INVESTMENT DECISION AND VALUE CREATION

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Abstract

The value creation supposes that the undertaken investment leads to draw a surplus with regard to the alternative use that the providers of capital would have been able to make it. This research proposes an analysis of the relation between the investment decisions and value creation on a sample of 82 French firms that compose the SBF 250 index, from 1999 to 2005. We show that the relation between the investment and the firm value is direct and positive.

Keywords: Investment Decisions, Value Creation, Growth Opportunities, Cash Flow

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1 Introduction

At the most basic level, the choice of investments based on value creation means not subsidize unprofitable units with funds from more profitable and do not over-invest in central units declining.

In a decision concerning an investment, a company faces usually the alternative of internal and external growth. Internal growth proceed by creation of additional assets, for example through the purchase of new equipments, investment in research and development (R & D), ... It opposes the external growth witch is a mode of development that relies on voluntary or forced merger between two or more companies with equity participation in the capital of another company or a merger or by a divestment operation.

In this article, we attempt to answer theoretically the question of whether investment decisions: either internal growth or external growth operations are creative or destructive of value for shareholders of engaged companies this process.

Then, we analyze empirically the relationship between investment and firm value. Also, we attempt to test the validity of the POT hypothesis in the French market.

2 Literature review

The main researches performed on the corporate investment link the impact of the investment announcement to other financial theories such as the theory of Free Cash Flow (FCF) of Jensen (1986) or the hypotheses of the pecking order theory (POT) of Myers and Majluf (1984). It was proven that the impact of announcements on stock prices varies according to the quality of the investment opportunity of the company, it's FCF and the nature of the funding source used.

Previous studies have shown the necessity to consider these two theories both in analyzing market response to investment announcements.

If managers have no personal advantage to pay dividends, the market can interpret this no payment as a signal of financial difficulties. This will directly lead to a decline in the shares value whose first victims will be the shareholders. The best way to solve this problem is to increase the part of the debt in the capital structure. The analysis of this relationship shareholder - manager, regarding the FCF assignment is important.

Internal financing is the preferred by the company because it gives managers the freedom with respect to the financial market constraint. Whether to outside finance, the debt will be preferred. The reason is that the managers, holders of privileged information, know that the share is worth more than its market value, Therefore the market information is incomplete. Under these conditions, the issuance of new shares could only be made at an undervalued price which would lend to wealth transfer from old to new shareholders.

In order to determine whether an investment must be realized or not, we must estimate the value creation that will generate. There is value creation if the project return is greater than the opportunity cost that represents investing in this project. This opportunity cost depends on the project risk. More the project is risky, more the opportunity cost is high.

But the relationship between the investment and the value creation differs whether growth operations are internal or external.

2.1 Internal growth operations

Several studies have focused on the study of the stock market reaction to the announcement of fixed assets investment decisions. However, empirical evidence of the evaluation of the effects of these announcements is relatively rare

Given the different forecasts, it is difficult to determine the expected market reaction to investment announcements. A priori, stock prices may vary following the decision of changing spending of capital. It can be expected that the market considers the announcement of the increasing in these spending as good news, while it interprets the announcement of the decreasing in these expenses as bad news.

Economists have been noted that investment in R & D facilitates innovation and generates new knowledge and new technology. Several authors assert that technology or knowledge, in general, contributes to the growth of the firm.

There is a significant number of researchs that are trying to identify the market reaction to R & D expenditures. The Studies of [Sougiannis (1994), and Zantout Tsetsekos (1994), Green et al (1996) and Goodacre and McGrath (1997)][21] had the same result. The authors find that investments in R&D are positively valued by the market, although the evaluation may vary according to the firm size and the industry.

The study of Lev and Sougiannis (1996)[22] shows the existence of a direct and positive correlation between expenditure on R&D and economic growth, results and productivity gains of companies.

Among the studies that analyze the relationship between investment in R&D and the market reaction, some have identified a positive and significant link between R&D expenditures and return on equity. While other lead to the opposite conclusion. According to Lantz and Sahut[23], this difference in stock price reactions to announcements of increase of R&D expenditures is due, on the one hand, to the more or less aggressive competition in the sector, on the other hand, the fact that studies are made on years previous or after 1985 seemed to be a pivotal year in terms of stock behaviors in the United States.

2.2 External growth operations:

The mergers and acquisitions (MA) operations record, for many years, an explosive growth.

Moreover, the relationship between mergers & acquisitions operations and value creation has changed over time. Given the increase in the number and value of mergers & acquisitions operations and parallel the recognition more and more marked the concept of value creation, it is particular interest to investigate whether there is a positive or negative relationship between them .

We can conclude from different studies linking MA operations to investment that during the 70s years, the results of these studies were not unanimous when the improvement of performances linked to a MA operation . This may be due to sampling or econometric methods used. Over the years, these studies have focused on aspects more specific of these operations, such as their payment method, the fact that it is a domestic or international operation ... It appears that the MA allow an improvement of the performance of firms which process it, especially the target firms. The acquiring firms seem, on the contrary, have generally a value destruction both long and short term.

