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INNOVATION AND INDUSTRIAL RENEWAL IN FRANCE IN COMPARATIVE PERSPECTIVE

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One generation ago, France's industrial and macroeconomic performance was held up as the shining example of "modern capitalism":[1] in spite of being bogged down by colonial wars for nearly two decades, the country grew at unprecedented rates and thoroughly modernized its economic structures during the 1950s and 1960s.[2] In the mid-1960s, France became the fourth largest OECD economy and passed the UK in terms of per capita GDP. Several elements fed into the French success. One was the implementation of an industrial policy which, with the help of indicative planning, promoted industrial restructuring and the setting up of French firms with a sufficient size to be able to face competition on world markets (national champions) and initiated ambitious infrastructure programmes (railways, telecommunications, nuclear energy amongst others). Another equally important element was the implementation of a broad Keynesian macroeconomic policy which, within the Bretton Woods monetary system, relied on downward adjustments of the French currency to accommodate inflationary pressures. The optimism of the assessments led the Hudson Institute to predict that France would soon overtake Germany as the leading economic power in Europe.[3]

This positive picture collapsed during the second half of the 1970s and the 1980s, when the French brand of Fordism appeared ill suited to adapt to a more flexible model of production organized around non-price competitiveness. Suddenly, the strong points of the Golden Age appeared to turn into profound weaknesses: in an age of deregulation and privatization, French industrial policy, with its emphasis on state intervention, was seen as an obstacle to the operation of market forces and a distortion of competition. Keynesian style macroeconomic policies were dropped in favour of more orthodox economic prescriptions in most developed countries when they proved unable to resolve the economic crisis of the 1970s and 1980s; the reduction of inflation (instead of unemployment) became the main macroeconomic objective. Even French "managed capitalism", which embodied a new balance between state and market, seemed to disappear into oblivion. Once an instrument for modernization and growth, its structure seemed to prevent the French economy from adapting to the new age of economic flexibility: pampered national "champions" turned into bloated bureaucratic organizations that left virtually no initiative to the

1 The classic statement is Shonfield (1965).

2 Complementary assessments of French post-war growth are: Kindleberger (1963) and Boyer (1997).

3 See Boyer (1998).

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lower layers of management and shop-floor workers at a time when competitiveness depended more than ever on decentralized decision-making and horizontal co-ordination between enterprise groups.

One viewpoint prevalent during most of the 1980s and the beginning of the 1990s was that ill-adapted industrial relations, rigid patterns of organization and inefficient macroeconomic policies had made France the UK of the modern age, waiting for its Mrs Thatcher to pull the country out of economic lethargy. French economic performance in the late 1990s, however, contradicts such a bleak appreciation of the French economy. Most economic indicators, with the notable exception of unemployment, are relatively favourable and attest to more economic dynamism than could have been forecasted at the end of the previous decade. Another view appeared recently, which suggested that, although unable to admit it to itself, France has moved toward an Anglo-Saxon model (*The Economist* 25 July 1999); it has got rid of the rigidities which characterized the old French model and today enjoys the benefits associated with this structural change.

This paper will argue that both the view of France as being stuck in the old model and the liberal interpretation that France is simply on the way toward a deregulated market economy are wrong. There is more diversity in "models" of capitalism than is usually thought,[4] and the French model still exhibits marked differences *vis-à-vis* the Anglo-Saxon model. The substantive point of the paper is that the past 15 years have witnessed a profound structural change in France's production regime, initiated by the state but implemented by the large companies, the effect of which was to transform the mode of organization, the skills structure of the workforce and more generally the production methods of French industry. The second section documents French economic performance since the second oil shock and demonstrates that it has been much better than the conventional images suggest. The third section discusses possible explanations and proposes an interpretation of the French model of capitalism which builds on the capacities of firms to restructure their institutional environment to allow them to reposition themselves in more lucrative market segments. The fourth section reviews the rearrangement of the corporate governance system, labour relations, and firms' suppliers in the 1980s and early 1990s, and how this was reflected in product market strategies. The fifth section summarizes the argument and offers concluding remarks.

THE MYTH OF "FRANCOSCLEROSIS"

A first look at the main statistical indicators reveals that the image of systematic underachievement and the concurrent decline of France is mistaken. Table 1 presents figures on growth and productivity for the G5 countries, comparing the period before and after 1979. While the latest period exhibits inferior economic performance, this is not specific to France and applies to all five countries in the comparison. The drop in growth rates for GDP or manufacturing production after 1979 may have been more important in France than in the UK for instance, but that is because British performance was already weak before the second oil shock. In terms of GDP growth, France

4 An argument developed in Amable *et al.* (1997).

TABLE 1: MACROECONOMIC INDICATORS

	France	UK	Germany	Japan	USA
GDP growth 1960–79 (%)	4.5	2.4	3.7	7.1	3.4
GDP growth 1979–95 (%)	*1.9*	*1.8*	*2.0*	*3.4*	*2.2*
Manufacturing growth 1960–79 (%)	5.9	1.8	3.9	10.1	3.7
Manufacturing growth 1979–95 (%)	*0.7*	*0.8*	*0.6*	*4.3*	*2.1*
Labour productivity growth 1960–79 (%)	4.9	3.0	4.6	6.0	1.7
Labour productivity growth 1979–95 (%)	*2.4*	*2.4*	*2.1*	*3.1*	*0.9*
Manufacturing labour productivity growth 1960–79 (%)	6.3	3.4	5.2	9.3	2.6
Manufacturing labour productivity growth 1979–95 (%)	*3.0*	*4.1*	*2.1*	*4.4*	*2.6*
Capital stock growth 1960–79 (%)	5.1	4.9	5.5	10.1	3.6
Capital stock growth 1979–95 (%)	*3.4*	*2.6*	*2.7*	*6.2*	*2.5*
Manufacturing capital stock growth 1960–79 (%)	6.9	4.0	5.8	13.0	4.1
Manufacturing capital stock growth 1979–95 (%)	*2.1*	*0.6*	*1.4*	*5.9*	*2.6*
Average equipment age 1979 (USA = 100)	103	106	102	98	100
Average equipment age 1995 (USA = 100)	*101*	*102*	*100*	*92*	*100*
Average equipment age in manufacturing 1979 (USA = 100)	105	104	105	99	100
Average equipment age in manufacturing 1995 (USA = 100)	*104*	*106*	*101*	*92*	*100*
Capital productivity growth 1960–79 (%)	−0.7	−2.5	−1.8	−3.0	−0.2
Capital productivity growth 1979–95 (%)	*−0.6*	*−2.8*	*−0.7*	*−2.8*	*−0.3*
Capital productivity growth in manufacturing 1960–79 (%)	−1.1	−2.2	−1.9	−2.9	−0.4
Capital productivity growth in manufacturing 1979–95 (%)	*−1.4*	*0.3*	*−0.8*	*−2.6*	*−0.5*

Source: CEPII (1998: ch. 5).

