

The Impacts of LBOs on the Performance of Acquired Firms: the French Case

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Abstract: This paper investigates the financial characteristics and changes in performance of French companies involved in a leveraged buy-out. The empirical study covers a sample of 161 MBOs in France from 1988 to 1994. The acquired firms outperform their counterparts in the same sector of activity before and after the buy-out. However, unlike findings concerning LBOs in the USA and the UK, the performance of French firms falls after the operation is completed. This downturn in performance seems to be less detrimental to former subsidiaries of groups than to former family businesses.

Key-words: leveraged buy-out, performance, French LBO, family businesses, group subsidiaries.

JEL classification : G32, G34, L22

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1. INTRODUCTION

Leveraged buy-outs really took off in the USA from the 1970s and in Europe from the 1980s. These operations are a highly effective way for their instigators (venture capitalists, industrial and commercial firms, private individuals) to take control of the targeted company while minimising their contributions in equity. The financial packages to which they give rise vie with each other in terms of ingenuity and complexity and lead to a new form of organisation (Jensen, 1986 and 1989).

When the acquired firms are listed on the stock exchange, the financial market anticipates largely favourable effects as many studies report abnormal positive returns of between 17% and 25% when the buy-out is announced. The average total gain (difference between the final price at which the stocks are bought and their value before the announcement), computed after adjustment for movements in the market, is between 30% and 37%.¹

Many empirical studies have been carried out to analyse the effects of management buy-outs on *ex post* performance and on the organisational structure of the acquired firm.² They show that after the buy-out, these firms perform better than the average of other firms in the same sector of activity. Most research based on accounting indicators report significant upturns in turnover, operating results, cash flow, return on equity and on investment³ and productivity⁴, after the transfer of ownership. These firms also improve their stock management (Singh, 1990; Smith, 1990) and reduce their borrowing after the buy-out (Muscarella and Vetsuypens, 1990; Seth and Easterwood, 1993).

Many factors have been put forward to explain these performance improvements: tax advantages (Kaplan, 1989b), wealth transfer from lenders to buyers⁵, reduced conflicts of interest resulting from higher leverage⁶ and because risk-bearing and decision functions are combined⁷, new choices as to organisation (concerning control and incentive arrangements

in particular), strategy, technology and sales⁸, intense motivation on the part of the acquirers⁹, making up for earlier poor performances.¹⁰ Another factor appears in some studies: the discontinuation of implicit contracts leading to wage cuts and job losses after the buy-out (Schleifer and Summers, 1988; Ippolito and James, 1992). Acquired firms reportedly shed more jobs after the LBO than their industry counterparts (Smith, 1990)¹¹.

Empirical studies have focused particularly on LBOs in the USA and to a lesser extent in the UK. In both countries, these buy-outs are mainly a means of divesting divisions and subsidiaries from large groups, and to a minor extent relate to listed companies which are going private. In France, MBOs are mostly used to facilitate the transfer of family businesses and, to a lesser but significant extent, are the result of divestments from groups (see Appendix). The analysis of changes in corporate performance before and after French LBOs needs to take this important aspect of the French market into account.

The purpose of this paper is first to highlight and analyse the specific features (motives, financial characteristics...) of French companies involved in buy-outs. Second, it seeks to measure, for the first time in France, the impact of such operations on a number of performance variables regarding the companies purchased. This study is conducted both overall and with regard to the motive or source of the buy-out, be it a matter of succession in a family-run business or divestiture of subsidiaries or divisions in larger groups. With regard to the second objective, our results are very atypical as they show that, even if the acquired firms outperform their counterparts in the same sector of activity, this overperformance falls significantly after the buy-out is completed. However, distinctions must be made between the former subsidiaries of groups and the former family businesses.

The paper is structured as follows. The following section presents the characteristics of French LBOs and discusses the agency costs issues. Then the next two sections outline the sample and the methodology employed in the study. Empirical results are reported in the

fifth section. The paper ends with a summary and concluding remarks.

2. SPECIFIC FEATURES OF FRENCH LBOs

Leveraged buy-outs are a mechanism whereby their instigators (industrial and commercial firms, financial organisations, private individuals) can secure control of the target company with minimum equity. The LBO is generally supposed to bring about a positive transformation in the organisation's structure and in the contractual relations between the firm's managers and its various financiers. Jensen (1989) reports that organisations involved in LBOs, in particular those engaged in low-growth or no-growth sectors, will face fewer problems concerning management incentives and control than other companies. Because of factors dealing with borrowing packages, concentrating shareholding in the management's hands and introducing active monitoring by venture capitalists and lenders, managers are led to take decisions aiming at maximising the firm's share value. This theory explains why acquired firms significantly outperform others in their sector after the buy-out.

However, French LBOs differ from those in the USA or the UK, to such an extent that one may wonder whether the theory developed by Jensen (1989) concerning American buy-outs is valid within the French context.

First of all, as shown in Table 1, the financial structures are on the average far less indebted in France than in the US. It seems obvious that a lower rate of debt in French financial structures is neither a pressure to perform on the managers involved in an LBO¹² nor an inducement to cut agency costs stemming from the existence of free cash flows.¹³ However, new managers often invest a substantial part of their personal wealth in the company's capital, which strengthens their incentive to maximise the firm's financial performance (Mehran, 1995). On top of that is the impact of the strategic and financial controls used by lenders and especially by venture capitalists whose equity interest in the

company generally rise in proportion to the size of the LBO. In all, it is difficult to say a priori whether these positive effects overcome the above stated negative ones. If it were the case, one would expect French buy-outs to outperform their industry counterparts after the operation, less than in the USA.

Table 1

Average Deal Structure of LBOs in the US and France

Period	US ¹		France ²	
	1986-1990	1988-1990	1988-1990	1988-1995
Senior Debt (%)	84.9	59.4	57	57
Mezzanine (%)		15	14	14
Equity (%)	10.7	18.6	23.5	23.5
Other Finance (%)	4.4	7	5.5	5.5
Total	100	100	100	100

1. Adapted from Roden and Lewellen (1995), p.80.

2. Source : Merrez (1999), p.18.

Secondly, the motives for buy-outs in France are very different from those prevailing in America. Actually, figures from the CMBOR, Barclays Private Equity and Deloitte & Touche on 828 American buy-outs carried out from 1991 to 1997 show that these LBOs deal mainly with divestments within groups (64.1%), then with family firms (30.8%) and to a minor extent with stockmarket-listed companies (5.1%). In this case, LBOs can be analysed basically as a feature of the market for corporate control of firms with dispersed share ownership. As a matter of fact, French MBOs are mainly a means to hand on small and medium companies, i.e. family-run firms (among which some are in financial distress or in receivership), above all when there is no familial successor. Besides, the buy-out legislation introduced in 1994 was deeply influenced by a 1992 study showing that almost half of all family businesses were run by an owner manager of at least 50 (Heuzé, 1991). Thus, MBOs on family firms, which have always been most important in the French buy-

out market, represent 55.5% of the operations carried out in France from 1991 to 1997 (see Appendix). To a smaller but significant extent (41.6% within the same period), buy-outs are also a means of divesting French subsidiaries controlled by industrial and commercial groups. In contrast, there are very few LBOs of publicly-held corporations in France (see Appendix). Thus, unlike the context which the Jensen's (1989) theory is based on, French MBOs are characterised by a considerable concentration of the ownership of the acquired firms (family businesses and subsidiaries of groups). Consequently, agency costs reduction (and so a possible enhancement of the acquired firms performance) is better explained by the ownership transfer to new managers and venture capitalists than by what is usually admitted, i.e. the lowering of the separation of ownership and decision-making functions.

