MASTER OF SCIENCE: THESIS IN FINANCE AND ACCOUNTING

INVESTMENT MANAGEMENT

Tracking Down Skewness: What Role does Fundamental Risk Play? Evidence from Swedish Equities 1994-2013

Abstract:

Our thesis sheds light on the research gap of what makes a firm's stock return skewed. We conduct a broad and explorative study in the Swedish equity market from 1994-2013 to find possible relations between different fundamental risk measures and two particular skewness indicators. Our findings suggest that there is a positive relation between a firm's financial risk and idiosyncratic skewness of excess returns – especially in the sub-sample of private investors. Furthermore, we find an inverse relation between our asset risk measures and coskewness / idiosyncratic skewness of excess returns. This unexpected finding raises the question about possible mispricing in high asset risk stocks. In addition, when combining our asset risk and financial risk measures, we find a robust and stable skewness predictor that could have practical utility for practitioners. Moreover, we notice several calibration issues in the case of financial risk measures that motivate further research on fine-tuning the adequate fundamental indicators to measures a firm's financial risk level.

Authors: Jan-Hendrik Mohr[1] and Fjodor Krainikov[2]

Supervisor: Michael Halling (Assistant Professor in the Department of Finance)

Stockholm School of Economics

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[1] jhmmohr@googlemail.com and 40382@student.hhs.se
[2] krainf@gmail.com and 40367@student.hhs.se

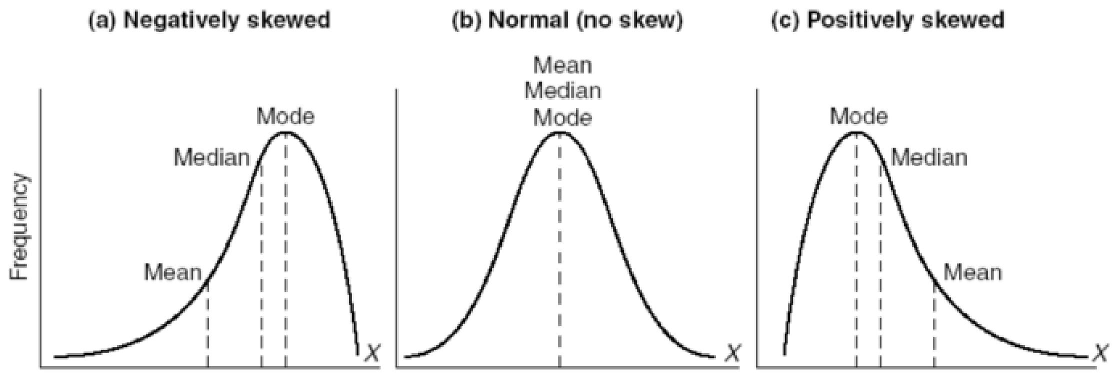
Table of Contents

1 Introduction

There has been a wide body of literature on higher moments of stock returns such as skewness or kurtosis. In the aftermath of the financial crisis, this debate has become utterly relevant for practitioners as well. It has become common knowledge that stock returns are distributed in a way that is much different from a normal (or log-normal) distribution. This debate motivates us to take a closer look at one such moment of the return distribution of equities: skewness. Qualitatively, a return distribution with positive skewness would have many small negative and few large positive returns. Vice versa, negative skewness would imply many small positive returns and few large negative returns (see Chart A).

Chart A

Chart A illustrates the density function of a variable that is distributed in three different ways. Picture a (c) illustrates the shape of the density function when the variable is negatively (positively) skewed. We can see that the median and standard deviation of both distributions are identical to the normal distribution. Unlike in the normal distribution, the variance does not occur symmetrically in the skewed distributions. This can be seen in the case of the median of the skewed distributions being different from the mean. (University of S. Alabama, 2014).



Understanding skewness is important for a variety of reasons. In fact, many investors find it interesting to understand not only how much a given stock return will vary, but also in what way. This question gets even more relevant in the area of option pricing, in which higher moments of the return distribution are vital to understanding asymmetries in implied volatility that are caused by the normal distribution assumption underlying the Black-Scholes (1973) option pricing model. One well-known pattern in implied volatility is the "smirk" in index option implied volatilities. After the 1987 stock market crash (which is essentially implausible to happen under a log normal return distribution assumption – but did happen!) option traders started to price implied volatilities of out-of-money Put-options differently from at-the money or in-the-money Put-options. Visually, the chart that depicts implied volatilities in relation to strike price would resemble a "smirk". This pricing pattern is due to the expectation that index returns are negatively skewed, a notion that received further empirical evidence even after the crash of 1987 (Ilmanen, 2011). Calibrating the expected skewness correctly would therefore help to understand option pricing better.

In the literature, two different frameworks are used for classifying skewness. Some authors look at idiosyncratic skewness (essentially the third moment of excess returns) as the best measure for a given stock's "jump" or "crash" characteristics. Other authors disregard idiosyncratic skewness, arguing that firm-specific attributes are diversifiable and hence should not warrant a pricing in capital markets. Instead, these authors consider coskewness of a firm's stock returns, which measures the relative skewness of a given firm's stock return when the market return is skewed. Given the lack of consensus about which measure is adequate to capture skewness in stock returns, we will use both in order to juxtapose these different facets of skewness pricing.

There has been plenty of discussion on the two different kinds of skewness and their effects on asset pricing. What we find fascinating though, is the fact that *causes* of skewed returns have rarely been analyzed. The description of firm characteristics is mainly a subject left to Corporate Finance researchers, whereas analysis of skewness is mostly discussed in the area of Asset Pricing. We aim to link both areas and ask: "which findings from Corporate Finance can be used to explain the skewed returns Asset Pricing deals with?" Given the research gap in this field, we approach our study in an explorative way. Rather than conducting extensive testing on how a few fundamental variables relate to skewness, we test a broad array of factors to explore possible relations and to provide starting points for more focused analysis. In addition, we are not aware of any studies that take a look at different skewness measures in the Swedish market. Therefore, we also provide evidence on whether the skewness patterns known in other markets also hold in Sweden within the time period between 1994 and 2013.

Chapter 2 provides an overview of prior literature on skewness. Chapter 3 motivates our research. We set our hypothesis by building a stylized model of skewness that is built upon firm-specific findings from prior Corporate Finance literature. We also motivate the use of different measures of skewness and provide an overview of empirical findings around higher moments of stock returns. Chapter 4 explains our methodology and provides a thorough overview of how we construct our dependent and independent variables. We also elaborate on the use of the adequate regression technique and the possible extensions that could be added to the methods we apply. Chapter 5 presents results and discusses caveats to our study. Chapter 6 builds upon our results and provides a contextual interpretation that connects all separate findings for the variables within a skewness-pricing framework. Chapter 7 explores whether more advanced aggregations of our variables leads to improved explanatory utility. Chapter 8 concludes and provides an outlook.

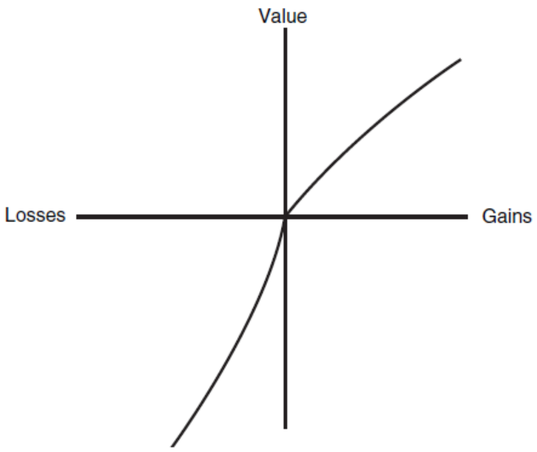
2 Literature Review

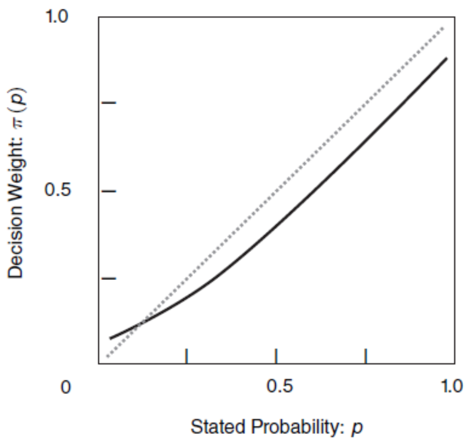
Sharpe's (1964) Capital Asset Pricing Model (CAPM) is based on the notion of the marginal investor who optimizes her portfolio allocation in a mean-variance framework. All increases in returns are linearly related to increases in variance along the "capital market line" (CML). Given that investors can diversify all idiosyncratic risks in their portfolio, the entire risk of the investor is captured by her exposure to systematic risk – expressed through the metric of beta (a portfolio's sensitivity to overall market variance). While the CAPM model has been widely successful especially among practitioners, early empirical research (Black et al, 1972) finds a flatter CML than the CAPM-model would suggest. A seminal addition to CAPM originated in Fama and French (1993) who introduced size and book-to-market ratios of firms as explanatory variables to their asset pricing model of cross-sectional excess stock returns. Another major addition to the equity asset pricing models came in the form of Carhart's (1997) 4-factor model. The author incorporates the finding from Jegadeesh and Titman (1993) who find autocorrelation in the excess returns of stocks and therefore add momentum as a further explanatory variable to the size and book-to-market factors of the Fama and French (1993) model.

A more recent extension to these cross-sectional asset pricing models by Harvey and Siddique (2000) introduces a firm's coskewness with the overall market as an additional pricing factor. Their work is based on an early CAPM-extension by Kraus and Litzenberger (1976) who construct a three-dimensional version of the CAPM, incorporating higher moments of the return distribution. Harvey and Siddique (2000) apply a dynamic utility model (similar to Campbell, 1993) and derive a positive marginal utility of skewness due to investor's non-increasing absolute risk aversion (Arrow, 1964). Non-increasing absolute risk aversion (same slope of utility-functions, regardless of the absolute level of wealth) is a necessary condition for the decreasing marginal utility assumption of individuals. In other words, if we believe investors ascribe decreasing marginal utility to income, they would prefer portfolios that are skewed positively rather than negatively (Harvey and Siddique, 2000). An alternative explanation for skewness preference can be derived from cumulative prospect theory (Tversky and Kahneman, 1992). The authors provide evidence that individuals overweigh low-probability events relative to high probability events (see Chart B). This finding explains why individuals are attracted to lotteries while seeking insurance to hedge low-probability events. Both lotteries and insurance are well-known to be negative expected value investments (the average performance of lottery players is distinctly negative and insurance companies price their policies to be profitable – at the cost of their clients). Nevertheless, individuals seem to be willing to trade off negative expected value for insurance against major losses or the chance of large wins. This implies that investors ascribe a higher-than-rational probability to a large payout (a "skewed return" so to speak). In consequence, skewed returns look attractive to investors who optimize strategies by maximizing their expected value functions.

Chart B

The left picture in Chart B is an excerpt from Tversky and Kahneman (1992) illustrating that individuals ascribe non-linear utility to gains and losses. The authors conduct experiments in which individuals were to choose between either accepting a certain gain or loss and gambling for a higher (lower) gain (loss). Throughout different iterations of the experiment, investors choose structurally different strategies for gains and losses. Further testing by the authors provides evidence that individuals overweigh low-probability events (see right picture). This overweighing is a plausible explanation why individuals engage in negative expected value activities like lottery or insurance.





