Growth and Shareholders' Value Creation: M&As versus Internal Investment

Vassilis Samaras

Université Catholique de Louvain

Abstract

This paper addresses the following basic question related to the performance of firms: should the companies focus on M&As or would they be better off by investing those resources internally instead? Our paper analyses the operational and market performance of all US companies listed on the NYSE, the NASDAQ and the AMEX between January 1990 and December 2004, and compares the performance of the firms that performed internal growth with those that did external growth. We find evidence that both kinds of growth strategies create value for the shareholders, as companies generated higher abnormal returns for the periods of time over which they grew up. In addition, the effects of growth on market performance were mostly short-term effects (i.e. they appeared in the same time panel as the growth). It also appears that in the short run, organic growth is consuming the cash-flow returns of the companies. However, when we run the panel regressions with lagged growth variables, it appears that organic growth has a positive impact on operational performance, once the companies had sufficient time to increase their sales and realize economies of scales or other cost reduction strategies.

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1. Introduction

Company growth can be achieved in a number of ways. The two most important ones are mergers and acquisitions (external growth), and the increase of its own assets or output through the reinvestment of its cash flows in existing businesses (internal or organic growth). Both types of growth strategies are regularly used simultaneously, and have advantages and drawbacks. Ram Charan summarizes nicely the point of view of many professionals: "The profitable growth that is sustainable and is capital-efficient is a combination of the two. Companies that use strictly organic growth may command price premiums but they also miss opportunities because they don't do the right kind of acquisitions. Companies that do only acquisitions usually pay a very high price and there is difficulty in earning the premium back.

So there is a balance for any manager to go after."[1] Clearly, an efficient growth strategy is difficult and important: each type of growth will have a consequential impact on the firm's operational and market performance.

The academic literature has also investigated the advantages and drawbacks of these two generic growth strategies. The following section will describe the effects of growth strategies, defined as the increase of the company's total assets through M&As and internal investments, in terms of shareholder value.

Two of the most often mentioned rationales for conducting external growth are synergies between the combining firms and the creation of market power.

Synergy gains can be defined as the ability of a combination to be more profitable than the individual units that are combined (Gaughan, 2002). The origins of these synergies are diverse. Firstly, they can originate from economies of scale or scope (Peteraf, 1993). For example, Dranove and Shanley (1995) analyzed the source of the gains of economies of scales in production, administration and marketing in hospital systems following mergers and acquisitions. Secondly, synergies may derive from better corporate control on the target firm (Jensen, 1988) because managers often have trouble abandoning old strategies and habits that are unhealthy for their company. The market for corporate control can therefore act as a mechanism to regulate the agency relationship between shareholders and managers of the firm (Manne, 1965). Jensen (1998) argues that it's easier for new top-level managers that had no close bound with the company to make the adequate changes. Resistance to organizational change is also usually significantly lower when top-level managers have been recently appointed. Wang and Xie (2007) also presented evidence on the benefits of changes in control from mergers and acquisitions. They find that the stronger the acquirer's shareholder rights relative to the target's, the higher the synergy created by the acquisition. Finally, synergies may appear from new co-specialized assets, as explained theoretically by Teece (1986), and verified empirically by Capron (1999).

[1] Ram Charan , Director of Austin Industries at the Intergrowth Conference in Rancho Mirage, California, April 19-23 2005. Ram Charan also taught at the Harvard Business School, the Kellogg school of Management, and Boston University, and wrote various books such as "Execution", which was a best-seller.

Another rationale for merging is market power. Market power refers to the capacity of a company to act independently of its competitors and clients (Carlton and Perlof, 1990; Hay and Morris, 1991). Eckbo (1983) tested the collusion hypothesis (i.e., "that rivals of the merging firms benefit from the merger since successful collusion limits output and raises product prices and/or lower factor prices") and finds little evidence indicating that the mergers would have had collusive effects. This result has been confirmed by many subsequent studies. For example, Eckbo (1992) also compared the Canadian market, which was free of antitrust policy for a long period of time, with the US market to test the deterrence hypothesis (i.e., "that the probability of a horizontal merger being anti-competitive is higher in Canada than in the US"). The author finds no clear evidence supporting the hypothesis. Several other empirical studies, such as Sharma and Thistle (1996) in the US market, implied a lack of significant post-merger market power gains to be able to influence the product markets. Similarly, Bittlingmayer and Hazlett (2000) studied the Microsoft case (54 antitrust enforcement announcements during the period 1991 to 1997) and find evidence against the join hypothesis that Microsoft's conduct is anticompetitive and that antitrust enforcement produces net efficiency gains. Finally, several synergy sources were empirically tested by Devos et al. (2007) which suggest that the main source of improvement is a more efficient resource allocation, rather than a decrease in taxes or an increase in market power.

Acquisitions can also destroy value if the management reinvests the firm's resources, or free cash flows, for their own personal interest in inefficient projects. Amihud and Lev (1981) empirically examined the motives for the widespread and persisting phenomenon of conglomerate mergers. Why do managers perform these conglomerate mergers if investors can achieve the same diversification effect in their own portfolios, according to their own risk aversion? They conclude that managers are engaging in conglomerate mergers "to decrease their largely undiversifiable "employment risk" (i.e., risk of losing job, professional reputation, etc.)". Jensen (1986) brings his free cash flow theory to explain why those kind of mergers occur. Free cash flows are cash flows in excess of what is required to fund all projects with positive net present value. Agency costs occur when there are substantial free-cash flows that are reinvested inefficiently by the managers (e.g. by performing firm combinations), instead of redistributing them directly to their shareholders through dividend payments. Yet another example is the study from Shleifer and Vishny (1989) that describes how managers can entrench themselves with manager-specific investments that make it costly for shareholder to replace them. Those manager-specific investments also provide the

opportunity for managers to extract higher wages and to have more control over the corporate strategy of the company. A last source of value-destruction in combinations is poor post-merger integration. Datta (1991) empirically examines the organizational differences between US bidders and targets of M&As on post-acquisition performance. He concludes that differences in top management styles negatively impact post-acquisition performance. However, difference in reward and evaluation systems didn't seem to impact the post-acquisition performance significantly.

