significant failures (such as the Franco-British supersonic Concorde). But its two major directions (product specialization, and international cooperation) were ratified by the markets and allowed the development of organizational capabilities. It is true that the state both helped it and hampered it (for instance, by mistaken pressures on the then private aircraft maker Dassault). But after painful years of learning technology, products, and markets, the three remaining players, for aircraft Aérospatiale and Dassault (the latter with a quickly diminishing competitiveness) and for engines SNECMA, have moved from sheer dependence to active interdependence, that, in turn, led to a line of commercial jets produced by Airbus, now the only world competitor to the two American leading producers. Its market success relies on three types of international cooperation: the aircraft is produced by a joint venture between the French state-owned company and a German firm, later an English firm; the engine results from a partnership between SNECMA and America's General Electric; the whole production process is geared toward cluster relationships between manufacturers and suppliers

⁹⁸ Dechery, *Competing*, pp. 132-43.

or subcontractors. The price paid for this reentry on world markets and its durability are still to be assessed.⁹⁹

In the space business, the French position seems paradoxically better. The French government initiated another European consortium, Ariane-space, in 1973, in order to launch commercial satellites. Initially based on French scientific capabilities, it has proven successful. A private firm, created in the 1960s, Matra, started producing guided missiles. Highly successful, it made a major unrelated diversification into media, acquiring the oldest and largest French publisher, Hachette, after having taken the management of a major commercial radio network. It is now the twenty-seventh largest French firm. A further diversification into a TV network was a total failure. So, space remains one of its core businesses, and, as in aircraft, the French source of competitiveness resides in research (in public institutes and in firms) and in specialization.¹⁰⁰

In addition to the government's critical role in high-tech industries, the French government played a leading part in the reshaping of two other major industries, oil and steel. In oil, the new state-owned group Elf, which Gaullist governments created (as they did in computers) as a challenger to the national first mover (Compagnie Française des Pétroles) between 1962 and 1966, prospered. It became in the 1980s the largest French firm by assets and the world's seventh largest oil company.¹⁰¹

The decline of the steel industry has been a worldwide phenomenon. As in Germany, the European Coal and Steel Community after 1974 took control of prices and investments. As decline continued, the liberal government of 1978, confronted by the risk of the industry's collapse, decided on a quasi nationalization of the companies. The nationalization itself was achieved by the left in 1982 and led gradually to a general

⁹⁹ In a vast literature I have selected Francis Lorentz, "De la volonté d'être une entreprise: Bull," in Gatty et al. *Identité*, pp. 108-112; Jocelyne Barreau and Abdelaziz Mouline, *L'industrie électronique française: 29 ans de relations Etat-groupes industriels (1958-1986)*, Paris, LGDJ, 1987; Kay, *Foundations*, pp. 3, 10, 11, 13, 332. Pierre Mounier-Kuhn, "Bull, a worldwide company born in Europe," *Annals of the History of Computing*, 41, 1989, pp. 279-298. Raymond-Alain Thiéart, "Les actionnaires face aux gestionnaires: le cas d'une grande entreprise," *Revue Française de Gestion*, January-February 1992, pp. 75-83. Jean-Pierre Brulé, *L'informatique malade de l'État*, Paris, Les Belles Lettres, 1993.

¹⁰⁰ Emmanuel Chadeau, "L'industrie aéronautique," in [Stoffaès], *L'industrie française*, pp. 117-128. Emmanuel Chadeau, "Contraintes technologiques et stratégies internationales: le moteur d'aviation, 1920-1970," *Entreprises et Histoire*, April 1992, pp. 61-78.

¹⁰¹ Ohana, *Les banques de groupe*, pp. 115-121. Emmanuel Chadeau, ed., *L'ambition technologique: naissance d'Ariane (1969-1975)*, Paris, Rive droite, 1995. On the first mover, see Emmanuel Catta, *Victor de Metz*, Paris, Total, 1990.

merger. Its result, Usinor Sacilor, tapped on better organizational capabilities, was much more innovative and competitive than its predecessors, but had to face hard times.¹⁰²