Harvey and Siddique (2000) construct a coskewness indicator that measures a firm's incremental contribution to the aggregated skewness of a portfolio and find this indicator to add significantly to the explanatory power of the Carhart (1997) 4-factor model. In fact, investors seem to be willing to pay a premium (discount) for positive (negative) coskewness stocks. While the authors find substantial variation of the coskewness premium over time, it seems to be consistent across industries and company size. This time variation of coskewness pricing was further evaluated by Smith (2007) who finds a much more positive coskewness premium during times of positive market skewness versus times of negative market skewness, further implying a time-varying dimension to the importance of coskewness.

The work from Harvey and Siddique (2000) has received great attention in the literature and has recently been extended by models that focus on idiosyncratic skewness. Barberis and Huang (2008) and Brunnermeier et al (2007) find preference of investors for "lottery stocks", i.e. firms with positively skewed returns. The alleged pricing of idiosyncratic skewness seems counterintuitive given that investors should be able to diversify idiosyncratic risk and traditional methods of asset pricing suggest that no return premium should be ascribed to taking on additional idiosyncratic risk factors. However, authors like Anderson (2007) show that certain investor groups do in fact under-diversify, a notion that Mitton and Vorkink (2007) link to the deliberate seeking for positive skewness. While the private investors in Mitton and Vorkink (2007) construct inefficient portfolios from a mean-variance perspective, they load heavily on positive skewness securities. This demand for positive skewness payoff profiles is understood to explain the low performance of firms with positive idiosyncratic skewness.

While there is ample literature on the pricing effect of positive coskewness and positive idiosyncratic skewness, much less has been discussed about the *causes* of why firms show skewed returns. One leading model explaining idiosyncratic skewness was constructed by Chen, Hong and Stein (CHS, 2001). They find that several control variables (abnormal trading volume, lagged skewness, lagged variance of returns, book-to-market, and size) can explain idiosyncratic skewness in common stocks. CHS (2001) test their model in the US market in the 1962-1998 time frame and find their control variables to be significant throughout time and industry and also after passing several robustness checks. Later research in a different sample (Japan and 1980-2001) by Fujii and Takaoka (2005) confirms the applicability of the CHS (2001) model in markets outside the USA. On the other hand, the literature on the origins of coskewness is very limited. Harvey and Siddique (2000) show some limited descriptive statistics on the characteristics of the firms in the different coskewness percentiles of their sample. Given that Harvey and Siddique (2000) only evaluate a sample of two years for their descriptive statistics analysis, their findings are inconclusive, obfuscating any systematic pattern on what causes firms to exhibit a given level of coskewness.

3 Motivation of Study

In this paper, we want to extend this debate on the origins of both coskewness and idiosyncratic skewness. While models like CHS (2001) have received much attention in the asset-pricing literature when it comes to explaining the effects of skewness, few researchers in the field of corporate finance have dealt with the origins of skewness. Hence, CHS (2001) and extensions like Boyer, Mitton and Vorkink (2010) mostly apply explanatory variables that are based on statistical features of firms (stock price variance, trading turnover, trading liquidity etc.) rather than fundamental characteristics of the firms. In our work, we aim to explore the fundamental drivers that cause a firm's returns to be skewed.

Black et al. (1972) and Merton (1974) provide the frameworks that the limited liability of a common stock investment suggests an asymmetric, call option-like, payoff profile to equity investors. Equity holders have the following pay-off profile in a one-period setting with no discounting and no dividends:

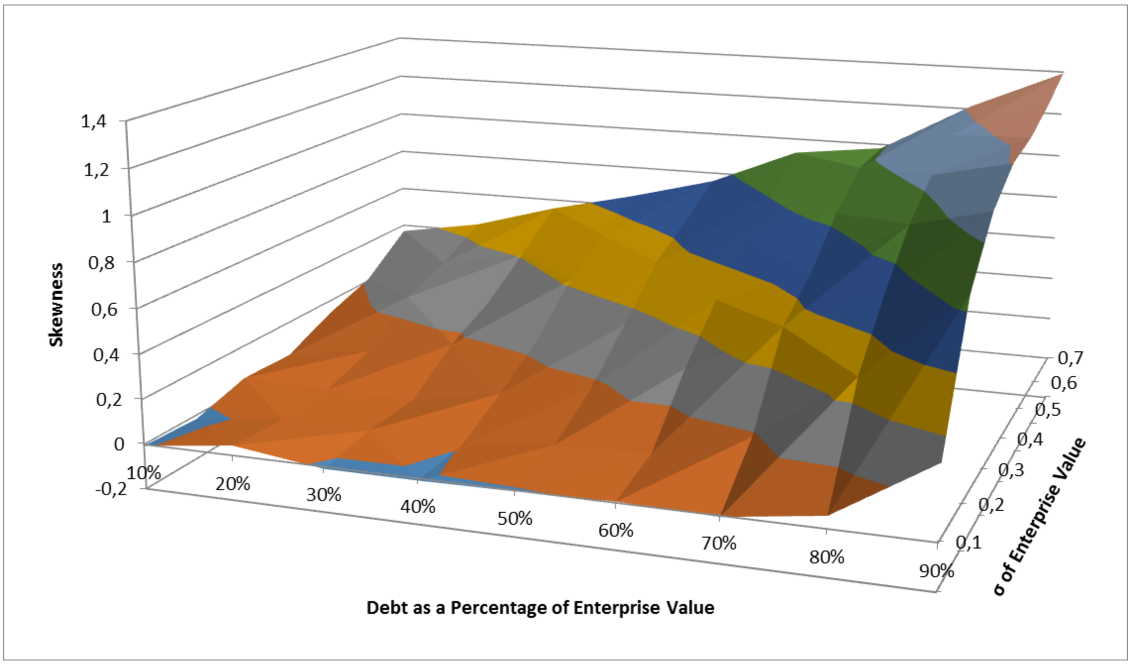
$$E(Equity) = max(0; E(Enterprise\ Value) - Debt)$$

Our analogy to a call option would make the debt level the "strike price" of a stock and the enterprise value the "price of the underlying". Given that we neglect dividends and interests in our model, the price drivers of the "equity call option" can be reduced to two variables: variability of the enterprise value (positive relation) and level of debt (negative relation). Any variation in both drivers would impact the pay-off to equity holders. By way of illustration, we conduct a 10,000-run Monte Carlo simulation showing the skewness of equity returns being contingent on leverage and enterprise value variability in a highly stylized way. While recognizing the limitations of such a simple approach, Chart C does in fact illustrate that increases in leverage and enterprise value variability make stock returns more positively skewed. In a stylized world, firms with more leverage and high asset risk would end up having more positively skewed returns. This short analysis provides the motivation to look at measures of firm's capital structure and nature of assets to learn more about the realized skewness in empirical returns.

The two dimensions of fundamental risk in our model – financial leverage and variability of the enterprise value – are closely related to the original risk factors in Modigliani and Miller (MM, 1958). MM argue that the capital cost of a firm is indifferent to its financing mix and hence increases in low-cost debt would be offset by a higher cost of equity, leaving the total cost of capital of the enterprise at the level defined by its asset risk. Since MM's initial publishing, a smorgasboard of new theories have added numerous market frictions to the initial model. We are therefore cautious to not *only* look at pure measures of earnings variability and financial leverage, thus opting to extend our set of variables to represent a broad set of financial ratios that can be applied to measure the fundamental risk of a firm.

Chart C

Chart C illustrates the results from a 10,000 run Monte Carlo simulation of our stylized skewness model. The capital structure of our firm consists of equity and debt and we show the pay-offs to equity holders under the assumption of a stochastic one-period development of the enterprise value. The stochastic process is a simple normal distribution with standard deviations of enterprise value between 0.1 and 0.7. The debt as a percentage of enterprise value in t_0 is varied between 10% and 90%. We calculate the standardized skewness (skewness divided by standard deviation cubed) of the resultant equity residuals in t_1.



Using diverse measures for fundamental risk also acknowledges the explorative nature of our study as we are not aware of any prior literature that draws a substantive link between measures of fundamental risk and return skewness. We introduce four groups of financial ratios that we apply in our testing (the exact construction of the test variables can be seen in Part 3 of this paper: "Methodology"):

1. Level of financial leverage ("**financial risk**"). In Corporate Finance theory, the market value of debt and equity is often used for e.g. the weighted average cost of capital (WACC) calculations. While market value of equity is easy to measure (Market Capitalization), a

market value of debt is oftentimes not immediately available. Common practice is to use the book value of debt instead (Berk, DeMarzo and Harford, 2012). Our first measure of financial risk is hence Net Debt in relation to Market Cap of the firm. This is congruent with our stylized model given that we define equity as enterprise value minus debt. However, studies such as Mather and Peirson (2006), Paglia and Mullineaux (2006) and Moir and Sudarsanam (2007) find a more diverse use of financial risk measures in the covenant provisions of bank debt. In addition to the aforementioned Net Debt to Market Capitalization ratio, the level of debt to assets, Net Debt to EBITDA and interest coverage ratios play an important role for lenders to monitor the financial risk of firms. This indicates that just using Net Debt to Market Capitalization might be too narrow of a measure to capture the full extent of financial risk. We therefore include Net Debt to Assets, Net Debt to EBITDA and EBIT to interest payments as variables in our study, given that these are pointed out as additional measures used by lenders to evaluate the financial leverage of firms.

2. Variability of enterprise value ("**asset risk**"). Asness, Frazzini, and Pedersen (2013) incorporate a measure of earnings variability in their construction of a "quality score". The authors base their earnings variability measure on the five-year standard deviation of the return on equity. We take this as a starting point, but apply several adjustments. Namely, we do not base our dimensions on net income (which is one core input to return on equity) but use unlevered measures of profitability. This is due to our quest of *enterprise* variability and hence we deem any levered inputs unfit. Specifically, we examine the standard deviation of EBITDA / Revenue and of unlevered Operating Cash Flows / Revenue. EBITDA provides a gross look at profitability and is used by many practitioners for either valuation and / or covenant purposes (as discussed earlier in our use of the Net Debt / EBITDA). Moreover, the inclusion of unlevered Operating Cash Flow provides an additional perspective due to the inclusion of working capital deviations. A business with positive (negative) working capital sees cash inflows (outflows) during times of contraction. Using unlevered Operating Cash Flow in addition to EBITDA could hence add to the picture as working capital deviations might offset or amplify deviations in EBITDA. Similar to Asness, Frazzini, and Pedersen (2013), we also use a five-year observation period to measure standard deviation. There is a tradeoff between capturing a full business cycle and data availability. We find a sufficient sample of companies with rolling five-year financial data and deem five years as a meaningful long period to capture most parts of a business cycle. Indeed, authors like Watson (1992) find five years to be a robust estimate

for a full post-war business cycle in the US sample (they define business cycle as one full expansion and one full contraction period). We therefore establish the five-year standard deviation of the EBITDA / Operating Cash Flow margin as the appropriate measure for a firm's asset risk.

