CORPORATE BEHAVIOUR AND COMPETITIVE FORCES

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Abstract:

The purpose of this article is to propose a typology of the economic behaviour of French industrial companies in 1993 based on a sample of more than 7,000 companies participating in the Balance Sheet Data Centre of the Banque de France. The objective is therefore to explain how productivity and competitiveness shape a company's rate of return. Three performance levels have been put forward: the "physical" level, the "market" level and the "financial" level, corresponding respectively to labour and capital productivity, the profit margin and the return on assets. The relationship between various types of behaviour and the competitive forces (M. Porter, 1986) affecting these companies is then examined on the basis of a sub-set of companies that participated in the Sesame survey and are included in the qualitative data base maintained by the Companies Division at the Banque de France.

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The deep recession France experienced between 1991 and 1993 (Artus, 1994) was longer and more severe than any other recession over the past fifteen years. Bankruptcies rose by 3.4% in 1993 compared to 3% in 1992. However, activity has picked up since early 1994[1]. The strength and scope of the recovery are largely dependent on the ability of companies to increase their competitiveness, which in turn depends on their current decisions, in particular with respect to investment in modernization.

Numerous studies have examined the importance of developing corporate competitiveness (Coriat-Taddei, 1992; General Planning Commission, 1993; EC Commission, 1994).

The Commission of the European Communities examined "*US, Japanese and Community Competitiveness Developments"* in its 1993 Economic Report". It defined "competitiveness" at the **macro-economic level** as the ability of a country *to increase its share of export markets, or to sustain a relatively higher rate of growth of domestic demand without a deterioration its current account balance"* (page 164). If one of the "*most widely used indicators of competitiveness is based on unit labour costs*." it is because this indicator makes it possible to establish the index of labour costs for a given country in comparison with that of its trade partners. "The implicit assumption

1 Lettre de Conjoncture of the BNP, July-August 1994.

behind this indicator is that, since traded goods prices are linked by strong international competition, developments in relative unit labour costs are indicative of changes in the relative profitability in the traded goods sector." The report goes on to note, however, that profitability is influenced by other factors and that, "accordingly, the preferred competitiveness indicator might be the ratio of the relative unit labour costs to the relative price of the value-added since this indicator gives the evolution of labour's share in value-added for the home manufacturing sector with respect to that of its foreign competitors." (page 164).

However, in a 1993 study called "Small and Medium-Sized Enterprises: Technology and Competitiveness", the OECD stated that "***micro-economic analysis*** *connects a firm's competitive factors with all its functions and decisions affecting its activity, growth (as reflected by its turnover, value added, gross operating margin, workforce, etc.), profitability, financing, its financial position and its management*" (excerpts from "Problèmes Economiques", January 1994, page 25).

The authors specify that "*at present, no theoretical model appears to exist that could link these variables and provide an explanation for the competitiveness of small and medium-sized companies*". In other words, according to this interpretation, a firm's competitiveness is analyzed by the coherence of its various functions and the way they are implemented and can be tracked by a number of indicators.

From this perspective, competitiveness is simply the ability of a company to sell its products (referred to as the market or realization [2] constraint) at a price allowing it to ensure its continued growth and meet its obligations to third parties. This is referred to as the profitability constraint, or the "need for fixed asset formation and return on invested capital" (Jacot, 1976)). This double constraint, involving markets and profitability, determines the economic and financial environment of the business, whose goal is therefore to maximize its rate of return[3] by reducing those constraints to a minimum (Mesnard (de), 1992).

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2 A commodity is said to be "realized" when it has been fully transformed into money, i.e. sold/paid to/by a customer.

3 Return meaning rate of return rather than just profit. What matters here is the return on invested capital and not just profit as such. In even simpler terms, this says that, in order for a profit to be generated, commodities must be not only produced but sold as well. In other words, a firm's competitiveness derives from its ability to manage that double constraint of markets and return, in order to maximize its rate of return; maximize, that is, but not necessarily increase it: that objective depends on certain constraints, meaning that it takes into account the potential of markets and hence real situations. Constraints are handled with the bottom line in mind. It is a matter of choosing the right combination of unit prices and quantities put out for sale. A firm may opt for a policy of high prices and small quantities, rather than adopting a more aggressive pricing policy and expecting it to positively affect the volume of sales. Unfortunately the available accounting and financial data makes it impossible to separate "price competitiveness" from "non-price competitiveness".

DESCRIPTION OF THE OVERALL SAMPLE

Companies have been divided into the following categories based on the number of employees:

Table 1

EMPLOYEE THRESHOLDS USED TO DETERMINE SIZE IN 1991			
Size	Thresholds	Percentage of Companies	Percentage of Employees
1 (VSIC)	up to 100 employees	63.2	12.9
2 (SIC)	from 101 to 500 employees	28.8	25.6
3 (LC)	from 501 to 2,000 employees	6.6	25.4
4 (VLC)	more than 2,000 employees	1.3	36.0
Total		100.0	100.0
Source and production: Banque de France - Companies Observatory Tel.: +33 (1) 42 92 56 58 Last update October 5, 1994			

As the proportion of each category in the total population remained stable year-on-year, the structure of the sample was constant over the period examined.
In 1990 the coverage rate of the sample in terms of workforce was 51.9%. of that of the comprehensive data base of companies subject to corporate income tax operated by INSEE, France's national institute of statistics and economic studies
The sector structure of the sample was stable over the period under review. The intermediate and non-durable consumer goods sectors held equal shares at 36,8% and 36,5%, respectively.

