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**Are there contagion or competition effects for non rated firms?
The case of successive bond rating downgrades of Alcatel**

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Abstract:

The object of this paper is to study the impact of successive changes in ratings of the leading firm on non rated firms belonging to the same stock index sector. Two courses of research are being mobilized regarding, on the one hand, the incidence of downgrading of ratings on the value of the firms and on the other hand, the contagion effects associated with the report of bad news. The analysis of the successive downgrading of the ratings of Alcatel, world leader in the telecommunications infrastructure, allows us to point out minor contagion effects among non rated French firms belonging to the same stock index sector.

Keywords:

Ratings; Contagion effects; Information transfer; Event studies.

JEL Classification :

G14 - G30

Are there contagion or competition effects for non rated firms ?

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1. Introduction

Within the context of asymmetry of information between investors and firms, certain financial market participants occupy an exclusive position. They are, in particular, the financial analysts and the rating agencies. By reducing the asymmetry of information between the various actors present on the market, the financial analysts contribute to the efficiency of the latter. The rating agencies play a similar role for the holders of debt securities. The allocation of ratings should especially allow the creditors to adjust the risk premium required for the debt securities¹. We can point out that the activities of these two categories of information producers are relatively complementary since the new information reported by one or by another can be used by the creditors as well as the shareholders (Ederington and Goh, 1998).

The object of this article is to complete the studies of the reactions of the financial market to the information reported by the rating agencies. We try to verify the idea according to which the disclosure of information regarding the solvency of a given firm leads investors to review their expectations in relation to the value of the other firms that are not rated and belong to the same stock index sector. Our explorative study is based on two different courses of research.

¹ Using survey research methodology, Baker and Mansi (2002) confirm the importance of rating companies, even if these authors find that industrial companies issuing bonds and mutual funds investing in corporate bonds differ in some of their assessments about rating agencies.

The first involves the impact that a downgrade by the rating agencies of the solvency ratings of firms would have on the value of shares². In the United States, various studies have pointed out a negative reaction of the financial market upon a report of “bad news” concerning ratings. Holthausen and Leftwich (1986) were the first to study this phenomenon on daily data. Their results were confirmed by Hand *et al.* (1992), who obtained an average negative abnormal return of 0,79%, on a sample of 841 reports of downgrades of ratings between 1977 and 1982. Ederington and Goh (1998) confirmed these results for a more recent period; an average decrease in the value of the shares of 1,29% (over a two day period) is observed for the 494 downgrades of ratings reported between 1984 and 1990³.

Outside the United States⁴, and especially in Europe, very few similar studies have been published. This occurrence is probably linked to less bondholder financing and therefore, to a lesser presence of the rating agencies⁵. However, in the United Kingdom, the results from Barron *et al.* (1997) corroborate those obtained on the American market.

The analysis of the contagion effects is the second course of research retained. The main idea is to understand how certain information, *a priori* specific to a firm, affects the wealth of the shareholders of the competitive firms. Lang and Stulz (1992) noted that information relative to a given firm (for example, bankruptcy announcement) can have a positive effect on the value of the competitive firms (*competition effect*), linked to a redistribution of market shares and profits, or a negative effect (*contagion effect*), resulting from a downward revision of expectations by the financial market for all of the firms

² The reader interested in the impact of the change of ratings on the bond risk premium may consult Altman and Kao (1992) or Hite and Warga (1997). For studies of the link between the yield spread and the return of the shares market, see for example Duffee (1998) or Longstaff and Schwartz (1995). Finally, for the study of wealth transfers between bondholders and shareholders in the case of rating changes, see Kliger and Sarig (2000).

³ It also appears that an improvement in the ratings does not have a significant impact on the value of the shares. Otherwise, the financial market seems to expect the event. In fact, these studies show that the value of the shares generally decreased during the weeks preceding the report of a downgrade in the solvency rating. Finally, Dichev and Piotroski (2001) find negative abnormal returns in the first year following downgrades.

⁴ Using weekly data, Matolcsy and Lianto (1995) also confirm this result for the Australian market.

⁵ It is still important to note that the bond market in euros has considerably expanded over these last years and today there are almost 2200 firms registered. However, in France, the number of rated firms remains relatively small.

belonging to the considered sector of activity. For example, in the banking industry, contagion effects have been highlighted by Docking et al. (1997), upon reports of a bank's financial difficulties, as well as by Aharony and Swary (1996) and Akhigbe and Madura (2001), upon reports of bankruptcies. In addition, in the insurance sector, the results of Fenn and Cole (1994) also show that contagion effects exist. Furthermore, Fields et al. (1998) find a negative reaction of the financial market for 46 insurance firms of their sample, upon the report of financial difficulties of the English insurance firm Lloyd's in the early 1990's.

In an original work, Akhigbe et al. (1997) study the contagion effects linked to the reports of changes in ratings in the U.S market. While studying 354 reports of downgrades of ratings between 1980 and 1993, these authors conclude on a negative average return, economically weak but statistically significant, for the competitive firms. Furthermore, this abnormal return is all the more negative since the firms with downgraded ratings hold a considerable market share⁶.

Our analysis questions the informational content of rating agencies reports and his impact on non-rated firms on the French financial market. More specifically, we attempt to verify if the restructuring of the investors' portfolios, following a downgrade of ratings, applies only to the company affected by the "bad news" or if these reports would also have a impact on the value of companies that are not part of the monitoring by ratings agencies. Such a result tends to show that there are negative effects associated with the information revealed by the ratings agencies and that the informational content of the downgrade of ratings is, in reality, greater than that presented in earlier studies.

In order to verify the existence of such (contagion or competition) effects, we use the results of Akhigbe et al. (1997) as a foundation and we adopt an approach similar to that of Fiels et al. (1998). We analyze what the impact was on the value of shares of firms belonging

⁶ In a recent work, Caton and Goh (2003) also study the intra-group effects linked to the drop in ratings. They verify that these reports lead to a downward revision of the expectations of the financial analysts.

to the same stock index sector after reports of successive downgrades of solvency ratings of a firm that is a leader in the market. We consider the Alcatel firm, source of a downgrade of their rating and placed on the watch list on 15 occasions over an 18 month period by the two major rating agencies in the world: Moody's and Standard and Poor's (S&P). Our work provides evidence of minor contagion effects among 34 non rated French firms firms belonging to the same stock index sector.