The divestment is a restructuring operation just like the MA operations of another entity, moreover Weston (1989) reported that 35-40% of MA produced in the 1980s correspond to divestments of other firms.

It is useful to remember that the value creation following the divestment transaction is assumed to correspond to the richness generated to the shareholders. Several studies have shown that the generated value of the divestment depends for shareholders, one hand, on the financial situation of the company before the divestment operation and, the other hand, on the announcement of the transaction price.

Klein (1986)[24] found positive and significant abnormal returns of announcements of initial negotiations of sell-offs when an offer price is announced and insignificant retyrns when the price is not announced.

Afshar et al (1992)[25] find a stock reaction much greater (positive) when the divestment announcement is the result of a contractual agreement, rather than a simple declaration of intent.

3 Methodology

The objective of our research is to lay the foundations of the relationship between investment and firm value.

To achieve this goal, we use the following linear regression:

[21] Del Brio E., Perote J. and Pindado J. (2003), "Measuring the impact of corporate investment announcements on share prices", Journal of Business Finance and Accounting, Vol.30, n°5-6

[22] Ding Y. Et Stolowy H. (2003), «"Capitalisation" des frais de RD en France : déterminants et pertinence », 24th congress of the Accounting Francophone Association, 21-23 May 2003, Louvain-La-Neuve, Belgium.

[23] Lantz J. S. Et Sahut J. M. (2005), « Effets des dépenses de R&D sur la performance des firmes », Investments, information technologies, value and control, International Financial Conference, Hammamet Tunisia, 3-5 march 2005.

[24] El ibrahimi, A. (2005), « L'impact des opérations de restructuration du capital sur la création de valeur des actionnaires et gouvernement d'entreprise, le cas du désinvestissement », Investments, information technologies, value and control, International Financial Conference, Hammamet Tunisia, 3-5 march 2005.

[25] Afshar K. A., Taffler R. J. and Sudarsanam P. S. (1992), "The effect of corporate divestments on shareholder wealth: The UK experience", Journal of Banking and Finance, Vol.16.

$$V_{it} = a_0 + a_1 I_{it} + a_2 CF_{it} + a_3 D_{it} + a_4 S_{it} + \varepsilon_{it} \quad (1)$$

Where V_{it}: The value of the firm i at the end of the period t,

V_{it} is equal to the market value of equity which is none other than the market capitalization (MC_{it}).

Market capitalization$_{it}$ = Number of outstanding shares * Share price $_{it}$.

V_{it} is the dependent variable. For independent variables, they are among four.

* I_{it} : the investment of the firm i during the year t

$$I_{it} = \Delta FA + DA_{it} \quad (2)$$

ΔFA: The increment in fixed assets = $FA_{it} - FA_{i(t-1)}$.

DA_{it}: Depreciations and amortizations of the firm i during the year t.

* CF_{it} : The cash flow which is calculated by adding to the net income the depreciations and amortization minus the change in the working capital needs (WCN).

$$(CF_{it} = NI_{it} + DA_{it} - \Delta WCN_{it}) \quad (3)$$

* D_{it} : The increment in debt.

$$D_{it} = D_{it} - D_{i(t-1)} \quad (4)$$

* S_{it} : The increment in shares outstanding.

S_{it} = outstanding shares$_{it}$ – outstanding shares $_{i(t-1)}$

Therefore the final model is as follows:

$$MC_{it} = a_0 + a_1 I_{it} + a_2 CF_{it} + a_3 D_{it} + a_4 S_{it} + \varepsilon_{it} \quad (5)$$

All the variables have been scaled by the total of assets of the period.

Our model is that of Del Brio and al (2003). In addition, the fact that such study has not been made on the French market, this model has the ability to predict the effect of changes in financial decisions on the firm value, and subsequently the interaction between investment and financing decisions.

The sample of our study is constituted by all the firms quoted in the Paris Stock Exchange and composing the SBF250 index and which are introduced before 1999 (firms introduced in 2000 and later are not included in our sample). For lack of unavailability of the data, the definitive sample consists of 82 firms.

The period of study spreads out over 7 years: from 1999 to 2005.

4 Results and interpretations

4.1 Descriptive analysis and correlation matrix

Table 1 presents the descriptive statistics for the variables used in this analysis.

The average investment is 0.1808. it varies between (-0.4529) and 0.5832. This variable is almost unchanged for the whole sample (Standard Deviation = 0.4180).

The increment in debts D is the most volatile variable among other variables (Standard Deviation = 7.4323).

The review of the correlation matrix shows the inexistence of a critical correlation between the different independent variables. The only negative correlation between the explanatory variables is that between the CF and investment.

4.2 Analysis of the regression model results

The probability of Hausman specification test (chi2 (4) = 265.97 with a probability> chi2 = 0.000), being less than 10%, allows to choose the fixed effects model.