Table 2

STRUCTURE OF THE SAMPLE COMPARED TO THE NATIONAL INDUSTRIAL STRUCTURE IN 1991						
as a percentage	Study Sample		Industry*		Coverage Rate	
	Number of Companies	Employees	Number of Companies	Employees	Number of Companies	Employees
Small and Medium-Sized Industrial Companies (less than 500 employees)	92.1	38.6	98.9	55.5	9.2	32.8
Large Companies	7.9	61.4	1.1	44.5	62.6	65.0
Intermediate Goods	37.1	33.1	28.3	32.0	11.8	48.7
Consumer Goods	35.8	22.5	38.7	28.0	8.3	38.0
Business Equipment	23.1	26.3	21.4	28.0	9.7	44.1
Household Equipment	0.6	1.6	0.5	1.6	10.8	49.8
Motor Vehicles and Other Transportation Equipment	3.4	16.5	1.8	10.3	16.7	75.2
Total	100.0	100.0	100.0	100.0	9.0	47.1
Source and production: Banque de France - Companies Observatory Tel.: +33 (1) 42 92 56 58 Last update October 5, 1994						

*Complete file of companies subject to corporate income tax maintained by INSEE.

Compared to INSEE's complete file, it appears that intermediate goods and automobile manufacture are slightly over-represented, while the consumer goods sector and small and medium-sized companies are slightly under-represented as is, to a lesser extent, the business equipment sector. On the whole, however, the sample provides the basis for a reliable analysis.

1. Behaviour Typology in 1993

The survey demonstrated that the behaviour of firms can be classified in specific, homogeneous categories based on a number of criteria that merit an explanation.[4] In line with the problem laid out, firms were differentiated according to their competitiveness using ratios reflecting investment policy, production resource structure and financial constraints.[5]

1.1. Competitiveness: Assessment and Measurement

Assessing a company's economic situation involves looking at how the management uses resources and **measuring the results obtained** with reference to the objectives set (J. H. Jacot, 1990). Results can be measured fairly easily through the financial analysis of accounting documents using the profit maximization hypothesis, although some difficulties remain.[6] Assessing the resources applied is a more complex. matter. In the absence of qualitative information regarding the manufacturing organization, sales policy and technologies implemented, such an assessment is based solely on investment, financing and workforce data. As a result, it is impossible to clearly identify the target objectives, unless they are limited to the above-mentioned maximization hypothesis.

Notwithstanding this difficulty, three stages must be distinguished: "namely, *the recognition of levels that are too often confused in economic assessments: the "physical" level, the "market" level and the "financial" level*" (J. H. Jacot, 1990, page 65).

The "physical" level corresponds to the productivity (or yield) of labour and capital. It is the level of the concrete implementation of the combination of factors of production. It covers both the technological and organizational dimensions of the production process, along with human resource management. Consequently, the productivity stemming from this "physical" level depends as much on quantitative factors (workforce, capital, etc.) as on qualitative factors(training, working conditions, etc.). One can say that it is a determining factor in a company's competitiveness since it is the outcome of the production process from the point of view of factors of production.

Competitiveness corresponds to the "market" level. In addition to the productivity of labour and capital, it depends on "the excellence of production", *i.e.*, quality, reliability, fluidity (zero stocks), flexibility, safety, etc. Using accounting data, and in the absence of information on market shares, the relevant indicator of the market outcome is the profit margin. This is because the profit margin is the result of cost control, via the company's pricing policy and quality of customer service, and of the organization of production and of human resources.

The third, "financial", level, brings return on assets into play.[7] It is distinguished from the preceding level by using capital rather than output as the denominator. It is thus possible to

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4 See Lebart, Morineau, Fenelon, "Treatment of Statistical Data", Dunod, 2nd edition 1982.

5 These are various functions which provide the pre-conditions for competitiveness.

6 Or "optimization", a term which introduces relativity, *i.e.*, taking into consideration the company's environment.

7 It is also possible to use financial return.

dissociate competition issues (competitiveness) from profitability, as profits can be generated at the expense of competitiveness, or even at the expense of the yield on labour and capital. This classification can be illustrated as "*the 'telescoping' of the three levels: productivity (labour and capital), competitiveness (profit margin) and profitability (return on capital)*" (J. H. Jacot (page 67):

P/K = P/Y . Y/K = [(Y/L - W/L) / Y/L] . Y/K

where:

P/K = return on capital or return on assets, *i.e.*, overall surplus in terms of capital invested

P/Y = profit margin, *i.e.*, overall gross surplus/overall value-added, *i.e.*, overall gross surplus/output

Y/L = apparent labour efficiency ratio with the number of employees as the denominator

Y/K = apparent labour efficiency with either output or value added compared to capital invested

W/L = unit labour cost

On this basis it appears that although profitability is shaped by the productivity of labour, capital and competitiveness, the methods used to generate it may differ greatly from company to company. Not only do markets differ, companies also make individual trade-offs between productivity (labour and/or capital productivity gains) and competitiveness (price and non-price))This in turn influences their investment decisions, which determine the combination of productivity factors and the corresponding financial structure.