This paper is structured as follows. In the next section, we will briefly present the Alcatel firm, as well as the various events studied relative to their solvency rating. The methodology will be presented in a third section and the results will be discussed in the fourth section. Finally, we will synthesize our main results in the last section.

2. Downgrades of Alcatel's bond rating

2.1. Presentation of the Alcatel firm

In 2000, with a sales figure greater than 30 billion euros, Alcatel is the n°1 supplier of telecommunications infrastructures in the world⁷. This firm, with close to 100,000 employees around the world, occupies the top positions in markets such as high speed Internet and optical networks.

Their portfolio includes a range of turnkey solutions, from the simple telephone service to the most sophisticated multimedia networks. Alcatel proceeded with numerous operations for external growth and their two major purchases were the American DSC in June of 1998, purchased for 4.4 billion dollars and Canadian Newbridge in February of 2002, for 6 billion dollars.

⁷ Most of the information relating to the presentation of the Alcatel Company was obtained on their internet site. Information regarding the reports made by S&P and Moody's comes from Fininfo.

During a five year period starting in 1998 and ending in 2002, Alcatel experienced a dissimilar evolution. The financial elements presented in table 1 show that Alcatel's financial situation improved between 1998 and 2000. Sales increased 48 %, to reach 31.4 billion euros in 2000 and debts remained very low (the financial debts/shareholder's equity ratio was equal to 0.48). The recorded net profit was positive and since the recorded return on the shareholder's equity varied quite significantly (from 21.8% to 8.6%), the market value was multiplied by 17.7 between December 1998 and December 2000. Graphic 1 presents the exponential increase of the share price during this period.

[Insert Graphic 1]

In 2001, the financial situation of Alcatel deteriorated more or less, the same as numerous other firms evolving within the sphere of the "new economy". While the treasury remained abundant, representing respectively 13.7% and 23.6% of the company's total assets in 2001 and in 2002, its reported net profit turned negative (-5 billion euros at the end of 2001 in comparison to 1.3 billion euros at the end of 2000) on December 31, 2001. Furthermore, its market capitalization was divided by three in one year (24 billion euros at the end of 2001, in comparison to 73 billion at the end of 2000). These financial developments brought about many downward revisions of ratings attributed by S&P and Moody's.

[Insert Table 1]

2.2. Alcatel's bond ratings

For the 18 month period studied (May 2001 to November 2002), the two rating agencies rendered negative information public on 15 occasions. Besides the 9 downgrades of ratings (by 8 notches from S&P and 9 notches by Moody's), these agencies placed Alcatel's

solvency rating under negative watch on 6 occasions. Table 2 summarizes these various events.

[Insert Table 2]

These "bad news" are mainly related to the uncertainty that reigned in the sector of information technology. For example, on February 18, 2002 "Moody's reported a long-term downgrade of ratings for Alcatel, from Baa1 to Baa2, along with a negative outlook. Moody's based this on "the prediction of a continuing low demand for telecommunications equipment and the resulting increase in competition. (-) The negative outlook reflects 'the poor visibility of the sales of the operators', added Moody's"⁸ (La Tribune, February 19, 2002).

Similarly, the downgrade of July 9, 2002 was linked to the particular situation of the telecommunications market. As a result, "Moody's downgraded Alcatel to "Junk bond" status. The rating agency's decision was based on its anticipation of 'a continual downgrade in the demand for telecommunications equipment over the next two years'. Moody's therefore expressed its 'concern with regard to Alcatel's ability to adjust its costs and financial flexibility to the new environment' "⁹. (La Tribune, July 10, 2002).

Since we use these report dates, it is necessary to specify that in 6 cases, the reports are contaminated by the disclosure of other information regarding Alcatel (see the contamination column in table 2). The different informations, published in the daily newspaper "La Tribune", which contaminates the reports made by the agencies, is presented (in its original version) in annex 1.

The report of May 18, 2001 is contaminated by two other reports related to the introduction of a subsidiary of Alcatel onto the stock market (May 18) and Alcatel's acquisition of Lucent (May 21). The reports of July 26 and 27, 2001 are contaminated by the

⁸ Our translation.

⁹ Our translation.

announcement of Alcatel's semi-annual results. The report of September 10, 2001 is contaminated by the September 11 attack in New York. Finally, the reports of September 23 and 24, 2002 are contaminated by the announcement of a controlling interest (314 millions euros) in the French military electronics group, Thalès.

This contamination problem (disclosure in the press of several types of information on the same date) has consequences on our methodology, knowing that the object of this work is not to evaluate the capital loss of the Alcatel firm at the time reports are made by the rating agencies, but rather to analyze the importance of the contagion effects associated to these events. In other terms, we test the impact the successive reports have on the value of French firms belonging to the same stock index sector.

3. Methodology

3.1. The sample

The construction of our sample is based on an identification of all the French companies that are included in the same stock index sector as Alcatel, in this case, the EPA information technology sector. When we eliminate the few companies¹⁰ that are rated by the rating agencies, as well as the foreign companies and those for which there is a lack of stock market data (companies introduced into the stock market during the period of the study), the final sample contains 34 French companies.

¹⁰ Only two French companies belonging to the same stock index sector as Alcatel have been rated by the rating agencies.

The data provided in table 3 (part A) indicates that the market value of stocks adds up to a mean of 573 million euros on 31/12/2001, but there is a relative dispersion between the 34 firms: the median is equal to 196 million euros. However, these firms achieved mean sales of 406 million euros and their mean total net assets were equal to 360 million euros.

