Does the Stock Market Penalise Fast-Growing Firms?

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Executive Summary

This study examines in detail the link between accounting measures of a firm's success and its share price performance, employing data on all currently listed French companies. A key finding is the negative relationship between the growth rates of earnings, sales, and assets, and the following year's stock returns. In particular, firms whose total assets grow substantially can experience relative share price falls for up to five years. However, we show that the eventual rewards for investors who fund acquisitions and development can be substantial when share undervaluations are reversed. Eurofins Scientific, a company which experienced phenomenal asset growth over the past 15 years, is used as an exemplar. When financial and real estate holding companies are excluded from the analysis, Eurofins ranks highest in terms of both its total returns to shareholders (of over 5,000% compounded) and its risk-adjusted returns among all companies that listed on the Paris Bourse for the whole period.

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1. Introduction

The price of a stock should be the present value of all of its future cashflows, and when a business creates a surplus over the cost of its debt and equity financing, it creates value for shareholders. According to the efficient markets hypothesis (EMH), current stock prices should reflect all relevant information available at that time and changes in stock prices (or returns) should be unforecastable. Stock returns can be decomposed into news about the firm's cashflows and news about discount rates – the rate at which future cashflows are discounted back to the present. Research indicates that the former are considerably more important in explaining returns at the firm level than the latter (see, for example, Vuolteenaho, 2002).

Yet there is widespread evidence – both within the academic literature and as evidenced by the number and profitability of mutual funds and hedge funds around the world – that the EMH does not hold. Numerous pricing "anomalies", where investors appear to be able to systematically earn greater profits than they should for the risk that they took, have been observed and exploited, seeming to be both persistent over time and pervasive across many markets. While this is not the place to provide an exhaustive list, examples of the most important anomalies include the small firm effect, the January effect, post-earnings announcement drift, the momentum effect, and the value effect, to name but a few. There are numerous empirical models that have sought to use these anomalies to explain the cross-section of stock returns (i.e. why some stocks generate higher returns than others) using firm characteristics such as size, dividend yield, and the ratio of book value to market value.

A question that also relates to the EMH is the extent to which stock markets appropriately value real investments. If the markets are indeed efficient, then they should correctly capitalise asset investment and divestment. Logic dictates that firms making rational capital expenditures to grow their businesses should see their share prices rise in anticipation of expected future profit growth. However, there is a vast academic literature suggesting that companies making acquisitions subsequently lose value. In other words, acquiring firms experience a period of

negative abnormal returns. Recent research by Cooper *et al*. (2008) has also shown that asset growth more broadly is a strong predictor (cross-sectionally) of future stock returns, the relationship between the two being negative – i.e., when a firm's total assets increase, their share prices fall.

The present study in essence takes this research agenda forward and examines the EMH from a different perspective by focusing on the interplay between some of the accounting measures of a firm's success and its stock returns. Again, according to the EMH, current stock prices should reflect discounted probability-weighted predictions about future profitability, and so there should be no link cross-sectionally between current stock returns and publicly available accounting information. But there is already evidence, as that the markets are unable to accurately price investment activities by the firm. However, there is surprisingly little research on the interplay between accounting measures of firm performance and stock returns and virtually nothing exists outside of the US or using post-millennium data. Even if the market is slow to adjust to firm operating performance in the short term (or even over-reacts) or is subject to sentiment that causes equity prices to deviate from fair value, *over the long run* (ten years, say), one would expect accounting and stock market-based measures of performance to be highly correlated. Indeed, Easton *et al*. (1992) find this to be the case and Halsey (2001) shows a remarkable mean reversion of return on equity (ROE) within ten years of initial observation to a value that approximates the long-run return to the market as a whole and thus to the average cost of equity. Although debt-to-equity ratios and total assets vary little over time, much of the mean reversion in ROE is due to reversion in profit margins (see Halsey and Soybel, 2000).

This research will seek to answer the following questions. First, which firms on the French stock exchange performed best over the past 5, 10 and 15 years on both market-based (growth in share prices and dividends) and accounting-based criteria (e.g., return on assets, return on equity, asset growth)? Second, which companies were leaders in their industries according to these measures? Third, what is the relationship between stock returns, earnings growth, capital

investment and other accounting variables? The analysis will comprise two parts. The study first will begin with an examination of all stocks listed on the French stock exchange in parallel, and second, it will then focus on a case study of Eurofins Scientific. Eurofins constitutes a particularly interesting firm to use as a case study because it has experienced phenomenal growth since its initial public offering just 15 years ago, through a mixture of organic business development and extensive acquisitions.

The use of French data is quite unique, which will complement and provide comparative findings to existing studies based on US stocks. According to recent figures, the pan-European Euronext Exchange, of which the Paris Bourse is part, is the world's fifth largest with a market capitalisation of around $3 trillion[1] and yet it is the subject of surprisingly little empirical research. Although it would be possible to conduct a cross-country comparison, the French exchange is selected so that the companies are traded in relatively homogeneous conditions, are subject to precisely the same accounting conventions, and are traded in the same currency.

The remainder of this paper is as follows. Section 2 surveys some relevant existing studies that examine issues relating to the relationship between stock market and accounting performance. Sections 3 and 4 then proceed to outline the data and methodology employed in the study respectively. The results for the part of the study that examine the whole of the Paris Bourse are presented and analysed in Section 5, with the case study of Eurofins discussed in Section 6. Section 7 offers some concluding comments.

2. Literature Review on the Link between Accounting Information and Stock Returns

As stated above, given the widespread availability of accounting information and that stock returns are in essence the only measure of interest to shareholders, the lack of compelling evidence on the link between the two is puzzling. The majority of extant studies are focused on individual sectors (e.g., Gaur *et al.*, 1999) or on

[1] Figure as at December 2011, source: http://en.wikipedia.org/wiki/List_of_stock_exchanges#France

only one or two specific variables (e.g., earnings or assets) and almost exclusively employ US data. The early and pioneering work in this area was conducted by Beaver *et al*. (1970), who argue that market-based and accounting-based measures of risk are highly correlated. Slightly more recently, Haugen and Baker (1996) provide multi-country evidence that various lagged accounting variables can forecast future relative stock returns. These variables are classified as price-related (i.e. variables that signify that a stock is cheap or expensive relative to fundamentals, such as earnings-to-price, or cashflow-to-price), factors that relate to risk or liquidity, and factors that relate to growth potential (i.e. variables that predict whether a firm's earnings or dividends are likely to grow more quickly in the future than those of other firms, such as operating income-to-total assets, income-to-sales, sales-to-assets etc.). They find surprisingly little role for the risk-based factors, and a much bigger role for those focused on the price level or growth potential. They argue that his points to a serious degree of mis-pricing in the stock markets, a conclusion echoed by Cooper *et al*. (2008).