In fact, the LBO issue in France strongly depends on the context: family businesses succession or divestiture of subsidiaries from groups. In the former case, it is not only a matter of organising a transfer of ownership but of arranging the succession of the company's founder who plans to retire. Concentrating shareholding in the new managers' hands and introducing active monitoring by venture capitalists can lead to an enhancement of the performance of the acquired company by expanding its business and by improving its management efficiency (Jensen, 1989). But, the MBO may also involve greater risk when the founder holds a major share of the specific information (i.e. information required to decision making) and when the firm is not very complex.¹⁴ This makes the decision management and control more personal and weakens the position of buyers, especially when the founder has not made the effort to delegate this specific information and the associated decision-making rights (Jensen and Meckling, 1992). Moreover the performance effect of MBOs should be more a factor of entrepreneurial age and energy as incentives when it comes to a family-run business than to a divestment.¹⁵

In the second case, divestment by LBOs is a solution to the problems raised by

incorporating the activity concerned into a multidivisional firm or into a group structure. These problems, namely internal capital or labour markets failures; development of deviant behaviour in contractual relations, particularly between shareholders (especially if the firm is diffused in ownership) CEOs, divisional managers and employees, etc.¹⁶, are inherent to changes in the organisation's environment. The managers of these newly independent entities should take advantage of the buy-out to make up for the above mentioned malfunctioning in the control systems or to adopt new, more efficient ones (Hite and Vetsuypens, 1989) and to make investments creating more value than before (Denis, 1992). The positive consequences of such divestments should be proportionally greater when the LBO involves the incumbent manager of the subsidiary (or division), who holds specific information (i.e. information required for decision-making). Consequently, after their LBO, the increase in the performance of former subsidiaries and divisions, as compared to that observed in their sector of activity, should be higher than the one recorded by former family businesses.

3. SAMPLE

The empirical work in this paper was conducted on a sample of 161 LBOs in France completed between 1988 and 1994 (cf. Table 2). There were two principal constraints when choosing the period. First the French market for LBOs was non-existent before 1985 and secondly it was necessary to include accounting information (unavailable on CD ROM before 1986) before and after the buy-outs. The sample is made up of all the LBOs taking place over the reference period for which we have all the required data. The sample size and window for calculating changes in the various indicators are very satisfactory if compared to those used in American and British studies¹⁷.

Table 2

Sample Description

Year	Family Businesses	Group Subsidiaries	Total
1988	4	4	8
1989	29	6	35
1990	23	9	32
1991	13	6	19
1992	9	7	16
1993	14	8	22
1994	18	11	29
Total	110	51	161

The 161 firms involved in LBOs only operate in 45% of the sectors of activity listed in France¹⁸, with the three most common sectors (metalworking, printing and publishing, consulting) accounting for 24% of the observations (this figure rises to 46% and 65% respectively depending on whether the leading 7 or 12 sectors of activity are taken into consideration). It can, therefore, be seen that French buy-outs are somewhat concentrated on a minority of sectors of activity. This finding differs from the results of the study of Ambrose and Winters (1992) which does not show a significant sectoral effect for the LBOs completed in the USA. This specific feature of the French LBO market will lead us to set up a new methodology.

The second subsample (subsidiaries belonging to groups) is less than half the size of the first (family businesses). This phenomenon is mainly due to the structure of the French LBO market which is largely represented by the transfer of family businesses (see Appendix). It also stems from the fact that we could only include divestments by groups when the entities to be divested were historically subsidiaries of these groups, or divisions converted into companies sufficiently well in advance (two years) of the LBO for their corporate accounts to be available to us.

Moreover, due to the nature of French MBOs, our sample contains few target companies that are listed on the stock exchange.

As shown in Table 3, this sample covers buy-outs of very different sizes. Indeed, the firms in our sample have a turnover of between 6 million and 3.4 billion French Francs, with the book value of their assets lying between 1.6 million and 2.4 billion French Francs. This spread in terms of the size of the acquired firms is much greater among the family businesses than among the former subsidiaries of groups. Finally, it can be seen that the size of the former is significantly smaller than that of the latter (Mann-Whitney test significant at the 1% level for both indicators).

Table 3

Size of acquired firms one year before the LBO (in thousand French Francs)

		Family Businesses	Group Subsidiaries	Total
Sales	mean	150 079	207 330	168 214
	σ	352 147	250 733	323 789
	median	65 246	113 066	76 722
	min	6 259	16 638	6 259
	max	3 425 583	1 264 242	3 425 583
Total Assets	mean	94 862	166 406	117 525
	σ	246 493	207 249	236 484
	median	36 619	87 400	49 121
	min	1 632	9 733	1 632
	max	2 452 557	993 019	2 452 557

The fact that the size of the firms in our sample is not homogeneous may be seen as a weakness. However, giving precedence to the criterion of uniformity of size would have led us to give too much importance to one particular type of LBO, since the value of buy-outs on group subsidiaries is greater, in a large number of cases, than that on family businesses. As such, distinguishing results depending on the source of the LBO (family businesses or group subsidiaries) amounts to forming more evenly-sized subsamples.

4. METHODOLOGY

Our empirical work constitutes a test of Jensen's (1989) theory which states that both new

management shareholding concentration and venture capitalists' and lenders' intensive control are a great incentive to managers for maximising the firm's shares value after the LBO. Thus, acquired firms should significantly outperform their industry counterparts after the buy-out. However, if we take into account the lower debt level in French financial structures - and the smaller pressure to perform on managers as a result - this enhanced performance, if indeed it exists, should be less than that observed in the USA. There is therefore a question about the relative importance of these two challenging elements of the new structure of inducement and control. Evidence suggests that the change in management stockholdings has a greater effect on the emphasis on efficiency goals and on productivity (Phan and Hill, 1995) as well as on excess return on capital invested (Thompson et al., 1992) than the change in debt. Thus, the positive aspects of French buy-outs (linked to the new managers' shareholding and to the controls performed by the venture capitalists and lenders) should overcome the unfavourable effects of the relatively low debt levels of their financial structure (weaker pressure to perform on the managers and smaller reduction in the free cash flows).

Furthermore, the LBO issue is very different depending on whether it relates to the handing on of family businesses or the divestiture of subsidiaries belonging to groups. The developments set out in section 2 have led us to formulate the hypothesis according to which, after their LBO, the improved performance of former subsidiaries compared to that observed in their sector of activity, should be higher than that recorded by former family businesses. The following two (null) hypotheses can then be formulated:

H1: The change in performance of acquired firms is not greater than that observed in their sector of activity.

H2: After the LBO, the change in abnormal performance of former subsidiaries of groups is not greater than that measured for former family businesses.