On the other hand, internal growth provides more corporate control, encourages internal entrepreneurship and protects organizational culture for different reasons. First of all, managers have a better knowledge of their own firm and assets, and the internal investment is likely to be better planned and efficient (Kazanjian, 2006). In addition, synergies may also be costly to exploit, making it again more interesting to invest internally (Denrell, Fang and Winter, 2003). Moreover, as mentioned earlier, internal growth attenuates top management styles and firm structures differences, which destroy value in combinations (Datta, 1991). Finally, companies that are investing internally are also able to create sustainable competitive advantages since their value-creation processes and positions are less likely to be duplicated or imitated by other firms. Internal growth strategies are more private and less prone to any hostile action from other companies. This leads to better rewards from the capital market (Barney, 1998).

Moreover, there is some evidence about indirect effects of M&As on R&D and employment. Hargedoorn and Duysters (2002) analyzed the effect of M&As on the technological performance of companies in a high-tech environment. Their main result is that the strategic and organizational fit between companies involved in M&As played a crucial role in improving the technological performance of the companies. O'Shaughnessy and Flanagan (1998) studied the relationship between combination and employment, and found that the probability of a layoff announcement is higher if the firms involved in the transaction are related. The probability that a layoff will be announced was not changed when the acquirer was a non-U.S. firm (cross-border transactions), and target revenue per employee before the M&A was negatively related to the probability that a layoff was announced.

The choice of growth type will have a direct impact on the company's strategy and performance, as well as on the development of our economies. The global M&A market had indeed an unprecedented announced deal value of $4.3 trillion in 2007 ($1.4 trillion of which was performed by US acquiring companies), with the top 10 completed deals totaling over $370 billion[2]. Which type of growth strategy creates more value for the shareholders? Should companies focus on M&As or would they be better off by investing those resources internally instead?

This paper will attempt to shed some light on this problematic, which hasn't been broadly studied in the literature because internal growth is not an "event". It's a lengthy process that progressively takes place in time. Therefore, its empirical study is not straightforward.

A lot of empirical studies have been made on M&As about short and long-term market performance around the announcement dates of combinations, as well as post-merger accounting performance.

Although target companies levered significantly positive abnormal returns in most short term studies (Datta, Pinches and Narayanan, 1992; Jensen, 1988), acquiring companies have had mixed results. Some short term studies show a drop in the acquirer's post-acquisition value around the announcement date (Lorderer and Martin, 1992), while others find no significant changes (Andrade, Mitchell and Stafford, 2001; Capron and Pistre, 2002). Therefore, the overall effect at the announcement date is either slightly positive, or zero. If there are no aggregate gains in the combination, M&As may be caused by hubris (Roll, 1986), which suggests that managers are overconfident and destroy value by miss-selecting or over-valuing the target's value. Under this value neutral hypothesis, there is a transfer of value between the bidding and the target company. In addition, there are several determinants for those CARs : means of payment, industry effect (Andrade, Mitchell and Stafford, 2001), status of the target, acquirer's and target's size, number of acquisitions (Fuller et al, 2002), takeover technique (Jensen and Ruback, 1983), bad vs good bidders (Mitchell and Lehn, 1990), number of bids (Bradley, Desai and Kim, 1988), effects of regulation (Eckbo, 1993; Aktas et al., 2004a,b), or cross-border effects (Eckbo and Thorburn, 2000) play a significant role in the performance around the announcement date. On the other hand, long-term market performance studies

[2] Source : SDC Platinum and Bain & Company 2007 Newsletter on M&A Activity (January 2008)

following mergers, such as Asquith (1983) or Agrawal, Jaffe, and Mandelker (1992) show significantly positive long-term pre-event returns for the acquiring firm, zero announcement returns and significantly negative long-term post-event returns. Bouwman et al. (2007) also argue that acquirers buying during high-valuation markets have significantly higher announcement returns but lower long-run abnormal stock and operating performance than those buying during low-valuation markets.

The first attempts to measure post-merger accounting corporate performance go back to Healy et al. (1992). They examined the performance of the 50 largest mergers between U.S. public industrial companies between 1979 and 1983, and found higher post-merger operating cash flow returns relative to their industries. Empirical data also indicated that firms did not reduce their long-term investments after mergers. However, acquiring firms usually undertake acquisitions when they are bigger than industry-median firms (Ghosh, 2001) and following a period of superior performance (Morck et al., 1990). Using firms matched on performance and size as a benchmark on the hundred largest US acquisitions in 1998, Ghosh (2001) finds no evidence of any improvement in cash flow returns following corporate acquisitions. Improvements are due to higher sales growth, and not cost reductions. Cash flow returns increased following cash acquisitions and declined for stock acquisitions.

Finally, consulting firms such as Bain[3] or BCG[4] are encouraging companies to perform M&As, arguing that the more external growth they do, the more their financial and economic performance will increase. BCG's report quotes that the highly acquisitive companies of their US sample have the highest mean total shareholder return, and that the most successful acquisitive growers outperformed the most successful organic growers, allowing them to gain market share more rapidly than their counterparts. However, the objectivity of the studies might be questioned because consulting firms have direct financial interests linked with the results of their studies. On the other hand, several big consulting companies, such as General Electric's consultancy department, have recently praised the advantages of organic growth[5] and encourage companies to pursue it because of the lower costs, the better return of investment and the incentives that it gives to pursue innovation. GE also emphasizes that when Procter & Gamble and Gillette appeared at a meeting in Arizona soon after announcing

[3] Source : Bain & Company Global Learning Curve Study (2003)
[4] Source : The Boston Consulting Group, Growing through Acquisitions : The successful Value Creation record of Acquisitive Growth Strategies (2004)
[5] Source : General Electric Commercial Finance report : Leading views from GE (May 2005)

their merger, A.G. Lafley, P&G's CEO, explained that his company is no longer dependent on mergers to continue sales and profit growth and insisted that "[his] growth has been quality growth because of organic growth". Lafley has often been credited with revitalizing the company by building on P&G's core brands such as Crest and Pampers. Another interesting example is Starbucks. While Starbucks has made some acquisitions, such as the 60-outlet Seattle Coffee Company to enter the U.K. market in 1998, their main objective has been to build on their core competences through the development of internal growth, which brought the total number of their worldwide outlets beyond 13000 as of 2007.