TABLE 2: SHORT-RUN MACROECONOMIC PERFORMANCE, 2000Q2 OR Q1. 1995 = 100 FOR INDICES

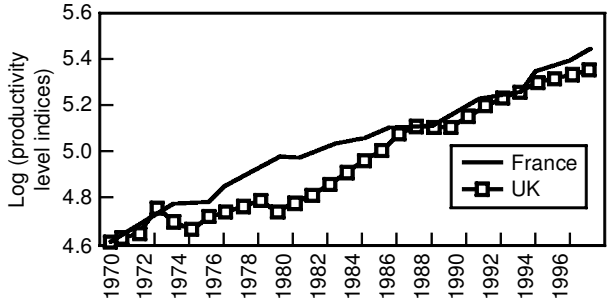
	GDP index	IIP	Inflation (ICP)	Unemployment rate (%)
France	112.6	115.5	106.2	9.8
Germany	108.8	116.4	106.5	8.4
UK	114.3	105.1	114.5	5.5
Italy	108.4	107.5	112.5	10.6
Netherlands	118.9	110.5	111.2	2.8
USA	130.5	126.3	112.7	4.0
Japan	106.4	104.6	101.7	4.7
European Union	112.0[a]	114.7	105.9[b]	8.4
OECD	112.7[a]	116.6	—	6.6

[a] 2000Q1.
[b] Euro zone.

falls squarely in the middle of the group of European economies. The low growth period of the early 1990s was not just another French exception but a European-wide phenomenon, and mainly attributable to restrictive macroeconomic policies adopted by the Bundesbank after German unification and followed by most of its European partners.[5] In manufacturing growth, what really stands out is the weak overall European performance compared with Japan or the USA. More recent figures regarding macroeconomic performance (Table 2) show that France has been growing more

5 See Muet (1998) for details.

FIGURE 1: PRODUCTIVITY LEVEL INDICES IN MANUFACTURING (1970 = 100) IN LOGS.



Source: OECD figures.

rapidly than Germany or Italy since 1995, and at about the same pace as the European Union as a whole, with a low rate of inflation. French industrial production growth is comparable to that of Germany and significantly better than in Italy, the UK or even the Netherlands. The only major weakness concerns unemployment, where France has one of the worst performances among EU countries. The situation is however improving rapidly: civilian employment grew by 2.3 per cent in France over the 12 months to mid-2000, a higher growth rate than in the OECD as a whole (1.1 per cent), the EU (1.5 per cent) or the Euro zone (1.7 per cent).

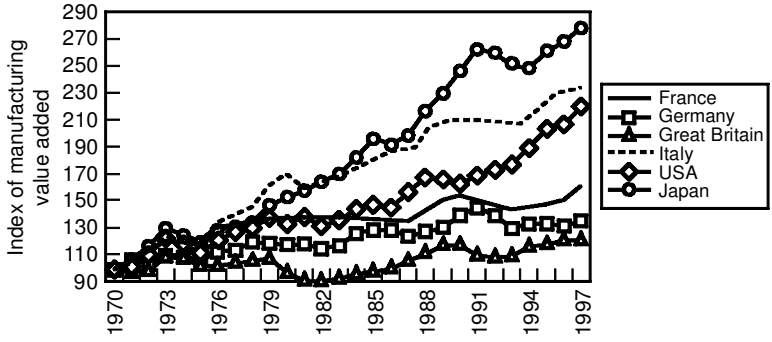
Figures for labour productivity growth in Table 1 do not point to a particular problem in France either. Considering the whole aggregate activity, productivity growth in France remained high even after the oil shocks, higher than in Germany, and much higher than in the USA. This is also true for manufacturing productivity of labour: its average growth rate after 1979 was again higher than in Germany or the USA. Only the UK exhibited a superior average labour productivity growth in manufacturing after 1979, but this reflects the combination of very low productivity growth during the 1970s and the dramatic downsizing and restructuring which took place during the Thatcher era. The exhaustion of downsizing possibilities in the UK is indicated by a slowing of productivity growth towards the end of the 1980s. The evolution of productivity in the French manufacturing sector follows the inverse path. At the beginning of the 1980s, productivity growth slowed down, and stayed there until the early 1990s, with a brief period of improvement during the recovery of 1988–89. The second break manifests itself after 1993 by what seems to be a return to the pre-1980s rate of productivity growth (Figure 1).[6]

This evolution mirrors that of value added (Figure 2). Following a Kaldorian mechanism, periods of slow output growth are characterized by slow productivity growth, whereas a faster output growth fosters productivity improvements. Therefore, the stronger pace of manufacturing activity in France after 1993 has had direct consequences in terms of productivity growth.

These productivity improvements have been made possible by considerable labour

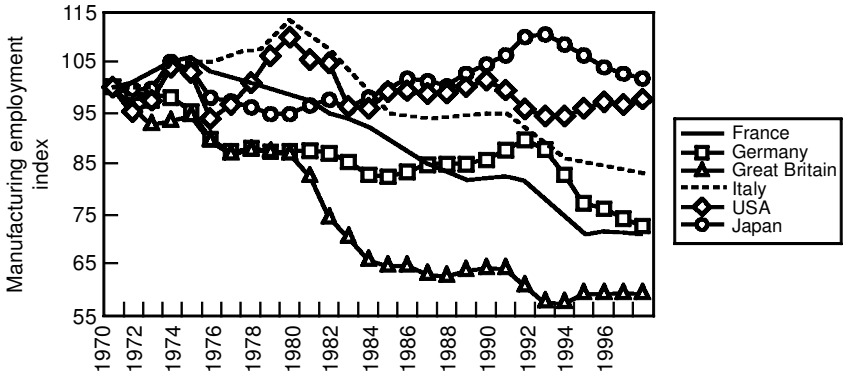
6 Figures for multifactor productivity growth in Scarpetta *et al.* (2000) are, however, more favourable for the UK and indicate that between 1995 and 1998, France, Germany and the UK followed parallel evolutions (between 1.3 and 1.5 per cent for average annual growth).