McConnell and Muscarella (1985), amongst others, demonstrate that the markets react positively to announcements of planned capital investments – and the bigger the investment, the bigger the rise in share prices. One might expect such investments to be viewed favourably as an indicator that the firm has strong investment opportunities (and senior managers are offering a signal that this is the case) that will enhance profitability in the future. Yet the evidence also suggests that once the firm makes these capital investments, stock prices subsequently fall over the medium term (one to three years following). A truly enormous literature describes and attempts to explain the negative stock returns that follow initial public offerings and seasoned equity offerings (see, e.g., Loughran and Ritter, 1995), and acquisitions (e.g., Asquith, 1983; Aggarwal et al., 1992; or Loughran and Vijh, 1997). And by contrast, any firm actions that involve asset reductions and returns of funds to shareholders, such as dividend initiations (e.g., Michaely *et al*., 1995) and share repurchases (e.g., Lakonishok and Vermaelen, 1990), typically result in share price rises. Titman *et al*. (2004) suggest that this may be because managers may have a tendency to overinvest, putting their own interests in empire building above those of shareholders. Indeed Titman *et al*. show that

stock returns following capital investment are most negative where firms have greater managerial discretion because of the firm's current financial strength – for example, because it has strong cashflows and/or minimal debts.

Early work on the relationship between earnings (i.e. profitability) and returns was conducted by Ball and Brown (1968) and by Beaver (1968). Slightly more recent research surveyed in Lev (1989) and numerous studies thereafter have focused on the post-earnings announcement drift that often arises when stock prices adjust only slowly upwards (downwards) following unexpectedly good (bad) earnings figures rather than the instantaneous adjustment that the EMH would posit. Stock price valuations depend not only on the profitability of a firm if it continues with its current activities at the current scale (these are fairly stable and fairly easy to estimate) but also on the options that the firm may have to expand production significantly by making acquisitions or by entering new lines of business (these are much harder for investors to evaluate). Burgstahler and Dichev (1997) demonstrate that when the ratio of earnings to book value is low for a particular firm, this option to switch its resources to a better use is the key factor determining its value. On the other hand, if the earnings to book value ratio is high, the markets may consider that the firm is doing just fine as it is and consequently the risks and costs involved in switching lines of business imply that the option is of low worth.

The negative correlation between asset growth and stock market performance described above is not shared by all kinds of firms, however. Gaur et al. (1999) argue that retailers go through a lifecycle whereby they typically establish on the basis of selling cheap goods, but they gradually move up market to trade more expensive goods in more prestigious locations when new, low-end retailers move in to take their place. They show that retailers can adopt a broad variety of different strategies to achieve similar degrees of profitability, and that retailers having high return on assets, high sales growth and high margins provide the highest long-run stock returns. The empirical research in this paper will shed light on whether these findings also hold more widely than just the retail sector.

3. Data

The sample used in the empirical work for this project comprises all companies listed on the Paris Stock Exchange (Euronext Paris Bourse) on 1 September 2012. The company list includes all constituents of the CAC All-Shares Index, which is currently some 511 firms.[2] The CAC All-Shares Index also serves as a useful benchmark for performance comparisons since it comprises all firms traded on the Bourse, including both large and small stocks from the whole range of sectors and styles. All data on both the financial and accounting information employed in this study are obtained from Thomson Datastream. We lose two firms from the sample for which no data are available on Datastream, and more in some cases where specific accounting variables are not present for those companies. We examine 15 years of data with each year running from 1 September to 31 August, taking monthly observations for the stock returns and annual observations for the accounting data. As is common for much empirical work in finance, all of the accounting variables are winsorised at the 1% and 99% levels. In other words, to minimise the possible effects of outliers on the results, any observations lower than the 1st percentile or greater than the 99th percentile are set to the 1st and 99th percentiles respectively. The total number of firm-years is 5288, as not all firms were listed and have data available for the whole sample. We consider total returns that incorporate dividend payments rather than pure price returns and we also employ stock prices that have been adjusted for stock splits etc. This measure thus constitutes the actual return that will be received by investors including both income from dividends and capital gains.

It is also important to compare firms directly with their industry peers. Since firms' profitabilities are affected by decisions made by their direct competitors, they will be inter-related and so, therefore, will be their stock returns and levels of risk. Hao *et al.* (2011) find that less profitable firms within an industry are more sensitive to industry-wide news than their more profitable counterparts, in

[2] One could suggest that the results in this study are subject to survivorship bias since the sample only includes companies that existed on 1 September 2012 and excludes those which existed at some point during our sample period but which for some reason were deleted. However, since our intention is not to evaluate the performance of a trading rule, for example, but rather to examine the relationship between accounting variables and stock returns more broadly, this should not be consequential. In any case, details of the French dead stocks were not available.

particular for capital-intensive sectors. We collect information on the sector classification of the firms at level three, and in total there are 18 sectors; this information will be employed in the case-study part of the research in Section 5.

While this is not the place to give a comprehensive explanation or comparison of the relative merits of various accounting measures of performance, a few points clarification are in order. We employ data on several sets of variables that are thought to affect stock prices using a classification proposed by Haugen and Baker (1996). In the first group we have variables that proxy for the riskiness of the firm – its debt-to-equity ratio and the interest coverage ratio. Second, market capitalisation is employed as an (albeit crude) measure of liquidity. Third, several variables capture the appropriate price level for the firm's stock and whether the shares are under-valued or over-valued relative to fundamentals: the earnings-to-price ratio, the dividend yield, the cashflow-to-price ratio, and the sales-to-price ratio. The final group of variables are those that are thought to capture the firm's potential for growth, and these include the net profit margin on sales, the sales-to-total assets ratio, the return on assets, return on equity, total asset growth, and earnings (before interest, taxes, depreciation and amortisation, EBITDA). More precise definitions of how each variable is constructed are given in Table 1.

ROE is probably the most widely used accounting measure of performance, and is particularly useful because it links a firm's income statement and thus its earnings with balance sheet information. However, it has several important drawbacks – most notably that it increases with leverage so long as the returns on the debt exceed the cost of borrowing, although this may entail considerably increased risk for the firm. In addition, earnings may be subject to legal manipulation and ROE may be misleading in times of inflation when the value of sales is increasing more quickly than book value is being recalculated. Return on equity increases with leverage so long as it is higher than the discount rate. Economic value added shares many of these limitations, and in addition is harder to compare across firms unless it is normalised by dividing with invested capital to form a "performance spread", and hence is not used in this work. We employ return on assets (ROA), which is another normalised measure of profitability, in

this case divided by total assets so that it measures the success of the firm in generating value from the investments that have been made.

Our study focuses in particular on the role of the growth in total assets (TAG). As Cooper *et al*. (2008) note, this variable is better able to capture the subsequent variation in returns than other growth or risk-based measures. In addition, TAG incorporates all of the elements that comprise the assets of the firm, including increases in cash, property, plant and equipment and other assets. Alternatively, TAG can be considered from the liabilities side of the balance sheet, and includes growth in retained earnings and in stock and bond financing. Cooper et al. therefore argue that TAG is a better measure of firm growth than competitors both from a theoretical and empirical perspective. It would also have been of interest to measure other variables that encompass the capital investments of firms more directly, such as invested capital (defined as fixed assets + non-working capital) or the value of property, plant and equipment. However, such detailed accounting information is hard to obtain for a long period and on a broad sample of companies and is therefore not employed in this study.