In order to assess the performance of each type of growth strategy and the value creation for the shareholders, we will adopt an empirical approach by analyzing the operational and market performance of all US companies listed on the NYSE, the NASDAQ and the AMEX between January 1990 and December 2004 (a total of 18015 M&A deal and 7223 companies for which data was available), and comparing the performance of the firms that performed internal growth with those that did external growth. To do so, we firstly constructed an internal and an external growth rate measure for each year and each company of our sample, and we clustered them into five 3-years panels. Then, we computed and used for the same panels the mean calendar-time abnormal returns (using the Fama-French three factor model) as a shareholder value creation measure, and the industry-adjusted cash flow returns on assets as an accounting performance measure, and we performed several panel regressions to assess for performance. We also validated our internal growth measure with different other proxies (machinery and equipment, R&D and employees growth rates) and went through several robustness tests.

In section 3, we find evidence that both kinds of growth strategies create value for the shareholders, as companies generate higher abnormal returns for the panels over which they grew up. The similar magnitude of the coefficients corroborates the theory that at the aggregate market equilibrium, both kinds of strategies would yield the same marginal gains for the shareholders. The effects of growth on market performance were mostly short-term effects (i.e. they appeared in the same panel as the growth).

Analyzing the operational performance of the companies also gave some interesting results. It appears that in the short run, organic growth is consuming the cash-flows of the companies, as the cash flow returns decrease around the investment dates. However, when we run the panel

regressions with lagged independent variables, both coefficients become positive (and significant for the lagged internal growth rate coefficient), indicating that in the longer run, organic growth has a positive impact on operational performance, once the companies had sufficient time to increase their sales and realize economies of scales or other cost reduction strategies.

The rest of the paper is presented as follows. The next section describes the sample and the research design. Section 3 validates the internal growth measure, and provides the results of the operational and market performance for each type of growth strategy, as well as some robustness tests. Section 4 concludes the paper.

2. Sample and research design

2.1. Sample

Our sample includes all US companies listed on the NYSE, AMEX and NASDAQ, which were bidders on M&As performed between January 1990 and December 2004. The study uses data from SDC Platinum Mergers and Acquisition database to identify the bidding companies. Management and leveraged buy-outs were not included in the sample[6]. Accounting and market data was obtained from the Compustat and CRSP databases (the extraction options are available in Appendix A). Banks and utilities were also excluded because they are subject to different accounting rules.

The search resulted in a final sample of 7223 companies and 18085 completed deals for which the data was available. Table 1 reports descriptive statistics on the time and industry distribution of the sample mergers[7]. Panel A of the table shows that the end of the 90s was the most active period of our sample, with one third of the mergers happening between 1997 and 2000. Panel B indicates that the acquirers came from 34 different industries, with the Services (#36) sector being the most widely represented in our sample (29.3% of total acquirers). Therefore, our tests will control for it by adjusting the company's performance with their corresponding industry (Healy et al., 1992), as described later on in this section.

Table 2 describes summary statistics on merger transaction accounting methods, number of bidders, method of payment, and merger type. Panel A shows that most acquisitions are accounted using the purchase method (91.3%). Panel B indicates that most mergers are uncontested (98.8%), while Panel C shows that the mergers of our sample are made more often by cash (28.1%) than by stock (22.3%).

[6] Our paper focuses on acquisitions of public companies only. For an analysis of earnings performance subsequent to leverage buyouts, the literature includes Kaplan (1988) or Smith (1990). Literature about performance subsequent to management buyouts includes Bull (1988), Kaplan (1989) or Smith (1990).

[7] Industries definitions can be found in Appendix B and follow the classification in 38 categories by Kenneth French (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/).

2.2. Growth Measures

Computing the growth rates

For each company of our sample, we create a measure of internal and external growth. The approach is similar to Frank (2007), but has been slightly modified to fit better to our research topic and framework. The *total growth rate in fiscal year t, Ga(t),* is defined as $[(TA_t/TA_{t-1})-1]$, where TA_t are the *total assets of the firm at the end of fiscal year t*. If this firm made no M&As or asset divestments during a given year t, then it only grew through its internal resources, and *the internal growth rate, Gi(t),* is equal to the *total growth rate Ga(t).* However, if the company has made combinations during a given year, the total growth rate reflects three processes: (1) the internal growth rate of the original assets TA_{t-1}; (2) the addition of the *acquired target's assets, ta,* which is added at instant $(1-\tau)$, $\tau \leq 1$, with the fiscal year being regarded as length 1 in time (for example, if the merger happens at the first of September, then τ, the part of the year that is hasn't yet elapsed, is equal to 1/3); (3) the *internal growth of the acquired assets over the time fraction τ.*

Therefore, assuming that all the assets owned by the firm grow at the same rate, the internal growth rate Gi(t) solves the following equation :

$$\mathrm{TA_t} = [1 + \mathrm{Gi(t)}]\mathrm{TA_{t-1}} + [1 + \mathrm{Gi(t)}]^{\tau} ta \qquad (1)$$

Once both Ga(t) and Gi(t) are computed, we can compute the *external growth rate Gx(t)* for each company at any given year :

$$\mathrm{Gx(t)} = \mathrm{Ga(t)} - \mathrm{Gi(t)} \quad (2)$$

Extending this framework to the case of several combinations and divestments in a year is straightforward:

$$\mathrm{TA_t} = [1 + \mathrm{Gi(t)}]\,\mathrm{TA_{t-1}} + \sum_j [1 + \mathrm{Gi(t)}]^{\tau}{}_j\, ta_j - \sum_k [1 + \mathrm{Gi(t)}]^{\tau}{}_k\, ta_k \qquad (3)$$

with j, the number of mergers and acquisitions at a given year t, and k, the number of divestments of the given year.