To test these two hypotheses, the performance variables have to be defined. The indicators used in this study (cf. Table 4) are those most commonly used in asset type financial analyses. Measurements of return on equity and return on investment are used, as well as illiquidity risk (current and quick liquidity ratios), and solvency risk ratios (capital structure ratios). In order to enhance the profitability analysis and risk analysis of acquired firms, we add the various margin ratios. Because of the very small number of MBOs over listed companies and since we have no market data for private companies, we used *ex post* accounting variables following the established LBO literature.¹⁹

Table 4

Definition of variables

Indicators	Measurements
Return on equity	CF/E = Cash-flow / Equity NP/E = Net Profit / Equity
Return on investment	EBITD/EA = Earning Before Interest, Taxes & Depreciation / Economic Assets* EBIT/EA = Earning Before Interest and Taxes / Economic Assets*
Capital structure	TD/TA = Total Debt / Total Assets FD/E = Financial Debt / Equity
Liquidity ratios	CR = Current assets / Current liabilities (Current Ratio) QR = Current assets less stocks / Current liabilities (Quick Ratio)
Margin ratios	EBIT/S = Earning Before Interest and Taxes / Sales NP/S = Net Profit / Sales CF/S = Cash-flow / Sales

* total assets less creditors = financial debt (long-term +short-term) + equity

The data required for calculating these indicators come from *Diane* CD ROMs, which provides company accounts²⁰ from 1986 to 1996. Each variable is calculated over five years: from t-2 to t+2, where t is the calendar year during which the LBO was carried out.²¹ The standard corrections for analysing accounting data from French companies have been made. They concern in particular funding investments via leasing arrangements (re-inclusion in the assets and financial borrowing for the balance sheet; distribution of rents in the trading account between financial costs and depreciation allowances) and unmatured

discounted bills of exchange (reintroduced in accounts receivable and short term borrowing).

Two series of tests were conducted on each set of variables. The first was designed to determine to what extent acquired firms have different characteristics, on the average, from those belonging to the same sector of activity (odd-numbered results tables). The calculations were made for each indicator for each of the four years around the buy-out (two before and two after). Following previous studies, the actual year of the LBO, an exceptional period of change, was excluded from the analysis.

The second series of tests was conducted on the changes in each indicator, in order to measure the average increase in performance of acquired firms, compared to that of their sector of activity (even-numbered results tables). These variations were calculated on the various possible time windows around the LBO. Allowing for the year of the buy-out, the change in performance of these firms is therefore tested over three years (window -1, +1), over four years (-2, +1 and -1, +2 windows) and over five years (-2, +2 window).

The degree of statistical significance of the deviations for each indicator between firms and their sector of activity is determined by parametric and non parametric tests conducted on centred and reduced Y_{is} variables for the initial tests on statistical data and DY_{is} for the second tests on indicator variations with, respectively:

$$Y_{is} = (x_i - m_s)/s \text{ and } DY_{is} = (Dx_i - m_D)/s_D$$

x_i = indicator value of variables for the firm i under study;

s = sector of activity of the firm i ;

$m_s (s)$ = mean (standard deviation) of variable x for the sector of activity;

$m_D (s_D)$ = mean variation (standard deviation of variation) of indicator x for the sector of activity.

Given the relative concentration of our observations over a minority of sectors of activity and to achieve a more refined definition of them, we used the four-figure rather than two-figure French APE classification. Then, to calculate the data relating to these various sectors, we selected all the firms belonging to each of them (including acquired firms) for which we had the necessary information on the *Diane* CD ROMs, up to 1,000 firms (a limit set for practical data processing reasons). We preferred this extensive approach, which comes closer to being exhaustive and finally to being representative of our industry calculations, rather than pairing each observation with a single firm belonging to the same sector of activity and of the same size. We could have combined these two approaches, as Barber and Lyon (1996) advocate, by setting against each LBO a group of firms belonging to the same sector and of comparable size. However, the firms used (and in all likelihood the final results) would have been very different depending on the size indicator selected (turnover, adjusted book value, economic assets). In addition, for some sectors that include few companies (e.g. arms manufacturing with 11 companies), it was impossible to find firms of the same size. We could have referred to a group of firms belonging to the same sector and having achieved comparable performance before the MBO, as this technique neutralises the mean-reversion effect for targets that are under- or overperforming to a large extent before the operation (cf. Barber and Lyon, 1996). Once again it would have been impossible for us to form control groups made up of firms that were comparable with each LBO target (in performance terms) for sectors involving a small number of companies, this problem being intensified by the high industry concentration of the firms studied.

The choice of working on centred and reduced data stems from the fact that, unlike earlier research on American and British LBOs, we wanted to take into account and neutralise any industry variations of each performance indicator used. The greater these

variations are, the weaker the statistical value of the mean is and the more likely the tests are to be biased. As our results will show, we were particularly exposed to this problem, with our various sectors of activity made up of 11 to 1,000 companies. Furthermore, handling the problem of intrasectorial variations with centred and reduced data allows us to settle the debate about the choice of central tendency indicator to be used, with some authors advocating the median of the industry data rather than the mean (Barber and Lyon, 1996). Parametric tests on n static data or indicator variations were obtained from the following statistics :

$$\frac{\bar{Y}}{1/\sqrt{n}} \sim \tilde{\mathbf{A}}(0,1) \quad \text{and} \quad \frac{\overline{\Delta Y}}{1/\sqrt{n}} \sim \tilde{\mathbf{A}}(0,1)$$

$$\text{with } \bar{Y} = \frac{1}{n} \sum Y_{is} \quad \text{and} \quad \overline{\Delta Y} = \frac{1}{n} \sum \mathbf{D}Y_{is}$$

Given its potential in approaches such as ours (Barber and Lyon, 1996), the Wilcoxon test, which does not require any specific assumption (in particular as to normality) about the distributions of centred and reduced variables Y_{is} and $\mathbf{D}Y_{is}$, was also computed.

Whether we reason in terms of static data or in terms of changes in variables, the tests were conducted on the sample of all French LBOs, as well as the two subsamples of transfers or assignments of family businesses (110 observations) and divestments from groups (51 companies). To test the sensitivity of results to the motivation or the origin of the LBO, in other words to study the differences between these two groups of observations, we put together the following parametric tests:

$$\frac{\sqrt{n_F} \cdot \bar{Y}_F - \sqrt{n_I} \cdot \bar{Y}_I}{\sqrt{2}} \sim \tilde{\mathbf{A}}(0,1) \quad \text{and} \quad \frac{\sqrt{n_F} \cdot \overline{\Delta Y}_F - \sqrt{n_I} \cdot \overline{\Delta Y}_I}{\sqrt{2}} \sim \tilde{\mathbf{A}}(0,1)$$

with $n_F = 51$ and $n_I = 110$;

\bar{Y}_F (\bar{Y}_I) = mean of Y_{is} for group subsidiaries (family businesses);

$\overline{\Delta Y}_F$ ($\overline{\Delta Y}_I$) = mean of \mathbf{DY}_{is} for group subsidiaries (family businesses);

A non parametric test (Mann-Whitney) was also used to test the identity of centred and reduced variable distributions \bar{Y}_F and \bar{Y}_I ($\overline{\Delta Y}_F$ and $\overline{\Delta Y}_I$).