3. Balance Sheet Liquidity ("**balance sheet liquidity risk**"). Arguably, the balance sheet liquidity of a firm is another important dimension to complement the picture of fundamental risk. When a company defaults, it is most often because it ran out of cash, and not because it ran out of earnings. Hence, stressed balance sheet liquidity could present a *de facto* decrease of the distance to default equity holders have to consider – hence increasing skewness of outcomes according to our stylized model. In the extreme, a firm with zero financial leverage could still default when swings in enterprise value coincide with stressed balance sheet liquidity. As a measure, we apply the Current Ratio of a firm, i.e. the ratio of current assets to current liabilities. There are obviously many different ways to measure balance sheet liquidity but most of them seem tailored to firm- or industry-specific environments. Current ratio has the advantage of being applicable regardless of firm size and across different industries (Troy, 2008). Therefore, we opt for the straightforward measure of current ratio that simply provides a relation of "what can we liquidate soon" to "what do we have to pay soon".
4. Trend of financial ratios ("**distress risk**"). Piotroski (2000) argues that the distress risk within high book-to-market firms (Fama and French, 1993) can be controlled for by applying a simple trend indicator of financial ratios. He constructs a nine-component measure (the "F-Score") that captures if critical financial measures are improving or deteriorating. Piotroski (2000) bases his work on a number of aggregated distress scores, such as the one introduced by Altman (1964). Piotroski (2000) argues that a firm is unlikely to be distressed if all of the nine financial ratios are trending up and vice versa. Building portfolios using the F-Score as a stock election tool significantly enhances returns for investors, when controlling for risk using the Fama and French (1993) 3-factor model. We apply the F-Score as our measure of a firm's distress given that it adds a time-contingent variable to our stylized model. All other variables we use are stationary in nature (they give an indication of the level of a certain variable) while the F-Score measures the dynamic of financial ratios and hence might offer additional insights about the fundamental risk of a firm.

In general, we conduct our tests with one variable at a time to see if these variables add explanatory power to the established control models for skewness. However, we add one dimension we call "classic firm risk" as an analogy to the MM-framework (1958). MM (1958) argue that the risk of the firm is mutually exclusive and collectively exhaustive captured by the level of financial and asset risk. We hence apply two additional aggregated measures by combining Net Debt to Market Cap with variability of EBITDA and variability of Operating Cash Flows. We use both dimensions also in our stylized model and hence include an explicit measure of "classic firm risk" in our empirical study.

In our empirical analysis, we test whether these aforementioned variables of fundamental risk relate to coskewness and idiosyncratic skewness of stock returns. We hypothesize that increased measures of fundamental risk increase the positive skewness of firm's returns. On the contrary, our null hypothesis is that fundamental risk has no relation to coskewness or idiosyncratic skewness. We test our hypothesis in two ways. Firstly, we test how our fundamental risk measures relate to the coskewness measure as expressed in Harvey and Siddique (2000). Secondly, we extend the CHS (2001) idiosyncratic skewness model with our fundamental risk measures to see if we can explain variances in idiosyncratic skewness beyond the control variables used by CHS (2001). Our rationale for evaluating both coskewness and idiosyncratic skewness as dependent variables lies in the explorative nature of our study. We aim at providing evidence on the relation between return skewness and firm's fundamental risk measures and there is little consensus in prior literature on what makes a firm's returns skewed or even on the "correct" measure of skewness. In order to broaden our evidence and to increase robustness, we hence opt for testing skewness in two different ways.

We conduct our study in the Swedish equity market in the timeframe between 1994 and 2013. While studies in the Swedish market are not uncommon, most prior research in the area of skewness has been conducted in the US sample. We found no skewness research that is centered on the Swedish market. In addition, part of our work is on very recent data (in fact, we work with trading data up from as recent as a few months prior to publishing of this study). Given this different time and location perspective, our study also provides some out-of-sample evidence to the existing research body on skewness.

4 Data and Methodology

4.1 Data sources

The data collection and sorting process implemented in the research process starts with downloading the prices, turnover, and other fundamental variables from Datastream. As we have decided to focus on the Swedish market, we also download the OMX 30 return time series from Bloomberg. We use the OMX 30 as our proxy for the equity return of the Swedish market. Our sample runs from March 1994 until February 2014 and includes 1,164 public companies. The reason for the seemingly odd start and end date stems from the fact that we aim to capture the absorption of fundamental data into prices. Namely, in our regression construction, returns for each year start on the first of March of that year and end on the last trading day of February of the following year. This coincides with the regulations of OMX Stockholm concerning the schedule of annual financial statement releases, which public companies must make by the end of the second month after the financial year's end according to rule 3.2.2. of the NASDAQ OMX Stockholm Rule Book for Issuers (NASDAQ OMX, 2014). This way the fundamental data, which is revealed in the financial statements, should be incorporated in the stock returns from the beginning of March onwards. The complete list of variables that we calculate based on the raw financial data we downloaded from Datastream can be seen in Table A in section 4.5. As a robustness test, we sampled ten firms from different years and checked the Datastream data with the actual annual reports. We could not find any differences between the secondary data and the primary data and hence feel comfortable with using Datastream as our source for fundamental variables. The descriptive statistics of the final variables used in the regression is discussed in the Results section of the paper.

4.2 Data sorting & filtering

We first filter out financial companies (banks and insurance firms), investment companies, real estate firms and utilities. We apply these filters to exclude industries and stocks that have unique and industry-specific fundamental factors that do not apply to most other industries. The exclusion of these companies is also customary practice in prior asset pricing literature. After the data was downloaded, we performed several transformations and adjustments to the raw data. First, we use prices for the set of securities we have in the sample to produce log return time series for each stock. We then subtract the daily log return of the market (i.e. OMX 30 index) to create excess log returns. We obtain daily stock / market returns, so using log returns makes sense as they can be added together to form annual returns. Whenever we use annual returns as an input to one of our calculation we would also add the dividends accrued for that company during the given year. We also use these log returns to compute second and third moments, i.e. the stock excess return volatility and idiosyncratic skewness for each year in the sample. For delisted companies, the last price is taken as the delisting price. We then filter the companies to limit our sample to companies with a Market Capitalization of over 200 million SEK, because companies below this threshold produce a significant amount of outliers that are not relevant for the general market. Also, we found a significant drop in trading liquidity for all stocks below 200 million SEK Market Cap making any possible findings hard to implement in practice.

4.3 Ranking variables

The next important data construction aspect is our ranking system of financial and fundamental variables. Namely, we do not regress returns, idiosyncratic skewness and coskewness on fundamental and financial indicators directly. Instead, we would rank N companies in a given year with respect to a certain variable by assigning rank "1" to the company with the highest value for the variable and the company with the lowest variable getting rank "N". Our reasoning for applying ranks is threefold. First, ranks are a simple way to deal with outliers in our data given that some of our fundamental risk variables have quite extreme values (see "Results"). Alternatives to our rank system would be application of logarithms or winsorisation to smooth extreme values. We recognize the merits of these smoothing techniques (and actually work with winsorised data in some robustness checks) but find them inferior to ranking in our given sample (see "Results"). Secondly, a rank system is more useful from a practitioner's perspective (especially in comparison to using logarithmic or winsorised data) given that a ranking of companies is the basis for many screening-based portfolio management approaches. For example, the construction of zero-cost factor portfolios would buy a certain – most often equally weighted – portfolio of the best ranked percentile in a given market and short the portfolio consisting of the worst ranked percentile (Fabozzi, Gupta and Markowitz, 2002). Hence, a given portfolio manager would be most interested in what changes in the rank of a company imply for portfolio construction. One such practical question could be whether the manager should construct portfolios consisting of the top/bottom 10% or rather then top/bottom 20%. Such deviations are very easy to derive from our rank-based analysis. Third, prior literature that uses similar independent variables (such as Asness, Frazzini and Pedersen, 2013) also use a rank system very similar to ours and find this to be a robust approach throughout different markets and time periods. They also quote "consistency and ease of interpretation" as a motivation to use ranks instead of the actual variables. Nevertheless, we recognize that we might lose information by using ranks and hence will test all our relevant findings in a separate regression model using winsorised fundamental risk measures as independent variables.

As to illustrate our ranking methodology, we take a look at the ratio Net Debt / Market Capitalization for 180 companies in the year 1998. Thus, the companies receive a rank from 1 to 180 according to their ratio in that particular year. In this case, it would mean that the company with the highest ratio would rank "1" and the company with the lowest ratio would rank "180" (exception are current ratio and interest cover, both have an inverse ranking order by construction). Hence, the higher the rank, the lower the financial risk of the firm. However, we do not stop here. This absolute rank introduces scaling issues, making regressions unstable. In fact, being the highest ranked company in a sample of two stocks is different from being the highest ranked company in a sample of 1,000 stocks. We therefore calculate the relative rank of each company by dividing the absolute rank by the median rank for that variable in that year. To continue with the given example, this would mean giving the relative Net Debt / Market Capitalization rank of 1/90.5[3] = 0.011 for the company ranked "1". Similar procedure is followed for the rest of our variables, apart from the combined variables such as the average rank of the financial risk and asset risk that we use to measure the aforementioned "classic firm risk". In this case, we first sum up the absolute ranks and divide them by two. The result is divided by the median of the combined absolute ranks in the year. For instance, in 2011 the company Massolit Media was ranked third in Net Debt / Market Cap and first in five-year standard deviation of Operating Cash Flow / revenue. Therefore Massolit Media's absolute rank in the combined ratio was (3+1)/2=2. The relative rank of Massolit Media was computed by dividing 2 by the average of the combined absolute ranks in the year 2011 (which was 183.83) giving us 2/183.83=0.01088.

One exception among our independent variables is our measure for distress risk: Piotroski's (2000) F-Score. This measure is already scaled as a unit-less indicator variable taking on the value 0 to 9. In our tests, we use the actual F-Score indicator values rather than a relative rank for distress risk. Given that F-Score is already scaled on a fixed and discrete interval, we see no motivation to apply additional relative scaling. We adopt the construction of F-Score in Piotroski (2000) when constructing our distress risk measure. Piotroski (2000) argues that positive Return

[3] 90.5 = median of the sequence 1,2,…180. We use 180 in our example given that it is the number of Swedish companies in our sample for the year 1998.

on Assets ("RoA") and Cash-Flow from Operations / Assets ("CFO"), both trailing one year, are signs for a firm's ability to generate funds internally, which can be seen as a positive sign in an environment where most of the sampled value stocks are distressed. Both are assigned 1 in the model if positive and 0 if negative. In addition, Piotroski (2000) considers the year-over-year change in Return on Assets ("ΔRoA") as "suggestive of an improvement in the firm's underlying ability to generate positive future cash-flows" (Piotroski, 2000). Again, 1 gets assigned if the trend is positive, 0 if the trend is negative. The fourth profitability variable is the Relation between CFO and RoA ("Accrual"). Sloan (1996) provides evidence that positive accruals could be indicative for a) lower subsequent profitability and also b) aggressive management of earnings. This variable assumes the value 1 if CFO > RoA and 0 if CFO < RoA. Piotroski (2000) assigns a 1 (0) to year-over-year decrease (increase) in long-term debt / assets ("ΔLever"). In terms of liquidity, Piotroski (2000) uses the change of a firm's current ratio ("ΔLiquid") as a proxy for the ability to service currently maturing liabilities. A positive year-over-year change in liquidity gets assigned a 1, a negative change a 0. A third variable in the financing dimension of the F-Score is the monitoring of equity issuance. An increase in share count might indicate severe financial distress at a value firm, since equity issuance does come along with high cost of capital a firm has to accept when its share price is low. Managers are likely to only accept this cost of capital when they truly have no other financing choice (Piotroski, 2000). Therefore, the author assigns companies with an increase in share count (year over year) a 0 and all other companies a 1. Piotroski (2000) evaluates the Changes in gross margin and changes in asset turnover ("ΔMargin" and "ΔTurn"). Piotroski (2000) assigns to a positive trend in both variables a 1 and to a negative trend a 0. The construction of F-Score is based on the same variables as our other fundamental risk measures. In fact, if we use cash-flow from operations in year t_1 as an input for our asset risk, we would use the exact same Operating Cash Flow number for the construction of F-Score.