Adjustment for the accounting method

In addition, the accounting methods used to record the business combination (pooling of interests or purchase method[8]), the means of payment (cash, stock, debt or a mix), the percentage of control of the target, and the price paid can significantly influence the data and introduce biases in our computations. Therefore, we have to adjust the total assets in our formulas for all the possible cases.

Let's first take a look at the two different types of accounting methods: the pooling of interests method and the purchase method. The pooling method presumes that two companies merge as equal, resulting with either the creation of a new company, or with one company becoming part of the other. Therefore, both previous entities retain their operating activities. Moreover, companies that are willing to merge under the pooling method have to meet 12 criteria from the SEC[9] (including similar size and type criteria). No new assets or liabilities are created by the combination, and the values for the assets and liabilities that are carried forward are the book values of each company. On the other hand, the purchase method is based on the notion that one company acquires another company. As a result, assets and liabilities are recognized by the surviving company at their fair market value, and any excess of purchase price paid over the net fair value is considered as a goodwill. The goodwill, as well as the difference between the fair market value and the book value, have to be amortized against expense.

Therefore, we have to correct the total assets according to the accounting regime used for each combination. The adjusted total assets, $\widetilde{\mathrm{TA}}$, are similar to the ones made by Frank (2007)[10] to correct for the different accounting methods:

- Pooling of interests method :

$$\widetilde{TA}_t = \mathrm{TA_t} - (\mathrm{GW_{t-1}} + \mathrm{GW_{ta}}) \quad (4)$$

[8] After the issuance of FASB Statement No. 141 in July 2001, all business combinations must be accounted for using the purchase method. However, both methods coexisted before the fiscal year 2002.
[9] Accounting Principles Board Opinion (APBO) No. 16, 1970
[10] Frank's paper demonstrates the formula for all the different cases and all possible combination types

- Purchase method :

$$\widetilde{TA}_t = \mathrm{TA_t} - (\mathrm{GW_{t-1}} + \mathrm{GW_{ta}} + \alpha P + \beta\, TgtLiabMV - \beta ta) \qquad (5)$$

$0 \leq \alpha \leq 1;\ 0.5 < \beta \leq 1$

P refers to the *price paid for the control-achieving transaction*; *α* refers to the *weight of equity and/or debt securities paid in the price of the combination deal* (in contrast to payments in the form of cash or other assets), so that αP represents the portion of price paid in the form of equity and/or debt securities; *β* refers to the *accumulated controlled portion of the target from this deal and the previous deals* (if any), β must be bigger than 0.5 for the control of the target to be obtained; *TgtLiabMV* is the *market value of the target firm's liabilities*[11], so that *β TgtLiabMV* represents the amount of target's liabilities assumed by the acquirer during the business combination; GW_t is *the goodwill of the company at time t*, GW_{ta} is the *goodwill of the target company at the combination date* ; the other items are defined as before[12].

Non-Overlapping Panels Creation

We then divided our internal and external growth measures into 5 panels (5x3years) for each company, each panel's growth being the sum of the three years composing the panel. Because we want to focus mainly on the impact of investments and acquisitions on corporate and market performance, but also because a majority of the divestments were not available on the SDC database, we decided to drop any panel for which the total growth for the whole panel was negative, as well as the very few cases of divestments that remained after dropping those panels. While it's true that this choice might have some undesirable consequences (survival bias, sample selection bias...), the loss of those panels will make sure that long (since or panel's length is three years) and big divestment periods, such as the selling of a major part of the operations, or even bankruptcy, won't impact our results.

[11] Also available through SDC

[12] For some of the companies (especially private targets), the target's total assets were not always available. We used the ratio deal value/% acquired as a proxy for the target's total assets. The validity of this hypothesis is tested in the robustness section of this paper.

In addition, the use of 3 years non-overlapping panels will have two other advantages. Firstly, their length is sufficient for the estimation of a Fama-French three factors model. Secondly, non-overlapping panels are adequate for inference and for the use of lagged panel regression tests (see sections 2.3 and 2.4).

2.3. Value creation measure (Fama-French three factor model[13])

In this section, we will describe the methodology that we used to assess the value creation for the shareholders of each growth strategy. Because each type of growth has different induced risk levels, as broadly illustrated in the introduction of the paper, we will use a risk-adjusted measure of performance. Therefore, we estimate the mean-calendar abnormally returns through the Fama-French (1992) three factor model, and we use it as a value creation measure.

The Fama and French three factor time-series regression was estimated for each of our five panels[14] :

$$R_{jt} - R_{ft} = a_j + b_j (R_m - R_f)_t + s_j SMB_t + h_j HML_t + \varepsilon_{jt} \quad (6)$$
$$j = 1,\ldots,N ; t = 1,\ldots,T$$

Where R_{mt} is the *market return*, R_f is the *risk-free asset return*, b_j is the *factor sensitivities of excess return on market portfolio factor*, s_j is the same for the *size factor portfolio*, and h_j for the *value factor portfolio*. R_{jt} denotes the *stock returns for each company in month t*. a_j is the *mean calendar-time abnormal return*, and ε_{jt} is the *mean-zero asset-specific return*. The Ordinary Least Squares method of estimation is used for econometric analysis.

Then, we estimate which growth strategy performed better, by performing a panel regression of the abnormal mean returns of equation 6, after adjusting them for heteroscedasticity (as in the FGLS approach of Saxonhouse, 1976), on the contemporary and lagged internal and external growth rates :

$$a_{jt} = \gamma_0 + \gamma_1 Gi_{jt} + \gamma_2 Gx_{jt} + \gamma_3 Gi_{jt-1} + \gamma_4 Gx_{jt-1} + \varepsilon_j \quad (7)$$

[13] The value of the three factors for the NYSE, AMEX and NASDAQ markets are available at Kenneth French's website: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/.
[14] The panel required data over at least 24 out of the 36 months composing it in order to be kept.

Finally, we perform the specification test devised by Hausman (1978) to choose between a fixed and a random effect estimator. Given a model and data in which fixed effects estimation would be appropriate, a Hausman test tests whether random effects estimation would be almost as good. In a fixed-effects kind of case, the Hausman test is a test of H_0: that random effects would be consistent and efficient, versus H_1: that random effects would be inconsistent. The result of the test is a vector of dimension k which will be distributed according to a chi-square(k). So if the Hausman test statistic is large, the test recommends the use of a fixed effect model. If the statistic is small, one may get away with random effect.