[Insert Table 3]

3.2. The variables

3.2.1. Abnormal returns

To determine the effect of the downgrade of the Alcatel rating on the value of the competitive firms, we calculate different abnormal returns. The calculation is made in the following manner:

$$CAR_i(k, k') = \sum AR_{i,t} \text{ avec } k < k'$$

with:

CAR_i : the cumulative abnormal return of firm i ;

$AR_{i,t}$: the abnormal return of firm i over the period t , equal to $R_{i,t} - E(R_{i,t})$;

$R_{i,t}$: the real return of firm i over the period t ;

$E(R_{i,t})$: the expected return of the firm i over the period t , estimated by way of a market model. So, we have: $E(R_{i,t}) = \alpha + \beta.R_{m,t} + \mu_{i,t}$. The parameters α and β of the market model are estimated, for each report date, by daily returns over a period of 3 months (up four days before the date of the event)¹¹. We use the EPA Technologies de l'information index for the calculation of the market portfolio return ($R_{m,t}$).

¹¹ We retain a relatively short estimation period to avoid problems of overlapping of the window of cumulative abnormal returns and the window for the estimation of the parameters of the market model. We have noted that there is no significant modification to the parameters for the market model estimated for the 34 firms when the window of estimation is enlarged.

Beyond Alcatel's 6 contaminated reports (see the previous section), we have decided not to study the reports of July 9 and 12, 2002, due to the great similarity of the reports made by the rating agencies. Hence, we retain 7 "bad news" reports from the rating agencies. For these reports, we have verified that there is no other news information relating to any of the 34 companies of our sample. The results of annex 2 (in their original versions) reveal that 25 items of information have been disclosed in the daily financial newspaper "La Tribune" around the dates of downgrade of ratings or placement on a negative watch list. Therefore, we have not calculated any abnormal returns for these contaminated events¹² and our study contains $(34 * 7) - 25 = 213$ reports/companies.

3.2.2. Determinants of the industry counterparts' abnormal returns

If we study the existence of contagion or competition effects, we should also try to understand the magnitude of the effects. To do so, we define two types of variables. The first type relates to the characteristics of the reports made by the rating agencies (downgrades or placement on a negative watch list, number of downgrade notches, first report or confirmation). The second type relates to the characteristics of the firms retained (solvency, growth opportunities and size). We choose these variables, because there are "observable" by investors: we consider that investors react only on public information.

¹² For the reader interested in the problems of contamination, we suggest reading the article by McWilliams and Siegel (1997).

- Characteristics of the reports made by the rating agencies

- The nature of the report (DEGR)

We will identify the events according to whether they relate to a placement on a watch list (DEGR = 0) or a downgrade (DEGR = 1). Theoretically, the market continually revises its expectations. In view of this, we expect a more negative reaction when the rating agency reveals information that appears original (placement on a watch list). In practice, the downgrades frequently result from a placement on a negative watch list. This anteriority should ease the impact of the effective downgrade of the rating on the stock market. Of the 7 reports retained, there are two reports of placement on a negative watch list and 5 downgrades of ratings.

- The number of downgrade notches (NOTCH)

Even if the investors continually revise their expectations, we expect a more significant reaction of the market, in the presence of an asymmetry of information, when the downgrade of the rating is more considerable. It seems, in fact, difficult to perfectly anticipate the magnitude of the downgrade by the rating agencies. The NOTCH variable measures the number of downgrade notches of the rating. In the case of Alcatel, we notice that the rating decreased 1 notch in 2 cases, 2 notches in 1 case and 3 notches in 2 cases.

- The timing of the report (TIME)

We also expect a more negative reaction of the investors at the time of the report of the first downgrade by an agency (TIME = 1), in comparison to the confirmation of the downgrade by the other agency (TIME = 0). This variable allows taking into account the problem of *split rating*, discussed particularly by Cantor et al. (1997). Concerning Alcatel, we note that S&P are first to report a downgrade in three out of five cases.

- Characteristics of the firms

- Firm solvency (SOLV)

In principle, the downgrade of Alcatel's rating should have a greater downward effect on the firms with weaker solvency, since the market integrates new information regarding business conditions (or the state of the product market) that are at the origin of Alcatel's downgrade of ratings (or placement on a watch list). We retain the variable SOLV that corresponds to the connection between the recorded shareholder's equity of the firm and the total recorded liabilities. This is a measure that is commonly accepted for solvency. The results presented in table 3 (part B) show an average solvency ratio equal to 40% for the 34 companies of the sample.

- Growth opportunities (M-to-B)

For firms with greater growth opportunities, the impact of a downgrade in solvency should be weaker. In fact, for these firms with projects that would produce a greater cash flow in the future, the risk of insolvency is weaker. Due to their historical character, the accounting data can only imperfectly reflect this situation. To measure the firms' growth opportunities, we retain the Market-to-Book ratio. This ratio is equal to the market value of the shareholder's equity in relation to the book value of the shareholder's equity. For our sample, the average ratio is 4,5 (table 3).

- The size of the firms (SIZE)

Finally, we introduce a size variable for additional control. The size is estimated by using the total of the total net assets of the firms. We assume that the small competitive firms are more affected by bad news than the large firms. There are two justifications that can be put forth. The first relates to the a greater asymmetry of information for small firms (less followed by the financial analysts). In this context, the report of bad news should reflect more

strongly on the small firms. The second is connected to the stronger diversification of large firms as much from a geographic point of view as from the product point of view. Due to this fact the latter are less sensitive to a downgrade of market conditions.

4. Results and analysis

4.1. Market's reaction and contagion effects

4.1.1. Changes of the value of Alcatel

To begin, we briefly discuss the impact of the reports of changes in ratings on the value of Alcatel. The cumulative abnormal returns for the 7 reports are presented in table 4. These results evoke two main comments.

[Insert Table 4]

Firstly, it appears that, for the different windows retained for cumulative abnormal returns, in 57% of the cases the returns are negative (24 out of 42 cases). However, the percentage of negative CAR's depends on the window retained. In particular, if we do not account for the day +3, then the CAR's are negative in 73% of the cases (22 out of 30 cases). This result is in conformance with those obtained in the United States: an item of "bad news" with regard to ratings has a negative impact on the value of the companies concerned. However, a strong dispersion of negative CAR's exists. For example, the CAR's of November 20, 2002 are (economically) more negative than those of November 13, February 18, 2001 or April 30, 2001, regardless of the window retained.