5. RESULTS

In setting out our findings, we shall make a distinction (for the total sample as well as for the two subsamples) between the various groups of indicators (return on equity, return on investment, capital structure, liquidity ratios, margin ratios). Two sets of results are presented depending on whether we use the static data, before and after the LBO (odd-numbered results tables) or changes in the variables (even-numbered results tables). For the sake of consistency, we have chosen to present the centred and reduced Y_{is} and \mathbf{DY}_{is} variables on which the parametric tests (t) and non parametric tests (Z) are carried out, although these are more difficult to interpret economically than their numerator.²²

(i) Changes in the return on equity of LBO target firms

The statistics in Table 5 show that, on the average, acquired firms offered their shareholders higher returns on equity than their industry counterparts in the period t-2 (with indicator NP/E only) and that, two years after the buy-out, those returns were lower (with the first CF/E ratio). The latter result can be attributed to family businesses which alone performed significantly below par at t+2, whatever the ratio under study. However, return on equity indicators do not appear to be significantly different between the two groups of companies (group subsidiaries and family businesses).

Table 5

Static statistics for the total sample and subgroups

			t-2	t-1	t+1	t+2
Total Sample	CF/E (%)	mean	-0.98	-0.53	-0.66	-0.47
		t; Z	- ; -	- ; -	- ; -	- ; -2.39b
	NP/E (%)	mean	5.00	0.12	-2.10	-2.97
		t; Z	- ; 2.65a	- ; -	- ; -	- ; -
Group Subsidiaries (S)	CF/E (%)	mean	0.56	-4.24	-0.71	-2.02
		t; Z	- ; -	- ; -	- ; -	- ; -
	NP/E (%)	mean	5.51	-5.42	-6.43	-3.13
		t; Z	- ; 1.92c	- ; -	- ; -	- ; -
Family Businesses (F)	CF/E (%)	mean	-1.69	1.18	-0.63	0.26
		t; Z	- ; -	- ; -	- ; -	- ; -1.99b
	NP/E (%)	mean	4.77	2.69	-0.10	-2.89
		t; Z	- ; 1.83c	- ; -	- ; -	- ; -1.90c

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

Tests conducted on changes in the two indicators (cf. Table 6) show no significant change in the CF/E ratio. The second indicator changes significantly after the LBO for all firms and over the (-2, +1) and (-2, +2) windows. This result shows on the average a fall in return on equity for these firms after the buy-out compared to their industry counterparts. Thus, we do not confirm the expected favourable effect of the buy-out on the financial performance of the acquired firms, mainly due to the new managers' shareholding and to the controls performed by the venture capitalists and lenders.

It should be remembered that this test concerns only LBO target companies and is not conducted on consolidated capital structures (acquired and holding companies). We found only one study comparable to ours. Contrary to our findings, Bull (1989) noticed a significant upturn in the return on equity of acquired firms after the buy-out compared to their industry counterparts.

Table 6

Statistics on variations in variables (total sample and subgroups)

			-1, +1	-2, +1	-1, +2	-2, +2
Total Sample	Δ CF/E (%)	mean	-0.12	0.32	0.07	0.51
		t; Z	- ; -	- ; -	- ; -	- ; -
	Δ NP/E (%)	mean	-2.23	-7.10	-3.09	-7.97
		t; Z	- ; -	- ; -2.40b	- ; -	- ; -2.54b
Group Subsidiaries (S)	Δ CF/E (%)	mean	3.52	-1.27	2.21	-2.58
		t; Z	- ; -	- ; -	- ; -	- ; -
	Δ NP/E (%)	mean	-1.00	-11.93	2.29	-8.64
		t; Z	- ; -	- ; -	- ; -	- ; -
Family	Δ CF/E (%)	mean	-1.81	1.06	-0.93	1.95
		t; Z	- ; -	- ; -	- ; -	- ; -

Businesses (F)	Δ NP/E (%)	mean	-2.79	-4.86	-5.59	-7.66
		t; Z	- ; -	- ; -1.95c	- ; -1.96b	- ; -2.88a

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

If we turn to the results for each of the two subsamples, no significant variation in financial performance of group subsidiaries is observed in relation to the performance of the sector of activity. Conversely, the relative reduction in return on equity (measured by the NP/E indicator) is significant for family businesses over the three largest computation windows, without being statistically different from that measured for the first group.

Overall, the results obtained for the first two variables of return on equity do not allow us to reject hypothesis 1 and partly refute hypothesis 2. The abnormal financial return of the acquired firms deteriorates significantly after the buy-out. This underperformance can be primarily attributed to family businesses, which would tend to confirm the superiority of group subsidiaries (as they do not perform differently from the other firms in the same sector of activity).

(ii) Changes in return on investment of LBO target firms

Only the second accounting measurement of return on investment provides statistically significant results.²³ This is the most suitable indicator as it measures profitability before taxes obtained by the providers of financial resources (shareholders and lenders) after allowing for capital consumption (provisions for depreciation). This EBIT/EA ratio appears to be greater for acquired firms than the industry average. This overperformance is significant for the total sample and for independent firms from $t-2$ to $t+1$.²⁴ This result clearly shows that LBOs are carried out on companies which have the greatest ability to remunerate the funds provided by investors and lenders.

Table 7

Static statistics for the total sample and subgroups

			t-2	t-1	t+1	t+2
Total sample	EBITD/EA (%)	mean	4.78	4.95	-0.68	0.91
		t; Z	- ; -	- ; -	- ; -	- ; -
	EBIT/EA (%)	mean	10.88	14.03	9.21	5.24
		t; Z	1.38c ; 3.10a	1.78b ; 4.60a	- ; 2.42b	- ; -
Group Subsidiaries (S)	EBITD/EA (%)	mean	7.83	3.90	-2.68	4.06
		t; Z	- ; -	- ; -	- ; -	- ; -
	EBIT/EA (%)	mean	8.89	8.76	16.12	4.74
		t; Z	- ; 2.04b	- ; 2.16b	- ; 2.36b	- ; -
Family Businesses (F)	EBITD/EA (%)	mean	3.37	5.43	0.25	-0.55
		t; Z	- ; -	- ; -	- ; -	- ; -
	EBIT/EA (%)	mean	11.81	16.48	6.01	5.47
		t; Z	- ; 2.30b	1.72b ; 4.11a	- ; -	- ; -

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

Looking at changes in the variables (cf. Table 8) for the total sample, significant results are found for both indicators on the (-1, +2) window, indicating a more unfavourable trend in economic performance for firms after the LBO than the industry average. These results, which are in line with those found for financial return, do not corroborate those of Kaplan (1989a), Bull (1989) and Smith (1990). Hypothesis 1 is therefore confirmed: the break caused by the LBO leads in the short term to a reduction in the abnormal return on the capital invested by the holding company and the long-standing lenders of the acquired firm.

These aggregate results conceal a major discrepancy between the two sets of firms, if the EBIT/EA ratio is considered. It can be seen that, in contrast to family businesses, (whose abnormal return on investment deteriorates over the (-1, +1) and (-1, +2) windows), the relative performance of group subsidiaries increases significantly after the LBO (over the (-2, +1) window). The significant difference obtained between the two subsamples means hypothesis 2 can be rejected: the break in the link which previously kept the former subsidiaries in their group and the reorganisations which it brings about lead to an abnormal, significant and rapid improvement in their return on investment. The LBOs involving family businesses produce the reverse effect, which can illustrate the difficulty encountered by the acquirer in quickly obtaining the specific information held by the former manager.