However, it is also necessary to identify as accurately as possible the type of environment in which the companies operate and the organizational methods they adopt. Although this approach is limited by the use of accounting data, it must be acknowledged that the diversity of companies corresponds to a wide range of organizational methods, technical choices and profitability factors (see, *inter alia*, M. Porter, 1986; R. Salais and M. Storper, 1993).

This method makes it possible to use certain indicators: "*Maximizing the return on capital does not in itself define a hierarchy of choices between the production models. All the production models are in fact profitable if they are implemented coherently*" (R. Salais, M. Storper, p. 74).

Consequently, this implementation must be examined both throughout the levels and (J. H. Jacot, 1990), and in terms of how profitability is achieved. This is possible by examining the various components. "*These are not merely formalized algebraic formulae, but rather the contradictions that a company encounters in its day-to-day operations and which it must bring into a sort of*

"dynamic equilibrium". The nature of this equilibrium is specific to each production model or variation thereof.".[8]

This makes it possible to construct a profitability constraint management matrix, *i.e.*, controlling the "dynamic equilibrium".

1.2. Characterization of Various Economic and Financial Situations

The relative position of the various companies can be displayed in a synthetic graph. (M. Bardos, B. Paranque, 1992) by calculating the axes using selected base ratios (see box on following page). This shows the strong differentiation of companies on either side of the axes, which are described according to their correlation with the base ratios.[9]

VARIABLES USED TO STUDY BEHAVIOUR

14 active ratios which contribute to defining behaviour:

- BA32: Debt servicing costs
- BA7: Overall value added/capital employed (capital productivity)
- BA64: Extended fixed asset formation rate
- BRA4: % Change in value added
- BA1: Change in employee numbers (as a percentage)
- BA66: Change in capital
- BMP1: WCR turnover Turnover
- BR5: Export Rate
- BRA1: Investment rate/overall value added
- BG1: Shareholders' rate of return
- BG4: Lenders' rate of return
- BRR2: External Financing Rate
- BA0: Production employees/Total employees
- BA27: Unit Labour Cost

10 representative ratios that supplement the analysis of results :

- BA18: Return on equity
- BA22: Total investment rate
- BA24: Gross return on investment
- BB2: Overall gross cash flow/Overall value added
- BB15: Capital Employed/Personnel costs (capital intensity)
- BJ3: Apparent Labour Productivity
- BMP3: Production equipment turnover rate
- BF14: Equity/Net Assets
- BRR5: Average Cost of External Financing
- BA34: Outstanding bank financing/External Financing

8 See R. Salais and M. Storper 1993 pages 67 to 74.

9 The first axis considered is obtained using an algorithm which calculates the principle of least squares. A second axis is then calculated orthogonally to the first, and so on.

Table 3

DESCRIPTION OF THE FIRST FIVE AXES				
	Value	Percentage Inertia	Ratio Correlation - Factors	
			Negative	Positive
Axis 1	2.5	18.1	Debt servicing costs (0.7)	Extended fixed asset formation rate (0.7) Change in VA (0.7) Change in capital (0.7) Change in employee numbers (0.6)
Axis 2	1.8	12.7	Capital efficiency (0,7)	WCR turnover (0.5) Unit Labour Cost (0.5)
Axis 3	1.6	11.4	Unit labour cost (0.6)	Ratio of production employees to to total employees (0.5)
Axis 4	1.3	9.0	External financing rate (0.6)	
Axis 5	1.1	7.8	WCR Turnover (0.5)	Turnover rate of production equipment (0.5)
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The first five axes used represent 59% of total inertia; the first three axes alone account for 42%.

The first axis (inertia: 18,1%) corresponds to the cost of financing fixed asset formation. It is strongly correlated to (from left to right):

- debt servicing costs (BA32), and

- the extended fixed asset formation rate (BA64), the change in capital (BA66), the change in value added (BRA4) and the change in the number of employees (BA1).

Accordingly, the firms with very high debt servicing costs, **and/or** very low fixed asset formation rates are on the one side of the axis, while those in a symmetrical position are on the other side.[10]

Companies' investment policies and how they finance them differ therefore according to the development of their activities. This in turn depends on the overall economic environment as well as on the companies' own ability to make competitive gains, even in times of recession.

The second axis (inertia: 12,7%) describes the control over the combination of factors of production through strong correlations (from the top to bottom on the graph):

- between the average working capital turnover (BMP1) and the unit labour cost (BA27), and

- capital efficiency (BA7).

On this axis, companies are differentiated according to their combination of factors of production and its efficiency. Small and medium-sized industrial companies differ from larger companies with fewer than 2,000 employees.