Secondly, for the two dates of May 14, 2002 and October 4, 2002, Alcatel's CAR's are positive, regardless of the window retained. This result is a priori, surprising. It can particularly be explained by the fact that the news reported by the rating agencies, on these two dates, was better than anticipated by the financial market. In this case, the market, that had previously strongly sanctioned Alcatel, will review and increase its expectations. Although quite plausible, we must admit that this explanation is difficult to verify empirically.

4.1.2. Changes of the value of Alcatel

In table 5, the abnormal return of the 34 firms in our sample associated with the various events retained is presented. We have calculated the abnormal returns of the competitive firms for different windows. The table 5 details the three following comments.

Firstly, in the majority of cases studied, the abnormal returns are generally negative. On the whole, the CAR's are, on average, -0.60% for the windows (0 ;1) and (0 ;2). Regardless of the window retained, approximately 60% of the CAR's are negative. Therefore, when "bad news" are reported by the rating agencies with regard to Alcatel, the leader, the value of non rated companies belonging to the same stock index is reduced.

Secondly, for the dates of May 14, 2002 and October 4, 2002, this result is not valid: a contagion effect does not appear to exist. However, it would be interesting to compare this result with that obtained for Alcatel. For these two dates, Alcatel's CAR's are positive and those of the other companies of the same stock index are almost nil or slightly positive for May 14, 2002.

Thirdly and finally, the existence of strong dispersions, between the companies of the sample for each date and between the different dates of the studies, justifies an in-depth analysis of the phenomenon. For example, for April 30, approximately 75% of the companies

have negative CAR's and, economically, the reduction in value is greater than on other dates. The multivariate analysis must allow us to verify if the magnitude of the CAR is instead linked to the characteristics of the reports made by the rating agencies or to the specificities of the companies.

[Insert Table 5]

4.2. Cross-sectional analysis of rival firms abnormal returns

The multivariate analyses will allow us to refine our initial results and to understand what factors lead to explaining the magnitude of the abnormal returns of the competitors. Given the differences in the CAR's presented in table 5 for the different windows, our regressions are performed on the six windows of calculation. Table 6 presents our different results.

[Insert Table 6]

It appears that our model, based on observable variables by investors, does not offer a satisfactory explanation of the CAR's of the 34 companies, belonging to the same stock index sector as Alcatel, resulting from the report of "bad news" by the rating agencies. In fact, the explanatory power of the models tested remains moderate. Although the Fisher test is not significant in five regressions, the coefficient of determination varies from 1.3% to 6.2%.

Furthermore, the different variables retained are not significant. Four variables (DEGR, NOTCH, M-to-B and lnSIZE) are each statistically significant in one regression out of six, at a threshold of 10%. However, the TIME and SOLV variables are never important. Therefore, if it appears that minor contagion effects exist (only for certain windows) for the non rated companies belonging to the same sector as Alcatel, the difference in abnormal

returns noted for the seven different report dates cannot be explained by the characteristics of the reports made by the rating agencies, nor by the three company characteristics (solvency, opportunities for growth and size) identified in this study¹³.

5. Conclusion

The object of this article is to study the impact of information supplied by rating agencies on the financial market, in a context of asymmetry of information. Prior studies were generally focused on the consequences of the reports of downgrades of solvency ratings, or placement on a negative watch list, of the concerned firms (evolution of the value of the shareholder's equity or the cost of bondholder financing).

The main objective of this paper is to stress the informational content of rating agencies reports on non-rated companies in the French context. To do that, this work attempts to highlight the impact of the successive negative changes in ratings of a leading firm on the value of the shareholder's equity for companies belonging to the same stock index sector and that are not monitored by the rating agencies.

More precisely, we have an interest in the effect that the diverse "negative information" having affected the Alcatel firm (world leader in its sector) has on the value of the shareholder's equity of 34 French firms, namely 15 changes in ratings and placements on a negative watch list, reported by the two principal rating agencies (Standard and Poor's and Moody's) over a period of 18 months.

The two main results of this study are the following. Firstly, the "bad news" affect negatively and significantly the value of the leader Alcatel. This first result is not surprising

¹³ We have performed other regressions that are not presented in this article for reasons of congestion. We have particularly eliminated the dates of May 14, 2002 and October 4, 2002, for which the cumulative abnormal returns of Alcatel were positive. The results were not modified: our model does not explain the differences in the abnormal returns.

and tends to confirm the importance of the information transmitted by the rating agencies to the financial market for the rated firm. The second result show that the information published by the rating agencies have sometimes a negative impact on non-rated companies belonging to the same stock index sector. For example, on the whole, the cumulative abnormal returns are, on average – 0,6% over two days. However, we show that the difference in the changes of value of the non-rated companies measured by the cumulative abnormal returns does not appear to be easily explained. Future works should allow us to examine these original results in more detail.

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Graphic 1.
Value of Alcatel Share (in euros) between January 1998 and 31 December 2002