4. Methodology

For the market-wide part of the study, a regression analysis is conducted using a slight variant on the second step of the methodology pioneered by Fama and MacBeth (1973). Specifically, separate cross-sectional regressions are conducted using ordinary least squares (OLS) for each year in the sample using all firm observations that are available for that year. The dependent variable in each case is the annualised total stock return from 1 September of one year to 31 August the following year, including any dividends paid during the period and adjusted for stock splits or rights issues. The explanatory variables in the regressions are one year lagged values of the accounting and other variables described above. Then summary results for all firms in all years are obtained by averaging the coefficients across the years and taking their standard errors (i.e. the standard deviations over time divided by the square root of the number of yearly observations).

5. Results from the Pan-Exchange Regressions

Table 2 presents the results from running a regression of percentage annual stock returns on the previous year's total asset growth. So, for example, the first row after the header reports the parameter estimates from a cross-sectional regression of stock returns from 1 September 1998 to 31 August 1999 on the percentage in total assets between 1 September 1997 and 31 August 1998. It is clearly evident that the relationship is negative on average, although not statistically significant overall and is also negative for 11 of the 14 individual years. The slope estimates are small, but signify that a 10% rise in total assets will lead, all else equal, to a 0.1% annualised fall in returns. To put this in perspective, Eurofins' total assets increased by an incredible average of 49.1% per year, which, over the 14-year period from 1998, could have been responsible for knocking around 15% off its share price.

The joint effects of a broad range of accounting variables are considered in Table 3. Again, the regressions are run separately for each year and then the parameter estimates averaged in the penultimate row with overall t-ratios presented at the end. Most of the variables are associated with coefficients that are not statistically significantly different from zero, but this arises in part due to the large standard errors that result from the small number of year examined. The results in this case start with the year 2002 since four further years are lost due to the lack of availability prior to that of some of the variables included. It is interesting to note that total asset growth is again negatively related to stock returns – this time significantly so at the 5% level, and the parameter estimate is approximately the same.

The lagged dividend yield, growth in the sales-to-total-assets ratio, growth in earnings, and the debt to equity ratio are all negatively related to stock returns on average, but not significantly so. On the other hand, return on assets, return on equity and the cashflow-to-price ratio all positively but insignificantly affect stock returns on average. Returns are negatively related to firm size (measured by market capitalisation), and this is also significant at the 1% level – this is just further evidence of the "size premium" or small firm effect first reported by Banz

(1981) and widely documented thereafter. Interest cover is also significantly negatively related to returns, so that firms able to make their debt interest payments more times from current earnings yield lower stock returns than those with more cover. This result makes sense, since firms with higher interest cover are considered less risky and so should command a lower premium (i.e. we would expect lower stock returns) than companies with less cover. However, taken together, the results suggest that, like Titman *et al.* (2004), we cannot attribute the negative relationship between firm's investment levels and their stock returns to risk or other firm characteristics alone, thus providing somewhat of a puzzle for proponents of the rationality and efficiency of financial markets.

Following a procedure that is very common in tests of asset pricing models, it is of interest to determine whether it is possible to earn an "arbitrage" profit from knowledge of firms' differing degrees of total asset growth. We now proceed to rank the stocks on the basis of their previous year's total asset growth and then separate them into decile (i.e., ten of equal size) portfolios. We find that firms in the highest asset growth portfolio experience average annual returns of 12.2%, whereas those with low asset growth portfolio experience returns of 18.0%, suggesting a spread between the two of 5.8%. This difference, while smaller the figure of 19% reported by Cooper *et al.* (2008), is still both statistically and economically significant.

In fact, the correlation between the stock returns of year t and growth in total assets of year t-k is negative for lags, k, between one and five, but it turns positive at lag six. Therefore, it is evident that, all else equal, firms which grow their total assets experience a weaker stock market performance for half a decade than otherwise identical firms where total assets do not grow. Thereafter, there is a modest reversal when the relationship turns positive. It thus seems to be the case that indeed, firms that are growing fast in terms of their earnings, sales, and total assets, are all penalised by the markets, compared to those which do not. Of course, they may be sector effects at work here too, so that the fastest growing firms are present in sectors that happen to have performed poorly in return terms, but this seems unlikely to be a sufficient explanation of the results. The focus on a

single company within a specific sector in the following section should also mitigate this problem and shed further light on the relationship between investment and shareholder value.

6. A Case Study of Eurofins Scientific

The purpose of this section is not to provide a fundamental analysis of Eurofins Scientific as an investment, for these are already available elsewhere from brokers' reports.[3] However, I will begin by giving a brief summary of relevant background information. Eurofins is a company focused on testing, inspection and certification, trading on the Paris Bourse.[4] Its principal competitors in Europe are SGS, Bureau Veritas and Intertek Group. Of these, only Bureau Veritas in this sector is also traded on the French Stock Exchange. At the more broadly defined level three sectoral classification, Eurofins is defined as a healthcare company. Eurofins is involved in three main lines of business: food and feed testing, services to pharmaceutical and biotechnology companies, and environmental testing, with the three constituting roughly 40%, 40% and 20% of its revenue stream respectively. It is a world leader in laboratory testing, and recent high profile food scares combined with increases in regulation on food hygiene are indicative that basic demand for these services should continue to grow. These lines of business are also not particularly cyclical in nature and therefore give the company an element of defensiveness.

Figure 1 plots the total return index for Eurofins together with that for the CAC All Shares Index, both rebased to 100 in October 1997. The spectacular profile of the meteoric rise of Eurofins share price is clearly evident. The CAC rose by a little over 100% over the fifteen year period, more than doubling. Eurofins price, on the other hand, rose over 5000%, averaging almost 50% per annum (arithmetic average, 30% per annum geometric average) compared with around 11% for the CAC.

[3] See for example, "Eurofins Scientific Support Services" Exane BNP Paribas Equity Research, 5 October 2011; or "Testing, Inspection and Certification" by Mezzanotte, S., Zomer, K., and Foggon, W., Berenberg Capital Markets Equity Research, 22 May 2012.

[4] Eurofins is also listed on the German Stock Exchange (Deutsche Börse) until its delisting in 2011, but since the focus of this study is on a comparison of Eurofins within the French market context, we do not further consider its position in Germany.

Table 4 presents key performance indicators for Eurofins for the almost 15-year period since its IPO in 1997. The first column after dates shows the annualised stock returns. It is clear that the years to September 1998, to 2000, year to 2005, to 2011 and to 2012 were the best years. Although considerable shareholder value was lost in the individual years 2001 and 2009, returns were positive for 11 of the 15 years since the IPO.