10 The degree of proximity between the two ratios reflects the correlation between them. Conversely, a high degree of proximity between a ratio and a company means in general that this ratio is highly valued by that company. In general, the position of a company (which is a two-dimensional space) does not depend on a single ratio, but rather on a group of ratios. On this issue, see Lebart, Morineau, Fenelon, "Treatment of Statistical Data", Dunod, 2nd edition 1982.

The third axis (inertia: 11,4%) concerns employment as measured by labour cost and by the number of production employees in the workforce. Indirectly, it illustrates the organization of work and the employment structure.

1.3. A Behaviour Typology

On the basis of this initial approach, six classes of behaviour can be identified.[11]

Table 4

BREAK-DOWN OF THE INERTIA CALCULATED ON THE 10 AXES AFTER CONSOLIDATION				
	Inertia	Employees	Weight	Distance
Inter-class Inertia	4.0214			
Intra-class Inertia				
Class 1/6	1.8950	3,161	3,161.00	0.5649
Class 2/6	0.9012	942	942.00	3.8816
Class 3/6	1.4446	713	713.00	6.5824
Class 4/6	1.1658	658	658.00	8.0677
Class 5/6	1.3408	667	667.00	7.4938
Class 6/6	1.5976	911	911.00	8.6902
Total Inertia	12.3665			
Source and production: Banque de France - Companies Observatory Tel.: +33 (1) 42 92 56 58			Last update October 5, 1994	

The first so-called "autonomous" class (see Table 5 below) comprises 44.9% of all companies. It basically includes small and medium-sized manufacturing companies with less than 100 employees (68.8% of all small and medium-sized manufacturing companies, which account for 64.4% of the sample) and intermediate goods manufacturers (42.5% compared to 37.1%). These companies have long working capital turnover periods (86 days compared to an average of 81.8 days for the entire sample) and employ more production employees (80.4% of all employees compared to an average of 76.1%). With little debt (46.8% versus 51.6%) and investment (7.4% versus 9.8%), they experienced a drop in business and reduced their workforce. However, they were able to control their profitability constraints and profit margins. **They are slightly more competitive than average (23.3% versus 20.5%), but suffer from a deficit at the "physical" level, which could jeopardize their future**. In addition, the fact that their intangible expenditure is among the lowest at 1.7% compared to an average of 2.6% for the entire sample reinforces this theory given the growing importance of this aspect of competitiveness (B. Coriat, D. Taddeï, 1992).

The second class, called "exporting", includes 13.3% of companies, essentially belong to the business equipment sector (33.6% versus 23.1% for the entire sample). These firms employ between

11 The procedure used to determine these classes is an ascending order classification. It is followed for all companies according to their combination of factors of production. The first step, concentration around moving centers ("k-means" or "dynamic cluster" types) leads to the rapid construction of a partition containing a large number of small groups (for example, one hundred). These groups must be parts of "real" classes that the partitioning algorithm has broken up.
Aself-correction procedure is added to obtain a high-quality preliminary partition immediately. This consists of creating several successive partitions (the "base partitions") and then crossing them. The stable groups (also called "strong forms") which are formed by the individual groups collected together in the base partitions are used as final classes.
During the second stage, a hierarchical tree is built based on the center points of these stable groups.

100 and 2,000 employees. Their low capital efficiency (48% versus 63%) is the price they pay for being highly capital intensive. They are autonomous and invest little but have long working capital turnover periods and are strong exporters. **Their competitiveness (26.5% versus 20.5%) is based on high labour productivity although their capital efficiency is the lowest in the typology (48.8% versus 63%) and adversely affects their return on assets**. Their ratio of intangible investment is high at 3.6%, even during the two previous years, and must thus have contributed to their performance.

The third class includes 10.1% of all companies, in particular companies with between 500 and 2,000 employees in the business equipment (31.3%) and consumer goods (42.6%) sectors. Their workforce rose by 1.6% compared to a decline of 3.2% for the entire sample. They are very profitable and make investments. This class is called "profitable" **because it is characterized by what may be termed virtuous" cycle with high labour productivity and good average capital efficiency paired with a high profit margin**. This pattern is based on a high and sustained intangible investment rate of 5.2%, following on 5.5% in 1991 and 5.3% in 1992.

The fourth, "investing", class accounts for 9.3% of the companies in the sample, which are primarily small and medium-sized industrial companies and firms in the intermediate goods sector. Debt servicing is high at 96.9% of overall gross cash flow, although less than the overall 133.8% average. These companies experienced strong business growth of +12.5% versus -3.2% and have hired new employees, increasing their workforces by +8.2% against -3.2%. Their net total investment of 37.4%, compared to 12.5% resulted in high debt, but did not prevent them from recording a high return on assets of 15.2%, as opposed to 11.5%. **They are more competitive than average (29.4% versus 20.5%), but suffer from a lack of capital efficiency due, most likely, to the time lag in return on investment.** The rate of intangible investment is average at 2.3%, 2.4% and 2.6%, versus 2.7%, 2.6% and 2.6% for the entire sample.