FIGURE 2: MANUFACTURING VALUE-ADDED INDICES (AT 1990 PRICES). 1970 = 100.



Source: OECD figures.

FIGURE 3: MANUFACTURING EMPLOYMENT INDICES. 1970 = 100.

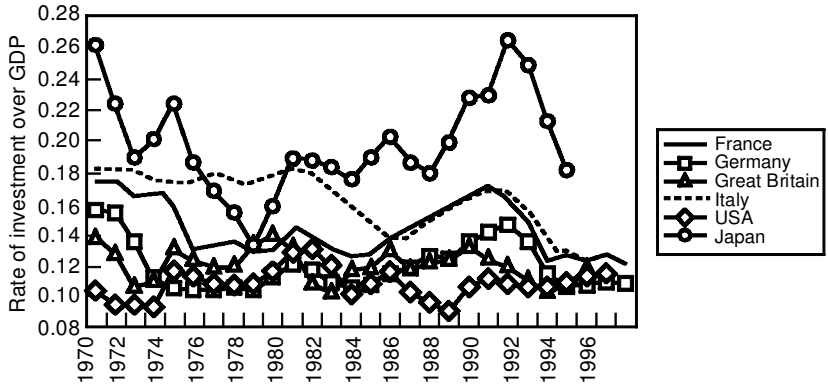


Source: OECD figures.

force reductions in manufacturing (Figure 3). The decline in manufacturing employment has been steady since the first oil shock, with a brief pause at the end of the 1980s. By comparison, the drop in employment figures, which was concentrated in the first 5 years of the Thatcher government, has been much steeper in the UK. Germany on the other hand has experienced a decrease in manufacturing employment, starting around 1990.

The investment rate in France was higher during the second half of the 1980s than in most other EU countries and declined only with the onset of the recession of the early 1990s (Figure 4). Investment in machinery and equipment in particular was at a steady and high level throughout the second half of the 1980s and the first half of the 1990s, above the G7 average. This shows in the figures for capital stock growth reported in Table 1. For the pre-1979 period, the French growth rates were intermediate between the UK and Germany for the aggregate economy and above these two countries for the manufacturing sector alone. The post-1979 data demonstrate that capital stock has grown more rapidly in France than in either the UK or Germany, with French performance being second only to that of Japan. However,

FIGURE 4: INVESTMENT RATE IN MANUFACTURING.



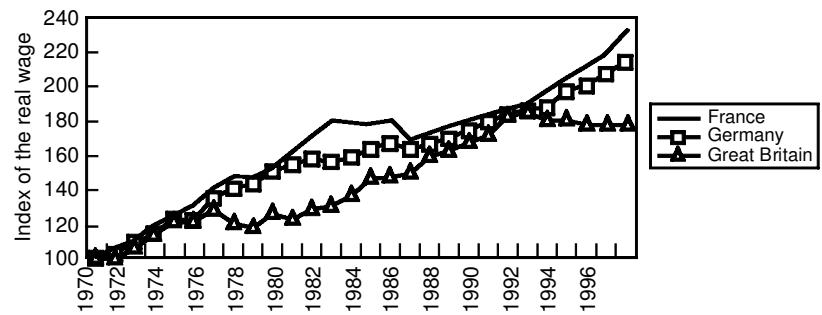
Source: OECD figures.

France still has an older equipment stock than the USA, particularly in manufacturing. But the comparison with the UK is clearly beneficial to France. Despite the relative age of machinery, capital productivity growth showed no particularly unfavourable trend relative to the other G5 countries either for manufacturing or aggregate activity.

Both a cause as well as a result of high investment, profitability in France witnessed a real turnaround after 1984: while it has traditionally been among the lowest in the G7, it surpassed most other countries in the years that followed. French profitability experienced the single biggest improvement: the average manufacturing profit rate doubled between 1979 and 1983 and again in 1989 and 1993, to put French firms in second place, only (but barely) after the USA.[7]

The labour share of value added dropped from 68 per cent in 1983 to 59 per cent in 1995, but the improvement in profitability did not particularly rely on a wage squeeze that would have made France a low wages country. Figure 5 shows that real wage rates in manufacturing (deflated by the price index of value added) have grown slightly more rapidly in France than in Germany, and considerably more rapidly than

FIGURE 5: REAL WAGE RATE INDICES. 1970 = 100.



Source: OECD figures.

7 See Glyn (1997) for the data and an insightful analysis.

in the UK, which has experienced a real wage stagnation since the beginning of the 1990s.

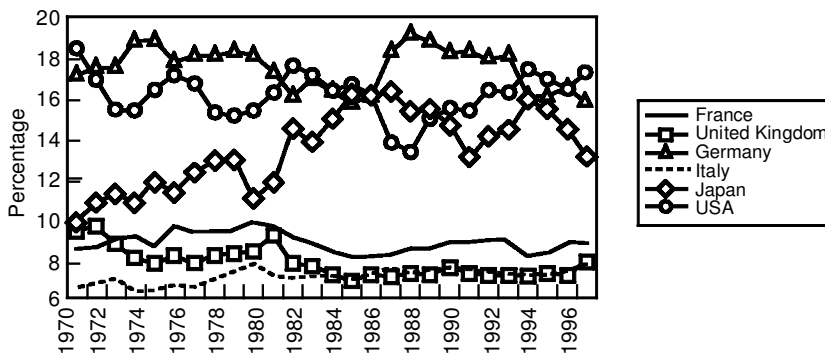
Foreign trade has followed the same pattern of resurgence. While the 1980s were a particularly difficult period, recent foreign trade figures point to an improvement of the competitive position of France: the trade deficit of the late 1980s has been turned into a growing trade surplus at the end of the 1990s. This is true for the aggregate trade figures as well as for the manufacturing sector alone (see Table 3). Within manufacturing, a few sectors, such as automotive and aerospace, stand out. Manufacturing OECD export share got back to its 1970 level, after a rise in the 1970s followed by a fall in the 1980s (Figure 6). Overall, the behaviour of France in this area was not and is not very different from that of other European countries.