The information ratio is a key stock return performance measure employed by analysts and is reported for Eurofins in the third column of Table 4. There are various approaches to calculating it available, but a common one is to subtract the average benchmark return from that for the company under study and then to divide it by the standard deviation of the company's return. In this case, the CAC All-Shares Index is used as the benchmark. Thus the information ratio presents a better measure of performance because it is risk-adjusted whereas the total return considers only return but ignores the risk involved in holding the investment. The results show that Eurofins exceeded the benchmark in 11 of the years, and the information ratio for the company had an average value of over four for the 15 years, which is a remarkable performance. A comparison with other firms is discussed below. The Treynor ratio is also presented, which is another risk-adjusted return measure, this time dividing returns in excess of the benchmark by the stock's CAPM beta. Treynor represents the ratio of the excess return to the level of systematic risk, rather than total risk as is the case for the information ratio. A Treynor ratio above 0.1 is often considered to represent outstanding success and Eurofins achieved this in every year except two.

The other columns in the table are also testament to the phenomenal pace at which the business grew since its IPO. In terms of its accounting performance, Eurofins' profit and cashflow generation were severely curtailed, albeit temporarily, by two phases of intense acquisition in 2000-04 and 2006-08. Echoing the wider findings of the rest of this report, in the past it seems as if the markets had not fully accounted for the one-off nature of Eurofins' restructuring costs following acquisitions and the transitory effect of such costs on profitability.

Aside from the October 1999-September 2000 period where the share price more than doubled, the periods of acquisition and restructuring were accompanied by the company's slowest share price growth. According to the report by Mezzanotte *et al*. referred to in footnote 3, Eurofins' revenues are expected to grow significantly faster than those of its competitors over the next five years. With the company's focus now shifted to enhancing the profitability of its existing businesses rather than buying new ones, the share price has been steadily rising. Thus, rather than signifying a business in decline or terminally high-cost and unprofitable, the investments represented the seeds of a new era of renewed and increasing surpluses.

The relative performance of Eurofins is compared with that of its peers in the CAC All Shares (around 509 firms) in Table 5 and with that of other firms in the same industry (around 32 firms) in Table 6. Eurofins was consistently in the top one percent of all French companies in terms of its stock returns, and over the past fifteen years it has been the very top company according to its returns and second according to its information ratio. Perhaps more importantly, what the tables also show is a further improvement in Eurofins shareholder value over the past 12 months alongside enhancements in its fundamentals. Over the year to 1 September 2012, Eurofins risk-adjusted performance was second on the entire French Exchange and first in its sector, and its total return eighth (third in its sector). The company's assets per share and dividend per share growth have also been among the very highest in the whole country during the past year. These recent improvements mark the reward for investors following the company's previous acquisition and restructuring phases as share valuations during 2011 and 2012 have caught up with the fundamental strength of the business after a period of significant undervaluation in 2008-2010.

Table 7 presents the best perfoming twenty and worst performing five stocks on the Paris Bourse over the 15-year period to 1 September 2012 according to their total shareholder returns. Note that for this and the subsequent tables, we require a firm to exist for all fifteen years for inclusion in the statistics, in order to be able to make meaningful comparisons of annualised average returns with Eurofins.

The annualised returns are calculated as geometric averages and so represent the average equivalent to the actual returns (including dividends) that the investor would have received yearly from each of the companies over the 15-year period.[5] Focusing on the top performers first, it is clear that the most successful firms are mainly medium sized and specialised with product or service markets that are expanding rapidly. The table shows that Eurofins ranks first out of some 500 companies[6] on the exchange over the period since its IPO, which represents an exceptionally strong growth in the share price of some 30% average geometric return annually. Eurofins' market capitalisation grew from around 20 million euros in 1997 to around 1.5 billion euros in 2012, generating a total compounded return for shareholders of over 5000% in the process.

Purely for comparison, the second half of Table 7 lists and shows key performance measures for the five companies with the lowest 15-year total shareholder returns. This part of the list is dominated by technology firms, and they have been spectacularly unsuccessful, with destruction of up to a third of shareholder value per year in some cases. Most of these weakest companies are very small and fairly newly established.

Table 8 then moves on to examine a risk-adjusted, rather than raw, measure of firm performance, namely the information ratio, as defined above. On a risk-adjusted basis, Eurofins again rates exceptionally well, and the company had the second highest information ratio of all companies on the Paris Bourse over the fifteen years to September 2012. If we look more closely at Table 8, the highest rated stock in risk-adjusted terms Sofibus Patrimoine is a Real Estate Investment Trust (REIT). More importantly, the shares are highly illiquid, trading at most monthly; as a result, its stock return volatility is artificially reduced and hence the information ratio is no longer useful as a performance indicator. It is clear that for this stock, its information ratio is implausibly high not because the returns are high, but rather because the variability of those returns is so low. It is common in academic studies to remove from the sample any companies that are in certain

[5] However, note that the performances are reported in the tables on an annualised basis where the averages are taken over all available years.
[6] In fact, only around 280 companies existed for the whole 15-year period.

sectors that make their properties anomalous – specifically, investment trusts, holding companies, financial firms, and very illiquid or closely held shares. If we apply such a filter to our sample, in Table 7 the companies in positions two and three drop out as they are REITs/real estate holding companies, in addition to four others in the top 20, leaving Eurofins out on its own as the leading generator of shareholder returns. In Table 8, when Sofibus is removed (plus six others below Eurofins in the top 20), Eurofins now ranks first in risk-adjusted return terms as well.

Finally, moving on to consider the 2012 figures to get an idea of each firm's more recent performance velocity, it is clear that only Eurofins has a sound track record of outstanding long-term growth combined with further improved recent performance. Almost all of the other long-term stars in the top ten have now faded away. The tables in the Appendix present the performance of Eurofins shares, as measured by the total returns, over the 10- and 5-year horizons and also over the 12 months to September 2012.

7. Conclusions

This study has examined the link between a firm's accounting performance – in particular the growth rate of assets – and it stock returns. Overall, there is little relationship between stock price performance and information from the firm's accounts. But confirming and extending the results of existing studies, we observe a negative relationship between asset growth and stock returns. However, what we find, for the first time, is that over the longer term the relationship between the two turns positive. Since studies have been unable to attribute this correlation to firm risk, we must resort to a behavioural explanation, where shareholders excessively punish firms making acquisitions or significant investments by marking down their share prices. The markets appear to find it challenging to separate profit falls arising when business declines from those arising from the costs associated with capital investments. Eurofins Scientific is employed as a case study of a firm which grew its asset base very considerably and rapidly, and whose share price was marked down by the markets in the process. However, as these investments mature and bear fruit, the share price falls are reversed.

The implication for investors is that there could be rich rewards for those who adopt a contrarian stance and buy firms which have experienced significant asset growth and hold them for a period of more than five years. Sloan (1996) suggests that "stock prices reflect naïve expectations about fundamental valuation attributes." (p.290). Taking a broader perspective, the results provide further evidence that financial markets can seriously and systematically misprice assets with potentially important implications for the markets' ability to efficiently allocate capital between competing uses.