4.4 Control variable construction

As described in the literature review section, we draw inspiration from the works of Carhart (1997), Piotroski (2000), CHS (2001), and Harvey and Siddique (2000) when constructing our regressions. Thus, the control variables we use in our regressions are constructed according to the models these authors use to study idiosyncratic skewness and coskewness along with the return regressions, with the latter used for guidance and interpretation of the NCSKEW and coskewness regressions. In the first set of regressions described in detail in the following section, we use three control variables: the natural logarithm of the company's Market Capitalization ("ln mcap"), the ratio of a stock's price to its corresponding book value per share ("p/b"), and the stock's lagged one-year return ("MOM"). These control variables represent the size, value, and momentum factors similar to Carhart (1997). These variables are used as controls because we are seeking to isolate whether our fundamental risk variables explain variances in excess returns in addition to the well-known Fama and French (1993) evidence on size and value and to Carhart's (1997) findings on momentum.

Moving on to the regressions on idiosyncratic skewness, we construct a model similar to CHS (2001). We follow their control variable specification, using the aforementioned ln mcap, p/b (CHS use Book / Market, which is the inverse of p/b), and MOM (CHS use 5 lags, because their regression is semi-annual rather than annual and they wanted to capture a longer time history). In addition, we follow their model in using the lagged one-year idiosyncratic stock volatility ("stdev"), lagged negative coefficient of skewness ("lagged NCSKEW", defined below in the section on regression construction), "DTURNOVER" (described in more detail below), the stock's trading turnover ("turnover"), and a dummy variable capturing whether sell-side research analysts follow the company. The latter dummy variable equals one when analysts follow the company, and if the company is not followed the dummy equals zero. The turnover of the stock is calculated by scaling the actual turnover in SEK by the company's Market Capitalization. This is similar to CHS's (2001) turnover calculated as number of shares traded divided by the number of shares outstanding. DTURNOVER is the de-trended turnover, which we calculate as the current year turnover divided by the preceding year turnover. While this is slightly different from the CHS (2001) specification of DTURNOVER as turnover minus its 18-month moving average, we believe our construction achieves a similar objective – it removes the fixed firm characteristic from the turnover variable. With the major control variables explained, we move on to describing the set-up of regressions used in our research in the next section.

4.5 Regression Set-Up

The regression method used in our analysis is a simple ordinary least squares (OLS) estimate. Given that we adjust our data for outliers already by assigning ranks to the variables, we do not expect to face usual issues with OLS-regressions that can appear when the independent variables are widely skewed. In this explorative study, we do not dig much deeper into more advanced regression peculiarities that could potentially affect our study. One such issue could be a non-linear relation between our independent variables and the two different skewness measures. A more advanced study could for example apply power transformations such as the Box-Cox transformation to capture different linear relations in different scaling intervals of our independent variables. Another way to do this would be a test of the relation of quartile-sorted variables on skewness. However, in this paper we stick to the simple approach of using OLS-regressions due to scope constraints. Rather than using several methods to test a limited set of variables, we apply one method to a very broad set of variables and sub-samples. We argue that this approach honors our objective of providing grass-root evidence on the relation between fundamental risk and different measures of skewness. The regressions are performed in Matlab using matrix algebra without any adjustments to the standard OLS regression set-up. As a robustness check, we also performed some regressions using the Newey-West (1986) standard error adjustment, but found that it was not particularly helpful for our purposes as the improvement in the t statistics was barely noticeable. The regression results presented in the subsequent section are therefore very straightforward for interpretation for the reasons outlined above.

In the first set of regressions (results shown in Tables 1-8 in the appendix), we conduct a panel regression of the log excess return of stock i in year t_0 on the control variables ln mcap, p/b, and MOM described in the section above adding one of our independent variables at time t_{-1}. The typical regression could be described in the following way:

$$(r_i - r_m)_t = \alpha + \beta_1 * LN\ MCAP_{t-1} + \beta_2 * \frac{P}{B}_{t-1} + \beta_3 * MOM_{t-1} + \beta_4 * Rel.Rank\ X_{t-1} + \varepsilon$$

Where Rel. Rank X represents the particular relative rank variable of interest. The independent variables we use are described in more detail in the table A below.

As the ranking procedure has been explained in the section above, we stop here to briefly explain the motivation for the variables. We see the relative rank of the firm's leverage (represented by Net Debt to Market Cap, EBITDA to Net Debt, Interest Coverage, and Net Debt to Assets ratios) as a proxy for the financial risk the company possesses at a certain point in time. As pointed out before, we do not apply one single financial risk measure but rather a diverse set given that we have no strong prior what the correct measure is. Similarly, we evaluate the asset risk of a company by examining the Operating Cash Flow/Revenue and EBITDA/Revenue ratios. The higher the variability in Operating Cash Flow or EBITDA (both scaled by revenue), the higher the asset risk of the firm. Additionally, we combined the measures for financial and asset risk to measure "classic firm risk", i.e. the risk to the equity holders in the MM (1958) framework. Next, we look at the balance sheet liquidity measure represented by the current ratio and the distress risk measured through Piotroski (2000) F-Score. These variables serve as additional controls for risk dimensions investors may price in equities.

Table A. Independent variables used in the regressions.

Variable	Description
Financial risks	
Relative yearly rank Net Debt / MCap	The leverage of the company in terms of the shareholders' equity
Relative yearly rank Net Debt / Assets	The leverage of the company in terms of the total assets of the firm
Relative yearly rank EBITDA / Net Debt	The leverage the company employs compared to the company's operations
Relative yearly rank interest coverage	The ability of the company to cover the costs associated with the employed leverage
Asset risks	
Relative yearly rank 5y stdev OCF / Revenue	The variability of the company's operations in terms of its operating cash flow
Relative yearly rank 5y stdev EBITDA / Revenue	The variability of the company's operations in terms of its EBITDA
Classic firm risks	
Relative average yearly rank Net Debt / MCap and OCF / Revenue	These combined variables represent the leverage and the margin variability, combining the financial and asset risks of the firm
Relative average yearly rank Net Debt / MCap and EBITDA / Revenue	
Balance Sheet Liquidity risk	
Relative yearly rank current ratio	The balance sheet liquidity risk of the company
Distress risk	
Piotroski F-Score	The distress risk of the company

As a first step, all of our regressions are run including control variables with each independent variable added separately. In a second step, we also run regressions without the specified control variables to observe the explanatory power of the regression model with our fundamental risk measures as the only independent variable. For all regressions we run, we use four iterations of fixed effects: no fixed effects, time fixed effects, industry fixed effects, and combined time and industry fixed effects. The construction of the fixed effects may best be understood through a simple example. To control for the fixed effect of year 1995 we would create a vector that has ones in each row that corresponds to panel data from the year 1995 and zeroes in all other rows. We would follow the same logic for each year except the last year. The omission of dummy variables for the last year is necessary in order to avoid multicollinearity issues. We use a similar construction for industry fixed effects, i.e. we structure columns, where we put a one if a particular firm operates in a certain industry (as measured by Datastream industry classifications) and zero for all other industries. The total number of columns is again one fewer than the total number of industries in consideration of the potential multicollinearity problem. Thus, regressions with fixed effects produce coefficients for all independent variables and all fixed effect variables.

In a second set of regressions (results shown in Tables 9-16 in the appendix) we consider the second set of regressions with the CHS (2001) NCSKEW measure as the dependent variable. The regressions is set up in the following way:

$$NCSKEW_t = \alpha + \beta_1 * NCSKEW_{t-1} + \beta_2 * DTURNOVER_{t-1} + \beta_3 * TURNOVER_{t-1} + \beta_4 * ANALYST_{t-1} + \beta_5 * \sigma_{t-1} + \beta_6 * LN\ MCAP_{t-1} + \beta_7 * \frac{P}{B}_{t-1} + \beta_8 * MOM_{t-1} + \beta_9 * Rel.Rank\ X_{t-1} + \varepsilon$$

Where Rel. Rank X represents the particular relative rank variable of interest. We define NCSKEW in the same way as CHS (2001):

$$NCSKEW_{it} = \frac{-n(n-1)^{\frac{3}{2}} * \sum R_{it}{}^{3}}{(n-1)(n-2)\left(\sum R_{it}{}^{3}\right)^{\frac{3}{2}}}$$

Where R_{it} represents the sequence of demeaned daily market excess returns to stock i during period t and n is the number of observations on daily returns during the period. By putting a minus sign in front of the third moment, we are following the CHS convention, where "…an increase in NCSKEW corresponds to a stock being more crash prone, i.e. having a more left-skewed distribution" (CHS, 2001). The regression itself includes the control variables from CHS (2001), although we have slightly modified to fit our research topic by dropping extensive volatility and NCSKEW lags and keeping just one lag to make the regression more focused. The motivation and construction for this test remains the same, i.e. we want to see if investors price fundamental risks into the skewness of the returns. We therefore structure the regression as a predictive one, with all explanatory variables at t_{-1} and the dependent variable at time t_0.

Lastly, we study the coskewness measure (results shown in Tables 17-24 in the appendix). It represents the contribution of a security to the skewness of the overall portfolio, which in our case is the Swedish market portfolio. We follow the Harvey and Siddique (2000) formulation:

$$\beta_{SKD_i} = \frac{E[\epsilon_{i,t+1}\epsilon^2_{M,t+1}]}{\sqrt{E[\epsilon^2_{i,t+1}]}E[\epsilon^2_{M,t+1}]}$$

Where $\epsilon_{i,t+1}$ is the stock return over the market, i.e. $(r_i - r_m)_t$. We differ here slightly from the Harvey and Siddique (2000) approach as they use the residual from the stock regression on the market. The other elements of the equation are very intuitive: the numerator is the covariance of the stock excess return and the market return and denominator is a normalization.

In the regular skewness formula, this normalization would be the standard deviation cubed, but here we use the product of the variance of the market returns and the standard deviation of the stock excess return. The coskewness measure we construct can be interpreted as a measure for contribution to portfolio-skewness. Firms with positive coskewness measure would increase the skewness of the portfolio and vice versa. In line with Harvey and Siddique (2000), we use this measure rather than actual coskewness, given that the economic interpretation of this contribution measure is more straightforward. In fact, with our regression set-up a practitioner could use the regression coefficients to make a direct link between the relative rank of a company for a given variable and the expected impact on aggregated portfolio skewness. We would like to note that by construction, the coskewness contribution measure (and also coskewness itself) are most sensitive to a given firm return behavior during times of market skewness. Unlike idiosyncratic skewness (which measures "jumps" and "crashes" in general), coskewness looks at the skewness of returns in the context of market skewness. Given that market returns tend to be negatively skewed (Ilmanen, 2011), coskewness could also be seen as a surrogate measure for performance during bad times.

We apply size, value and momentum as controls for coskewness given that we are not aware of any literature suggesting a better prior on what drives coskewness. Therefore, we control for firm specific characteristics like size, valuation and momentum that are known to explain variances in excess returns. CHS (2001) also start out by using these controls as components to their idiosyncratic skewness model before hypothesizing about additional controls.

5 Results

We structure the presentation of our empirical findings into three distinct parts. The first part contains descriptive statistics of our variables and an analysis of correlations between our fundamental risk measures and different control variables. The second part discusses the addition of our fundamental risk measures to the CHS (2001) model and evaluates in how far these additions help in explaining idiosyncratic skewness. The third part of this section presents the results from a panel regression with the Harvey and Siddique (2000) coskewness measure as dependent variable and our fundamental risk measures as independent variables.