Table 8

Statistics on variations in variables (total sample and subgroups)

			-1, +1	-2, +1	-1, +2	-2, +2
Total Sample	Δ EBITD/EA (%)	mean	-5.62	-5.46	-4.03	-3.87
		t ; Z	- ; -	- ; -	- ; -1.92c	- ; -
	Δ EBIT/EA (%)	mean	-4.82	-1.67	-8.79	-5.64
		t ; Z	- ; -	- ; -	- ; -2.74a	- ; -
Group Subsidiaries (S)	Δ EBITD/EA (%)	mean	-6.58	-10.51	0.16	-3.77
		t ; Z	- ; -	- ; -	- ; -	- ; -
	Δ EBIT/EA (%)	mean	7.37	7.23	-4.02	-4.15
		t ; Z	- ; -	- ; 1.75c	- ; -	- ; -
Family Businesses (F)	Δ EBITD/EA (%)	mean	-5.18	-3.12	-5.98	-3.92
		t ; Z	- ; -	- ; -	- ; -	- ; -
	Δ EBIT/EA (%)	mean	-10.47	-5.80	-11.01	-6.34
		t ; Z	- ; -1.85c	- ; -	- ; -2.53b	- ; -
S - F	Δ EBIT/EA (%)	t ; Z	- ; -	- ; 2.56a	- ; -	- ; -

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

(iii) Changes in the capital structure of LBO target firms

Overall, LBO firms seem to be significantly less indebted than companies in the same sector of activity, over all the periods studied around the time of the buy-out (cf. Table 9). The fact that they are less indebted can be explained by the larger free cash flows (cf. Table 11) available to these companies. The group subsidiaries for which the results appear significant only before the buy-out, are significantly more highly levered than family businesses (but still less indebted than their industry average) for all the study periods in terms of overall leverage.

Table 9

Static statistics for the total sample and subgroups

			t-2	t-1	t+1	t+2
Total Sample	TD/TA (%)	mean	-41.89	-42.59	-34.59	-26.79
		t; Z	-5.32a; -6.12a	-5.40a; -5.86a	-4.39a; -5.53a	-3.40a; -4.40a
Total Sample	FD/E (%)	mean	-2.08	-2.34	0.84	1.28
		t; Z	-; -5.27a	-; -4.75a	-; -3.44a	-; -2.36b
Group Subsidiaries (S)	TD/TA (%)	mean	-26.61	-21.72	-14.06	-9.15
		t; Z	-1.90b; -2.32b	-1.55c; -	-; -	-; -
Group Subsidiaries (S)	FD/E (%)	mean	8.54	7.76	11.74	3.45
		t; Z	-; -2.31b	-; -1.79c	-; -	-; -
Family Businesses (F)	TD/TA (%)	mean	-48.98	-52.26	-44.11	-34.97
		t; Z	-5.14a; -5.87a	-5.48a; -6.08a	-4.63a; -6.07a	-3.67a; -4.56a
Family Businesses (F)	FD/E (%)	mean	-7.01	-7.03	-4.21	0.27
		t; Z	-; -4.86a	-; -4.58a	-; -3.82a	-; -2.54b
S - F	FD/E (%)	t; Z	2.29b; -	2.78a; 2.21b	2.56a; 2.91a	2.13b; 1.83c

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

It is therefore interesting to note that before the buy-out, firms enjoyed on the average a higher borrowing capacity than their industry counterparts, which can be considered as a key factor in the successful set up of the financial structure of the operation. This significant lower gearing of firms before the LBO was pointed out by Kim and Lyn (1991). However, it should be noted that even after the buy-out, family businesses still have significantly lower debt levels than companies in the same sector of industry. This result clearly reflects a lower leverage of French LBOs compared to those in the US, as reported in section 2.

Table 10 shows that after the buy-out, total borrowing and financial borrowing of LBO target firms increase significantly more than in their industry counterparts. Our findings do not fit in with those of Muscarella and Vetsuypens (1990) who note a significant abnormal reduction in the leverage of the financial structures after the LBO. It should be remembered though that financial structures involve much less borrowing in France than in the US and despite that they increase their borrowing after the buy-out, French acquired companies are still low leverage compared to their industry (Table 9). Moreover, because of the lack of capital structure data for most of the holding companies, we were unable to conduct our

tests on the consolidated debt of financial structure and could not calculate debt ratios in market value.

Table 10

Statistics on variations in variables (total sample and subgroups)

			-1, +1	-2, +1	-1, +2	-2, +2
Total Sample	Δ TD/TA (%)	mean	8.00	7.30	15.80	15.11
		t; Z	- ; -	- ; -	2.00b; 2.87a	1.92b; 2.95a
	Δ FD/E (%)	mean	3.18	2.93	3.62	3.36
		t; Z	- ; 1.79c	- ; 1.67c	- ; 2.11b	- ; 2.78a
Group Subsidiaries (S)	Δ TD/TA (%)	mean	7.66	12.55	12.57	17.46
		t; Z	- ; -	- ; 1.75c	- ; 1.66c	- ; 2.46b
	Δ FD/E (%)	mean	3.98	3.20	-4.32	-5.10
		t; Z	- ; -	- ; -	- ; -	- ; 1.75c
Family Businesses (F)	Δ TD/TA (%)	mean	8.15	4.87	17.29	14.01
		t; Z	- ; -	- ; -	1.81b; 2.38b	1.47c; 1.88c
	Δ FD/E (%)	mean	2.82	2.80	7.30	7.28
		t; Z	- ; -	- ; -	- ; 1.89c	- ; 2.15b

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

Contrary to what might be expected from the results set out above, the financial behaviour of the two subsets of firms is not fundamentally different. The abnormal increase in financial debt is not significantly greater in former family businesses, after the LBO, than in former group subsidiaries. However, the relative leverage of the latter appears to be more stable²⁵, which could be explained by the greater capacity of subsidiaries to generate their own internal resources (or not to lose any), whereas family businesses must overcome their lower mark-up (cf. Table 14) and liquidity (cf. Table 12) by mobilising new external resources. These indications confirm the previous rejections of hypothesis 2.

(iv) Changes in liquidity of LBO target firms

In accordance with the previous results highlighting their overperformance and lower leverage, we find that all the acquired firms enjoyed excellent liquidity before the buy-out (cf. Table 11). Whatever indicator is used (Current Ratio or Quick Ratio), it is significantly higher (at the 1% level in 80% of cases) than for the industry as a whole. The same applies

after the LBO, although to a lesser extent. These findings can be explained by the theory of Jensen (1986), validated by Maupin (1987), Lehn and Poulsen (1989), Ambrose and Winters (1992) and Opler and Titman (1993), by which LBOs are motivated partly by the existence of free cash flows in the acquired firms. These liquid reserves are often the subject of windfall distribution just after acquisition of the target by the holding company (in period t) in order to reduce its borrowing. This is perhaps one explanation for the low debt level in the financial packages for French MBOs. After the buy-out, the surplus liquidity will also be distributed by the operating company so that the holding company, which normally does not have other resources, can cover the borrowing annuities.