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Table 1: Definitions of Key Variables Used in the Study

Variable	*Definition and Explanation*
$R_{i,t}$	Total stock return (including dividends) for firm *i* in year *t*
MV	Market capitalisation
DY	Dividend yield = dividend per share divided by share price
ROA	Return on assets = net income divided by total assets
ROE	Return on equity = net income divided by shareholder's equity
NET PROF	Net profits divided by sales
TAG	Total asset growth = percentage increase in total assets from year *t*-1 to year *t*
SAG	Sales-to-assets growth = the percentage increase in the ratio of sales to total assets from year *t*-1 to year *t*
EBITDAG	Growth of earnings before interest, taxes, depreciation and amortisation = the percentage increase from year *t*-1 to year *t*
DTE	Debt-to-equity ratio
EP	Earnings-to-price ratio
CFP	Cashflow-to-price ratio
SP	Sales-to-price ratio
STA	Sales-to-total assets ratio, a measure of "capital turnover"

Table 2: Regression of Returns on Lagged Total Asset Growth

Year	*Intercept*	*Slope*
1999	5.752	-0.0678
2000	65.938	0.2230
2001	5.719	-0.1830
2002	-11.946	-0.0396
2003	13.575	-0.0812
2004	27.499	0.0307
2005	52.686	-0.0080
2006	28.805	-0.0035
2007	20.970	-0.0071
2008	-24.290	-0.0038
2009	-9.304	-0.0057
2010	12.772	-0.0026
2011	13.673	-0.0030
2012	-5.768	0.0067
Average	14.006	-0.0104
t-ratio	2.132**	0.4517

Note: The dependent variable is total stock returns from 1 September in the previous year to 31 August that year; the penultimate row reports the average over all the year while the last row is the t-ratio constructed by estimating the standard error as the standard deviation over time divided by the square root of the number of observations; ** denotes significance at the 5% level.

Table 3: Regression of Returns on various Lagged Accounting Variables

Year	*CONS*	*DY*	*INTCOV*	*MV*	*NET PROF*	*ROA*	*ROE*	*TAG*	*SAG*	*EBITDAG*	*DTE*	*EP*	*CFP*	*SP*	*STA*
2002	-12.032	1.877	-0.004	-0.0005	4.2020	32.51	0.019	-0.020	-0.1080	0.0034	0.0013	0.004	0.002	-0.0002	-3.070
2003	-6.090	1.610	-0.026	-0.0002	-7.2930	-38.38	0.169	-0.033	0.0008	-0.0009	0.0077	-0.006	0.008	-0.0003	10.485
2004	17.061	0.625	-0.061	-0.0010	15.2630	32.03	0.035	-0.001	0.0002	-0.0001	0.0061	0.014	0.009	-0.0024	14.938
2005	71.358	-3.884	-0.002	-0.0010	1.1890	-93.01	0.483	-0.004	0.0000	0.0003	-0.0150	-0.112	-0.015	0.0159	-19.828
2006	30.796	-2.968	0.002	0.0000	-5.7950	5.35	-0.167	0.001	-0.0103	0.0008	-0.0047	0.019	-0.006	-0.0001	-4.720
2007	28.696	-1.480	-0.012	-0.0002	-19.3550	17.91	0.209	-0.003	0.0116	-0.0001	-0.0003	0.014	0.003	0.0002	-10.655
2008	-25.773	1.301	0.008	0.0001	3.7410	-10.53	0.132	-0.009	0.0012	0.0000	-0.0012	-0.001	0.003	0.0010	-4.556
2009	-8.615	-2.851	-0.060	0.0001	-2.3610	365.33	-0.859	-0.021	-0.0003	-0.0156	0.0043	0.003	0.009	-0.0026	9.523
2010	17.981	0.351	-0.001	-0.0006	3.6160	17.71	-0.001	-0.004	0.0000	-0.0008	0.0009	-0.009	0.004	0.0000	-1.481
2011	13.164	-1.737	-0.004	-0.0004	5.5620	-9.18	0.217	0.002	0.0000	-0.0036	0.0005	-0.006	0.002	-0.0001	4.679
2012	-3.346	0.524	0.000	0.0003	1.2340	-12.41	0.106	0.001	0.0000	0.0003	-0.0006	0.005	0.001	-0.0002	-4.762
Average	11.200	-0.603	-0.015	-0.0003	0.0003	27.94	0.031	-0.008	-0.0095	-0.0015	-0.0001	-0.007	0.002	0.0010	-0.859
t-ratio	1.384	-0.978	-1.998**	-2.338**	0.0001	0.79	0.306	-2.401**	-0.9566	-0.9887	-0.0428	-0.625	0.894	0.6621	-0.282

Note: The dependent variable is total stock returns from 1 September in the previous year to 31 August that year; the penultimate row reports the average over all the year while the last row is the t-ratio constructed by estimating the standard error as the standard deviation over time divided by the square root of the number of observations; ** denotes significance at the 5% level; CONS refers to the regression intercept estimate.

Table 4: Key Performance Measures for Eurofins

	Total Stock Returns	*Information Ratio*	*Treynor Ratio*	*Growth in assets per share (%)*	*Growth in sales revenue (%)*	*Growth in net cash (%)*	*Growth in dividends per share (%)*	*ROE*	*ROA*
1998	275.20	12.55	-	85.71	87.56	-28.69	-	8.26	5.83
1999	-1.35	-0.05	-	56.41	128.30	99.94	-	7.57	3.81
2000	151.58	6.72	-	130.60	113.56	357.02	-	8.27	4.31
2001	-46.05	-1.28	-	-2.61	57.98	-90.60	-	-0.42	-0.23
2002	8.29	0.46	-	-2.43	189.82	35.13	-	-3.85	-1.36
2003	-11.17	-0.58	-0.19	0.75	11.70	22.08	-	-0.27	-0.08
2004	31.64	6.16	0.15	19.06	4.78	219.86	-	8.51	3.22
2005	145.84	21.63	1.72	19.75	12.84	-31.33	-	14.69	4.53
2006	55.12	4.33	0.29	23.61	45.31	388.51	-	15.14	3.53
2007	38.01	5.38	0.30	10.11	53.29	-19.72	-	7.36	2.85
2008	-5.23	-0.48	0.27	1.40	29.80	126.32	0	16.73	2.87
2009	-44.40	-2.60	-0.30	-14.47	15.46	-70.09	0	10.59	1.65
2010	4.21	0.40	0.19	28.68	0.56	119.55	0	-4.11	-0.59
2011	60.33	5.44	0.70	31.77	12.28	109.53	100	27.79	4.01
2012	76.71	8.61	0.68	-	21.10	-	300	35.39	5.55
Arithmetic Average	49.25	4.45	0.38	27.74	52.29	88.39	80	10.11	2.66

Notes: Observations are taken on 1 September of each year so the entries refer to the most up-to-date figure available at that time. The N/A in the net cash column denotes that data on this variable were not available for the year to 2012 at the time of writing. The Treynor ratio is calculated as the return on the stock minus the benchmark return divided by the stock's CAPM beta. Since calculation of the ratio requires five years' of trailing returns, it is not available for the 15-year horizon. Eurofins commenced dividend payments for the first time in 2007 and thus there are no dividend growth figures before that date.