Class 5, with 9.5% of all companies, includes small and medium-sized manufacturing companies and firms in the consumer and business equipment sectors. These companies are "non-capital-intensive", and have benefited from an increase in value added. Their workforce dropped by only 1.1%, less than in the other classes and includes the highest proportion of production employees with the lowest unit labour cost, which makes them profitable. Class 5 companies are autonomous, their working capital turnover period is very short, amounting to only 28.3 days, and they export little (8.2%). **They are not very competitive** (17.6% versus 20.5%) **but make up for this handicap by a high degree of capital efficiency which gives them a clear advantage at the "financial" level**. They have the lowest rate of intangible investment amounting to 1.3%; but this must be assessed in light of the specific nature of these companies and the limitations of the indicator, which does not take into consideration "built-in" intangibles such as employee know-how picked up "on the job".

Table 5

TYPOLOGY OF COMPANIES IN 1993 AS A PERCENTAGE, EXCEPT WHERE OTHERWISE INDICATED							
Average of Ratios*	Class 1 Autonomous	Class 2 Exporting	Class 3 Profitable	Class 4 Investor	Class 5 Non-capital intensive	Class 6 Ailing	All
Share of class in sample (%)	44.9	13.3	10.1	9.3	9.5	12.9	100.0
Active ratios							
Debt servicing costs (%)	77.9	77.1	53.6	96.9	66.5	526.6	133.8
Overall VA/Capital employed (%)	57.4	48.0	NS	55.7	130.5	54.9	63.0
Fixed asset formation rate (%)	1.0	7.0	12.1	18.5	22.8	- 20.3	3.8
Change in VA (%)	NS	0.0	NS	12.5	2.3	- 25.4	- 3.2
Change in employee number (%)	- 3.8	NS	1.6	8.2	- 1.1	- 11.6	- 3.2
Change in capital (%)	1.3	4.6	NS	27.3	5.1	- 10.7	3.1
WCR Turnover (days) (j)	86.0	102.5	NS	71.1	28.3	96.6	81.8
Export Ratio (%)	7.5	55.4	NS	11.7	8.2	NS	16.4
Investment in production (%)	7.4	NS	6.8	32.2	4.8	7.6	9.8
Shareholders' rate of return (%)	1.6	1.9	9.2	1.9	NS	1.2	2.5
Lenders' rate of return (%)	12.5	12.5	13.6	10.0	NS	NS	15.3
External financing rate (%)	46.8	38.1	33.9	77.7	25.2	96.5	51.6
Production employees/Total employees (%)	8.0	NS	49.2	80.7	81.9	73.8	76.1
Labour cost (FRF 000/p)	181.2	210.4	278.2	190.2	179.6	NS	197.8
Illustrative Ratios							
Return on equity (%)	2.5	3.6	8.6	3.1	6.1	- 24.4	0.2
GRI (%)	12.3	NS	17.5	15.2	18.0	- 4.4	11.5
Overall Gross Cash Flow/Overall VA (%)	23.3	26.5	30.6	29.4	17.6	- 7.8	20.5
Total investment rate (%)	9.2	NS	10.4	38.4	5.8	NS	12.5
Capital employed/personnel costs (%)	NS	357.7	317.6	336.9	140.3	246.7	280.8
VA/employee numbers (' FRF 000/p)	244.0	301.0	436.1	289.6	227.7	187.0	266.4
Production equipment turnover rate (%)	298.6	311.6	644.3	296.5	647.4	NS	376.5
Equity/Total assets(%)	37.7	42.4	42.6	32.1	NS	16.9	35.4
Average cost of external financing (%)	11.6	10.7	11.0	9.0	19.6	NS	11.9
Ordinary bank financing/External financing (%)	NS	24.7	23.0	23.1	16.0	37.4	26.9
Rate of intangible investment (%)	1.7	36	5.2	NS	1.3	1.7	2.6
Proportion (%)							
Intermediate goods	42.5	NS	23.4	44.4	25.2	NS	37.1
Consumer goods	NS	27.2	42.6	NS	44.4	30.0	35.7
Business equipment	17.0	33.6	31.3	16.1	27.6	29.0	23.1
Household goods	NS	NS	NS	NS	NS	NS	0.6
Automotive sector	NS	NS	1.7	NS	NS	NS	3.4
Small manufacturing firms	68.8	41.8	54.1	70.4	79.0	NS	64.4
Medium-sized manufacturing firms	NS	39.1	NS	NS	18.4	NS	28.2
Large companies	3.4	15.7	12.9	3.0	1.9	NS	6.2
Very large companies	NS	NS	NS	NS	NS	NS	1.2
Source and production: Banque de France Companies Observatory - Tel.: +33 (1) 42 92 56 58 Last update October 5, 1994							

* NS: not significant relative to the average or general frequency within the sample.

Ailing companies are covered by class 6 and account for 12.9% of all companies. No specific size predominates. Only firms in the business equipment sector are slightly more numerous. **These are companies whose debt servicing costs are five times greater than the rest of the sample**. A drop in business and the workforce coincides with negative rates of return and insufficient capital efficiency and labour productivity, although, at 3.5%, their intangible investment rate is a little higher than the average of 2.6%.