TABLE 3: TRADE SURPLUS AS A PERCENTAGE OF VALUE ADDED, SELECTED SECTORS

Country	Year	3845	3832	3825	3522	3850	3100	3843	3
Germany	1985	−83%	−1%	−13%	28%	274%	−5%	82%	28%
France	**1985**	**40%**	**−1%**	**−41%**	**37%**	**−29%**	**10%**	**32%**	**3%**
Great Britain	1985	79%	−19%	−30%	34%	85%	−17%	−48%	−5%
Italy	1985	−12%	−21%	−12%	−3%	132%	−25%	−8%	13%
Japan	1985	−181%	71%	65%	−9%	183%	−16%	103%	32%
USA	1985	27%	−37%	16%	5%	7%	−5%	−64%	−13%
Germany	1989	−48%	−5%	−52%	38%	359%	−9%	94%	31%
France	**1989**	**45%**	**−10%**	**−58%**	**33%**	**−115%**	**17%**	**17%**	**−4%**
Great Britain	1989	35%	−28%	−22%	35%	60%	−18%	−81%	−13%
Italy	1989	−3%	−56%	−31%	—	191%	−32%	−23%	10%
Japan	1989	−205%	72%	86%	−12%	215%	−32%	97%	27%
USA	1989	38%	−29%	4%	4%	11%	1%	−79%	−10%
Germany	1995	−9%	−7%	−103%	46%	383%	−17%	73%	23%
France	**1995**	**128%**	**14%**	**−71%**	**35%**	**−25%**	**22%**	**25%**	**8%**
Great Britain	1995	43%	1%	25%	51%	141%	−10%	−77%	−3%
Italy	1995	−4%	−54%	−34%	—	372%	−19%	0%	28%
Japan	1995	−152%	83%	83%	−12%	351%	−44%	96%	30%
USA	1995	54%	−28%	−111%	3%	20%	5%	−60%	−11%

3845: aerospace; 3832: electronics; 3825: computers; 3522: pharmaceuticals; 3850: instruments and specialized machines; 3100: food products; 3843: cars; 3: manufacturing industry.

FIGURE 6: OECD EXPORT MARKET SHARES (MANUFACTURING SECTOR).



Source: OECD figures.

These data on French economic performance suggest that the image of a stagnant France is misleading, if not downright wrong. While the country may not have been the top performer in the G5 for the past two decades, its economic performance has not been dramatically weaker either. In fact, the way the French export sector weathered the crisis of the early 1990s, which had much more dramatic effects on economic performance in Germany, the UK and Italy, suggests that the 1980s must have been a transitional period for the French economy.

FRENCH ECONOMIC PERFORMANCE: MACROECONOMIC AND ORGANIZATIONAL FACTORS

An assessment of the French macroeconomic performance of the past decades requires looking back upon the change in macroeconomic policy of the early 1980s and the adoption of the policy of "*désinflation compétitive*". The beneficial trade results of the past 10 years were, in contrast both to the past French experience as well as to the experience of the UK and Italy in 1992, reached without resorting to a currency devaluation. The macroeconomic policy choices made in the early 1980s, following the failure of the Keynesian reflationary policy of 1981–82, favoured the fight against inflation over all other macroeconomic objectives, particularly unemployment.[8] The main rationale for this policy was the achievement of European Monetary Unification (EMU), which implied that the French Franc should be pegged to the DM, thus forcing French monetary policy to follow that of the *Bundesbank* and adopt a restrictive attitude even when inflation was already low and unemployment high. The consequences in terms of real variables can be read in Tables 1 and 2 (low growth, high unemployment); the disappointing employment performance of the early 1990s therefore seems to have little to do with the structural problems usually associated with French capitalism and more to do with restrictive macroeconomic policy. Furthermore, French inflation now ranks amongst the lowest of OECD countries and has been systematically lower than in the other large European economies since the mid-1980s.

The "competitive disinflation" policy had two aspects, dealing respectively with price and non-price competitiveness. There was firstly price moderation, which if achieved through wage restraint would help stabilize international market shares. Second, faced with competitiveness problems, French firms, which would no longer be able to obtain easy price competitiveness gains through currency devaluation, would have no option but to upgrade their product lines and make substantial gains on non-price competitiveness. The new macroeconomic constraints would then act as some sort of shock therapy imposed upon French firms, forcing them to restructure and modernize. This modernization would become all the more welcome in the light of the completion of the single European Market.

The French competitiveness problems of the 1980s were mostly seen as a "non-price" problem, expressing the inability of the French manufacturing sector to supply to the standards of demand on world markets.[9] Put simply, French manufactured goods could not compete on price with low wage countries (as few advanced

8 See Lordon (1997) for an analysis of the French macroeconomic policy since the 1980s.

9 See Mathis *et al.* (1988) for an overview and an international comparison.

industrialized countries could), but they were not of sufficient quality to compete on equal ground with German, American or Japanese goods either. France was thus characterized as an intermediate country, competing on price—i.e. having lower production costs and/or lower margins—with the more advanced industrialized countries and on quality or other non-price determinants with low-cost countries.

The promotion of European Monetary Unification as the primary economic goal made gains in price competitiveness through a currency depreciation impossible; at the same time, no compensating short-run gains in terms of non-price competitiveness could be expected because moving up the quality ladder in terms of industrial specialization is at best a medium-run affair. The general competitiveness problem thus became more acute in the 1980s.

Price competitiveness can be achieved by keeping unit costs down. Yet as we saw earlier, France is not a low-wage country and no wage squeeze occurred during the restructuring period of the last decade(s). The gains in price competitiveness therefore have not resulted from low real wages, but rather through increases in labour productivity.

Gains in price competitiveness depend on both unit wage costs and the nominal exchange rate and can be assessed with the help of the real exchange rate indices.[10] French nominal exchange rates before Monetary Unification have followed the same pattern as the exchange rates of its main European partners (particularly Germany): a relative stability between the mid-1980s and the early 1990s toward the US dollar, followed by a steep rise in 1992 and a decrease after the mid-1990s. The productivity improvements combined with exchange rate stability generated a regular increase in price competitiveness until the late 1980s. The rapid increase in the nominal exchange rate in 1992 and 1993 annihilated these gains in price competitiveness, and the improvement in the real exchange rate resumed only after the stabilization in the nominal exchange rates around the mid-1990s. Therefore, improvements in the foreign trade balance can be explained in part by the evolution of unit wage costs which translated into an increase in price competitiveness in spite of nominal exchange rate instability in the early 1990s. However, the trade balance kept improving in spite of the upward movement of the real exchange rate during the first half of the 1990s, and the magnitude of the improvement over the late 1980s and 1990s cannot simply be attributed to the modest decrease in the real exchange rate. Elements other than just a gain in price competitiveness must be present to explain the improved industrial performance of France.