Table 11

Static statistics for the total sample and subgroups

			t-2	t-1	t+1	t+2
Total Sample	CR (%)	mean	51.92	55.18	38.90	41.37
		t ; Z	6.59a ; 6.91a	7.00a ; 5.77a	4.93a ; 6.48a	5.25a ; 4.74a
	QR (%)	mean	46.89	56.06	31.04	33.14
		t ; Z	5.95a ; 5.90a	7.11a ; 5.68a	3.94a ; 5.41a	4.20a ; 3.02a
Group Subsidiaries (S)	CR (%)	mean	43.06	34.70	24.15	31.49
		t ; Z	3.07a ; 3.57a	2.48a ; 1.81c	1.72b ; 2.46b	2.25b ; 3.39a
	QR (%)	mean	40.76	42.81	19.96	25.06
		t ; Z	2.91a ; 2.09b	3.06a ; 1.68c	1.42c ; 2.03b	1.79b ; 2.37b
Family Businesses (F)	CR (%)	mean	56.03	64.67	45.73	45.96
		t ; Z	5.88a ; 5.90a	6.78a ; 5.63a	4.80a ; 6.13a	4.82a ; 3.43a
	QR (%)	mean	49.73	62.21	36.18	36.89
		t ; Z	5.22a ; 5.68a	6.52a ; 5.78a	3.79a ; 5.05a	3.87a ; 2.04b
S - F	CR (%)	t ; Z	-1.98b ; -	-3.04a ; -1.93c	-2.17b ; -2.03b	-1.82b ; -
	QR (%)	t ; Z	-1.63c ; -	-2.45a ; -1.83c	-1.67b ; -	-1.47c ; -

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

The liquidity of group subsidiaries is significantly less than that of family businesses before the buy-out (which can be explained by the centralisation of cash holdings in groups) but also afterwards. Jensen's thesis (1986) could account for this result if the formers' LBO leverage were found to be significantly less than that of the latter's after the buy-out. Having been unable to use consolidated financial structures, we were unable to test this hypothesis.

We still have to check whether the buy-out leads to a significant reduction in the

abnormal liquidity of target companies. Indeed it is the case, as shown in Table 12. Of the total sample, this significant reduction can be seen for both indicators by the first year after the MBO. Firms rather use their cash to allow the acquiring holding company to pay-back the debt subscribed for the buy-out. This result supports Jensen's thesis (1986) according to which the reimbursement of the LBO debt forces managers to alienate the free cash flows and, by doing so, partly reduces the firm's agency costs. Nevertheless, the previously highlighted deterioration in the overperformance of the acquired firms leads to the conclusion that this favourable effect is non sufficient, due to the lower leverage of the French financial structures, these companies having still more liquidity than their industry counterparts after the buy-out (cf. Table 11).

Table 12

Statistics on variations in variables (total sample and subgroups)

			-1, +1	-2, +1	-1, +2	-2, +2
Total Sample	Δ CR (%)	mean	-16.28	-13.02	-13.80	-10.54
		t ; Z	-2.07b ; -	-1.65b ; -	-1.75b ; -	-1.34c ; -2.31b
	Δ QR (%)	mean	-25.02	-15.85	-22.92	-13.75
		t ; Z	-3.17a ; -1.78c	-2.01b ; -	-2.91a ; -2.75a	-1.74b ; -2.83a
Group Subsidiaries (S)	Δ CR (%)	mean	-10.55	-18.91	-3.21	-11.57
		t ; Z	- ; -	-1.35c ; -	- ; -	- ; -
	Δ QR (%)	mean	-22.85	-20.81	-17.75	-15.71
		t ; Z	-1.63c ; -	-1.49c ; -	- ; -	- ; -
Family Businesses (F)	Δ CR (%)	mean	-18.94	-10.29	-18.71	-10.07
		t ; Z	-1.99b ; -	- ; -	-1.96b ; -2.11b	- ; -2.41b
	Δ QR (%)	mean	-26.03	-13.56	-25.31	-12.84
		t ; Z	-2.73a ; -1.66c	-1.42c ; -	-2.65a ; -3.08a	-1.35c ; -3.09a

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

It should be noted that, although the differences between groups are not statistically significant, results indicating a deterioration in cash flow variables are more numerous and more significant in family businesses than in group subsidiaries, which further reinforces the previous results leading to the rejection of hypothesis 2.

(v) Changes in margin ratios of LBO target firms

Tests on the different centred and reduced margin indicators are almost all significantly positive, for the different periods under study, meaning that acquired firms were more profitable than the industry average before and after the buy-out (cf. Table 13). In particular, we find that the indicator CF/S is positive before the LBO, which is consistent with the results of Singh (1990) and with our own findings concerning the economic and financial return of these companies. As we specified for the analysis of acquired firm liquidity, this result may be interpreted from the free cash flow theory of Jensen (1986). Surplus cash flow compared to the sector of activity can be used to reduce initial borrowing on the package and then to service the debt contracted by the takeover holding company.

Table 13

Static statistics for the total sample and subgroups

			t-2	t-1	t+1	t+2
Total Sample	EBIT/S (%)	mean	40.37	46.51	28.08	28.04
		t; Z	5.12a ; 7.27a	5.90a ; 7.33a	3.56a ; 5.10a	3.56a ; 4.78a
	NP/S (%)	mean	29.20	32.53	16.93	19.26
t; Z		3.70a ; 7.23a	4.13a ; 6.80a	2.15b ; 4.90a	2.44a ; 4.93a	
Group Subsidiaries (S)	EBIT/S (%)	mean	39.15	34.87	27.26	27.50
		t; Z	4.97a ; 7.70a	4.42a ; 7.55a	3.46a ; 6.11a	3.49a ; 5.69a
	NP/S (%)	mean	42.15	39.58	29.75	38.38
t; Z		3.01a ; 3.81a	2.83a ; 3.51a	2.12b ; 3.18a	2.74a ; 2.45b	
Family Businesses (F)	EBIT/S (%)	mean	33.35	25.12	15.05	25.00
		t; Z	2.38b ; 4.00a	1.79b ; 2.97a	- ; 2.01b	1.79b ; 2.54b
	NP/S (%)	mean	37.72	26.02	27.55	35.34
t; Z		2.69a ; 3.34a	- ; 3.43a	1.97b ; 3.43a	2.52a ; 2.71a	
S - F	EBIT/S (%)	mean	39.54	49.73	27.31	23.25
		t; Z	4.15a ; 6.23a	5.22a ; 6.50a	2.86a ; 3.99a	2.44a ; 4.17a
	NP/S (%)	mean	27.27	35.97	17.80	16.60
t; Z		2.86a ; 6.05a	3.77a ; 6.13a	1.87b ; 4.46a	1.74b ; 4.23a	
S - F	EBIT/S (%)	mean	39.81	38.98	27.13	23.86
		t; Z	4.17a ; 7.04a	4.09a ; 6.73a	2.85a ; 5.19a	2.50a ; 5.11a
	NP/S (%)	t; Z	- ; -	-1.69b ; -	- ; -	- ; -
CF/S (%)		t; Z	- ; -	-1.40c ; -	- ; -	- ; -
	CF/S (%)	t; Z	- ; -	-1.58c ; -1.93c	- ; -	- ; -

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

It is worth noting that the two subsamples do not produce significantly different results except for the year preceding the LBO. In that year, family businesses appear significantly more overprofitable than group subsidiaries before the LBO, for all the indicators used in

our study.