5.1 Descriptive Statistics

Table B shows the descriptive statistics of the sample we use in our regressions (see "Methodology" for size and industry cut-offs). When looking at the actual variables (without relative ranking), we note severe deviations and a large amplitude for essentially every variable. This can be best seen by considering the min and max values for each variable and the differences between mean and median of the variables. A vivid example is the EBITDA / Revenue variable (which we use as an input to measure asset risk). Intuitively, the median for that variable seems plausible at around 10%. However, the mean is at negative 103% – which is an implausible result as it would imply that on average companies lose more EBITDA than they make in revenue! The genesis of this difference between median and mean lies in some few severely negative values that skew the mean of our sample variables. Due to the extreme outliners in our sample, we deem our ranking of variables as a reasonable approach. Ranking does have the disadvantage of losing information about the distance between the variables. The advantage of ranking is that it allows for the inclusion of all variables. As discussed in the prior chapter, we could also use winsorised variables to adjust for outliers and actually do so in our robustness test. Nevertheless, our descriptive statistics once more illustrate several pitfalls of winsorisation. Given that the extreme values are distributed differently across our variables, the level of winsorisation would realistically have to be different for each variable. An example is our Net Debt to Market Capitalization variable, which has a much smaller difference between mean and median in comparison to e.g. our asset risk variables. Winsorising at one level likely causes a loss of information in some variables. However, acknowledging the explorative nature of our study, we are not dogmatic about using relative ranks but rather test our main findings with winsorised variable regressions as well. As it will turn out, the results turn out to be not all that different between the two approaches.

Table B

Descriptive statistics

This table shows various statistical properties of the data employed in the regressions.

	MCap	Ln MCap	P/B	Log P/B
Mean	10 730 635.60	14.33	3.74	0.87
Median	1 088 786.50	13.90	2.23	0.81
Min	200 437.38	12.21	-72.08	-3.27
Max	1 658 806 541.78	21.23	129.19	4.86
St Dev	47 082 465.98	1.65	6.81	0.89
Skewness	17.55	0.98	5.94	0.31
Kurtosis	513.18	0.40	88.85	1.86

	ND/MCap	Yearly Rank ND / MCAP	OCF / Revenue	EBITDA / Revenue
Mean	0.25	130.14	-1.07	-1.03
Median	0.05	115.00	0.06	0.10
Min	-2.40	1.00	-862.18	-867.87
Max	32.46	376.00	36.80	23.09
St Dev	0.98	88.04	20.05	20.43
Skewness	15.92	0.59	-34.40	-33.43
Kurtosis	421.46	-0.49	1 340.61	1 270.95

	5y StDev OCF / Revenue	Yearly Rank 5y StDev OCF / Revenue	5y StDev EBITDA / Revenue	Yearly Rank 5y StDev EBITDA / Revenue
Mean	2.25	154.90	2.11	150.94
Median	0.04	151.00	0.04	146.00
Min	0.00	1.00	0.00	1.00
Max	922.97	374.00	894.92	354.00
St Dev	28.49	94.41	27.70	89.16
Skewness	21.96	0.22	21.72	0.27
Kurtosis	589.61	-0.90	573.58	-0.83

	Average Rank Leverage and OCF/Revenue	Average Rank Lev and EBITDA/Rev	Turnover	Dturnover
Mean	146.96	141.87	0.00	1.35
Median	142.50	135.50	0.00	0.87
Min	4.00	6.00	0.00	0.01
Max	349.00	343.50	0.02	79.15
St Dev	62.86	62.97	0.00	2.79
Skewness	0.33	0.53	14.43	16.34
Kurtosis	-0.17	-0.01	272.03	372.09

	NCSKEW	Return	MOM	Analyst Dummy
Mean	-0.23	-0.08	-0.11	0.87
Median	-0.19	0.00	-0.04	1.00
Min	-9.59	-4.43	-4.43	0.00
Max	14.24	1.69	1.69	1.00
St Dev	1.35	0.52	0.54	0.33
Skewness	0.73	-1.29	-1.27	-2.23
Kurtosis	16.12	4.81	4.68	2.97

	Lagged NCSKEW	St Dev	EV/EBITDA	EV/EBIT
Mean	-0.16	0.03	-1.46	-2.77
Median	-0.17	0.02	6.88	8.95
Min	-9.59	0.00	-38 872.43	-36 239.17
Max	14.24	0.21	19 540.69	31 359.98
St Dev	1.19	0.01	828.32	951.24
Skewness	1.75	2.80	-28.73	-8.08
Kurtosis	21.05	15.65	1 706.52	1 096.80

Table B (cont'd)

Descriptive statistics – continued

	ROIC	EV/Gross Margin	EV / Revenue	Current Ratio
Mean	2.71	-2.68	15.81	2.41
Median	8.95	4.36	1.04	1.71
Min	-589.16	-24 745.34	-120.83	0.10
Max	144.28	4 358.70	7 716.28	153.94
St Dev	34.66	487.52	205.92	4.36
Skewness	-5.28	-46.01	27.80	21.17
Kurtosis	57.40	2 346.95	885.84	633.69

	Piotroski	Yearly Rank EBITDA / Net Debt	Rel. Yearly Rank EBITDA / Net Debt	Yearly Rank Interest Cover
Mean	4.67	115.36	1.11	105.35
Median	5.00	114.00	1.12	74.50
Min	0.00	1.00	0.01	1.00
Max	9.00	265.00	1.99	479.00
St Dev	1.77	60.29	0.52	78.77
Skewness	0.02	0.21	-0.16	0.45
Kurtosis	-0.43	-0.65	-0.97	-0.96

	Rel. Yearly Rank Interest Cover	Yearly Rank Current Ratio	Rel. Yearly Rank Current Ratio	Rel. Yearly Rank 5y StDev OCF / Revenue
Mean	0.94	193.75	0.98	1.10
Median	1.18	184.00	0.98	1.14
Min	0.01	1.00	0.00	0.01
Max	3.28	500.00	2.00	2.00
St Dev	0.43	118.34	0.54	0.56
Skewness	-0.52	0.34	0.01	-0.21
Kurtosis	-0.13	-0.74	-1.14	-1.11

	Rel. Yearly Rank 5y StDev EBITDA / Revenue	Rel. Yearly Rank ND/MCap	Rel. Avg, Yearly Rank ND and OCF	Rel. Avg .Yearly Rank ND and EBITDA
Mean	1.11	0.94	1.03	1.03
Median	1.16	0.92	1.03	1.03
Min	0.01	0.01	0.06	0.04
Max	2.00	1.99	2.17	2.06
St Dev	0.56	0.55	0.35	0.37
Skewness	-0.23	0.08	0.02	0.06
Kurtosis	-1.08	-1.18	-0.10	-0.36

	Yearly Rank ND / Assets	Rel. Yearly Rank ND / Assets	Rel. Yearly Rank ND/MCAP and OCF and Curr Ratio
Mean	187.47	0.93	1.00
Median	166.00	0.87	1.01
Min	1.00	0.00	0.15
Max	524.00	2.00	1.86
St Dev	123.20	0.56	0.26
Skewness	0.55	0.20	-0.10
Kurtosis	-0.56	-1.14	-0.11

Table C shows the correlation matrix of our fundamental risk measures with the control variables from the CHS (2001) model and also the correlations among the fundamental risk measures. We note a relatively strong negative correlation between our fundamental risk variables and the standard deviation of a firm's stock return. Correlations with standard deviation range from -0.21 to -0.45 indicating a relation between the fundamental risk of a firm and standard deviations (note that by construction, the rankings for interest cover and current ratio are inverted which causes a switch in signs in the correlation matrix). Arguably, there could be an issue with multicollinearity given that standard deviation might already capture the fundamental risk of a firm. However, the correlations still seem modest enough to not disregard our measures of fundamental risk – but we note this correlation pattern as a caveat for interpretations. In addition, the Net Debt to Market Cap and Net Debt to Assets measure seem hardly related to standard deviation providing further evidence that standard deviation might not capture all facets of risk. In fact, the correlation of our fundamental risk measures with other control variables shows few systematic patterns. Only size of the firm and momentum seem to be related to our risk measures at noticeable correlation levels. Interestingly, P/B and the fundamental risk measures are hardly correlated, which is contrary to Fama and French (1993) who identify P/B ("value effect") as a risk measure. There is however a link that larger firms and firms with good recent performance tend to have lower measures of fundamental risk. This is not surprising given that distressed firms are unlikely to have buoyant stock price histories, reducing their respective Market Capitalization and stock price momentum. Other than that, most of our risk factors do not seem to be related to the control variables used in prior research to explain skewness.

Among our fundamental risk variables, there are high correlations between variables that aim at measuring the same kind of fundamental risk. Referring to the classification of fundamental risk made earlier, we find a high correlation within the set of financial risk variables and asset risk variables. For example, the financial risk measures (Net Debt scaled by EBITDA, Assets or Market Cap and interest cover) show correlations of larger than 0.50 with each other and are very high in some cases (correlation between Net Debt to Assets and Net Debt to Market Capitalization is 0.84). A similar pattern can be seen in the case of asset risk, with a correlation of 0.66 between the two different measures we apply (one using EBITDA and the other Operating Cash Flow, both scaled by revenue). These findings are not surprising as some of the variables for each fundamental risk category are causally related by construction (e.g. increases in Net Debt likely coincide with increases in interest payments). However, across the different kinds of fundamental risk, there is only a low correlation between the variables.

Table C

Correlation matrix for independent variables

This table presents Pearson correlations coefficients between the independent explanatory variables used in all regressions throughout the paper.

	ln mcap	p/b	turnover	DTURNOVER	MOM	ANALYST DUMMY	lagged NCSKEW	st dev	piotroski	rel. Yearly rank EBITDA / Net debt	rel. Yearly rank interest cover	rel. Yearly rank current ratio	rel. yearly rank 5y stdev OCF / Revenue	rel. yearly rank 5y stdev EBITDA / Revenue	rel. yearly rank ND / MCAP	rel. Avg .yearly rank ND and OCF	rel. Avg .yearly rank ND and EBITDA	rel. yearly rank ND / Assets
ln mcap	1.00																	
p/b	-0.01	1.00																
turnover	-0.18	-0.05	1.00															
DTURNOVER	-0.16	-0.04	0.27	1.00														
MOM	0.16	-0.10	0.06	-0.01	1.00													
ANALYST DUMMY	0.24	-0.07	-0.05	-0.09	0.28	1.00												
lagged NCSKEW	0.11	0.04	-0.13	-0.02	-0.34	-0.08	1.00											
st dev	-0.47	0.11	0.15	0.34	-0.56	-0.44	0.09	1.00										
piotroksi	0.17	-0.09	0.06	-0.07	0.31	0.13	-0.14	-0.27	1.00									
rel. Yearly rank EBITDA / Net debt	0.26	-0.08	-0.09	-0.12	0.41	0.23	-0.02	-0.40	0.41	1.00								
rel. Yearly rank interest cover	-0.13	-0.07	0.08	0.07	-0.19	-0.07	-0.06	0.21	-0.26	-0.68	1.00							
rel. Yearly rank current ratio	-0.06	0.08	0.08	0.04	-0.23	-0.09	0.13	0.23	-0.10	-0.17	0.19	1.00						
rel. yearly rank 5y stdev OCF / Revenue	0.19	-0.21	-0.08	-0.15	0.34	0.25	-0.04	-0.43	0.26	0.36	-0.17	0.00	1.00					
rel. yearly rank 5y stdev EBITDA / Revenue	0.19	-0.19	-0.10	-0.15	0.34	0.24	-0.03	-0.45	0.19	0.45	-0.19	-0.14	0.66	1.00				
rel. yearly rank ND / MCAP	0.15	0.25	-0.12	-0.10	0.01	-0.01	0.09	-0.03	0.01	0.52	-0.57	-0.11	-0.02	0.00	1.00			
rel. Avg .yearly rank ND and OCF	0.25	-0.04	-0.14	-0.19	0.29	0.21	0.02	-0.39	0.21	0.58	-0.45	-0.06	0.82	0.55	0.54	1.00		
rel. Avg .yearly rank ND and EBITDA	0.24	-0.02	-0.15	-0.19	0.30	0.20	0.02	-0.40	0.16	0.65	-0.46	-0.17	0.53	0.84	0.55	0.76	1.00	
rel. yearly rank ND / Assets	-0.01	0.10	-0.02	-0.03	0.13	0.02	0.01	-0.02	0.07	0.56	-0.55	-0.12	0.07	0.02	0.84	0.52	0.47	1.00

For example, current ratio or Piotroski (2000) F-Score show low to non-existing correlation to the other measures. Part of it can be explained by the different construction of measures, given that Piotroski (2000) F-Score for example is a dynamic measure indicating trends whereas the others are stationary by nature. The low correlation of current ratio is also not surprising, given that it is constructed with very different inputs than the other variables of fundamental risk. One notable exception in the correlation pattern are the results for the Net Debt to EBITDA measure. Leaving aside the low correlation with current ratio, the correlation of Net Debt to EBITDA to other variables in the sample is high (absolute values for correlation ranging from 0.36 to 0.68). While part of this is due to the use of EBITDA and Net Debt in other fundamental risk measures, high correlations with e.g. Piotroski (2000) F-Score have a less obvious interpretation. One possible explanation is the prominent role Net Debt to EBITDA seems to play in covenants, as discussed earlier. This allows for the inference that Net Debt to EBITDA is a major monitoring measure for banks and hence captures part of the other fundamental risk measures that we apply.