2.4. Operational performance measure

We use cash flows measures in order to assess the operational performance of the firms. Those measures have two advantages compared to other standard accounting measures: they moderate the impact of the financing of the acquisition (cash, stock or mixed) and the impact of the method of accounting for the transaction (purchase or pooling accounting) as mentioned by Healy et al. (1992) because they exclude the effect of depreciation, goodwill, interest expense/income, and taxes. Therefore, those properties make them more interesting for our study than earnings based performance measures. In addition, it must be underlined that this is a non-risk adjusted operational measure, as opposed to our risk-adjusted value creation measure.

Operating cash flows are defined as sales, minus the cost of goods sold, and selling and administrative expenses, plus depreciation and goodwill expenses[15]. The cash flows are then deflated by the firm's total assets to obtain a comparable metric. We prefer not to use the market value of assets as a deflator because a post-acquisition increase (or decline) in market value will decrease (increase) cash flow ratios even if the operating cash flows stay steady.

Because cash flows variables are affected by firm-specific and industry-wide factors, we adjust them using industry performance as a benchmark, by subtracting every year the industry median from the firm value[16].

[15] The different Compustat items are described in Appendix C.
[16] Once more, we use the classification in 38 categories by Kenneth French (see Appendix B)

Finally, we cluster again our industry adjusted cash flow returns into five 3-years panels, by cumulating the single year returns, and we perform a panel regression of the cash flow returns on the contemporary and lagged internal and external growth rates.

2.5 Descriptive Statistics

Table 3 reports descriptive statistics for the different growth and performance measures for each panel, as well as the average for all the panels. For all our variables, 5% of the top and bottom outliers were removed from the sample, as our global data had rather important variance and extreme values.

The companies of our sample had an internal growth rate panel average of 43% and an external growth rate average of 8% (since the majority of the companies didn't perform any external growth at all in most panels) between January 1990 and December 2004. In addition, the average 3-years cumulated cash flow return was 3.2% when deflated on assets.

Panel A of Table 4 presents the average (upper value) and median (lower value) alphas, sorted according to the amount of internal and external growth rate performed over the 15 years period. We notice that the mean and median abnormal returns increase as the amount of internal and external growth goes up, suggesting a positive relationship between growth and value creation for the shareholders. Panel B of Table 4 presents the same matrix but for operational performance. It appears that both types of growths might have a slight negative impact on the cash-flow returns, although it's hard to judge if it's significant just from those univariate statistics. The different panel regressions of section 3 will give us better understanding of the different relationships between the different variables, as well as their significance.

Finally, we wanted to investigate the association between both types of growth. Are they completely independent (as suggested by Luypart and Huyghebaert (2007) in the European market) or do companies usually perform them together? We correlated our internal and external growth measures for each panel, and found no statistically significantly correlation between them ($\rho = 0.02$), confirming the other similar results obtained in the literature.

3. Performance results

3.1. Validation of our internal growth measure

First of all, we decided to validate our internal growth measures through regressions with a few variables that should be correlated with them. Table 5 presents the coefficients of the univariate panel regressions between the internal growth rate and property plant and equipment growth rate (panel A), employees growth rate (panel B) and research and development expense growth rate (panel C), to see if there is a significant positive relationship between those variables. Indeed, if the companies did grow organically during a given period, it sounds intuitive and reasonable to assume that they increased their human capital, their machineries, as well as their R&D expenses (for those companies that used to invest in some R&D). Hausman specifications tests are performed for each panel regression and recommend fixed-effect panel regressions for all cases (all the chi squares are significant).

Results indicate that an increase in equipment, employees or R&D expenses has a significant positive impact on the internal growth rate of the company, therefore confirming that the internal growth rate proxy fulfills its intended purpose. With our internal growth measure being validated, we can now precede to the computation of the performance tests for each growth strategy.

3.2. Panel Regressions on market and operational performance

Tables 6 and 7 sum up the results from our panel regressions of the internal and external growth rates on market (Table 6) and operational (Table 7) performance. Each one of regressions was performed twice: once with a fixed effect model and once with a random effect model. We than ran a Hausman test in order to compare our fixed and random effects panel regressions. All the chi-squares, which are referenced in the tables, are positive and significant. This leads us to select fixed effects for all our panel regressions.

The results from Panel A of Table 6 indicates that an increase of the internal growth rate significantly (p-value = 0.00) improves the mean calendar-time abnormal returns of the company that grew up internally. Moreover, an increase in the external growth rate also has a significant positive impact on the company's market performance. Both impacts are of similar magnitude. Therefore, it appears that both kinds of growth strategies create value for the shareholders, as companies generate higher abnormal returns for the panels over which they grew up. Moreover, the similar magnitude of the coefficients corroborates the theory that at the aggregate market equilibrium, both kinds of strategies would yield the same marginal gains for the shareholders. Of course, at the micro level, companies will have to choose an optimal growth strategy according to their resources, their competitors, the concentration of the market, etc.

Panel C and D show the results of the panel regressions with two more independent variables: the lagged internal growth rate, Gilag (i.e. Gi_{t-1}), and the lagged external growth rate, Gxlag (i.e. Gx_{t-1}), in order to study the impact of a variation of internal or external growth on future market performance. The coefficients on the non-lagged variables remain positive and significant, while the coefficients of the lagged variables are non-significant, indicating that investments or mergers impact market performance on a short term horizon.

Panel A of Table 7 presents the coefficients of the panel regressions of the two growth measures on the cash flow returns. The negative coefficients (significant for the internal growth rate) might seem quite unexpected at a first glance. It appears that in the short run, organic growth is consuming the cash-flows of the companies, as the cash flow returns decrease around the investment dates. This decrease might be the result of the combination of two separate effects.