Table 5: Eurofins Ranking (Quartile Ranking) Relative to All Other Firms on the Paris Bourse According to Various Financial and Accounting Metrics

	Total Stock Returns	*Information Ratio*	*Treynor Ratio*	*Growth in assets per share*	*Growth in sales revenue*	*Growth in net cash*	*Growth in dividends per share*	*ROE*	*ROA*
Average over the past 15 years	1 (1)	2 (1)	N/A	54 (1)	60 (1)	112 (1)	N/A	201 (2)	251 (2)
Average over the past 10 years	11 (1)	2 (1)	69 (1)	136 (2)	105 (1)	95 (1)	N/A	126 (1)	224 (2)
Average over the past 5 years	42 (1)	27 (1)	60 (1)	93 (1)	91 (1)	85 (1)	16 (1)	64 (1)	228 (2)
Average over the past year	8 (1)	2 (1)	29 (1)	2 (1)	60 (1)	N/A	6 (1)	11 (1)	125 (1)

Notes: this table presents the relative rank of Eurofins on various measures within the universe of 509 companies traded on the Paris Bourse with its quartile ranking in parentheses. The N/A in the net cash column denotes that data on this variable were not available for the year to 2012 at the time of writing. The Treynor ratio is calculated as the return on the stock minus the benchmark return divided by the stock's CAPM beta. Since calculation of the ratio requires five years' of trailing returns, it is not available for the 15-year horizon. Eurofins commenced dividend payments for the first time in 2007 and thus there are no dividend growth figures before that date.

Table 6: Eurofins Ranking (Quartile Ranking) Relative to All other Firms within its Sector on the Paris Bourse According to Various Financial and Accounting Metrics

	Total Stock Returns	*Information Ratio*	*Treynor Ratio*	*Growth in assets per share*	*Growth in sales revenue*	*Growth in net cash*	*Growth in dividends per share*	*ROE*	*ROA*
Average over the past 15 years	1 (1)	1 (1)	N/A	5 (1)	7 (1)	7 (1)	N/A	15 (2)	12 (2)
Average over the past 10 years	1 (1)	1 (1)	3 (1)	9 (2)	12 (2)	8 (1)	N/A	9 (2)	13 (2)
Average over the past 5 years	4 (1)	4 (1)	5 (1)	8 (1)	11 (2)	10 (2)	3 (1)	5 (1)	14 (2)
Average over the past year	3 (1)	1 (1)	3 (1)	1 (1)	8 (1)	N/A	1 (1)	2 (1)	10 (2)

Notes: this table presents the relative rank of Eurofins on various measures within the 32 companies that are classified within the same level three sector (the ICB level 3 supersectors constructed jointly by FTSE and Dow Jones) and traded on the Paris Bourse with its quartile ranking in parentheses. The N/A in the net cash column denotes that data on this variable were not available for the year to 2012 at the time of writing. The information ratio is calculated as the return on the stock minus the return on the benchmark divided by the standard deviation of the stock's return. The Treynor ratio is calculated as the return on the stock minus the benchmark return divided by the stock's CAPM beta. Since calculation of the ratio requires five years' of trailing returns, it is not available for the 15-year horizon. Eurofins commenced dividend payments for the first time in 2007 and thus there are no dividend growth figures before that date.

Table 7: The Top 20 and Bottom 5 Companies on the French Bourse Ordered by Total Shareholder Returns over the 15 Years to 1 September 2012

Company	*Market Cap September 1997*	*Market Cap September 2012*	*Information Ratio – Average 15 years*	*Information Ratio 2012*	*Total Shareholder Return Geometric Average 15 Years (%)*	*Total Shareholder Return 2012 (%)*	*Total Compounded 15-year Return (%)*
EUROFINS SCIENTIFIC	***21.5***	***1485.78***	***3.69***	***7.24***	***30***	***77***	***5108***
ACANTHE DVPPT.*	5.4	47.12	0.99	1.72	29	97	4461
FIEBM	2.18	15.44	0.54	0.19	26	9	3191
SECHILIENNE	146.42	316.39	2.97	-2.86	24	-18	2310
JACQUES BOGART	31.14	177.41	1.65	1.37	23	36	2187
INTL.PLTNS.D HEVEAS	18.08	323.89	1.43	-1.64	22	-17	1915
BENETEAU	54.22	708.68	1.72	-3.45	22	-25	1860
FONCIERE DES MURS*	5.9	1123.91	0.73	-2.48	21	6	1611
UNIBAIL-RODAMCO*	835.61	14911.52	1.82	1.43	19	14	1318
AST GROUPE		45.29	3.67	0.03	19	15	1285
FONCIERE DES REG.*	21.41	3235.46	2.84	-0.63	19	4	1279
CAMBODGE (CIE DU)*	225.55	1879.53	1.77	-1.58	19	6	1260
ODET (FINC DE L')*	174.33	2403.56	1.30	-0.89	19	18	1248
EUROSIC	11.69	733.16	3.04	-5.46	19	0	1198
VINCI	801.58	19901.86	2.01	-0.75	18	0	1152
CANAL +	4677.57	584.17	0.74	-1.36	18	11	1101
VALLOUREC	453.91	4484.37	2.46	-1.97	18	-38	1031
HERMES INTL.	2838.15	24170.12	1.19	-1.67	17	-12	976
THERMADOR GPE.	63.07	235.35	2.41	-0.39	17	10	929
DASSAULT AVIATION	2053.12	7103.82	2.60	-0.58	17	3	916
⋮	⋮	⋮	⋮	⋮	⋮	⋮	
SOCIETE F. DE CASINO	50.69	10.18	-1.73	-0.72	-23	-7	-98
EURASIA FONC INV*	38.69	25.71	-1.25	-0.02	-25	-43	-99
ATARI	248.05	35.67	-0.74	-1.87	-26	-30	-99
ID FUTURE*	94.9	0.71	-1.88		-28	0	-99
CIBOX INTERACTIVE	48.02	3.97	-1.28	-7.90	-32	-64	-100