While productivity gains resulted in more favourable price competitiveness in spite of nominal exchange rate instability, industrial competitiveness also benefited from gains in "non-price" competitiveness. The most recent measures of price and non-price competitiveness (Couharde and Mazier 1999) show that even if France still possess a non-price disadvantage *vis-à-vis* the most advanced industrial countries (particularly Germany), this disadvantage tends to diminish, indicating that the average quality of French products is improving, even if slowly. Put succinctly, recent competitiveness improvements do not rely on cost cutting only, but on improvements in firm-level competitive behaviour.

10 Fayolle and Mathieu (1998), Couharde and Mazier (1999).

TABLE 4: SCIENCE AND TECHNOLOGY INDICATORS

	R&D/GDP (%) in 1996	World share (%) in scientific publications in 1997 and (1990)	World share (%) in US patents in 1997 and (1990)
France	2.3	5.2 (4.7)	3.0 (3.7)
Germany	2.3	6.6 (6.3)	7.2 (10.1)
UK	1.9	8.4 (8.3)	2.7 (3.7)
Italy	1.0	3.4 (2.6)	1.2 (1.6)
Netherlands	2.1	2.1 (1.9)	0.9 (1.2)
Sweden	3.6	1.6 (1.6)	0.9 (1.0)
USA	2.6	32.6 (35.4)	49.2 (45.5)
Japan	2.8	8.5 (7.6)	23.8 (24.2)

Source: OST.

Non-price aspects of competitiveness are often linked to scientific and technological achievements. Table 4 documents the French performance in these respects. The R&D intensity of GDP places France alongside Germany, intermediate between high technological intensity countries such as Japan, the USA or Sweden, and low intensity countries such as Italy or even the UK. Since it concerns the aggregate activity, such a figure should be interpreted with caution. A high R&D intensity may be the reflection of a specialization effect rather than a real technological intensity effect. For instance, the French industrial specialization bias toward aerospace, where R&D intensity is very high, means that the aggregate R&D intensity will tend to be high too *ceteris paribus*. Removing the industrial structure effect suggests that Germany has an R&D intensity advantage *vis-à-vis* France. However, the French performance in terms of science and technology does not seem that problematic: the share of France in the total of worldwide scientific publications has improved since the early 1990s, and the gap *vis-à-vis* Germany and the UK is closing. Regarding technology, the French decline in US patents share between 1990 and 1996 is not a particularly French but a European-wide phenomenon,[11] and the relative decline is lower in France compared with Germany or the UK. While this observation certainly suggests interesting avenues for further research, the available figures do not point to a particular French disease.[12]

Thus the twin objectives of competitive disinflation were reached, with both price and non-price competitiveness restored, but this was at the expense of employment. Regarding the non-price aspect, however, it is unclear what the role of the competitive disinflation policy implemented since the mid-1980s might have been in the qualitative improvements in French competitiveness. There is little doubt that the *franc fort* dramatically changed the business environment, but *how* exactly it did so is not explained by the shift in the macroeconomic regime. Instead of assuming a self-reinforcing equilibrium mechanism, whereby companies are able to unequivocally pick up market signals and translate these into corporate strategies, such broad macroeconomic shifts have to be unpacked in order to be understood. Put differently, they require a political and institutional translation into the realities of businesses to

11 Even the rise of US share is problematic and may very well be the consequence of individual firms' strategy, using patents as a strategic tool, rather than an expression of increasing technological competitiveness.

12 See the Rapport sur les indicateurs de l'OST (2000).

obtain their force. An example might illustrate this. Under a similar hard currency regime, the German car manufacturers, pushed by the labour market institutions they faced, shifted toward higher value-added market segments, which were less price sensitive, whereas the Japanese car industry gained market share by introducing and refining permanent cost reduction programmes.

The combination of increased international competition and a tight macroeconomic policy had the potential to push French manufacturers in many different directions, all of which were in principle compatible with the existing French model. One outcome could have been a version of the high-end "German" road (which was the main signpost in almost all the government initiatives of the 1980s). A second outcome could have been the simple low-cost mass production road. A third possibility was a blend of these two, or a mixture of emphasis on quality and design with cost competitiveness. While the problems—loss of profitability and international market share—may have been blatantly obvious to French industry, the possible solutions were manifold, as indicated by the debates in France in the 1980s which continued, in moderated form, into the 1990s.[13]

In order to understand the adjustments that have taken place in France during the last 15 years, it is necessary to examine micro-/meso-levels and organizational factors. Indeed, most aggregate indicators, which directly or indirectly measure organizational capabilities, suggest that some important sources of French competitiveness lie in effective organizational adjustment. Strong investment and labour productivity growth took place at the same time as French industry scored very high on such dimensions as the adoption of team work, the speed of ISO 9000 quality certification, and in the rise in formal skill levels (see below).

Focusing on organizational change as an explanation, however, raises another question. The dominant image of France in comparative studies of industrial organization is precisely one that emphasizes many important obstacles to organizational change. Studies of French management not only repeatedly have shown that recruitment still largely follows the noble route of the *Grandes Ecoles* and the elite corps in the French national administration instead of a company- or industry-based route;[14] the elite character of French management has also made them resistant to organizational change which involves a decentralization of decision-making in the company.[15]

There is a long lineage in the literature decrying the problems of organizational reform in France.[16] Low trust, supposedly a characteristic of French life in general, translates into bureaucratic organizational patterns with many detailed rules, which leave little room for the informal resolution of small problems. As these accumulate, they result in profound, often violent crises of the system which created the problems in the first place, but which does not fundamentally change the relative positions of the parties. The stalemate which ensues is then resolved only when a strong outside actor, the state, intervenes to pull it out of that negative equilibrium.

As the next section will show, that vicious cycle of non-reform was broken in the 1980s. Both helped and forced by the state, companies restructured ownership

13 See Howell (1992), Levy (1999), Ross (1987), Taddéi and Coriat (1993) for a review of these debates.

14 As is documented in Bauer and Bertin-Mourot (1995), Bourdieu (1989) and Schmidt (1996).

15 See Barsoux and Lawrence (1997), Sorge (1993), Zysman (1977).

16 The seminal statement is Crozier (1964).

patterns, and then reorganized internally. As a result of this restructuring process, which took place during the latter half of the 1980s and the first half of the 1990s, large firms, which had always been critical economic agents in France, even in the state-orchestrated post-war economy, were able to take their lead from the state, and became the pattern-setters for the entire French economy.