5.2 Fundamental Risk Measures and Idiosyncratic Skewness

In a first step, we apply the original version of the CHS (2001) model to our sample. The dependent variable from CHS (2001) is an indicator deemed "NCSKEW". According to CHS construction, a positive (negative) NCSKEW measure indicates negative (positive) idiosyncratic skewness of a stock. In CHS's (2001) words, "high NCSKEW stocks are the ones that crash." CHS (2001) use eight controls in their model, which we also apply to our sample (see "Methodology"). In our analysis, the CHS (2001) model shows much lower adj. R^2 in comparison to the original study from 2000. However, the regression coefficients we obtain have the same sign and magnitude (albeit lower t-stats) in relation to CHS's (2001) original study. Given the context of a smaller sample size and the different market and time frame of our study versus the original CHS (2001) work, we still see their model as an adequate framework of control variables to test our measures of fundamental risk. Nevertheless, we run each of our regressions also without the CHS (2001) controls (i.e. our fundamental risk measures as the only independent variable) to get a more robust picture. We hereby acknowledge the possibility that CHS (2001) might be the incorrect control model for idiosyncratic skewness in the Swedish market. Therefore, we run 28 different regressions (14 measures of fundamental risk, once with CHS (2001) controls, once without). In addition, we include different fixed effect controls (for time and industry), bringing the total number of idiosyncratic skewness regressions to 112 (see Tables 9-16).

Our most promising findings are the consistently positive coefficients for all financial risk measures that have a Net Debt component. As illustrated in Tables 9, 11 and 13, the relative ranks of Net Debt scaled by either Market Cap, EBITDA or assets all sport positive coefficients between 0.0581 and 0.0955 in the CHS (2001) regressions. This means that increases in the relative rank for financial risk coincide with increases in NCSKEW. In other words, the lower (higher) the financial risk level of a firm, the more negatively (positively) skewed are the idiosyncratic returns of this firm – confirming our earlier stated hypothesis. These coefficients do not change much in magnitude after fixed effects are included. However, the adj. R^2 of the regression models including financial risk measures with Net Debt component are highest when both time and industry fixed effects are included. These coefficients are statistically different from zero at 10% to 15% confidence levels. Since the coefficients of the control variables in the original CHS (2001) model are also not noticeably more significant in our sample, we suspect that our sample might be too small to show as significant results as CHS (2001) got on their initial study. However, a confirming argument to use the Net Debt based financial risk measures as an addition to the original CHS (2001) model are the relatively low correlations between those financial risk measures and the other control variables of the CHS (2001) model. Namely, the Net Debt to Market Cap and the Net Debt to assets measures show very little relation to any of the CHS (2001) controls – including standard deviation. This is of interest, as apparently the risk measures with the least correlation to the statistical risk measure standard deviation add the most in explaining idiosyncratic skewness. An exception is the Net Debt to EBITDA measure, which correlates strongly with standard deviation. This is interesting as apparently all Net Debt based financial risk measures capture positive idiosyncratic skewness but at the same time standard deviation – an established control from CHS (2001) – does not capture all dimensions of financial risk! Again, this provides motivation for further research into the right calibration of financial risk in general.

When using the Net Debt based measures of financial risk as the only independent variables in regressing NCSKEW (see Tables 10, 12 and 14), the coefficients stay strictly positive in all our tests. However, the magnitude of coefficients differs a lot cross the different financial risk measures and also when adding fixed effects. Moreover, the t-stats for the financial risk coefficients are lower than in the CHS (2001) model and the regression models have comparatively lower adj. R^2. This leads us to conclude that indeed CHS (2001) is the right control model for idiosyncratic skewness also in the Swedish market. In fact, our financial risk measures have potential merit in adding to the established control model for idiosyncratic skewness rather than in replacing it.

As a robustness check for our findings regarding financial risk variables with Net Debt, we conduct a regression with Net Debt to Market Cap (rather than its relative rank) as the independent variable. Again, we winsorise the data at 5% and 95% percentiles to smooth extremes in the data. The results (Table 26) confirm the findings of our prior relative rank-based analysis. While the coefficients are still only significantly different from zero at approx. 90% confidence intervals, our t-stats improve slightly when we use the variables instead of relative ranks of the variables. This additional test allows the conclusion that the differences in variable values are not critically important to show a relation between financial risk and idiosyncratic skewness. Interestingly, the coefficients for the Net Debt to Market Capitalization independent variable have higher t-statistics than other established CHS (2001) controls. This supports the notion that financial risk could be a worthwhile addition to CHS (2001) and might explain differences in idiosyncratic skewness that are not captured yet.

So far we have focused on the statistical relation between financial risk and idiosyncratic skewness. Arguably, the economic significance of our findings is less intuitive to evaluate. As already pointed out by CHS (2001), it is impossible to make a direct causal link between changes in NCSKEW and changes in utility for investors. However, the authors triangulate the economic impact of changes in NCSKEW by applying an option pricing framework. In their paper, they construct a stochastic option-model based on two different firms. The price of both firms follows an identical Wiener process but one firm has a symmetric distribution of returns (NCSKEW = 0), whereas the return distribution of the other stock is negatively skewed. CHS (2001) show how the price of a hypothetical 6-months Put-option would differ, given the differences in idiosyncratic skewness between both firms. In their example, they assume an NCSKEW of 0.037 for the firm with the skewed returns and derive a difference in implied option pricing of approximately 20%. CHS (2001) derive 0.037 by taking two standard deviations of their main control variable (DTURNOVER) and multiply it by the regression coefficient they find for DTURNOVER in their panel regression. Hence they argue that a two standard deviation change in DTURNOVER is economically significant within the CHS (2001) framework. We follow a similar approach for testing the economic significance of our financial risk measures' relation to idiosyncratic skewness. We wonder in what relation the 0.037 change in NCSKEW (that CHS (2001) deem economically significant) are to the results we find. In Table 9 / Line 8, we find a regression coefficient of 0.0923 for relative rank of Net Debt to Market Capitalization (one exemplary financial risk measure we found to have a relation to idiosyncratic skewness). Ceteris Paribus, a change of NCSKEW by 0.037 would relate to a change of approximately 0.40 in the relative rank of Net Debt to Market Capitalization (0.037 / 0.0923 = 0.40). However, Table B shows that the standard deviation of our Net Debt to Market Capitalization is already 0.55! This implies that a change in financial risk of a firm as modest as 0.73 standard deviations (0.40 / 0.55 ≈ 0.73) would be sufficient to provide an economically significant effect on the prices of options on that firm. Applying the same logic as CHS (2001), we therefore find evidence that our results of financial risk are economically significant.

A less exciting but still notable finding of our idiosyncratic skewness analysis is the weak relation between idiosyncratic skewness and the asset, balance sheet liquidity and distress dimensions of fundamental risk. Based on our sample, we can reject our hypothesis that increases in these risk measures relate to positive skewness in stock returns. When added to the CHS (2001) model, these coefficients are statistically not different from zero. Somewhat higher significance can be traced in the asset risk measures, but here the coefficients have signs that are opposite to what we expect in our hypothesis. We therefore cannot make the argument that asset risk, balance sheet liquidity of firms or distress relate to positive idiosyncratic skewness of stock returns. When applying variables rather than relative ranks of variables we even find a negative relation between asset risk and idiosyncratic skewness (see Table 26). We discuss this unexpected finding more in-depth in the next chapter when we discuss pricing of skewness. For now, we note that we certainly find no evidence in our data that increases in asset, balance sheet liquidity or distress risk relate to increases in idiosyncratic skewness.

The aggregated "classic firm risk" measure does show a consistently positive relation to idiosyncratic skewness, especially when we use variability of EBITDA as input for asset risk. The application of time and industry fixed effects seems to be important to increase the statistical significance of the "classic firm risk" coefficients. When aggregating Net Debt to Market Cap and variability of EBITDA, we find positive coefficients (indicating a negative relation between "classic firm risk" and idiosyncratic skewness) that are significant at the 10% level.

5.3 Fundamental Risk Measures and Coskewness

We construct a panel regression with the Harvey and Siddique (2000) coskewness measure as the dependent variable and our measures of fundamental risk as independent variables. Given the lack of established models that explain coskewness, we adopt a simple set of size, value and momentum controls (see "Methodology"). In addition, each of our fundamental risk variables is regressed individually (without controls) on coskewness. Subsequently, we add industry and time fixed effects. Results can be found in Tables 17 to 24.

Most notably, the adj. R^2 is very sensitive to the application of time fixed effects. The panel regressions have very low adj. R^2 when no fixed effects or only industry fixed effects are applied. After the inclusion of time fixed effects the adj. R^2 increases to between 20% and 26% in each of our regressions. This indicates a good explanatory power of our model. In addition, it underlines the time-variant nature of the coskewness measure we use. In fact, Ilmanen (2011) argues that market return skewness is in fact not static over time but rather subject to quite erratic swings. By construction, our coskewness measure is most sensitive to a firm's stock performance during times of negative market skewness and hence we are not surprised by the time-variation nature of coskewness.

With regard to our size, value and momentum control variables, we find noteworthy relations to coskewness. The coefficients for size are significantly positive in all of our regressions and after including time and industry fixed effects. Coefficients also stay in the same magnitude of 0.008 throughout the different regression iterations. This finding is not surprising given the potential trading liquidity effects during times of severe market stress. As outlined in Watanabe and Watanabe (2008), the illiquidity premium on stocks is time-variant and highest during times of negatively skewed market returns. Arguably, larger companies are more liquid than smaller ones and hence experience less of an illiquidity discount when market skewness is very negative. The picture for P/B is more ambiguous with coefficients having different signs and varying levels of significance depending on which fixed effects are applied. Momentum shows consistently negative coefficients at high significance levels. In addition, the magnitude of coefficients is similar across the different regressions and after inclusion of fixed effects. In fact, stocks with recent outperformance seem to suffer over-proportionally when market returns are negatively skewed.