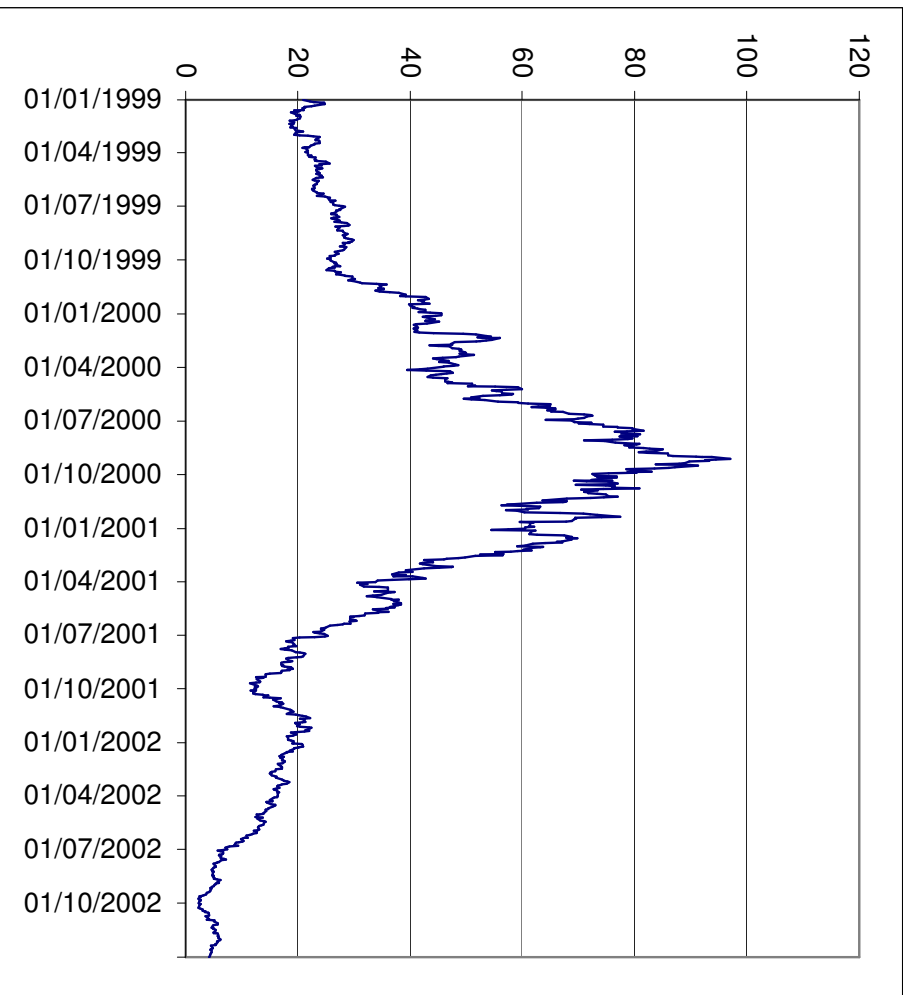


Table 1.
Financial data (in millions of euros) of Alcatel between 1998 and 2002

	31.12.1998	31.12.1999	31.12.2000	31.12.2001	31.12.2002
Total Sales	21259	23023	31408	23845	16547
Variation of Sales	-	8,3%	36,4%	-24,1%	-30,6%
Net Profit	2348	681	1327	-4958	-4727
Net Profit / Total Sales	11,0%	3,0%	4,2%	-20,8%	-28,6%
Equity	10748	12514	15380	10046	5995
Net Profit / Equity	21,8%	5,4%	8,6%	-49,4%	-78,8%
Financial Debt	4105	5845	7390	7675	5783
Financial Debt / Equity	0,38	0,47	0,48	0,76	0,96
Treasury	3813	3595	3060	5013	6109
Total Assets	29640	34206	42978	36549	25880
Treasury / Total Assets	12,9%	10,5%	7,1%	13,7%	23,6%
Market value of Shares	4144	9061	73289	23333	5180
Market Value of Shares / Equity	0,39	0,72	4,77	2,32	0,86

Table 2.
Information relative to the solvency rating of Alcatel

Date	Agency	Report	Contamination
18 May 2001	S&P	Placed on watch list	Yes
26 July 2001	Moody's	Downgrade from A1 to A2 (1 notch)	Yes
27 July 2001	Moody's	Placed on watch list	Yes
6 August 2001	S&P	Downgrade from A to BBB+ (2 notches)	No
10 September 2001	Moody's	Downgrade from A2 to Baa1 (2 notches)	Yes
13 November 2001	S&P	Downgrade from BBB+ à BBB (1 notch)	No
18 February 2002	Moody's	Downgrade from Baaa1 to Baaa2 (1 notch)	No
30 April 2002	S&P	Placed on watch list	No
14 May 2002	Moody's	Placed on watch list	No
9 July 2002	Moody's	Downgrade from Baa2 to Ba1 (2 notches)	No
12 July 2002	S&P	Downgrade from BBB to BB+ (2 notches)	No
23 September 2002	S&P	Placed on watch list	Yes
24 September 2002	Moody's	Placed on watch list	Yes
4 October 2002	S&P	Downgrade from BB+ to B+ (3 notches)	No
20 November 2002	Moody's	Downgrade from Ba1 to B1 (3 notches)	No

Table 3.
Description of the sample

The sample involves 34 firms, belonging to the same stock index sector (EPA information technology) as Alcatel. All the figures in part A are expressed in thousands of euros (dated 31/12/2001).

M-to-B is equal to the market value of the shareholder's equity divided by the recorded value of the shareholder's equity. SOLV is the solvency ratio for each competitor, equal to the recorded shareholder's equity divided by the total liabilities.

	Mean	Median	Standard deviation
<u>Part A.</u>			
Market value	573 550	196 078	978 287
Sales	406 526	148 152	666 726
Total net assets	360 316	147 335	493 852
<u>Part B.</u>			
SOLV	40,5%	40,8%	29,3%
M-to-B	4,5	3,1	4,3

Table 4.
The cumulative abnormal returns (CAR) of Alcatel

Date	CAR(0,1)	CAR(0,2)	CAR(0,3)	CAR(-1,1)	CAR(-2;2)	CAR(-3,3)
06/08/2001	-2,02%	-2,47%	-5,00%	-0,53%	-0,21%	-3,46%
13/11/2001	-0,72%	-1,62%	0,34%	-0,32%	-1,47%	-1,15%
18/02/2002	-0,20%	-0,46%	1,41%	-3,91%	-5,12%	-4,80%
30/04/2002	-0,72%	-1,13%	0,65%	-1,41%	-1,29%	2,82%
14/05/2002	2,61%	1,94%	2,34%	5,09%	3,80%	2,65%
04/10/2002	3,38%	1,55%	4,97%	4,12%	10,53%	14,69%
20/11/2002	-7,42%	-3,69%	-4,09%	-11,24%	-11,22%	-10,48%

Table 5.
The cumulative abnormal returns (CAR) of the 34 firms

The sample involves 34 firms, belonging to the same stock index sector as Alcatel.

% CAR < 0 denotes the fraction of negative cumulative abnormal returns.