ORGANIZATIONAL CHANGE AND ECONOMIC RESTRUCTURING IN FRANCE

In the early 1980s the French production regime went through a profound crisis which manifested itself in the low profitability of the most important large firms: firms suffered from the low activity induced by restrictive macroeconomic policy and high and rising interest rates coupled with high indebtedness[17] exacerbated the debt overhang problem.

Despite the constraints on subsidizing imposed by domestic austerity programmes and EU Commission competition policy, the state contributed to many restructuring plans: combined, 16 of the largest firms in France received over FF 64 billion in subsidies.[18] Moreover, between 1981 and 1985, the government granted, in loans and subsidies, the equivalent of $5 billion to the newly nationalized industries.[19] Between 1982 and 1984, five of the largest companies—GE, Saint-Gobain, Péchiney, Thomson and Rhône-Poulenc—received 10 times more capital from the government than they had received from private investors in the 7 years prior to 1981. This allowed these companies not only to accelerate investment, but also to increase R&D expenses by over 20 per cent between 1982 and 1985.[20]

Alongside these massive investments, the government helped companies to restructure their workforces by footing a large part of the social bill for redundancies.[21] Overall, the large companies shed 20 per cent of their jobs in the 1980s.[22] The state simply appeared to follow the old pattern of bailing out the large firms and funding massive layoffs; however, there was one crucial difference. Government subsidies were made contingent upon detailed business plans negotiated between the government and top management to force companies to restructure in a more long-term perspective. Beyond solving immediate financial problems, they provided management with a novel framework by giving them operational autonomy to restructure.

When many of the previously nationalized companies were privatized in the second half of the 1980s, this situation was formally sealed. The governance structure of the large firms changed into a dense network of cross-shareholdings,

17 High debt was a direct result of the so-called overdraft economy of post-war France; see Hall (1986) and Loriaux (1997) for details.

18 Data from Schmidt (1996: 108).

19 This was estimated as approximately 20 times more than what private industry had invested since 1965 (Schmidt 1996: 124).

20 Data from Schmidt (1996: 125).

21 See Guillemard (1991) for an overview of early retirement programmes in different countries. Between 1984 and 1987, *Renault* reduced its total workforce by almost 20 per cent relying on government-financed social plans (Freyssenet 1998). The *Peugeot* group laid off 23 per cent of its workforce between 1980 and 1987 (Loubet 1998). In the steel industry, where the crisis had set in a few years earlier, employment in the sector was reduced by 45 per cent between 1980 and 1987 (Daley 1996).

22 These figures are cited in Berger (1995), INSEE (1993), SESSI (1997).

consisting of two poles built around hard cores of investors.[23] These new ownership structures allowed management to reorganize companies without either taking into account the social considerations that the state would impose, or the short-term considerations of the capital markets to which the firms were now partly exposed. It also provided an institutional framework that enabled managers to learn from each other (since they were formally controlling each other in the supervisory boards) and spread experimental patterns that were emerging in pilot companies.

Reorganizing work

After the first phase of the early 1980s, which involved simple cutting of labour costs, social plans to finance redundancies were integrated into a broader strategy for workforce upgrading. In a detailed study of a random sample of over 200 company applications to the *FNE* (the early retirement fund) and the *FIM* (a fund which existed between 1983 and 1987, designed to facilitate industrial restructuring), Salais (1992) discovered that almost 85 per cent of the large mass producing companies in the sample were using the funds to restructure their operations and workforce in an attempt to move out of the mass production segment and explore more diversified product markets. At the same time, of the much smaller group of companies that had occupied such market segments before applying to the restructuring funds, fewer of those (33 per cent) restructured their product and labour markets along the mass production model.[24]

The net effect of these government-subsidized social plans was that by the early 1990s, many older workers in industry were put in early retirement programmes, and younger, more broadly trained workers were hired instead. Consequently, male workforce participation rates for the 60–64 age bracket in France were the lowest and fastest decreasing in Western Europe. Between 1982 and 1990, the number of workers in industry fell by 14 per cent, while the number of foremen, technicians and engineers increased by over 20 per cent. Within the foremen and supervisors category, finally, a shift occurred from lower to higher levels.

Companies were able to restructure their workforce in this way because the educational level of the French had increased dramatically in the 1980s. As Table 5 shows, in less than 10 years, the number of untrained workers dropped by 30 per cent, while the vocational training programmes (CAP, BEP) as well as the technical "*Baccalauréat*"[25] levels each increased by almost the same proportion. This, in turn, was the consequence of the educational policy geared toward assuring that by the mid-1990s, 80 per cent of the young people should have completed secondary studies. Indeed, by 1995, around 75 per cent of the age cohort had done so, up from 40 per cent in 1984.[26]

Higher skilled workers were put to good use in work reorganization programmes. As Table 6 shows, France has a high score in comparative surveys of group work or

23 See also Morin (1998).

24 The study is reported in Salais (1988, 1992).

25 The certificate for completion of secondary studies.

26 Data from Courtois (1995).

TABLE 5: DIPLOMAS ACTIVE POPULATION, PERCENTAGE CHANGE 1982–90

	1982	1990	(of which younger than 31 years)	Evolution 1982–90 (%)
No diploma	42	29.1	(11)	−30.6
BEPC	5.3	6.4	(6.6)	+23.9
CAP, BEP	33.7	42.4	(38)	+25.7
BAC, BP or BT	14.4	15	(21.7)	+4.6
University	3.8	6.3	(20.6)	+62.9
MA, Ph.D.	0.7	0.8	(2.1)	+8.3
	100	100	100	

Source: INSEE, CEREQ.

TABLE 6: GROUP WORK IN EUROPE. PROPORTION OF WORKPLACES WITH DIRECT PARTICIPATION AND WITH GROUP DELEGATION PER COUNTRY

	Direct participation $N = 5{,}786$	Group delegation $N = 2{,}067$
Sweden	89	56
Netherlands	90	48
Ireland	85	42
France	87	40
UK	83	37
Denmark	81	30
Italy	82	28
Portugal	61	26
Spain	65	7

Source: Benders *et al.* (1999: 46).

teamwork in Europe, and one of the highest scores on direct workers' participation models. These data, however, have to be put in a broader perspective. A survey of workplace practices[27] emphasizes that between 1984 and 1990, the central period in workplace restructuring, the number of workers in the French engineering sector who claimed to be performing repetitive work, where the working rhythms were imposed by machines (typical characteristics of Taylorist mass production), increased by almost a third. The main difference was that these workers now were also involved in shop-floor management. Since historically these low-level management jobs had been exactly the types of jobs—control, administration, supervision and maintenance—of which French companies had disproportionately many more than companies in other countries, reorganizing those tasks offered serious potential productivity increases.[28]

27 See Duval (1996) for an incisive analysis.

28 See Lane (1989), Maurice *et al.* (1988) for these analyses.

TABLE 7: PROPORTION OF SME WORKING AS SUBCONTRACTORS, 1980–90

	10–49	50–199	200–499	Total
1980	38%	36%	26%	37%
1990	61%	52%	46%	59%

Source: Duchéneaut (1995: 199).