With regard to our fundamental risk measures, we find a negative relation between coskewness and current ratio relative rank. This indicates that stocks with relatively high current ratios are less skewed during severe market skewness. The coefficients for relative rank of current ratio are significantly different from zero at 5% to 15% confidence levels (see Table 23). We obtain the highest significance of coefficients after application of both industry and time fixed effects. However, the coefficients seem unstable under the different fixed effect applications and vary in magnitude between -0.0038 and -0.0127. As a robustness test, we conduct an additional regression, using the actual current ratio values as the independent variable. As to adjust for outliers, we winsorise the sample at the 5% and 95% percentile values for current ratio and run a standard OLS panel regression with size, value and momentum controls. Indeed, the coefficients turn out to be insignificant and actually show an inverse relation between coskewness and current ratio in contrast to the initial relative rank regressions (see Table 27). Considering both methods allows us to conclude that it is not sufficient to look at the percentile ranking of a firm with regards to current ratio when explaining coskewness. Rather, the distance between the variable values actually seems to mitigate the explanatory power of current ratio on coskewness. We therefore cannot make a strong argument that balance sheet liquidity risk is related to coskewness.

On the other hand, financial risk and asset risk show a strong negative relation to coskewness. In our sample, coskewness increases with increases in the relative rank of the Net Debt to Market Capitalization and relative rank of EBITDA and Operating Cash Flow variability (both scaled by revenue). In other words: The less financial risk a firm takes on and the lower the variability of profitability, the higher the coskewness. The coefficients for both financial and asset risk are significantly different from zero at greater than 10% confidence levels in all regressions (see Tables 17-22) and stay similar in magnitude also after including fixed effects. Interestingly, the inclusion of fixed effects increases the t-statistic of the coefficients for financial risk but decreases the t-statistic of coefficients for asset risk, indicating important (but seemingly different) time and industry patterns in both financial and asset risk. As a robustness check, we also run regressions with the risk measures themselves (rather than relative ranks) as independent variables. To test our coskewness findings about asset and financial risk, we therefore regress variability of Operating Cash Flow (as a measure of asset risk) and Net Debt to market-cap (as a measure of financial risk) directly on coskewness. We also winsorise the data at 5% and 95% percentiles to adjust for outliers. The results of the OLS regression (Table 27) clearly confirm our findings from the relative rank regressions. Increases in asset risk and financial risk decrease coskewness with the coefficients of our risk measures being statistically significant at greater than 10% confidence levels. Also, the coefficients are stable after the inclusion of fixed effects. In comparison to the relative rank regressions, the statistical significance of the coefficients stays roughly similar with no noticeable deviations. On a side note, we tested the effect of different winsorising levels when regressing our asset and financial risk variables. Interestingly, the regression analysis with no winsorising is extremely unstable and shows few significant coefficients. We suggest further analysis either in the "outlier-sub-sample" of our data or with a different regression method. Looking at outliers might in fact yield some interesting patterns regarding extremely high / low risk firms that we omit in our analysis by either using ranks or winsorising. A possible different angle would be to apply a regression method that is more robust to outliers such as Least Trimmed Squares (Hassani et al, 2010). This method iteratively optimizes regression fits over subsamples of the data that contain fewer outliers.

Tables 17-20 show that combining financial and asset risk into an aggregate measure of "classic firm risk" (see "Literature Review" and "Methodology" for further motivation), increases the magnitude and t-statistic of the coefficients when regressing on coskewness. Also, the regression coefficients stay relatively unchanged to the inclusion of fixed effects. These findings are consistent for the aggregate measure including either EBITDA or Operating Cash Flow variability as a proxy for asset risk. This finding is contrary to the initial hypothesis of the positive relation between fundamental risk and skewness. In fact, our findings for coskewness provide evidence that our stylized model (where fundamental risk only consists of asset and financial risk) receives no empirical backing in our sample. Unlike we assumed, increases in the asset and financial risk sub-categories of fundamental risk actually coincide with decreases in coskewness. In other words: high asset / financial risk stocks make portfolio returns more negatively skewed during times of negative market skewness.

In line with previous findings regarding the size of the firm's relation to coskewness, low financial and asset risk appear to be beneficial in times of severely skewed market returns. This is in-line with the "flight to safety" notion (Ilmanen, 2011) that investors value risk differently in different contexts. While we find affirmative evidence for this finding not only in Net Debt to Market Capitalization but also in Net Debt to Assets, Net Debt to EBITDA and Interest Cover show surprisingly little relation to coskewness. While out of the scope of this paper, calibration differences like the ones just mentioned within the financial risk measures warrant more attention as to determine what the best indicator for financial risk is. Also, remembering the elevated correlation between standard deviation and financial risk in our sample, motivates further research on finding the adequate financial risk measure.

For our distress risk measure (Piotroski (2000) F-Score), we find ambiguous relations to coskewness (Table 23). The coefficients for our distress risk measures are positive and significant if no time fixed effects are applied. This implies increasing coskewness with lower distress risk, contrary to what we expect in our hypothesis. However, when seeing coskewness as a measure of performance during bad times, the correlation with distress risk makes sense. In fact, one would expect low distress stocks to fare better in harsh environments. After application of time fixed effects, the coefficients turn insignificant, which suggests a strong time variation of Piotroski (2000) F-Score. Adjusted for this time variation, distress risk has no explanatory utility to predict coskewness. Therefore, we conclude that distress risk of a firm does not have a significant relation to the coskewness of the stocks excess returns.

6 Extension A: The Price of Skewness

We can summarize the key findings from the prior chapters as follows:

a) Financial and asset risk – and especially the aggregation of both – are negatively related to coskewness
b) Financial risk measures with Net Debt component are positively related to idiosyncratic skewness
c) "Classic firm risk" – the aggregation of financial and asset risk measures – is negatively related to coskewness and positively related to idiosyncratic skewness.

Some of these findings present a puzzle. Especially financial risk seems to have an ambiguous skewness relation. On the one hand, stocks with low financial risk reduce skewness in a portfolio when the market is negatively skewed. On the other hand, firms with high financial risk seem to show positive idiosyncratic skewness. This suggests that skewness has different facets and is context-dependent.

To get a better understanding about our skewness findings, we apply further tests around the expected returns of our fundamental risk measures. If indeed positive skewness has a utility to investors, one would assume a lower expected return for stocks with positive skewness (Barberis and Huang, 2008) – a relation we deem the "price of skewness". Accordingly, if the aforementioned fundamental risk measures actually relate to skewness, we should assume a relation to expected returns as well. In fact, we assume that stocks with positive skewness (regardless whether coskewness or idiosyncratic skewness) have on average lower returns, since investors are willing to pay a price for positive skewness. We conduct several regressions with all of our fundamental risk measures and size, value and momentum controls (results shown in Table 1-8 in the appendix). Also, we apply industry and time fixed effects. Our dependent variable is a firm's excess log return.

Tables 1 to 4 show a very strong negative relation between asset risk and returns. At very high significance levels, firms with high (low) variability of EBITDA and Operating Cash Flow show negative (positive) excess returns. These findings are very robust in magnitude and significance after the application of fixed effects. This leaves a puzzling conclusion as stocks with high asset risk arguably are unattractive from a mean-variance standpoint (low excess return and high variance) but also show a negative (non-existing) relation to coskewness (idiosyncratic skewness). As mentioned before, when regressing the asset risk variables rather than their relative ranks, we even find evidence for a negative relation between asset risk and idiosyncratic skewness. These findings present a puzzle as investors seem to be making a bad deal when investing in high asset risk stocks! There has not been much prior literature on the relation between asset risk and return moments. One such study by Asness, Frazzini and Pedersen (2013) incorporates earnings variability into a "quality score" and obtains a similar negative relation between high asset risk and returns like we do. However, the authors do not provide a definite risk-based explanation for the strong performance of low asset risk stocks. We like to motivate three possible resolutions to the apparent attractiveness of low asset risk stocks. Firstly, high asset risk stocks might be good diversifiers to other risk factors of equity investors. While possible, we cannot infer any known risk factors that might be negatively correlated to high asset risk businesses. Secondly, the limited liability characteristic of equity provides a way for leverage-constrained investors to achieve indirect leverage by buying high risk businesses. Related literature on the "beta-puzzle" follows a similar logic: Investors pay premiums for high-beta securities given that they allow for a non-recourse access to leverage (Frazzini and Pedersen, 2014). While elegant from a theoretical perspective, we find it less plausible when evaluated in the context of our stylized firm model. If the limited liability characteristic of equity played a role for investors to obtain non-recourse leverage, we would assume the resultant payoffs to be positively skewed. Ceteris paribus, we would expect them to be skewed more if asset risk increases. Empirically however, we find the *opposite* relation between asset risk and both coskewness and idiosyncratic skewness. This is apparent evidence against investors' willingness to pay for non-recourse leverage by bidding up high asset risk stocks. Lastly, asset risk stocks might be mispriced due to institutional frictions or behavioral biases of investors. If this were so, one could test the economic significance of such a mispricing by conducting a trading strategy back-test based on the asset risk factor. This could be done by constructing a strategy that goes long high (low) current ratio (earnings / cash-flow variability) stocks and shorts the stocks with inverse characteristics. Given the results from our study, we would assume such a strategy to show excess returns with positive coskewness and potentially positive idiosyncratic skewness. This is interesting from a practitioner's stand-point, given that outperformance likely occurs during "bad-times", ascribing high utility attributes to portfolios constructed according to asset risk.

Regarding financial risk, Tables 1 to 6 show how the different measures of financial risk relate to excess returns. While we find non-significant coefficients for Net Debt to Market Cap, Net Debt to assets and interest cover, the coefficient for Net Debt to EBITDA is significantly different from zero and positive. If anything, increases in financial risk relate to decreases in excess returns. Given that we find a negative relation to coskewness and a positive relation to idiosyncratic skewness, investors seem to put a very high utility on positive idiosyncratic skewness. In fact, they are willing to accept lower returns on average and lower skewness during market crashes to achieve a lottery-like payoff profile in their high financial risk firms. This offers an interesting perspective on the earlier leverage-constraint debate in the case of asset risk. Seemingly, financial risk shows a return pattern that is closer to the stylized model of equity return we introduced at the beginning of this paper. Given that we find financial risk to relate to idiosyncratic skewness, one could now make two different explanatory arguments. On the one hand, leverage-constrained investors might be seeking non-recourse leverage in the form of firms with high financial risk – bidding up prices (evidenced by low returns / underperformance during bad times) – with the resultant returns being positively skewed due to the option-like payoff of stocks (Frazzini and Pedersen, 2014). On the other hand, investors might be specifically searching for positively skewed returns and hence bid up prices of firms with skewness-related attributes like financial risk (Barberis and Huang, 2008). We argue that these two different perspectives on idiosyncratic skewness – one seeing it as a consequence, the other as an origin – are likely due to different investor bases. Arguably, the deliberate seeking of lottery-like idiosyncratic skewness is a domain of the small investor (Mitton and Vorkink, 2007), possibly as a consequence of them under-diversifying their portfolios (Anderson, 2007). Therefore, we conduct additional tests where we split our sample in an "institutional" and a "private" part. We conduct this segmentation by using our Analyst dummy, i.e. if a firm is followed by a sell-side analyst we deem it "institutional" if it is not followed we deem it "private". While it is obviously a very simplified way to approximate investor bases, we find it still plausible that an underfollowed stock is less likely to be on the radar of institutional investors and vice versa. In fact, when a stock is followed by analysts it needs to have an institutional investor base almost by construction (why would an analyst cover a stock in which she doesn't get institutional trading commissions?!). With these two subsamples, we run CHS (2001) regressions to see if we can find differences in the relation between financial risk and idiosyncratic skewness when comparing the two subsamples. We recognize that testing a double-hypothesis is problematic as the effect from one casual factor might offset the other. Finding no difference in the regression results between the subsamples is hence no evidence for the absence of causal relations. However, finding differences between the subsamples would provide empirical support for either the "consequence" or "origin" classification we made earlier for idiosyncratic skewness. Table 28-35 show the results from the CHS (2001) regressions with the relative ranks of our financial risk measures as independent variables. The results shown include both time and industry fixed effects given that the inclusion of both leads to the highest adj. R2 in our initial CHS (2001) regression model. We can clearly see that the coefficients for our financial risk relative ranks have much higher t-statistics in the private sub-sample than in the institutional sub-sample. If we were to look at the institutional sample only, we would not actually assume any statistically significant relation between the financial risk measures and idiosyncratic skewness! Moreover, the coefficients for financial risk are the second most significant in the extended CHS (2001) model when we look at the “private” subsample. In the private subsample, financial risk seemingly has a much better explanatory utility regarding idiosyncratic skewness than many other CHS (2001) control variables. While we recognize all the caveats of our analysis, it still adds to the picture of the lottery-seeking small investor which has been debated in recent literature. We contribute to this debate by introducing financial risk as a possible dimension according to which these small investors select their highly skewed stocks.