In the other major industries, the large French firms were generally able to maintain their competitiveness by themselves, and government played a lesser role. This was obviously the case of the automobile industry. Between 1945 and the early 1960s the two first movers pursued with success opposite policies: Renault (now state-owned), a volume strategy targeted at the lower end of the market; Peugeot, a niche strategy. From the early 1960s onward they felt strong enough to carry a full range of products. Their challengers, Citroën and Simca and, in trucks, Berliet could not survive. In 1983–1985 both companies barely escaped bankruptcy, as their organizational capabilities had deteriorated, leading to an aging of the range, a decline of the quality, and an overcapacity both in dealers and in workers. Yet both were able to recover, to improve their capabilities substantially, to move toward “lean production,” and to become highly profitable. Beyond this return to organizational learning which made both firms creative organizations, two other features may be emphasized. Since the early 1960s, competition between the French car makers has coexisted with cooperation (for advanced research or for the making of major components by joint subsidiaries). Mergers, which were achieved in the 1970s, were major sources of destabilization of both companies.¹⁰³

In rubber, the Michelin company vigorously improved its competitive position: at world level it was seventh in 1960, third in 1974, second in 1978, and first in 1989, even before taking over the Uniroyal Goodrich Tire Company in 1990. It pursued a single-minded strategy: innovative products based on technological research and economies of scale. But American and Japanese competition forced it to resort to massive lay offs, which was the price it had to pay for growing with an organization substantially unchanged since the 1960s.¹⁰⁴ Michelin remains, like Peugeot, a stronghold of family capitalism.

Undisputed success came in three traditional sectors which have been

¹⁰² Philippe Mioche, “La sidérurgie et l’Etat en France des années 1940 aux années 1960,” Ph.D. thesis, University Paris IV, 1992, and Jacques Ferry et la sidérurgie française depuis la seconde guerre mondiale, Aix, Publications de l’Université de Provence, 1993. Jean-Gustave Padioleau, *Quand la France s’enferme*, Paris, PUF, 1981. Eric Godelier, “De la stratégie locale à la stratégie globale: la formation d’une identité de groupe chez Usinor (1948–1986),” Ph.D. thesis, Ecole des Hautes Etudes en Sciences Sociales, 1995.

¹⁰³ Laux, *The European automobile industry*. Midler, *L’auto*.

¹⁰⁴ Alain Jemain, *Michelin. Un siècle de secrets*, Paris, Calmann-Lévy, 1982, pp. 13–23.

undergoing extensive technical change in the past three decades: glass, food and drink, and materials building. In glass, Saint-Gobain’s growth did not prevent the appearance of a major technological gap vis-à-vis its British competitor Pilkington, which invented and produced the revolutionary float glass (sold from 1957 onward). The gap had two initial origins: Saint-Gobain’s research department had concentrated on incremental innovation rather than on the finding of another technical system; Saint-Gobain’s technical experts were skeptical about the potential of the British invention when it became known. This episode revealed two weaknesses in the company’s organizational capabilities: fundamental research had been neglected in favor of applied research, and market surveys (and market research) had been underdeveloped. In the recent words of one top executive, “We produced well, but we researched and sold badly.”

So, Saint-Gobain had to adapt its entire industrial strength to float glass. This immense effort was fruitful and enabled it to conquer new markets. But in the short run it made the company vulnerable. This was one of the foundations for BSN’s attempt at a hostile takeover in 1968–1969, after which Saint-Gobain had to merge with the large producer of pig iron tubes, Pont-à-Mousson. The company after the merger increased its investments in research, marketing, and management and has become a rare case of a successful merger in largely unrelated businesses. The only question open to debate was whether the extent of its further diversification should be reduced.¹⁰⁵ During the brief period of nationalization (1982–1986), government imposed the selling of its acquisitions in computers and semiconductors. It is still an open issue.

In food and drink, except for the volume production of bulk sugar, few large companies had appeared in France. One brand new player succeeded in dominating the industry and reaching world size: BSN, now the ninth largest French industrial enterprise. It was initially a glass company, born from a merger in 1966, and immediately a challenger to the first mover Saint-Gobain. Though ten times smaller, it undertook at the end of 1968 a hostile takeover of Saint-Gobain. When this bold move failed (in February 1969), BSN embarked on an entirely opposite policy: product diversification. It decided to fill its glass bottles with mass consumption goods, the contents of which would be in its possession. This was achieved by external growth. BSN acquired successively mineral water

¹⁰⁵ Jean-Pierre Daviet, *Une multinationale*. “Intervention of Mr. Bailly,” in [Stoffaels], *L’industrie*, pp. 188–189.