The workforce restructuring effort had some by-products in the labour relations system which were very fortunate for management. The shift in the workforce composition, and the introduction of new channels of workers' participation, helped by the implosion of the labour unions, which were losing members at a rapid pace,[29] allowed companies to de-fuse the perennial workplace conflict. The aggregate outcome was that in the 1980s, and despite some well-publicised large-scale conflicts, strike figures in France dipped towards the low German levels.[30]

Restructuring supplier networks

Alongside this wide-reaching workforce reduction programme, large firms also externalized many of the costs of adjustment onto their suppliers. Between 1980 and 1990, the proportion of small firms that were subcontractors to large firms almost doubled,[31] and a rapid move toward just-in-time (JIT) parts supply systems was generalized in a few years. As early as 1982, car assemblers were experimenting with Kanban systems.[32] By the mid-1980s, JIT-based production systems were common in most of French industry.[33] Between 1979 and 1985, for example, the degree of vertical integration of both Renault and PSA was reduced substantially.[34] The externalization of production in the early 1980s (Table 7)—which had the advantage of rapidly clearing the balance sheets since many of the supporting activities associated with the subcontracted tasks were eliminated as well (product development, process engineering, training and quality control, for example) saddled large firms with a host of unforeseen problems.[35] For a variety of historical reasons, their suppliers, on whom they off-loaded many new tasks, were unable to follow large firms in the organizational and technological jumps associated with this new JIT-based production model.[36] The large firms

29 On unions and unionization in France, see Bévort (1995).

30 See Boltho (1996) for details.

31 Data are taken from Duchéneaut (1995: 199).

32 See Labbé (1992) for an overview of labour relations and subcontracting in Renault.

33 See the excellent overview of the development of subcontracting in France in Gorgeu and Mathieu (1993).

34 Renault's vertical integration rate fell from 26 to 19 per cent and that for PSA fell from 35 to 26 per cent in the 6 years 1979–85.

35 In assembly industries subcontracting implied just-in-time delivery of parts upon demand, which had the additional financial advantage of reducing capital tied up in the inventory of parts. Between 1984 and 1987, for example, *Renault* used these programmes to reduce its stock of finished but not yet sold cars by 55 per cent, and despite increased outsourcing, reduced its purchasing/turnover ratio by 8 percentage points between 1984 and 1988, due to the renegotiation of prices with suppliers (Freyssenet 1998).

36 The argument can be found in full in Ganne (1992).

TABLE 8: DISTRIBUTION OF LARGE FIRMS PER ZE, 1995

Number of large firms	Total ZE	Per cent
1	82	39
2	46	22
3	19	9
4	21	10
More than 4	42	20
Total	210	100

Source: Own calculations based on SESSI, CD-Rom l'industrie dans les régions.

responded by redrawing the links between themselves and their suppliers, which were integrated in regional production systems.

Throughout the post-war period, large firms had set up plants in under-industrialized regions, and many of the small firms in these regions were captive suppliers, located in the immediate vicinity of the large plants. The result was that in almost two-thirds of the local industrial systems in France[37] one or two large firms dominated an entire regional production network (Table 8). Large firms used this existing structure by organizing support programmes which relied heavily on the existing regional institutions for economic development. In areas as diverse as Rennes, Lower Normandy, Franche-Comté or Auvergne, large firms mobilized regional training institutes, local development agencies (DRIRE and MIRE), employment offices and existing regional technology transfer institutes in an effort to upgrade the local small firms and make them fit for the new, complex production models that large firms were implementing, and which devolved many more responsibilities to the suppliers.[38]

The most visible measurable outcome of this process of upgrading was that, by the early 1990s, France had very high numbers of ISO 9000-certified small firms, with a growth rate that matched those of most of the other OECD countries.

The new supplier policies of the large firms, and the increased reliance of the large firms upon their suppliers for system development and JIT logistics for production, thus eventually ended up reorganizing French industry into a series of *regional production networks*, constructed around one large firm, which dominated the region in every aspect: employment, output, regional investment.[39] Increasingly, as Table 8

37 Operationalized here as travel-to-work area or *Zone d'Emploi*—ZE.

38 A few cases will illustrate how widely spread and pervasive these arrangements are. The car-maker Peugeot SA (PSA), for example, used its monopoly power in the region where it was located to turn a regional technology policy centre into a tool for the modernization of its supplier base (Levy 1999: 108ff.). Citroën used the regional institutions in Brittany to do the same for its suppliers around Rennes (Gorgeu and Mathieu 1996). In the south-east of the country, the steel company Sollac relied on the regional training institutes to organize a far-reaching training programme for its suppliers (Hildebrandt 1996). In 1998, when Moulinex restructured its production apparatus after a wave of social plans that hurt the region badly, the company applied to the regional authorities for technical and financial aid—not for itself directly, but for its suppliers. Moreover, the company was involved in a local "Association for Industrial Quality", set up by the regional government, and aiming at providing small firms with access to state-of-the-art technology and training (*Usine Nouvelle* 21 March 1996).

39 For a graphic representation, see the map of the geography of France in Quélennec (1997: 19). Relevant data are found in that volume, and in SESSI (1997).

demonstrates, France began to resemble a collection of quasi-autarchic regional economies, in which SMEs were integrated technologically and organizationally into the large firms' production systems. These regional production networks, in turn, were subordinate to the strategies conceived and developed in headquarters, usually located in the Paris area.[40] In embryonic form, this multi-layered hierarchical structure had always existed, but in response to the crisis of the early 1980s, it became a building block for large firms in their reorganization.

Reinventing product markets

Between 1985 and 1995, French industry built on the internal reorganizations described above to upgrade their products and move into market segments which combined the advantages of mass production, such as economies of scale and standardization, with rapid model changes and a positioning in protected niches. Through a combination of a reorganized product development system and the cost advantages they could exploit as a result of higher labour productivity and the restructuring of supplier relations, they were able to find or construct considerably more profitable market niches. The results in terms of competitiveness, especially in exports and the trade balance, were presented above; a few representative cases of successful firms or industries will add some detail to these aggregate stories.