In addition, the return-to-cost differential for companies in classes 3 and 4 was generally positive.

Table 6

"GROSS RETURN ON INVESTMENT - APPARENT INTEREST RATE" DIFFERENTIAL in 1993							
As a percentage	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Total
≤ 0	46.0	44.3	39.3	19.9	49.9	97.1	48.7
> 0	54.0	55.7	69.7	80.1	50.1	2.8	51.3
Source and production: Banque de France - Companies Observatory Tel.: +33 (1) 42 92 56 58 Last update October 5, 1994							

Overall, the wide range of situations that emerges can be explained by varying sensitivity to the recession and the fall in activity. This would be a rather simplistic view if one did not take into account the specific characteristics of each company in terms of technology, marketing policy, strategy and work organization methods. In other words, the diversity of economic structures corresponds to a wide variety of market positions and production processes.

2. Intensity of Competition Assessed on the Basis of Qualitative Data

Given the limitations of the accounting approach, it seemed worthwhile to examine this issue through the survey conducted by the Banque de France for its Sesame project.

This survey led to the creation of a new qualitative data base on the strategic behaviour of French companies. Its purpose was to allow the Banque to enhance the accounting and financial assessment of companies with a strategic analysis.

The data base has been developed throughout the country since 1993. The business leaders participating in the survey responded directly to a specially-designed machine-scored questionnaire. The answers to the two hundred questions describe the overall environment (customers, suppliers, new entrants, substitute products, internal rivalry, etc.), as well as the strategic orientation by activity (market positions, goals, the competitive advantages pursued and the means implemented to achieve these goals).

In 1993, 2,000 business leaders **in the business equipment and intermediate goods sectors** responded for the first time to a questionnaire during in-depth interviews lasting an average 2 1/2 hours. A complete sample of companies across the entire manufacturing sector will be assembled following the second national survey conducted in 1994, which will cover those sectors that were not investigated in 1993 (consumer goods, household equipment, food processing, other ground-transport equipment).

In particular, we examined **the intensity of competition** that these companies face (M. Porter, 1986).

Some 1,354 companies in the 1993 sample responded to the Sesame survey. Only the 819 companies that generated at least 95% of their revenue from their core activity were selected.

2.1. Concepts Used

A a structural approach was used to describe the businesses environment of each sector and determine the position of a company with respect to five external forces (suppliers, customers, new entrants, substitute products and direct competitors).

The combination of these five forces measured by a "competition intensity" indicator characterizes the degree of attraction of the sector.

Each force is examined in the questionnaire using an average of ten basic questions.

The "customer" force is defined as the power exercised by customers, which limits a company's leeway and constrains its financial results. Its level depends, *inter alia*, on the relative concentration of customers and their specific price sensitivity in view of the originality and specificity of the product.

The "supplier" force is defined similarly as the restrictive power exercised by suppliers on a company's strategic decisions. The criteria used are similar to those applied to customer relations.

The "new entrants" force measures the risk of new competitors appearing in the sector and making the overall competition keener. It is directly related to the barriers to entry in the sector (regulations, economies of scale, etc.).

The "substitute products" force measures the risk of products in the sector being replaced by other, different, products, which perform the same functions. The prices and the customers for these products must be carefully examined.

The "internal rivalry" force measures the direct competition among companies in the sector that restricts the company's potential in terms of sales volume or margins. This threat is determined, among other factors, by the sector's growth rate and the existence of excess capacity, etc.

2.2. Intensity of Competition 1993 by Typology Class

The distribution of the 819 companies by class differs somewhat from that of the entire sample.

BREAK-DOWN OF THE COMPANIES INTO CLASSES

As a percentage	Autonomous	Exporting	Profitable	Investor	Non capital-intensive	Ailing
Sesame Sample	44.7	22.3	6.6	7.2	4.9	14.3
Total Sample	44.9	13.3	10.1	9.3	9.5	12.9
Source and production: Banque de France - Companies Observatory Tel.: +33 (1) 42 92 56 58 Last update October 5, 1994						

These 819 companies score higher as "exporters" than the total sample, but are also slightly less "profitable". They invest somewhat less, but are a little more frequently "ailing". Compared to the entire sample, the percentage of companies with a workforce ranging from 100 to 2,000 is greater at 52.8% versus 35.4%.

Some 23.1% of these companies consider the intensity of competition (M. Porter, 1986) to be rather weak, 75.8% average and 1.1% rather high.

INTENSITY OF COMPETITION AND CLASSES

As a percentage	Autonomous	Exporting	Profitable	Investor	Non- capital-intensive	Ailing	Total
Rather weak	21.6	24.0	**25.9***	**25.4**	20.0	24.8	23.1
Average	77.0	76.0	74.1	74.6	75.0	73.9	75.8
Rather high	1.4	0.0	0.0	0.0	**5.0**	1.7	1.1

Source and production: Banque de France - Companies Observatory
Tel.: +33 (1) 42 92 56 58 Last update October 5, 1994

*Figures in bold indicate a percentage greater than that recorded for the sample as a whole.