businesses, yogurt, pasta, sweets, mustard, champagne, biscuits, and sauces, not only in France, but also in Germany, Italy, Spain, Britain, the United States, and Japan. Its current size is now one-fourth of Nabisco and Philip Morris. In glass, its strongest organizational capabilities had been in production and finance. For its diversification into food, BSN developed its marketing resources. It adopted the divisional structure. The large sums it had to devote to research were the major reason for its aggressive multinational strategy, in order to reap the highest economies of scale possible. The larger sums needed for both research and external growth prompted in 1980–1981 the divestment of one of its early core businesses, flat glass.¹⁰⁶

Cement provides an example of new technologies bringing new opportunities to be exploited by large enterprises. For the world structure of the industry radically changed in the 1960s and 1970s. The introduction of do-it-yourself concrete in the 1960s provoked a market explosion, which led to an electronic automation of the production process. Economies of scale, based on the same technical and commercial culture, led to the multinationalization of firms. These two breakthroughs enabled European enterprises to take the world leadership. There were, however, two strategies among the Europeans. The French and the Belgians practiced downstream integration (do-it-yourself concrete, prefabrication, distribution), while the British, Italians, and Germans rejected integration and focused on cement. The French leader, Lafarge, became second in the world industry, just behind a Swiss company. Other factors behind its performance were vigorous external growth, systematic closing of uncompetitive production sites, creation of an “industrial holding” at the top of its structure, and a sophisticated management of its human resources.¹⁰⁷ Its diversification in biotechnology did not prove successful enough and was divested.

On the whole, it seems that wherever it used or stimulated the learned organizational capabilities of large firms, the French government played a broader and more innovative role in its relationships with big business than did the German government and was more successful than those of Britain, Italy, and other European countries.

¹⁰⁶ Francis Gautier, “B.N.,” in [Stoffaers], *L'industrie*, pp. 178–185. In 1994 BSN was renamed Danone.

¹⁰⁷ Léon Dubois, *Lafarge-Coppée*. Martine Muller and Félix Torres, *L'identité*. Olivier Lecerf, *Au risque de gagner. Le métier de dirigeant*, Paris, de Fallois, 1991. Collomb, “L'industrie européenne.”

At a more general level, industrial policy has been a mixed blessing. There have been good results: reconstruction and modernization after World War II (with American financial help), the building of a nuclear energy industry (but without including the costs of decommissioning), the growth of a space industry, the catching up of French telephone and telecommunications since 1974.¹⁰⁸ Yet there have been characterized failures where government promoted a product or tried to reduce a French gap for purely political reasons.¹⁰⁹ Also the recurrent practices of subsidies to the ailing branches of the First Industrial Revolution or to their reconversion were for a long time contradictory and sometimes counter-productive.¹¹⁰ Clearly, industrial policies which compensate for weaknesses do not often succeed, whereas those which stress the exploitation of distinctive capabilities may have long-term effects.¹¹¹

The two waves of privatizations (one in 1986 involving CGE, Saint-Gobain, Matra, and the second starting in 1993 with Rhône-Poulenc and Elf) may signal the end of the postwar era where industry managers and government officials conceived of competition as a *Kriegspiel* which they might play together. They leave unchanged two major issues which appeared in this survey: the difficulties often occasioned by mergers and acquisitions, and the quasi-cyclical variations of organizational strength.¹¹²

CONCLUSIONS

We have stressed a number of features which account for the relatively good performance (except in the 1930s and probably most of the 1980s) of the French industry in the twentieth century: the growing number of large corporations; their larger size; the protracted but significant development of organizational capabilities, first in production and later, to a

¹⁰⁸ Pascal Griset, “Le développement du téléphone en France depuis les années 1950. Politique de recherche et recherche d'une politique,” *Vingtième Siècle*, October–December 1989, pp. 41–53. Jean Bouvier and François Bloch-Lainé, *La France restaurée, 1944–1956*, Paris, Fayard, 1986. Kuisel, *Seducing the French*.

¹⁰⁹ Elie Cohen, *Le colbertisme high tech*, Paris, Hachette, 1992. Patrick Fridenson, “Selling the innovation: French and German color TV devices in the 1960s,” *Business and Economic History*, 1991, pp. 62–68. Le Bolloc'h-Puges, *La politique industrielle*. Pierre Mounier-Kuhn, “Le Plan Calcul, Bull et l'industrie des composants: les contradictions d'une stratégie,” *Revue Historique*, July–September 1994, pp. 123–153.

¹¹⁰ Elie Cohen, *L'Etat brancardier*, Paris, Calmann-Lévy, 1989.