The results of our model reflect the expected relationship between firm value and the explanatory variables. As we see it in the table above, with the expected relationship with investment is direct, which indicates that when the firm undertakes investment, the market reacts upwards. CF also has a direct relationship indicating that the greater the CF, the greater the increase in market value. A similar argument applies to increases in debt are offset by increases in value. This increase in debts can be explained by the greater tax shields obtained by firms. This is consistent with the theory of signal which states that the debt policy is a signal used by managers to prove to the market the good financial health of their firm. Thus, managers communicate the characteristics of their firm through the financial structure.

This can be explained by the fact that the firm which borrows signals to the market that the returns on the investment undertaken can cope with the financial expenses of debt. that is to say, the firm says it is able to repay at a predetermined maturity and that at the effective date of repayment, it honors its commitments without problems.

The negative relationship was found with the increment in shares outstanding. This can be explained by the fact that the market interprets this increase as a bad news because it can be a source of asymmetric information existing between current and prospective shareholders. This is consistent with the pecking order theory (POT), which states that firms prefer to self-finance their investments, borrow, failing that, and, only exceptionally, use the capital increase (and thus issuance of shares and dilution of the power of current shareholders). In other words, the increase in capital is a solution of last resort for firms. Saying this, we expect a negative relationship between the increment in shares outstanding and firm value and it was the case for our results.

Table 1. Descriptive statistics

variable	Mean	Standard deviation	Maximum	Minimum
I	0.1808	0.4180	0.5832	-0.4529
CF	0.0693	0.2472	0.1441	-0.3272
D	1.7688	7.4323	0.3410	-0.3275
S	-0.0252	0.4263	0.9999	-0.2392
V	1.4342	2.1816	0.1648	0.0033

Table 2. Correlation matrix

	CF	I	V	S	D
CF	1				
I	-0.0528	1			
V	0.1367	0.0607	1		
S	0.0992	0.0289	0.1330	1	
D	0.0119	0.1413	-0.0641	0.0465	1

Table 3. Linear regression of the impact of the investment on firm value

Variables	Coefficients	T	Significativity
Constant	2.95231	1.53	0,127
S	-0.3928096	-2.43**	0,015
I	1.86771	20.55*	0,000
D	8.174267	4.41*	0,000
CF	0.5813599	6.01*	0,000
F	13.72*	-	-
R2	52.15%	-	-

Note: * Significant at the 1% level, ** significant at the 5% level

Our results are consistent with those found by Del Brio and al (2003)[26] in their study. For them, they also found a both significant and positive relationship between firm value on the one hand, and investment and CF, on the other hand. For variable increment in debts, they find that increases in debt are offset by an increase in firm value. Regarding the latter variable, the increment in shares outstanding, they find that its relationship is negative with the firm value. Finally, we can say that Spanish firms prefer debt to the capital increase in financing of their investments.

In their study about indebtedness of French and German firms (comparative study), Kremp and Stöss (2001)[27] found that French firms have significantly improved their financial situation on the end of the 80s and the first half of the decade 90 significantly increasing their equity level.

According to Baude (2005)[28] The rise in share prices during the second half of ninety years have first highly valued the firm's equity and have therefore allowed them to take on more debt. And the bursting of the stock market bubble from the middle of 2000 would have reduced this credit excess without cancel it in 2004.

According to the pecking order theory (POT), debt is preferred to capital increase, this means that the debt has more advantages to the firm. These benefits include the fact that the cost associated with this type of financing is known in advance and does not vary in time, which is not the case when the company makes a capital increase. Also, the use of borrowing does not change the firm allocation of capital between shareholders.

But this type of financing has also drawbacks. The increase in debt can create an imbalance in the financial structure of the firm which may affect its future solvency. Similarly, use of borrowing is reflected in higher financial costs which has the consequence of reducing the future income of the firm for an amount equal to the cost of loan repayment and for a period equal to the loan maturity.

[26] Del Brio, E., De Miguel, A. and Pindado, J. (2003), "Investment and firm value: an analysis using panel data", Applied Financial Economics, Vol.13, n°12

[27] Kremp, E., Stôss, E.(2001), « L'endettement des entreprises industrielles françaises et allemandes : des évolutions distinctes malgré des déterminants proches », Economie et Statistique, N°341, 2001-1/2

[28] Baude, J.(2005), « L'impact des chocs boursiers sur le crédit en France depuis le milieu des années quatre-vingt-dix », revue de la Stabilité Financière,N°7

But the capital increase can lead to the entry of new shareholders not inevitably favorable to the management team and may even, in the worst case, lead to losing control of the firm in favor of the new shareholder. Also, the return on investment expected by shareholders may be higher than interest rate of debt.

Finally, we can conclude that the choice of financing depends on the firm conditions, the industry, the financial market, the economic situation...

5 Conclusions

Regarding the influence of internal and external growth operations on firm value, studies and empirical researchs performed on this point are numerous and attempt to analyze these operations according to their powers to explain the firm value and stock returns.

The study of decision-making environment must be open to other stakeholders whose wealth is also influenced by the investment decision. In investing, the firm changes its relationships with suppliers, customers and employees.

According to our results, we can conclude that:

✓ The relationship between investment and firm value is direct and positive;

✓ French companies prefer the recourse to cash flow first then the debt in the financing of investment, which is consistent with the pecking order theory.

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