*, ** and *** denote z-statistics, which are significantly different from zero at the 0,01 ; 0,05 or 0,10 levels of ratios of negative abnormal returns.

		CAR(0,1)	CAR(0,2)	CAR(0,3)	CAR(-1,1)	CAR(-2;2)	CAR(-3,3)
Total	Mean	-0,55%	-0,65%	-0,71%	-0,37%	-0,25%	-0,16%
	Median	-0,94%	-1,13%	-0,94%	-1,38%	-0,85%	-0,65%
	Standard deviation	4,79%	6,32%	7,60%	6,08%	8,22%	10,05%
	%CAR < 0	63,4% ***	59,6% ***	57,3% ***	60,1% ***	54,5%	55,4%
06/08/2001	Mean	-1,31%	-0,30%	-1,83%	-0,98%	2,47%	0,69%
	Median	-1,98%	-0,65%	-1,33%	-1,48%	2,32%	1,59%
	Standard deviation	3,39%	2,89%	4,23%	3,93%	4,63%	6,61%
	%CAR < 0	70,6% **	55,9%	61,8%	64,7%	35,3%	41,2%
13/11/2001	Mean	-1,21%	0,08%	1,08%	-0,77%	0,54%	2,04%
	Median	-1,30%	-1,84%	-0,47%	-1,16%	-0,94%	0,49%
	Standard deviation	2,86%	5,82%	8,85%	3,99%	6,71%	10,17%
	%CAR < 0	70,0% *	56,7%	53,3%	60,0%	56,7%	50,0%
18/02/2002	Mean	-0,98%	-1,22%	-1,18%	-0,01%	-0,16%	-0,82%
	Median	-0,33%	-1,79%	-0,72%	-0,45%	0,38%	-1,40%
	Standard deviation	3,96%	4,68%	6,94%	5,39%	6,38%	7,27%
	%CAR < 0	60,0%	60,0%	63,3%	56,7%	46,7%	66,7% *
30/04/2002	Mean	-1,22%	-3,03%	-2,84%	-2,35%	-4,62%	-4,69%
	Median	-1,13%	-1,93%	-2,22%	-2,34%	-3,51%	-4,73%
	Standard deviation	3,95%	5,12%	5,47%	4,10%	5,20%	6,05%
	%CAR < 0	73,3% **	80,0% ***	66,7% *	80,0% ***	80,0% ***	76,7% ***
14/05/2002	Mean	-0,08%	-0,37%	-0,14%	-1,16%	-1,42%	-0,70%
	Median	-0,60%	-0,51%	-0,50%	-1,88%	-1,27%	-0,66%
	Standard deviation	4,38%	5,96%	6,49%	5,41%	7,25%	7,51%
	%CAR < 0	57,1%	60,7%	50,0%	67,9% *	64,3%	60,7%
04/10/2002	Mean	0,72%	0,29%	0,55%	1,76%	0,87%	2,65%
	Median	-1,23%	0,02%	-0,31%	1,67%	0,36%	1,75%
	Standard deviation	7,55%	10,79%	11,82%	10,32%	14,41%	16,59%
	%CAR < 0	51,7%	48,3%	51,7%	41,4%	48,3%	37,9%
20/11/2002	Mean	0,31%	-0,01%	-0,41%	0,92%	0,12%	-0,30%
	Median	-0,93%	-0,82%	-0,65%	0,06%	-0,75%	-1,95%
	Standard deviation	5,96%	6,59%	7,44%	6,79%	8,45%	11,51%
	%CAR < 0	59,4%	56,3%	53,1%	50,0%	53,1%	56,3%

Table 6
 OLS regressions with different cumulative abnormal returns.

The sample involves 213 observations. The explanatory variables are defined as follows: DEGR is equal to 1 if the report is a downgrade of the solvency rating of Alcatel and equal to 0 if it is a report of placement on a watch list; NOTCH is equal to the number of notches of downgrade of Alcatel's solvency rating; TIME is equal to 1 for the first report of downgrade and equal to 0 if it is a confirmation of the downgrade by the other rating agency ; SOLV is the solvency ratio for each competitor, equal to the recorded shareholder's equity divided by the total liabilities; M-to-B is equal to the market value of the shareholder's equity divided by the recorded value of the shareholder's equity; ln(SIZE) is the logarithm of the size of the competitors, corresponding to the total net assets (in thousands of euros); F is the Fischer statistic, t is the Student statistic and p is the probability associated with the tests.
 *, ** and *** represent significance level at 10%, 5% and 1%

	CAR(0,1)	CAR(0,2)	CAR(0,3)	CAR(-1,1)	CAR(-2;2)	CAR(-3,3)
Constant	0,022	0,010	-0,012	0,041	0,067	0,051
t	0,645	0,216	-0,229	0,948	1,165	0,721
p	0,520	0,829	0,819	0,344	0,245	0,472
DEGR	-0,014	0,008	0,010	0,002	0,035	0,029
t	-1,229	0,532	0,565	0,169	1,828	1,221
p	0,220	0,595	0,573	0,866	0,069 *	0,223
NOTCH	0,008	0,003	0,000	0,009	0,002	0,003
t	1,824	0,604	0,059	1,574	0,224	0,314
p	0,070 *	0,546	0,953	0,117	0,823	0,754
TIME	-0,005	-0,003	-0,003	-0,007	0,001	0,006
t	-0,794	-0,340	-0,284	-0,801	0,112	0,412
p	0,428	0,734	0,777	0,424	0,911	0,680
SOLV	-0,011	-0,013	-0,008	-0,014	-0,025	-0,017
t	-0,949	-0,837	-0,421	-0,997	-1,261	-0,702
p	0,344	0,404	0,674	0,320	0,209	0,483
M-to-B	0,001	0,001	0,002	0,001	0,001	0,003
t	1,236	1,316	1,230	1,045	0,799	1,802
p	0,218	0,190	0,220	0,297	0,425	0,073 *
ln(SIZE)	-0,002	-0,002	0,000	-0,004	-0,008	-0,007
t	-0,794	-0,616	-0,094	-1,315	-1,703	-1,300
p	0,428	0,538	0,925	0,190	0,090 *	0,195
r ²	0,030	0,025	0,013	0,048	0,062	0,047
F	1,078	0,863	0,438	1,726	2,283	1,684
p	0,377	0,523	0,853	0,116	0,037 **	0,126

Annex 1.