¹¹¹ Kay, *Foundations*, pp. 332–335.

¹¹² Jocelyne Barreau (ed.), *L'Etat entrepreneur. Nationalisation, gestion du secteur public concurrentiel, construction européenne (1982–1993)*, Paris, Editions L'Harmattan, 1990. Hervé Dumez and Alain Jeunemaitre, “Privatization in France: 1983–1993,” in Vincent Wright, ed., *Privatization in Western Europe*, London, Pinter, 1994, pp. 83–104.

lesser extent, in research, marketing, and management; a specific recruitment and use of human resources; and the progress made in the direction of an environment more favorable to industry. We have not masked, though, the weaknesses that persist: the insufficient growth of medium-sized enterprises, the contradictions, limitations, or excessive interventions of government, the distribution of skills among the labor force, the long shortage of general trading companies or of trading capabilities within industrial firms.

Simultaneously, this chapter pleads for the recognition of the specificity of the French response to technological change. The replacement of personal capitalism and of family firms by the managerial firm was slower than in Germany, but most French historians would agree that this was not a real obstacle to growth.¹¹³ The role of government was probably broader than in Germany, and in different directions: more government ownership (at least from the late 1940s) and more scientific research in state institutions (but often with insufficient synergy with industry), but there was after 1950 a parallel commitment to the European Economic Community. Indeed these features and others point to the persistence of what recent business administration scholars called a French way of working together, framed in the eighteenth century: a society cemented by a logic of honor and differentiating strongly noble tasks and vile ones, legitimate or nonlegitimate methods of command, the pivotal place of the state in a society of ranks, the modest place of contractual links.¹¹⁴ The post-World War II business history of France shows that the corporations which succeeded – as in most other countries, a majority of first movers – mixed a sense for innovation with an adaptation of French work-related values. *Tabula rasa* was either impossible or failed.¹¹⁵ Yet most French top enterprises did not stick passively to traditional learning bases. They were able to chose between its variants, to set aside some of its aspects, to strengthen the potentially vital elements of their corporate

¹¹³ Maurice Lévy-Leboyer, "The family firm in French manufacturing industry," in Akio Okochi and Shigeaki Yasuoka, eds., *Family business in the era of industrial growth*, Tokyo, University of Tokyo Press, 1984, and "Le patronat français, 1912–1973," pp. 137–188. François Caron, "L'entreprise," in Pierre Nora ed., *Les lieux de mémoire*, 3rd series: *Les France*, vol. 3, Paris, Gallimard, 1993, pp. 323–375. Emmanuel Chadeau, "The large family firm in twentieth-century France," *Business History*, 35, October 1993.

¹¹⁴ d'Iribarne, *La logique*, pp. 35–55. Philippe Jean Bernard and Jean-Pierre Daviet (eds.), *Culture d'entreprise*.

¹¹⁵ See the case of the Calor house appliances company, in Maurice Hamon and Félix Torres (eds.), *Mémoires d'avenir*, Paris, Belfond, 1987.

culture, to multiply joint ventures or technological cooperation with foreign companies. Also in a number of industries – though not all – relations with suppliers shifted from a strict transaction cost pattern to a growing recognition of interdependency.¹¹⁶

Still the gap with major German firms remains high in two significant sectors: machinery and chemicals, and in the most dynamic of twentieth-century industries managerial elites have yet to complete their emancipation from the nation's government. Perhaps the recent changes in ownership – 30 percent of capital now belongs to American and British investors – and the privatizations, combined with closer European integration, will affect not only corporate governance, but also the process whereby the senior elite circulates and reproduces, or even brings into question, the "home-grown, interventionist and original" French model.¹¹⁷

Acknowledgments

My thanks to Alfred D. Chandler, Jr., Leslie Hannah, Matthias Kipping, Bruce Kogut, Alan Kramer, and Maurice Lévy-Leboyer for their comments on the first draft of this paper.

¹¹⁶ Edward H. Lorenz, "Neither friends nor strangers: Informal networks of subcontracting in French industry," in Diego Gambetta (ed.), *Trust: Making and breaking cooperative relations*, Oxford, Basil Blackwell, 1988.

¹¹⁷ Jonathan Charkham, *Keeping good company: A study of corporate governance in five countries*, Oxford, Oxford University Press, 1995. Hervé Dumez and Alain Jeune Maitre, "Privatizations," pp. 102–103. Denis Woronoff, *Histoire de l'industrie en France*, Paris, Le Seuil, 1994.