Tests on the changes in these indicators (cf. Table 14) provide results that are consistent with those obtained for changes in return on investment and return on equity. We measure a significant reduction in the margin ratios of firms after the LBO. These findings do not corroborate those of Bull (1989), Kitching (1989), Kaplan (1989a), Singh (1990), Opler (1992) and Phan and Hill (1995), and do not allow us to reject hypothesis 1. Nonetheless, even if their relative performance is down after the LBO, the acquired firms have margin indicators that remain significantly higher than the industry average.

Table 14

Statistics on variations in variables (total sample and subgroups)

			-1, +1	-2, +1	-1, +2	-2, +2
Total Sample	Δ EBIT/S	mean	-18.43	-12.29	-18.47	-12.32
		t; Z	-2.34a; -2.43b	-1.56c; -1.92c	-2.34a; -2.50b	-1.56c; -2.57a
	Δ NP/S	mean	-15.60	-12.27	-13.27	-9.94
		t; Z	-1.98b; -2.35b	-1.56c; -2.30b	-1.68b; -2.02b	-; -2.16b
	Δ CF/S	mean	-7.61	-11.88	-7.37	-11.65
		t; Z	-; -	-1.51c; -2.13b	-; -	-1.48c; -2.50b
Group Subsidiaries (S)	Δ EBIT/S	mean	-9.83	-12.41	-1.20	-3.77
		t; Z	-; -	-; -	-; -	-; -
	Δ NP/S	mean	-10.07	-18.30	-0.11	-8.35
		t; Z	-; -	-1.31c; -2.01b	-; -	-; -
	Δ CF/S	mean	1.53	-10.16	9.31	-2.38
		t; Z	-; -	-; -	-; -	-; -
Family Businesses (F)	Δ EBIT/S	mean	-22.42	-12.23	-26.47	-16.29
		t; Z	-2.35a; -2.63a	-; -	-2.78a; -2.86a	-1.71b; -2.35b
	Δ NP/S	mean	-18.17	-9.47	-19.37	-10.68
		t; Z	-1.91b; -2.09b	-; -	-2.03b; -2.35b	-; -2.00b
	Δ CF/S	mean	-11.85	-12.68	-15.11	-15.94
		t; Z	-; -	-1.33c; -2.17b	-1.58c; -2.26b	-1.67b; -2.63a
S - F	Δ EBIT/S (%)	t; Z	-; -	-; -	1.90b; -	-; -
	Δ NP/S (%)	t; Z	-; -	-; -	-1.43c; -	-; -
	Δ CF/S (%)	t; Z	-; -	-; -	-1.59c; -	-; -

a, b, c: tests respectively significant at the 1%, 5% and 10% levels.

Finally, group subsidiaries are more profitable after LBOs than family businesses when it comes to the EBIT/S indicator. The change in this indicator is significantly less for the former than the latter (-1, +2 window). These results confirm those of Muscarella and Vetsuypens (1990) and Singh (1990). However, subsidiaries appear to perform significantly worse than family businesses with regard to relative changes in the NP/S and CF/S

indicators (over (-1, +2) window). These contradictory results do not allow us to refute hypothesis 2.

6. SUMMARY AND CONCLUSIONS

This article analyses the specific features of French firms involved in MBOs (motives, financial characteristics...) and studies trends in their performance after completion of the operation.

It appears that French buy-outs differ in two essential ways from those carried out in the United Kingdom and particularly in the United States: a higher concentration of the shareholding in the acquired firms before the buy-out and a lower debt level in the financial structure of the holding companies. With regard to the first point, LBOs in France are mostly used when they involve a transfer of or a succession in family businesses and, to a minor but significant extent, they are the result of divestment by groups. Consequently, the study was conducted while taking this important specific feature into account.

By and large, MBO operations in France are carried out on firms whose financial situation is better than that of the other companies in the same sector of activity. It seems that these companies provide better returns on equity than their industry counterparts before the buy-out, and that they are less profitable afterwards. They also provide better returns on investment, have lower debt levels and better margin ratios and higher liquidity before and after the transaction. Group subsidiaries reveal a number of specific features compared to family businesses involved in LBOs. The former appear to overperform significantly less (in terms of return on investment and margin ratios), whilst being higher levered than family businesses (but still less indebted than their industry average) and having lower liquidity ratios, before and after the buy-out.

The results obtained in terms of the changes in these indicators run largely counter to

those from studies in the Anglo-Saxon world (mainly North America). We find a fall in the return on equity for acquired firms after the buy-out compared to their industry counterparts. The same feature is observed in return on investment and margin ratios. Accordingly their risk grows because their debt level increases and their liquidity ratio diminishes more rapidly. Even if, except for return on equity, the level of the study indicators is invariably higher after the operation than the industry average, it cannot be concluded, as in the USA and in the UK, that LBOs improve the performance of the acquired firms. Thus, the French MBOs unfavourable effects due to their relatively low debt levels (weaker pressure to perform on the managers and smaller reduction in the free cash flows) overcome their positive aspects (linked to the new managers' shareholding and to the controls performed by the venture capitalists and lenders).

It should be noted though that because the French MBO market is in its early days, changes in performance indicators could only be traced over the medium term (5 years around the buy-out) as in most of the existing literature. However, the performance of these operations may arise later on, due to, for example, the difficulties encountered by the acquirer of family businesses in quickly obtaining the specific information held by the former manager. It would be useful to extend this work over a longer period before making any definitive statement as to the paradoxical character of the performance of French LBOs.

This study also provides results validating the hypothesis that group subsidiaries should outperform family businesses after LBOs, as divestment through buy-outs is a solution to the problems of integrating these entities into group structures. The subsidiary thus released from its former supervisory authority should prosper more than family businesses that are bought out and for which the departure of the founder is often an important risk factor. In keeping with this hypothesis, it seems that former group subsidiaries witness a smaller fall

in abnormal return on equity and on investment. Indications are also found by which their overall liquidity is less adversely affected and their leverage remains more stable.

Beyond the results of this study, it would be interesting to further examine the determinants of this relative deterioration in the short term performances of French firms involved in LBOs. The study of the holdings' and acquired companies' property structure, whilst including the consolidated financial structure should provide enlightening information. A more qualitative approach could also be undertaken to observe the change in the incentive and control systems (compensation policy, employees' shareholding, reorganisation of the responsibility centres, etc.) and the target firm's investment (or divestment) policy.

APPENDIX
Sources of French LBOs

	Total 1980-90	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Family-run businesses	38.2%	21.6%	46.5%	51.9%	57.5%	51.9%	50.8%	44.8%	59.8%	35%	44.8%
Group subsidiaries	40.8%	43.3%	32.8%	39.4%	37.4%	44.3%	40%	45.8%	31.7%	46.3%	45.7%
- French parent company	22.1%	29.7%	22.4%	20.2%	30.0%	34.2%	29.2%	34.4%	19.5%	33.7%	32.7%
- Non-French parent company	18.7%	13.6%	10.4%	19.2%	7.4%	10.1%	10.8%	11.4%	12.2%	12.6%	13%
Listed companies	8.8%	24.3%	12.1%	2.9%	3.8%	2.5%	1.5%	0%	2.4%	1.2%	1.7%
Privatisations	7.4%	5.4%	3.4%	2.9%	0%	1.3%	1.5%	2.1%	0%	1.2%	0.9%
Firms in receivership	4.8%	5.4%	5.2%	2.9%	1.3%	0%	6.2%	7.3%	6.1%	16.3%	6.9%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sample size	272	37	58	104	80	79	65	96	82	80	116
Number of buy-outs	580	100	130	150	120	110	99	116	101	103	126

Source : Initiative Europe/CMBOR.