Informations published in the French daily newspaper “La Tribune”, concerning Alcatel, which contaminates the reports made by the agencies

Date	Information
18 May 2001	- Alcatel introduit sa filiale Nexans en bourse dès le 13 juin. Le groupe pourrait introduire en Bourse jusqu'à 100 % du capital de Nexans. La filiale 'câbles' d'Alcatel serait valorisée entre 700 et 850 millions d'euros.
21 May 2001	- Le marché sanctionne les visées d'Alctel sur Lucent. Les analystes craignent une dilution trop importante du bénéfice par action d'Alcatel. [Par ailleurs,] la perspective d'une fusion inquiète les marchés en raison des énormes difficultés financières de Lucent. Le titre du groupe français a plongé de 7,22 % à 33,4 euros.
25 July 2001 27 July 2001	- Alcatel devrait annoncer une perte semestrielle d'environ 3 milliards d'euros. - Alcatel exclut toute éclaircie cette année. Le groupe présidé par Serge Tchuruk accuse une perte nette de 2,907 milliards d'euros sur l'ensemble du premier semestre. Sur le seul deuxième trimestre, la perte se monte même à 3,117 milliards d'euros (au premier trimestre, le groupe affichait un bénéfice de 210 millions d'euros). Le résultat opérationnel (222 millions d'euros sur le premier semestre) est trois fois inférieur à celui enregistré un an plus tôt plombé notamment par la téléphonie mobile. Ce n'en était pas moins le soulagement qui dominait hier sur les marchés financiers, qui s'attendaient au pire. La Bourse paraît rassurée : le titre s'est apprécié de 4,67 %, à 17,7 euros.
11 September 2001	- Attentat à New-York du World Trade Center
24 September 2002	- L'équipementier a été affecté par la révision à la baisse des ventes de JDS Uniphase, ainsi que par la mise sous surveillance avec implication négative de sa note BB + par Standard and Poor's. Alcatel a perdu 14,81 % à 2,31 euros après que S&P a annoncé envisager de baisser la note de plus d'un cran.
25 September 2002	- L'action de l'équipementier téléphonique Alcatel a rebondi de 2,61 % à 2,36 euros après avoir perdu près de 15 % la veille. La valeur a bien résisté à l'annonce de Moody's de placer le rating à long terme Ba1 du groupe sous surveillance avec implication négative.
26 September 2002	- Alcatel se déleste d'une partie de Thalès. L'équipementier va retirer 314 millions d'euros de la vente de 6,1 % de Thales. Le titre Alcatel a repris 11,44 % à 2,63 euros hier. Le groupe rassure sur sa trésorerie et pourra financer ses restructurations. [Mais] l'équipementier garde une participation de 9,7 % dans le capital du groupe d'électronique militaire, qui reste soumis au pacte d'actionnaires jusqu'en juillet 2003.

Annex 2

Informations published in the French daily newspaper "La Tribune",
concerning the 34 firms belonging to the same stock index sector as Alcatel,
which contaminates the reports made by the agencies

Date	Information
2 August 2001	<u>Transiciel</u> , qui a obtenu un prêt syndiqué d'un montant de 150 millions d'euros, a pris 4,82 % à 43,50 euros.
8 Nov. 2001	<u>Transiciel</u> veut supprimer les droits de vote doubles. Malgré une réaction mitigée, hier, à la publication de son chiffre d'affaires au troisième trimestre, Transiciel devrait faire l'objet d'un regain d'intérêt spéculatif.
12 Nov. 2001	Le groupe informatique français <u>Bull</u> a confirmé qu'il doit faire face à un remboursement d'emprunt de 115 millions d'euros l'an prochain, à la suite d'un article des Echos.
13 Nov. 2001	Le titre <u>Unilog</u> a terminé sur un gain de 3,08 % à 67 euros, la plus forte hausse des valeurs du SRD. La société de services informatiques a publié après la clôture un chiffre d'affaires en progression de 25,5 % à 143,7 millions d'euros au troisième trimestre.
15 Nov. 2001	<u>Valtech</u> prend le marché par surprise avec un bon chiffre d'affaires trimestriel.
15 Nov. 2001	Le fabricant de semi-conducteurs <u>Soitec</u> a tenu sur ses niveaux de la veille en perdant seulement 0,47 % à 21,25 euros. La veille, l'action avait bondi de 20 % après l'annonce d'un contrat de ' plusieurs millions de dollars ' avec l'américain AMD qui envisage d'utiliser la technologie SmartCut de Soitec, pour sa gamme de produits ' Hammer '.
15 Nov. 2001	<u>GFI Informatique</u> , qui progressait hier de 7,52 % à 12,30 euros, a dévoilé une activité en hausse de 15 % sur le troisième trimestre.
13 February 2002	<u>Lectra</u> affiche une perte de 3,2 millions d'euros. Le groupe spécialisé dans la fourniture de solutions informatiques pour l'industrie textile enregistre un recul de son activité de 15 %. <u>Brime Technologies</u> émet des OBSAR, pour 22,5 millions d'euros.
13 February 2002	
14 February 2002	Le cours de <u>Valtech</u> perd 13,58 % après l'annonce de son chiffre d'affaires 2001.
15 February 2002	<u>Unilog</u> clôture l'exercice 2001 sur une croissance organique 26 %, ce qui lui vaut une progression de 12,6 % de son titre.
15 February 2002	<u>Transiciel</u> abandonne ainsi 4 % depuis le début de l'année, et reculait en séance hier, après la publication d'un chiffre d'affaires jugé décevant par plusieurs analystes.
15 February 2002	<u>GFI Informatique</u> progressait de 3,01 % à 11,31 euros hier : la croissance organique de la SSII s'est bornée à + 6 % à 166 millions d'euros sur le dernier trimestre, mais le président du groupe évoquait hier des négociations pour un rapprochement avec trois acteurs différents.
19 February 2002	<u>Silicomp</u> rachète les minoritaires de sa filiale américaine. Hier, l'action Silicomp a fini inchangée, à 15,37 euros, mais elle a perdu 27,5 % depuis le début de l'année.
21 February 2002	Alertée par Boursorama, la COB condamne les dirigeants de <u>Valtech</u> .
21 February 2002	Le fournisseur français de composants pour téléphones mobiles <u>Wavecom</u> a enregistré, en 2001, un bénéfice net de 11,648 millions d'euros (selon des normes comptables "généralement admises en France") contre une perte nette de 12,472 millions d'euros en 2000.
29 April 2002	Poursuivant son rebond après l'annonce de chiffres engageants en milieu de semaine, <u>Wavecom</u> a progressé de 6,35 %, à 40,2 euros.
29 April 2002	<u>Highwave Optical</u> (- 2,35 %, à 1,66 euro) a peu réagi à la publication de son chiffre d'affaires en baisse de 91 % au premier trimestre.
29 April 2002	<u>Hubwoo</u> , la place de marché vouée aux achats non stratégiques et cotée en Bourse, vient d'annoncer 16 millions d'euros de pertes en 2001, multipliant par quatre le déficit de 2000. De son côté, le chiffre d'affaires a légèrement augmenté, passant de 2,3 à 2,7 millions d'euros.
30 April 2002	Projet d'OPA simplifiée avec règlement partiel en actions de <u>Devoteam</u> qui propose la remise, pour 9 actions Siticom Group apportées, d'une somme de 35,19 euros et d'une action Devoteam (Credit Suisse First Boston, Société Générale).
2 May 2002	Avec 107,5 millions de dollars de chiffre d'affaires au cours du premier trimestre, en augmentation de 9 %, et un bénéfice net de 11 millions de dollars, <u>Business Objects</u> n'est plus une start-up, mais une société mature.
3 May 2002	Le titre Euronext a bénéficié, hier, de l'annonce du chiffre d'affaires de sa filiale à 26% <u>GL Trade</u> , qui dispense des services d'informations financières dans différents pays d'Europe. Au premier trimestre, l'activité de GL Trade a bondi de 34 %, à 28,1 millions d'euros.