Renault managed to position itself in segments of the car market where it combined the cost advantages of mass production with innovative design. It thus created a series of relatively protected niches in different volume market segments—such as with the small mini-van-like *Twingo*, the medium-size van-like *Mégane*, the minivan *Espace*, and recently the utility vehicle *Kangoo*. The result was that since the late 1980s, when these new car models started entering the market, the company became one of the most profitable car manufacturers in Europe. Even the recession of the early 1990s was insufficient to derail Renault's successes (Freyssenet 1998).

PSA did something similar but from a different angle. The company increasingly spread platforms across its two brands *Citroën* and *Peugeot* to reap the benefits of scale economies, while keeping distinct the identities of its two brands. Again, until the late 1990s, PSA managed to survive the recession without great losses. It is significant, and often conveniently ignored, that the strong performance of both *Renault* and *Peugeot* during the recession of the 1990s occurred while the strong German car manufacturers VW and Mercedes were posting dramatic losses and negotiating massive workforce reduction programmes with their unions (Loubet 1998).

The steel industry changed from a large collection of small autonomous mass producers into a highly integrated conglomerate of large volume and small specialty producers. By sticking to its core competencies, systematically upgrading skills, technology and the types of steel it was making, *Usinor-Sacilor* became, by the end

40 In fact, by the late 1990s, after a few highly publicised restructuring plans by large firms, including collective dismissals, which had a large regional impact, the local role of large firms had drawn the attention of French politicians as well. In the spring of 1999, a Parliamentary Commission in the *Assemblée Nationale* started hearings on the relationship between large firms and local economies, and on the use that large firms made of public (regional) funds. The full report, which includes detailed studies of Moulinex, Usinor, Hewlett Packard and IBM, is available at http://www.assemblee-nationale.fr/2/2dossiers.html.

of the 1980s, a "low-cost producer of increasingly higher value-added materials".[41] This new organization and product market strategy allowed the French steel producers to conquer foreign markets. Between 1981 and 1987, steel exports as a proportion of total production shot up from roughly 50 to 60 per cent. Furthermore, Usinor-Sacilor acquired steel companies in Germany and the USA, and purchased commercial networks in Germany, the UK, Italy and the USA in order to increase proximity to large clients who were reducing their inventories.[42]

The household equipment industry, where France had been a world market leader in the post-war period, slowly moved up-market as well. *Moulinex* and *SEB*, the two most important manufacturers, discovered in the early 1980s that a combination of market saturation and increased Southeast Asian competition was destroying their profit margins, and decided to shift from simple, one-function products into complex equipment, which combined several previously separate functions (multifunctional kitchen machines, ovens which combined microwave and conventional functions, sophisticated grills, irons, etc.). Both managed that transition with varying success and speed, but by the mid-1990s, Moulinex and SEB were successfully producing higher-end kitchen equipment.[43]

In sum, French exporting firms had managed a remarkable shift out of the traditional mass product markets into market segments where competitive advantage consists of a combination of innovative design, semi-customized products and services, and the economies of scale generated by a reorganized mass production system.[44]

CONCLUDING REMARKS

The evolution of the French economy over the past two decades has been one of adjustment and restructuring out of "State Fordism". Having witnessed a dramatic change in its macroeconomic policy at the beginning of the 1980s, with the implementation of the *désinflation compétitive*, French firms had to adapt their strategies to an environment that no longer permitted "soft" adjustments through inflation and currency devaluations. The consequences in terms of unemployment were dramatic, but some of the objectives were reached: profitability was increased and productivity gains were high. Besides gains in price competitiveness, some positive results in terms of non-price competitiveness were obtained too, as witnessed by the comparisons of the evolutions of the real exchange rate and the trade balance. Moreover, French indus-

41 In the words of a steel manager, cited in Smith (1998: 167).

42 See Daley (1996) and Smith (1998) for details.

43 The recent problems of Moulinex (see, for example *Alternatives Economiques*, September 2000) suggest that the profound reorganization of the company, while successful on its own terms, may have come too late. In fact, between 1984 and 1994, the company was paralysed by a protracted corporate governance conflict; see Hancké (2001) for details.

44 A marginal comment but which might grow in importance in the years to come: these commercial successes hide different underlying innovation models. The first, found in the conventional mass market sectors (automobile, household appliances, electronics, and steel), seems to base its competitive advantage on rapid design changes and low production cost. The second, which is typified by the SNCF, EDF, France Telecom and the Aerospace complex (Aérospatiale, Matra, SNECMA), secures a competitive advantage out of rapid co-ordination among powerful top managers within a forum organized by the state. This helps to explain the rapid upgrade of the telephone system (Cohen 1992), the success of the TGV (Suleiman and Courty 1996), and the provision of electricity through nuclear energy in less than 10 years time (Finon and Staropoli this issue).

try did particularly well in some "high tech" industries such as aerospace and telecommunication. This restructuring was achieved in a context of an adverse macroeconomic environment, which made the necessary adjustments more painful rather than easier, and did not rely on a wage squeeze. Consequently, the only adjustment variable left was employment, and France's performance in this respect was less than satisfactory.

However, it would be misleading to consider the pattern of adjustment followed by France during the 1980s and 1990s as the mere consequence of the implementation of a macroeconomic policy which made firms' environment tougher. Faced with such an environment, firms could have responded in a variety of ways, from a low wages–low skills route to the emulation of the high wage–high skill German model. The route followed by France was neither of those and took advantage of the existing institutional structure characteristic of "State Fordism". The state, somewhat paradoxically, used its power to give more independence and responsibility to large companies, while it was itself gradually reducing its involvement in the economy. Large companies took the opportunities that were thus offered to reorganize their production networks and internal organization in a way that favoured the upgrading of skills and product quality and wider system of industrial co-ordination.

The outcome of this restructuring process has been, as is amply documented in the business press in 1999 and 2000, that French companies are outperforming their immediate competitors. While we are aware that care is necessary with such optimistic assessments—who would have predicted the Japanese slump, the difficult restructuring of German industry and the resurgence of the US economy 10 years ago?—our claim is that the developments analysed in this paper and the performance of French exporting companies provide the fundamental impetus for this sudden and unexpected revival and reinvention of the French model.

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