Overall, the intensity of competition does not appear to be linked to classes. This reflects the wide range of strategies, which are not connected to a specific economic and financial profile. Nevertheless, several observations can be made.

"Profitable" companies are more frequently faced with rather weak competition, which gives them a fairly high earnings potential as is reflected in the financial profile obtained. This also applies to "investors", while "non-capital-intensive" companies must contend more often than other companies with "rather high" intensity of competition.

2.3. The Five Forces

Nevertheless, the components of the intensity of competition vary. The differences in the business environment of each class are underscored by breaking the five forces down and isolating barriers to entry.

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Classes	Competition					Customers				Suppliers			
(percent)	1	2	3	4	5	1	2	3	4	1	2	3	4
Autonomous	2.2	26.2	56.0	15.0	0.6	0.8	25.4	56.6	**17.2**	1.6	26.0	58.7	13.7
Exporting	3.3	**33.9***	51.9	*10.9***	0.0	1.1	26.8	61.2	*10.9*	0.6	34.4	53.0	12.0
Profitable	3.7	29.6	51.9	14.8	0.0	**5.6**	24.1	63.0	*7.4*	**3.7**	25.9	53.7	16.7
Investors	3.4	30.5	57.6	*8.5*	0.0	1.7	25.4	57.6	15.3	1.7	*18.6*	**67.8**	11.9
Non-capital-intensive	2.5	32.5	*42.5*	**22.5**	0.0	0.0	22.5	65.0	12.5	0.0	22.5	**67.5**	10.0
Ailing	*0.0*	23.9	56.4	**18.8**	0.9	1.7	22.2	59.0	17.1	*0.0*	29.9	61.5	*8.6*
Total	2.3	28.5	54.3	14.5	0.4	1.3	25.0	58.9	14.8	1.2	27.7	58.6	*12.5*

Classes	Substitute Products					New Entrants				
(percent)	1	2	3	4	5	1	2	3	4	5
Autonomous	4.7	23.9	46.9	22.1	2.4	0.3	1.1	29.0	56.3	13.4
Exporting	*2.2*	19.6	54.4	21.7	2.2	0.0	0.0	*22.4*	**68.9**	*8.7*
Profitable	3.5	31.0	51.7	*13.8*	0.0	0.0	1.9	29.6	51.9	**16.7**
Investors	19.4	**19.4**	*32.3*	25.8	3.2	0.0	**3.4**	**39.0**	*45.8*	11.9
Non-capital-intensive	*0.0*	42.1	36.8	21.1	0.0	0.0	0.0	20.0	57.5	22.5
Ailing	5.1	18.6	49.2	25.4	1.7	0.0	1.7	25.6	65.8	*6.9*
Total	5.0	23.3	47.6	22.1	2.0	0.1	1.1	27.4	59.5	12.0

Source and production: Banque de France - Companies Observatory
Tel.: +33 (1) 42 92 56 58 Last update October 5, 1994

*Figures in boldface indicate a percentage of the class which is greater than the sample as a whole.
**Figures in italics indicate a percentage of the class which is less than the sample as a whole.

"Autonomous" companies have little debt but, conversely, make fewer investments than the sample average. Over time, this may result in a loss of competitiveness. This condition may be at least partially explained by an "average" intensity of competition for 77% of these companies. There

is, in effect, a lack of special constraints with respect to four of the forces, with the "customer" force perceived as "high" more often than in the remainder of the sample (17.2% versus 14.8%).

A large majority of the "exporting" companies are faced with a "rather high" risk of new entrants, which is offset in part by an "average" position with respect to the other forces and low internal rivalry.

The "profitable" companies benefit from "rather weak" intensity of competition as a result of forces which are frequently "weak" (customers and suppliers), despite a risk of new entrants deemed high and barriers to entry that are most often perceived as weak. These companies experienced a drop in activity but have been able to maintain their performance due to a favourable environment in which they can play various components against each other.

"Investor" companies benefit from "rather weak" intensity of competition due to "rather high" or "high" barriers to entry. As a result, they can manage the lags in investment returns better by reducing the risk related to uncertainty about new competitors.

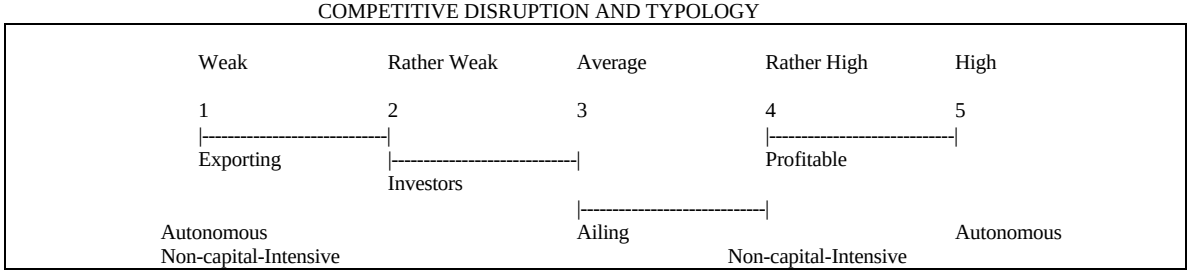
The "non-capital-intensive" companies must contend with "rather high" rivalry and supplier forces, given their small size and reduced bargaining leverage with their suppliers. Barriers to entry are considered either weak or high.