13 May 2002	Résultat annuel multiplié par 5 pour <u>Soitec</u> . Le groupe, qui vient de publier ses résultats de l'exercice 2001/2002, compte sur une amélioration de sa rentabilité pour l'année en cours mais prévoit un tassement de sa marge opérationnelle.
14 May 2002	<u>Brime Technologies</u> a vu ses ventes augmenter de 26,2% à 34,2 millions d'euros. La valeur recule de 4,89% à 35,8 euros.
14 May 2002	<u>Bull</u> affiche un chiffre d'affaires consolidé de 362,4 millions d'euros au premier trimestre 2002, en recul de 11,2 % à structure comparable par rapport au premier trimestre 2001.
16 May 2002	<u>Transiciel</u> concède 6,74 % à 29,75 euros après avoir été dégradé par BNP Paribas et Schroder Salomon Smith Barney.
17 May 2002	Les SSII ont accentué leur mouvement de baisse, <u>Alten</u> venant se joindre au lot (- 6,69 % à 16,47 euros) après son chiffre d'affaires au premier trimestre.
17 May 2002	Malgré leur plus petite taille, des sociétés comme <u>Transiciel</u> ou <u>Unilog</u> qui ont publié cette semaine leurs chiffres d'affaires trimestriels ont confirmé la mauvaise orientation des services informatiques.
17 May 2002	<u>Infogrames</u> : Au lendemain de la publication d'un chiffre d'affaires trimestriel en baisse de 22 %, l'éditeur de jeux vidéo a reperdu 0,40 % à 7,50 euros après une chute de 8 % la veille.
2 October 2002	<u>Pharmagest Interactive</u> , le spécialiste de l'informatisation de l'officine pharmaceutique a réalisé un résultat net part du groupe de 1,14 million d'euros au premier semestre 2002, contre 0,07 million un an plus tôt.
2 October 2002	<u>Infogrames</u> réduit de façon radicale ses effectifs. Le leader français des jeux vidéo licencie 280 personnes à Lyon. D'autres suppressions d'emplois sont envisagées en Europe.
2 October 2002	<u>Neopost</u> rebondit après ses résultats. Le spécialiste du traitement de courrier a publié un résultat net en hausse de 86% au premier semestre.
3 October 2002	Comme la plupart des éditeurs de logiciels, la société <u>Cegid</u> a vu ses résultats décroître au premier semestre fiscal (59,6 millions d'euros de chiffre d'affaires contre 60,8 en 2001 et une perte nette après amortissement des écarts d'acquisition de 200.000 euros).
3 October 2002	<u>Hubwoo</u> , la société de commerce électronique interentreprises a annoncé une perte nette de 5,58 millions d'euros au premier semestre 2002, contre un résultat négatif de 8,75 millions au premier semestre 2001.
3 October 2002	<u>Sylis</u> plonge de 19,73 % à 2,93 euros. Le groupe a fait état d'une marge brute d'exploitation, hors restructurations, de 7,2% à 6,2 millions d'euros au premier semestre, contre une marge de 10,3% un an plus tôt. Le chiffre d'affaires se replie de 3,68% à 86,3 millions d'euros.
8 October 2002	<u>Jet Multimedia</u> , le groupe, qui constitue désormais le pôle "hébergement à valeur ajoutée de services en ligne" du groupe LDCOM, a annoncé un résultat net part du groupe au 30 juin dernier déficitaire de 2 millions d'euros, contre une perte pro forma de 6,92 millions au premier semestre 2001.
18 Nov. 2002	<u>Altran</u> chute après la révision en baisse de ses résultats. Le bénéfice du 1er semestre se limite à 33 millions d'euros, au lieu des 54 millions précédemment annoncés.
19 Nov. 2002	<u>Hubwoo</u> : le CA du 3e trimestre est de 1,04 MEUR (+ 79 %). Sur neuf mois, le CA est de 3,44 MEUR (+ 112 %).