Firstly, it could be that decreasing cash flow returns are not the consequence of the combination/investment, but rather the cause of it. For example, if bidders perceive that it would benefit them from acquiring a certain company with bad current operational performance but with high synergy potential, they will go on with the acquisition. Similarly, companies with low cash flow returns might seek to improve their situation by expanding internationally for example, therefore increasing their equipment, employees and R&D expenses.

Secondly, we have to keep in mind that an increase in the total assets through organic growth at time t will decrease the cash flow returns ratio if the cash flows don't increase proportionally during the same year. If the sales increase or the costs reductions (through improved production methods or economies of scales) take some time to appear, it will take a few years for the cash flow returns to go up.

In order to test this hypothesis, we run the panel regressions with lagged independent variables (Panel B of Table 7). This time, both coefficients become positive (and significant for the lagged internal growth rate coefficient), indicating that in the longer run, organic growth has a positive impact on operational performance, once the companies had sufficient time to increase their sales and realize economies of scales or other cost reduction strategies.

Hence, it appears that growth impacts market and operational performance differently. On the one hand, the positive effects of growth on market performance and shareholder value materialize immediately (or at least in the same panel), while the gains on operational performance only do after a couple of years.

3.3. Robustness Tests

In this section, we will undertake some tests to evaluate the robustness of our results. The main panel regressions will be run again with: (1) a subsample of 6124 M&As for which all the data is available for both the bidder and the target, to assess the impact of our target's total assets proxy (deal value/%acquired) on the different coefficients; (2) new industry adjusted internal and external growth rates.

The results of the panel regressions with our new subsample are presented in Table 8. It confirms that our results are robust to our proxy, none of the coefficients changing sign significantly compared to the regressions with our full sample. However, the lagged coefficient for external growth in the second regression now significantly increases (p-value = 0.09) compared to the non lagged coefficient, from -2.12 to +0.95, backing up our intuition that the effects of mergers on accounting performance may also appear in the longer term.

To see if there was any industry effect impacting our growth rates, we adjusted them for industry by subtracting the industry median (for Gi) or the industry average (for Gx – since the industry median was zero in most panels) foe each panel. The results of the two core regressions are presented in Table 9, and the significance of all the coefficients remains once again similar to the previous tests.

4. Conclusion

This paper addresses the following basic question related to the performance of firms: should the companies focus on M&As or would they be better off by investing those resources internally instead? This question hasn't been broadly studied in the literature because internal growth is not an "event". It's a lengthy process that progressively takes place in time. Therefore, its empirical study is not straightforward.

In order to answer this question, we analyzed all US companies listed on the NYSE, AMEX and NASDAQ, which were bidders on M&As performed between January 1990 and December 2004.

Firstly, we constructed an internal and an external growth rate measure for each year and each company of our sample. Then, we computed and used the mean calendar-time abnormal returns (with a Fama-French three factor model) as a shareholder value creation measure, and cash flow returns as a measure for operating performance. Finally, we validated our internal growth measure and we estimated which growth strategy performed better, by performing panel regressions of the performance measures on the contemporary and lagged internal and external growth rates.

Using this methodology, we find evidence that both kinds of growth strategies create value for the shareholders, as companies generate higher abnormal returns for the panels over which they grew up. The similar magnitude of the coefficients corroborates the theory that at the aggregate market equilibrium, both kinds of strategies would yield the same marginal gains for the shareholders. The effects of growth on market performance were mostly short-term effects (i.e. they appeared in the same panel as the growth).

Analyzing the operational performance of the companies also gave some interesting results. It appears that in the short run, organic growth is consuming the cash-flows of the companies, as the cash flow returns decrease around the investment dates. However, when we run the panel regressions with lagged independent variables, both coefficients become positive (and significant for the lagged internal growth rate coefficient), indicating that in the longer run, organic growth has a positive impact on operational performance, once the companies had

sufficient time to increase their sales and realize economies of scales or other cost reduction strategies.

Hence, it appears that growth impacts market and operational performance differently. On the one hand, the positive effects of growth on market performance and shareholder value materialize immediately, while the gains on operational performance only do after a couple of years. All these results are coherent with the fact that the companies are valued on the stock market according to the present value of their future cash flows.

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Appendix A: CRSP and Compustat extraction options

option#LookAheadBias#0
option#QuarterlyMaxDelay#3
option#AnnualMaxDelay#12
option#NoInfoCode#-98
option#CRSPMICode#-99
option#EMPTYCode#0
option#SICInclusion#True
option#SICExclusion#False
option#SICFilePath#
option#PERMNOInclusion#True
option#PERMNOExclusion#False
option#PERMNOFilePath#
option#SHRCDInclusion#True
option#SHRCDExclusion#False
option#SHRCDFilePath#
option#ErrorCodeFilePath#
option#Flat#False
option#Slicing#False
option#MultipleRecord#False
option#NewMatching#True

Appendix B: Industry Classification

Industry Number	Industry Name	SIC Range
1	Agriculture, forestry, and fishing	0100-0999
2	Mining	1000-1299
3	Oil and Gas Extraction	1300-1399
4	Nonmetalic Minerals Except Fuels	1400-1499
5	Construction	1500-1799
6	Food and Kindred Products	2000-2099
7	Tobacco Products	2100-2199
8	Textile Mill Products	2200-2299
9	Apparel and other Textile Products	2300-2399
10	Lumber and Wood Products	2400-2499
11	Furniture and Fixtures	2500-2599
12	Paper and Allied Products	2600-2661
13	Printing and Publishing	2700-2799
14	Chemicals and Allied Products	2800-2899
15	Petroleum and Coal Products	2900-2999
16	Rubber and Miscellaneous Plastics Products	3000-3099
17	Leather and Leather Products	3100-3199
18	Stone, Clay and Glass Products	3200-3299
19	Primary Metal Industries	3300-3399
20	Fabricated Metal Products	3400-3499
21	Machinery, Except Electrical	3500-3599
22	Electrical and Electronic Equipment	3600-3699
23	Transportation Equipment	3700-3799
24	Instruments and Related Products	3800-3879
25	Miscellaneous Manufacturing Industries	3900-3999
26	Transportation	4000-4799
27	Telephone and Telegraph Communication	4800-4829
28	Radio and Television Broadcasting	4830-4899
29	Electric, Gas, and Water Supply	4900-4949
30	Sanitary Services	4950-4959
31	Steam Supply	4960-4969
32	Irrigation Systems	4970-4979
33	Wholesale	5000-5199
34	Retail Stores	5200-5999
35	Finance, Insurance, and Real Estate	6000-6999
36	Services	7000-8999
37	Public Administration	9000-9999
38	Almost Nothing	-