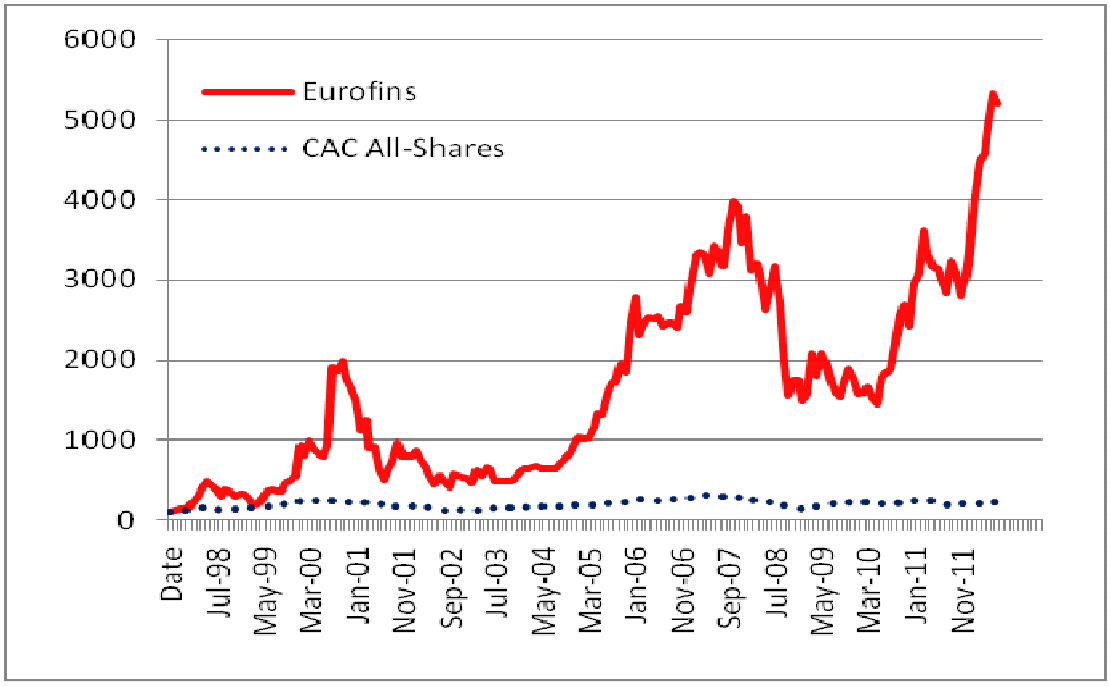
Note: the total returns in this table are calculated as geometric averages. Since the basis of calculation is different to that of Table 4 where arithmetic average returns were presented, the figures for Eurofins differ. The comparison includes only firms that existed for the full 15-year period. An asterisk denotes a company that was a REIT, financial firm, a holding company, or a company that has been suspended.

Table 8: The Top 20 and Bottom 5 Companies on the French Bourse Ordered by Information Ratio over the 15 Years to 1 September 2012

Company	*Market Cap September 1997*	*Market Cap September 2012*	*Information Ratio – Average 15 years*	*Information Ratio 2012*	*Total Shareholder Return Geometric Average 15 Years (%)*	*Total Shareholder Return 2012 (%)*	*Total Compounded 15-year Return (%)*
SOFIBUS PATRIMOINE*	46.79	56.09	13.68	-1.82	5	-20	100
EUROFINS SCIENTIFIC	***21.5***	***1485.78***	***3.69***	***7.24***	***30***	***77***	***5108***
AST GROUPE		45.29	3.67	0.03	19	15	1285
VERNEUIL PARTICIPAT.*	1.04	10.99	3.56	-1.21	6	-33	133
EUROSIC*	11.69	733.16	3.04	-5.46	19	0	1198
SECHILIENNE	146.42	316.39	2.97	-2.86	24	-18	2310
FONCIERE DES REGIONS*	21.41	3235.46	2.84	-0.63	19	4	1279
DASSAULT AVIATION	2053.12	7103.82	2.60	-0.58	17	3	916
VALLOUREC	453.91	4484.37	2.46	-1.97	18	-38	1031
THERMADOR GPE.	63.07	235.35	2.41	-0.39	17	10	929
REMY COINTREAU	701.88	4506.86	2.32	7.19	15	52	764
VINCI	801.58	19901.86	2.01	-0.75	18	0	1152
UNIBAIL-RODAMCO*	835.61	14911.52	1.82	1.43	19	14	1318
WENDEL*	867.44	3023.86	1.78	1.08	11	4	364
CAMBODGE (CIE DU)*	225.55	1879.53	1.77	-1.58	19	6	1260
AFFINE R E*	43.71	103.16	1.74	-3.73	13	-29	557
VM MATERIAUX	16.86	57.33	1.73	-7.31	10	-38	321
LVL MEDICAL GROUPE	152.88	325.64	1.73	4.44	2	123	32
BENETEAU	54.22	708.68	1.72	-3.45	22	-25	1860
SARTORIUS STEDIM BIO.	100.5	1174.89	1.71	4.68	12	43	449
⋮	⋮	⋮	⋮	⋮	⋮	⋮	
CREDIT AGR.TOULOUSE*	74.91	72.5	-2.49	-3.96	2	-3	41
SELCODIS*	13.92	1.8	-2.95		-21	0	-97
IMMOBILIERE DASSAULT*	30.52	115.51	-4.20	-3.78	5	-4	103
LA FONCIERE VERTE*	17.47	24.11	-6.68		2	0	38
OROSDI	9.07	48.95	-8.21	-0.68	-4	-11	-43

Note: the total returns in this table are calculated as geometric averages. Since the basis of calculation is different to that of Table 4 where arithmetic average returns were presented, the figures for Eurofins differ. The comparison includes only firms that existed for the full 15-year period. An asterisk denotes a company that was a REIT, financial firm, a holding company, or a company that has been suspended.

Figure 1: Eurofins Stock Price versus the CAC All-Shares



Note: Both indices are rebased to take the value 100 in October 1997 and both represent total returns that include dividend payments

Appendix – Additional Tables

Table A1: Total Shareholder Returns over the 10 Years to September 2012 for the Top 20 Companies

Company	*Market Cap September 1997*	*Market Cap September 2012*	*Total Shareholder Return Geometric Average 10 Years (%)*	*Information Ratio 10 Year Average (%)*	*Total Compounded 10-year Return (%)*
INTL.PLTNS.D HEVEAS	18.08	323.89	72%	4.03	22122%
ARTPRICE.COM		154.14	37%	1.39	2308%
LACIE	163.94	163.1	37%	2.29	2268%
EURO RESSOURCES	33.26	196.24	33%	0.68	1664%
AUFEMININ.COM		150.73	32%	3.19	1504%
HOLOGRAM INDUST.		155.34	32%	3.20	1488%
ALTAREIT*	34.38	297.58	32%	1.08	1474%
ABC ARBITRAGE*		347.41	31%	3.55	1419%
ALTAREA*	11.77	1282.09	27%	2.03	966%
VALLOUREC	453.91	4484.37	26%	3.44	884%
EUROFINS SCIENTIFIC	***21.5***	***1485.78***	***25%***	***3.95***	***857%***
GRANDS MLN.DE STRAS.	25.37	95.86	25%	0.01	834%
FONCIERE DES MURS*	5.9	1123.91	25%	1.02	826%
JACQUES BOGART	31.14	177.41	25%	1.67	819%
GAMELOFT		375.34	24%	2.53	791%
PRECIA	11.71	41.28	24%	2.81	767%
HI MEDIA		97.19	24%	2.08	740%
MAUREL ET PROM	75.24	1514.04	23%	2.72	707%
PLASTIC OMNIUM	218.66	1147.9	22%	1.76	623%
STALLERGENES		587.8	22%	2.43	602%

Note: the total returns in this table are calculated as geometric averages. An asterisk denotes a company that was a REIT, financial firm, a holding company, or a company that has been suspended.