"Ailing" companies seem to suffer more often from strong rivalry and rather "weak" barriers to entry. As a result, they have limited growth potential, especially during periods of recession.

Competitive disruption, *i.e.*, the impact of competitors' strategic changes on a company's business, is perceived as weak by 32.7% of companies, rather weak by 15.5%, rather high by 23.2% and high by 11.7%.

Competitive disruption may be weak or high for the "autonomous" class 1, and "non-capital-intensive" class 5, (rather high); weak or rather weak for the "exporting" class 2; rather high or high for "profitable" class 3; rather weak or average for "investor" class 4, and always rather high for "ailing" class 6.

COMPETITIVE DISRUPTION AND TYPOLOGY



The situation of the "autonomous" companies clearly reflects their fragility: these companies enjoy a certain degree of stability allowing them to anticipate developments as long as competitors do not change their strategic behaviour. However, in the event of a rapid and significant change in a competitor's strategy, they run a serious risk of reduced competitiveness due to a lag in investment.

The same observation applies to "non-capital-intensive" companies, but for different reasons: they are very dependent on their suppliers' strategies. Similarly, the situation of "profitable" companies is jeopardized by the risks of strategic changes as their competitors anticipate either economic recovery or losses of competitiveness. Such changes could completely alter their business environment and profit outlook.

3. CONCLUSION

Since the 1989-1990 turnaround in the growth cycle and subsequent slowdown in activity in 1993, French industry has adapted to a new environment. However, this was achieved at the cost of an increase in bankruptcies, a significant rise in unemployment and a large drop in investment, particularly in the latter period.

As a result, despite declining profit margins, well-established companies have been able to maintain profitability at a level which, while reduced, is close to or sometimes higher than that of the 1980s. Similarly, they have been able to stabilize their financial position or even improve it compared to the end of the 1980s.

An analysis of the 1991-1993 period shows very diverse situations, as well as a certain stability of the main economic and financial features. While some companies experienced serious solvency problems in 1993, others maintained a stronger investment policy than the sample average. The same phenomenon was observed in the 1980s (M. Bardos, B. Paranque, 1992).

It was therefore possible to examine the differences in profitability between companies by distinguishing three levels: the "physical" level, the "market" level and the "financial" level. Each of these levels has an indicator: productivity, competitiveness and profitability, respectively. The third indicator presents the fewest problems as it can be measured by the return on capital for shareholders and lenders. Productivity raises problems in the qualitative measurement and evaluation of the factors of production. However, one can nevertheless use the productivity of labour and capital efficiency. The most serious difficulties arise with respect to competitiveness, which implies the ability to compare, not only the accounting and financial results of companies, but also their relative market positions. The profit ratio gives a partial measurement of competitiveness. However, it does not take into consideration price effects and does not allow an assessment of the choices that a company makes between prices and volumes. This is also the problem with "total quality production" (zero defects, just-in-time, zero inventory, etc.). In addition, it does not constitute an indicator of market share, which makes the assessment of a company's competitiveness difficult since low margins may result in a dominant market position (or vice versa). In other words, the profit ratio is a partial indicator of corporate competitiveness and can only be used as one of the components of profitability. From this point of view, a process that takes a company's competitive environment into consideration makes it possible to complement the purely accounting approach by identifying various sets of economic patterns on which the variety of economic and financial situations are based.

Accordingly, in the recession, the decline in investment and profitability and the increase in financial autonomy have varied from company to company. The majority of the "autonomous" companies have been able to remain profitable and reduce debt at the expense of investment. This short-term choice may eventually jeopardize the competitive gains. At the other extreme, the "profitable" and, most of all, the "investor" and "non-capital-intensive" companies have made fewer cut-backs in the replacement of production assets. This choice may increase financial constraints but it favours an increase in their competitiveness, provided that the recovery materializes so that they can realize the anticipated gains.

A line can be drawn between these two extreme positions on the chart, as defined by the need for fixed-asset formation and the market constraint. On one side are companies faced with the need to expand their market, but which may nevertheless be able to loosen financial constraints by reducing investment, although they may have to accept lower profitability as a result. On the other side are companies that can reduce the profitability constraint by giving up some of their financial autonomy to enhance their fixed-asset formation.

The variety of economic and financial situations corresponds, therefore, to specific economic patterns and not simply to various responses to a similar environment. Management constraints and methods will differ depending on whether the business is based on producing standard products and economies of scale or on innovation and product differentiation. The focus will accordingly be either on increasing labour intensity or on improving the overall efficiency of capital, in particular human capital.

Finally, although the intensity of competition is most often average, it may reflect a variety of positions that companies may adapt with respect to its components. Overall, the economic and financial profiles and the intensity of the five forces defined by M. Porter appear to correspond. From this point of view, the risk of a loss of competitiveness seems to increase when profitability is achieved to the detriment of investment.

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