Appendix C: Compustat items

- DATA6/N-Assets - Total (MM$)
- DATA8/N- Property Plant and Equipment - Total (MM$)
- DATA12/N-Sales (Net) (MM$)
- DATA14/N-Depreciation and Amortization (MM$)
- DATA29/N- Employees - Total
- DATA41/N-Cost of Goods Sold (MM$)
- DATA46/N-Research and Development Expense (MM$)
- DATA132/N-SG&A Expenses (Restated) (MM$)
- DATA204/N-Goodwill (MM$)

Tables and Figures

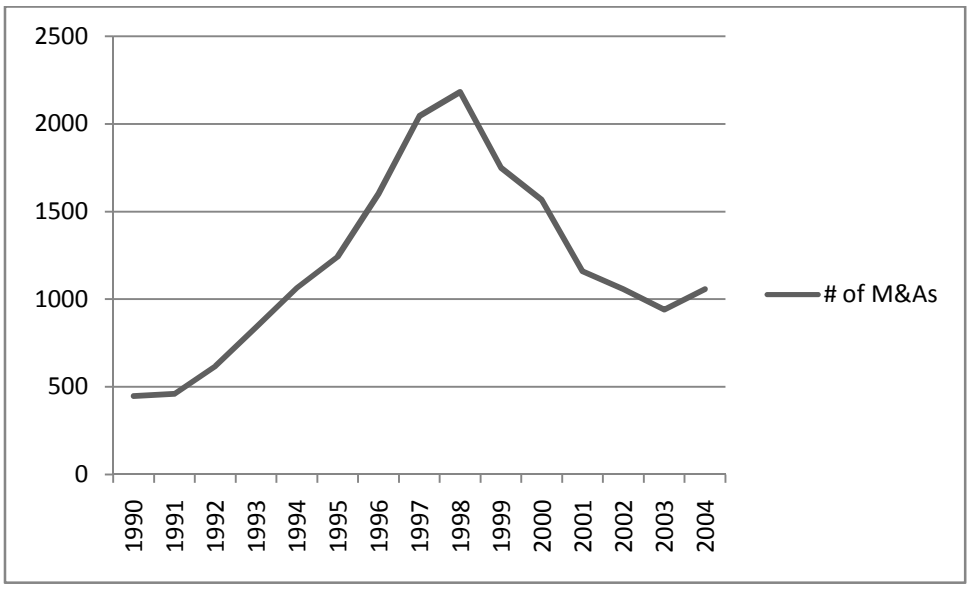
Table 1

Descriptive statistics on the time distribution of the sample mergers and their industry distribution

Panel A: Distribution of Merger Years

Year	Number of M&As	Percentage	Year	Number of M&As	Percentage
1990	448	2.5%	1998	2182	12.1%
1991	461	2.5%	1999	1750	9.7%
1992	618	3.4%	2000	1567	8.7%
1993	840	4.6%	2001	1160	6.4%
1994	1065	5.9%	2002	1058	5.9%
1995	1242	6.9%	2003	941	5.2%
1996	1602	8.9%	2004	1058	6.1%
1997	2046	11.3%	Total	18085	100%

Figure 1: Graphical representation of the merger year's distribution



Panel B: Distribution of Acquiring Firms' Industries

Industry	# of firms	% of firms	Industry	# of firms	% of firms
1	32	0.2%	20	275	1.5%
2	99	0.5%	21	1102	6.1%
3	919	5.2%	22	1443	8.0%
4	14	0.1%	23	390	2.2%
5	168	0.9%	24	996	5.5%
6	265	1.5%	25	176	1.0%
7	11	0.1%	26	302	1.7%
8	74	0.4%	27	565	3.1%
9	76	0.4%	28	647	3.6%
10	32	0.2%	29	32	0.2%
11	60	0.3%	30	42	0.2%
12	130	0.7%	31	0	0.0%
13	256	1.4%	32	0	0.0%
14	785	4.3%	33	1049	5.8%
15	91	0.5%	34	870	4.8%
16	144	0.8%	35	1341	7.4%
17	31	0.2%	36	5304	29.3%
18	70	0.4%	37	42	0.2%
19	240	1.2%	38	38	0.2%

Table 2

Summary statistics on merger transaction accounting methods, number of bidders, method of payment, and merger type for all the merger and acquisitions

Panel A: Distribution of firms by method of accounting for merger

Accounting method	
Purchase	91.3%
Pooling	8.7%

Panel B: Distribution of firms by number of bidders

Number of Bidders	
1	98.8%
2	1.0%
3 or more	0.2%

Panel C: Distribution of firms by merger method of payment

Method of Payment	
100% stock	22.3%
100% cash	28.1%
mix/other	49.6%

Table 3

Descriptive statistics on the performance variables

	Variable	Gi	Gx	Cash Flow Returns	alpha
Panel 1	Mean	0.39	0.04	0.07	0.005
	Median	0.28	0.00	0.08	0.005
	Std Dev	0.39	0.10	0.70	0.017
Panel 2	Mean	0.48	0.08	-0.01	0.002
	Median	0.35	0.00	0.04	0.002
	Std Dev	0.44	0.18	0.73	0.017
Panel 3	Mean	0.49	0.16	-0.03	0.002
	Median	0.38	0.00	-0.02	0.001
	Std Dev	0.45	0.31	0.82	0.019
Panel 4	Mean	0.45	0.16	0.08	0.007
	Median	0.31	0.31	0.09	0.005
	Std Dev	0.46	1.29	0.83	0.021
Panel 5	Mean	0.36	0.16	0.06	0.007
	Median	0.32	0.00	0.11	0.007
	Std Dev	0.33	0.47	0.93	0.015
Panel Average	Mean	0.43	0.08	0.03	0.005
	Median	0.33	0.00	0.06	0.004
	Std Dev	0.41	0.17	0.80	0.018