Table A2: Total Shareholder Returns over the 5 Years to September 2012 for the Top 50 Companies

Company	*Market Cap September 1997*	*Market Cap September 2012*	*Total Shareholder Return Geometric Average 5 Years (%)*	*Information Ratio 5 Year Average (%)*	*Total Compounded 5-year Return (%)*
INTEXA		12.31	58%	2.80	873%
GEA	48.48	78.19	38%	5.41	398%
JACQUES BOGART	31.14	177.41	30%	3.55	274%
EURO RESSOURCES	33.26	196.24	29%	1.07	253%
GEMALTO		5545.87	28%	3.57	242%
HOLOGRAM INDUSTRIES		155.34	26%	3.93	218%
HERMES INTL.	2838.15	24170.12	25%	3.03	209%
AKKA TECHNOLOGIES		326.93	21%	2.81	155%
INGENICO	188.1	2213.38	20%	2.34	151%
VIRBAC	186.59	1215.84	20%	2.88	150%
RIBER		55.45	19%	2.18	142%
ALLIANCE DEVELOP. CAP.*	28.83	25.82	18%	0.58	130%
BIG BEN INTERACTIVE		133.33	18%	1.71	128%
PLASTIC OMNIUM	218.66	1147.9	17%	3.35	117%
DURAN DUBOI*	29.68	7.17	17%	0.23	115%
REMY COINTREAU	701.88	4506.86	16%	4.68	107%
GRANDS MLN.DE STRAS.	25.37	95.86	15%	-0.10	101%
CATERING INTL.SVS.		191.78	15%	2.81	97%
INTL.PLTNS.D HEVEAS	18.08	323.89	14%	3.66	89%
DASSAULT SYSTEMES	3397.47	9655.81	14%	2.85	89%
ADVINI	20.9	104.63	14%	2.29	89%
BIC	3700.69	4081.52	13%	4.25	87%
RUBIS	116.02	1392.87	13%	2.32	82%
SAFRAN	1352.88	11616.35	13%	2.55	81%
ILIAD		7187.3	12%	3.03	79%
LVMH	16864.66	65969.75	12%	3.13	77%
ABC ARBITRAGE*		347.41	12%	3.98	76%
PRECIA	11.71	41.28	12%	3.01	74%
ZODIAC AEROSPACE	971.81	4312.25	12%	2.72	74%

Table A2 continued *Company*	*Market Cap September 1997*	*Market Cap September 2012*	*Total Shareholder Return Geometric Average 5 Years (%)*	*Information Ratio 5 Year Average (%)*	*Total Compounded 5-year Return (%)*
SARTORIUS STEDIM BIOTECH	100.5	1174.89	12%	3.32	73%
EUTELSAT COMMUNICATIONS		5379.58	11%	4.03	70%
ESSILOR INTL.	2162.93	14785.05	11%	3.16	68%
ARKEMA		4223.2	11%	2.35	66%
MUSEE GREVIN	7.34	45.29	10%	0.96	64%
PASSAT		41.16	10%	2.61	62%
TECHNIP	1833.77	9457.06	10%	2.22	61%
TERREIS*		328.73	10%	2.07	60%
BRICODEAL		90.95	10%	0.14	59%
TESSI*		199.63	10%	1.69	59%
IGE + XAO	10.01	45.69	9%	3.84	57%
ESI GROUP		109.7	9%	2.68	56%
EUROFINS SCIENTIFIC	***21.5***	***1485.78***	***9%***	***2.95***	***56%***
LVL MEDICAL GROUPE	152.88	325.64	9%	1.09	54%
SAM		14.74	9%	2.29	54%
SES FDR (PAR)		8288.75	9%	2.08	53%
ADLPARTNER		55.61	9%	2.32	53%
MALTERIES F-BELGES	48.77	74.4	9%	-0.09	53%
SOGECLAIR		30.52	9%	1.07	52%
NEURONES		199.04	9%	1.47	52%
SODEXO	3146.49	9878.89	9%	3.11	50%

Note: the total returns in this table are calculated as geometric averages. An asterisk denotes a company that was a REIT, financial firm, a holding company, or a company that has been suspended.

Table A3: Total Shareholder Returns over the Year to September 2012 for the Top 20 Companies

Company	*Market Cap September 1997*	*Market Cap September 2012*	*Total Shareholder Return Year to Sept 2012*	*Information Ratio Year to 2012 (%)*
LEXIBOOK	37.26	11.84	164%	-0.54
LVL MEDICAL GROUPE	152.88	325.64	123%	4.44
ACANTHE DVPPT.*	5.4	47.12	97%	1.72
GEMALTO		5545.87	91%	7.64
HOLOGRAM INDUSTRIES		155.34	90%	7.16
NICOX		188.25	88%	3.98
ORCHESTRA-KAZIBAO REGRT		41.63	87%	5.48
EUROFINS SCIENTIFIC	***21.5***	***1485.78***	***77%***	***7.24***
LACIE	163.94	163.1	73%	5.74
CARPINIENNE PARTS.*	12.16	27.76	72%	2.42
SOGECLAIR		30.52	59%	2.31
ESI GROUP		109.7	59%	7.22
REMY COINTREAU	701.88	4506.86	52%	7.19
ILIAD		7187.3	51%	5.64
CAMELEON SOFTWARE		7.22	51%	2.33
INGENICO	188.1	2213.38	50%	3.80
ALTAREIT*	34.38	297.58	49%	4.23
HAVAS	571.84	1747.65	48%	4.04
RUE DU COMMERCE		93.15	48%	1.67
NERGECO		12.56	46%	4.53

Note: An asterisk denotes a company that was a REIT, financial firm, a holding company, or a company that has been suspended.

Appendix: About the Author of the Study

Chris Brooks is Professor of Finance and Director of Research at the ICMA Centre – Henley Business School, University of Reading (UK). He was formerly Professor of Finance at the Cass Business School, London. Chris holds a PhD and a BA in Economics and Econometrics, both from the University of Reading. His areas of research interest include asset pricing, fund management, statistical issues in risk management, and econometric analysis and modelling in finance and real estate. Chris is author of over 100 articles and five books, although he is best known for the first textbook to teach econometrics to finance students, *Introductory Econometrics for Finance* (2008, Cambridge University Press), which is now in its second edition and has sold over 40,000 copies worldwide. Chris has consulted for various banks, real estate firms and professional bodies.