NOTES

- 1 Cf. DeAngelo and DeAngelo and Rice (1984), Lehn and Poulsen (1989), Kaplan (1989a, 1989b), and Marais, Chipper and Smith (1989).
- 2 See Thompson and Wright (1995) for a review.
- 3 For all these aspects see Bull (1989), Kaplan (1989a), Baker and Wruck (1989), Thompson, Wright and Robbie (1989), Muscarella and Vetsuypens (1990), Singh (1990), Smith (1990), and Long and Revenscraft (1993).
- 4 Cf. Lichtenberg and Siegel (1990), Opler (1992) and Phan and Hill (1995).
- 5 Cf. Asquith and Wizman (1990) and Cook, Easterwood and Martin (1992).
- 6 Cf. Jensen (1986), Baker and Wruck (1989) and Phan and Hill (1995).
- 7 Cf. Thompson, Wright and Robbie (1989), Baker and Wruck (1989), Muscarella and Vetsuypens (1990) and Phan and Hill (1995).
- 8 Cf. Buck and Wright (1990), Wright and Coyne (1985), Kaplan (1989a); Muscarella and Vetsuypens (1990), Lichtenberg and Siegel (1990), Wright, Thompson and Robbie (1992), Seth and Easterwood (1993) and Phan and Hill (1995).
- 9 Cf. Jensen (1986), and Wright, Thompson and Robbie (1992).
- 10 See the studies by the Banque de France (1990) and by Kim and Lyn (1991). Unlike DeAngelo (1986), Wu (1997) claims these poor performances are the result of accounting indicators being manipulated and that managers may underestimate profits before the operation. It has been argued instead that they also are due to poor investment policy (Denis, 1992).
- 11 In fact, Lichtenberg and Siegel (1990) find only an unusual fall in administrative staff (-8.5% over two years), which they relate to reduced costs of direct control of the production work force, as they are more motivated after the LBO. For Muscarella and Vetsuypens (1990), the reduction in numbers of employees stems from the fact that many LBOs involve divisions of multidivisional firms which divest after the operation, while the number of employees of independent firms tends to rise after the LBO. Kaplan (1989a) finds that for firms that do not divest after the LBO the reduction in numbers, corrected for sector variations, is not statistically significant. The impact of business transfers post-LBO on the reduction in numbers of employees has also been shown by Liebeskind, Wiesema and Hansen (1992) and by Wiesema and Liebeskind (1995).
- 12 This reasoning stems from the fact the firm's debt level can only encourage the managers to perform well, given the risks of bankruptcy and job losses which it causes (Grossman and Hart, 1982).
- 13 Here we are referring to the theory of Jensen (1986) which focuses on the incentive power of the high debt level in LBO packages, which affect the free cash flows of the firm (available cash flow after funding all investment projects with a positive net present value) for debt servicing. Therefore, these flows can no longer be subject to the opportunistic behaviour of managers.
- 14 Fama and Jensen (1983) state that an organisation is complex when the information required for decision making (specific information) which is passed between individuals at high cost, is held by many agents. In a complex firm, the dispersed character of specific information and the cost of transmitting it mean that it is more effective to delegate the decision to the agents who hold it. In a non complex venture, the specific information is held by the owner-manager who, for greater efficiency, fulfils the decision management and decision control.
- 15 We are grateful to an anonymous referee who suggested this argument.
- 16 Cf. Wright and Coyne (1985) and Wright and Thompson (1987). For analysis of the different economic motives for divestment see Wright (1986) and Denning (1988).
- 17 For instance, the sample size and window are respectively: 110 and (0, +3) in Kitching (1989); 37 and (-1, +2) in Kaplan (1989a); 35 and (variable) in Muscarella and Vetsuypens (1990); 37 and (-1, +2) in Smith (1990); 42 and (-1, +2) in Opler (1992); 66 and (-1, +2) in Kaplan and Stein (1993)...
- 18 The calculation is based on the French two-figure classification scheme (APE) which lists 99 sectors of activity.
- 19 The question has invariably been raised as to whether accounting indicators such as cash flows or profits are suitable yardsticks of business and financial performance, by reference to those obtained from market values (the financial market being assumed to be efficient). The link between accounting measurements of performance and market performance of firms is generally accepted, although this relationship is effective above all for long measurement periods (Easton et al., 1992) and is beset by timing problems between cash receipts and cash outlay in firms (which introduces a bias in the accounting performance measurements) and discrepancies between expected and actual flows (Collins, Kothari et al., 1992). Recently, Dechow (1994) has shown that accounting cash flows are less suitable for estimating the performance of the firm when: (1) the performance measurement period is short; (2) operating cycle financing requirements,

- investments and funding fluctuate; (3) the business cycle is long. Obviously, and like in most of the LBO literature, our results could suffer from these various biases.
- 20 This database does not provide any consolidated accounts. This does not pose a problem for our study because as we are dealing with family-run companies and groups' subsidiaries, the targets of LBOs belonging to our sample are not groups of companies.
 - 21 All LBOs including a financial year of more than or less than 12 months were removed from the sample. The same goes for all firms with abnormally high variations, which suggest errors in the *Diane* data base.
 - 22 This latter choice would, however, have allowed us to show that the mean of centred and reduced variables can have the opposite sign to that of the mean of their numerator. For each firm, the difference $(x_i - m_s)$ is divided by the standard deviation of the variable x for the sector of activity (σ_s) . The difference $(x_i - m_s)$ is then reduced to a varying degree depending on the size of the standard deviation (σ_s) . Thus even though the mean difference $(x_i - m_s)$ is negative, the mean of the centred and reduced variable may be positive if the spread of variable x in all sectors of activity to which underperforming firms belong is very high compared to that observed in the sectors where the differences $(x_i - m_s)$ are positive. The same reasoning applies to indicator variations. The more divergences there are, the more the results and conclusions of our study would have been biased if we had failed to work with centred and reduced variables to handle the problems inherent to intrasector variation among the different indicators.
 - 23 The difference in results between the two indicators is probably due to the depreciation policy of the companies under study (lower provisions than in firms from the same sector of activity).
 - 24 To provide a possible comparison with studies conducted in the US with other performance measures, we repeated the tests on the CF/EA indicator. This is significantly positive before and after the LBO (consistent with the result of Singh, 1990) for independent firms and for the total sample (as with the EBIT/EA ratio). To provide a possible comparison with studies conducted in the US with other performance measures, we repeated the tests on the CF/EA indicator. This is significantly positive before and after the LBO (consistent with the result of Singh, 1990) for family businesses and for the total sample (as with the EBIT/EA ratio).
 - 25 This analysis is reinforced by the result of an additional test showing that the Interests/Sales ratio of the firms studied, compared to that of their sector of activity, increases significantly less for group subsidiaries than for family businesses.

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