Table 4

Univariate statistics on performance according to the intensity of growth

Panel A : Average and median alphas according to the intensity of internal and external growth

high Gi	0.0071	0.0084
	0.0062	0.0081
Low Gi	0.0014	0.0019
	0.0018	0.0026
	Low Gx	High Gx

Panel B : Average and median cash flow returns according to the intensity of internal and external growth

high Gi	0.0323	0.0317
	0.0524	0.0579
Low Gi	0.0441	0.0425
	0.0714	0.0659
	Low Gx	High Gx

Table 5

Coefficients of the regressions for the validation of the internal growth measure

Panel A : Coefficients of the panel regression with property plant and equipment growth rate as dependant variable

Model : fixed effects Hausman chi2 = 7.71 Prob>chi2 = 0.02	Dependant variable: Gi	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 overall = 0.11	(Constant)	0.6354	0.0150	42.46	0.00
	Equipment	0.0066	0.0004	18.4	0.00

Panel B : Coefficients of the panel regression with employees growth rate as dependant variable

Model : fixed effects Hausman chi2 = 9.73 Prob>chi2 = 0.01	Dependant variable: Gi	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 overall = 0.27	(Constant)	0.6089	0.0148	41.13	0.00
	Employees	0.0480	0.0011	44.86	0.00

Panel C : Coefficients of the panel regression research and development expense growth rate as dependant variable

Model : fixed effects Hausman chi2 = 5.31 Prob>chi2 = 0.07	Dependant variable: Gi	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 overall = 0.06	(Constant)	0.6939	0.0242	28.6	0.00
	R&D	0.0001	0.0001	9.24	0.00

Table 6

Panel regressions on market performance

Panel A : Coefficients of the fixed effects regression on the market returns

Model : fixed effects Hausman chi2 = 8.24 Prob>chi2 = 0.02	Dependant variable: alpha	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0191	(Constant)	0.2102	0.0080	26.01	0.00
between = 0.7162	Gi	0.0019	0.0001	15.73	0.00
overall = 0.0171	Gx	0.0020	0.0003	7.03	0.00

Panel B : Coefficients of the fixed effects regressions on the market returns with lagged variables

Model : fixed effects Hausman chi2 = 124.61 Prob>chi2 = 0.00	Dependant variable: alpha	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0318	(Constant)	0.119	0.0109	10.97	0.00
between = 0.5863	Gi	0.0044	0.0003	14.8	0.00
overall = 0.0284	Gilag	0.0004	0.0002	0.83	0.41
	Gx	0.0020	0.0004	5.42	0.00
	Gxlag	-0.0005	0.0004	-1.32	0.19

Table 7

Panel regressions on operational performance

Panel A: Coefficients of the fixed effects regression on the cash flow returns

Model : fixed effects Hausman chi2 = 13.09 Prob>chi2 = 0.00	Dependant variable: CFR	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0023	(Constant)	-1.1221	0.6446	-1.74	0.082
between = 0.3663	Gi	-1.9042	0.3362	-5.66	0.00
overall = 0.0024	Gx	-0.3473	0.7463	-0.47	0.64

Panel B: Coefficients of the fixed effects regressions on the cash flow returns with lagged variables

Model : fixed effects Hausman chi2 = 6.11 Prob>chi2 = 0.05	Dependant variable: CFR	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0191	(Constant)	4.4182	1.0863	4.07	0.00
between = 0.4707	Gi	-12.0144	1.0638	-11.29	0.00
overall = 0.0193	Gilag	1.0636	0.5547	1.92	0.05
	Gx	-0.5727	1.1489	-0.5	0.62
	Gxlag	0.8178	1.2245	0.67	0.5

Table 8

Panel Regressions for the subsample with complete target's total assets

Panel A: Coefficients of the market returns regression

Model : fixed effects Hausman chi2 = 9.54 Prob>chi2 = 0.01	Dependant variable: alpha	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0198	(Constant)	0.0939	0.0120	7.83	0.00
between = 0.762	Gi	0.0032	0.0004	9.03	0.00
overall = 0.0169	Gilag	0.0004	0.0003	0.51	0.62
	Gx	0.0022	0.0005	4.76	0.00
	Gxlag	-0.0004	0.0005	-0.89	0.37

Panel B: Coefficients of the operational returns regression

Model : fixed effects Hausman chi2 = 36.04 Prob>chi2 = 0.00	Dependant variable: CFR	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0251	(Constant)	5.9250	1.5229	3.89	0.00
between = 0.6151	Gi	-16.7123	1.5409	-10.85	0.00
overall = 0.0253	Gilag	1.3809	0.7282	1.87	0.06
	Gx	-2.1221	1.8505	-1.15	0.25
	Gxlag	0.9526	1.8542	0.51	0.61

Table 9

Panel Regressions with industry adjusted growth rates

Panel A : Coefficients of the market returns regression

Model : fixed effects Hausman chi2 = 6.04 Prob>chi2 = 0.05	Dependant variable: alpha	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0289	(Constant)	0.16560	0.0095	17.45	0.00
between = 0.5405	AGi	0.0043	0.0003	13.89	0.00
overall = 0.0276	AGilag	0.0002	0.0002	0.62	0.53
	AGx	0.0021	0.0004	5.57	0.00
	AGxlag	-0.0005	0.0004	-1.26	0.20

Panel B : Coefficients of the operational returns regression

Model : fixed effects Hausman chi2 = 17.94 Prob>chi2 = 0.00	Dependant variable: CFR	Coefficients		t	Sig.
		B	Std. Error	Tolerance	VIF
R^2 within = 0.0191	(Constant)	-0.0348	0.9461	-0.04	0.97
between = 0.1974	AGi	-12.1321	1.0728	-11.31	0.00
overall = 0.0192	AGilag	1.0937	0.5518	1.98	0.05
	AGx	-0.6756	1.1481	-0.59	0.55
	AGxlag	0.74542	1.2243	0.61	0.54