One notable exception is again the financial risk measure of Net Debt to EBITDA. There is no clear relation between the relative rank of this variable and idiosyncratic skewness in the entire sample and we cannot observe any pattern when splitting the sample into an institutional and a private part. Again, this raises the question of the right measure for financial risk and why Net Debt to EBITDA seems to have different dynamics from the other financial risk measures.

7 Extension B: Exploring Aggregated Fundamental Risk

We started the motivation of this paper by deriving the dimensions of fundamental risk a firm faces and relating them to skewness in a stylized way. In our tests we find distinct empirical results that changes in asset and financial risk can explain differences in coskewness and idiosyncratic skewness. Interestingly, the effect for these two risks is pointed in the same direction for coskewness but in different directions for idiosyncratic skewness. From a practitioner's perspective, the construction of one aggregated fundamental risk indicator that captures all dimensions of skewness is highly attractive to measure the expected higher moments and timing of returns in a portfolio. From the outset, we already have an aggregated indicator in the form of "classic firm risk", i.e. the average relative rank of Net Debt to Market Cap and EBITDA / Operating Cash Flow variability. This indicator already shows robust explanatory utility throughout our return, coskewness and idiosyncratic skewness regressions. However, we pick up some of the earlier findings that indicate a potential relation between relative rank of current ratio and coskewness. We disregarded these relations on a stand-alone basis because they do not hold up when using the actual variables rather than relative ranks. Nevertheless, we find it worthwhile to test if the addition of our balance sheet liquidity measure adds explanatory power to our "classic firm risk". We are therefore constructing an aggregate score that averages the relative ranks of current ratio, Net Debt to Market Cap and variability of Operating Cash Flow. By doing so, we aim at coving all possible facets of fundamental risk that proved to have a relevant skewness relation in our prior tests. Also, the three inputs proved to have low correlations between each other, lowering the potential that some of the variables capture the same effect.

We use this aggregated score of balance sheet liquidity, financial and asset risk to run regressions on returns, coskewness and idiosyncratic skewness. We chose the same set-up as when testing the individual variables, i.e. the same controls and inclusion of time / industry fixed effects. Results are portrayed in Tables 36-38. When comparing the regression results for this new aggregated score with the "classic firm risk" measure, we consistently find the same magnitude and sign of the coefficients for both measures in all of our regressions. However, the t-statistics for the coefficients are lower than when using our aggregate of only financial and asset risk. Indeed, this suggests that balance sheet liquidity does not seem to be a fundamental risk dimension that is relevant in explaining coskewness and idiosyncratic skewness. From a practitioner's perspective, "classic firm risk" is already a comprehensive skewness indicator and could be used to infer expected skewness patterns for firms, based on their financial and asset risk measures.

8 Conclusion and Discussion

In our study, we take a close look at how different dimensions for financial risk relate to skewness of equity returns. Our hypothesis is that increases in fundamental risk of a firm relate to increases in the skewness of the firm's stock returns. For our distress and balance sheet liquidity risk dimensions, we find no relation to coskewness or idiosyncratic skewness and hence reject our hypothesis. On the other hand, our results for asset risk show a negative relation to coskewness and in some of our tests also a negative relation to idiosyncratic skewness. These findings are contrary to our stated hypothesis and present a puzzle to us, given that high asset risk stocks also show low excess returns on average. It seems that investors give up a lot of utility when buying high asset risk stock with ambiguous rewards on return. We argue that asset risk might be mispriced in capital markets – a hypothesis that could be tested through a trading back-test to shed light on the economic significance of this alleged asset mispricing. For financial risk, we find low excess returns on average and a negative relation to coskewness. On the other hand, the relation to idiosyncratic skewness is positive – supporting our hypothesis that increases in financial risk coincide with increases in skewness. We conduct further analysis on the relation between financial risk and idiosyncratic skewness by separating our sample into a "private investor" and "institutional investor" subsample. We find that the financial risk / idiosyncratic skewness relation is much more present in the "private investor" subsample. This confirms findings in prior literature that suggest lottery-seeking behavior by small investors. We contribute to this debate by bringing up financial risk as a possible variable those small investors look out for when selecting their lottery bets. In addition, we find that our aggregate measure of combining asset and financial risk ("classic firm risk") is a robust indicator for positive excess returns and negative coskewness. Albeit at lower significance, we also find a positive relation between "classic firm risk" and idiosyncratic skewness. This invites multiple avenues for follow-up research. For example, one could look into how firms trade off asset and financial risk and how this impacts skewness. This could shed more light on the interdependence of asset and financial risk and the resultant patterns of equity return distributions. From a practitioner's perspective, a portfolio strategy that uses "classic firm risk" might be useful in measuring risk premia, given that it seems to cover many different dimensions of risk for investors that go beyond the classic mean-variance framework.

An obvious next step to test our findings would be to conduct an out-of-sample analysis with the financial and asset risk measures and see if they also relate to coskewness and idiosyncratic skewness in markets outside of Sweden. An attractive testing environment could be the Japanese equity market, given that Fujii and Takaoka (2005) already provide evidence on the applicability of the CHS (2001) model in Japan. A logical extension is to test the CHS (2001) model in Japan with our financial and asset risk variables as additional controls. Another out-of-sample test for our results could be conducted in the US sample. This is of particular importance given that the most prominent studies on coskewness and idiosyncratic skewness were conducted in the USA. In fact, we noted that the model of CHS (2001) has less explanatory power in our sample vs. the original US study. Hence, one could test our findings on the same dataset that CHS (2001) use to see if our findings about fundamental risk also add to a control model that by itself has a much higher explanatory power than in our study. In a second step, one could also test the CHS (2001) model with our additional controls in the US sample but in the post-2000 period. In fact, the lower predictive power we found for the CHS (2001) controls could be due to the different observation periods between their study and our sample.

In our tests, we measure skewness in a two-fold way by considering coskewness and idiosyncratic skewness. Some of our results (negative relation of asset risk / financial risk and coskewness) suggest that coskewness is a measure of performance during bad times given that low risk firms (not surprisingly) perform well when the world is in a stressed state. Also, the relations between our variables and the two skewness measures tend to be pointed in a different direction for most of our regressions. Our findings add to the debate on which skewness measure is the "correct" one to capture a given stock's skewness. While this is a speculative claim, our data suggests that coskewness is a measure for a stock's relative performance during bad times whereas idiosyncratic skewness tells us more about the "jumps and crashes" a stock experiences, regardless of market performance.

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10 Tables

Table 1

Regression set 1: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and OCF). The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	**-0.2528**	**0.0149**	**-0.0057**	**0.1743**				**Number of observations**	3079
T-stat	(-3.1238)	(2.6676)	(-4.1302)	(9.8673)				**Adjusted R²**	4.48%
Beta Time Fixed Effects	**-0.2064**	**0.0166**	**-0.0052**	**0.1828**				**Number of observations**	3079
T-stat	(-2.3874)	(3.0327)	(-3.8403)	(10.3896)				**Adjusted R²**	9.24%
Beta Industry Fixed Effects	-0.0580	0.0008	**-0.0060**	**0.1413**				**Number of observations**	3079
T-stat	(-0.5630)	(0.1216)	(-4.1358)	(7.8620)				**Adjusted R²**	6.24%
Beta Time and Industry Fixed Effects	0.0004	0.0027	**-0.0057**	**0.1507**				**Number of observations**	3079
T-stat	(0.0035)	(0.3996)	(-3.9441)	(8.4261)				**Adjusted R²**	10.94%
Beta without Fixed Effects	**-0.2467**	**0.0147**	**-0.0056**	**0.1740**	-0.0039			**Number of observations**	3071
T-stat	(-2.8507)	(2.5868)	(-4.0593)	(9.8263)	(-0.2305)			**Adjusted R²**	4.43%
Beta Time Fixed Effects	**-0.2047**	**0.0165**	**-0.0052**	**0.1826**	-0.0013			**Number of observations**	3071
T-stat	(-2.2348)	(2.9677)	(-3.7916)	(10.3514)	(-0.0787)			**Adjusted R²**	9.18%
Beta Industry Fixed Effects	-0.0638	0.0010	**-0.0061**	**0.1407**	0.0022			**Number of observations**	3071
T-stat	(-0.5829)	(0.1525)	(-4.1536)	(7.8120)	(0.1092)			**Adjusted R²**	6.21%
Beta Time and Industry Fixed Effects	-0.0189	0.0031	**-0.0057**	**0.1499**	0.0103			**Number of observations**	3071
T-stat	(-0.1673)	(0.4615)	(-3.9644)	(8.360)	(0.5255)			**Adjusted R²**	10.89%
Beta without Fixed Effects	**-0.1888**	0.0037	**-0.0054**	**0.1295**		**0.1072**		**Number of observations**	2102
T-stat	(-2.1928)	(0.6031)	(-3.0421)	(5.9526)		(5.5135)		**Adjusted R²**	5.02%
Beta Time Fixed Effects	**-0.1596**	0.0050	**-0.0048**	**0.1460**		**0.1079**		**Number of observations**	2102
T-stat	(-1.7818)	(0.8277)	(-2.8276)	(6.7526)		(5.6841)		**Adjusted R²**	11.11%
Beta Industry Fixed Effects	-0.0150	-0.0037	**-0.0066**	**0.0855**		**0.1236**		**Number of observations**	2102
T-stat	(-0.1303)	(-0.4733)	(-3.5649)	(3.8435)		(5.0923)		**Adjusted R²**	7.79%
Beta Time and Industry Fixed Effects	-0.0004	-0.0006	**-0.0064**	**0.1028**		**0.1254**		**Number of observations**	2102
T-stat	(-0.0031)	(-0.0835)	(-3.5386)	(4.6530)		(5.2204)		**Adjusted R²**	13.48%
Beta without Fixed Effects	**-0.3456**	**0.0114**	**-0.0071**	**0.1307**			**0.1647**	**Number of observations**	2098
T-stat	(-3.8585)	(1.9204)	(-4.1001)	(6.0149)			(5.6293)	**Adjusted R²**	5.07%
Beta Time Fixed Effects	**-0.3189**	**0.0128**	**-0.0066**	**0.1466**			**0.1671**	**Number of observations**	2098
T-stat	(-3.4278)	(2.2209)	(-3.8995)	(6.7918)			(5.8837)	**Adjusted R²**	11.19%
Beta Industry Fixed Effects	-0.1958	0.0024	**-0.0073**	**0.0905**			**0.1539**	**Number of observations**	2098
T-stat	(-1.7190)	(0.3131)	(-3.9569)	(4.0749)			(4.3122)	**Adjusted R²**	7.45%
Beta Time and Industry Fixed Effects	**-0.1761**	0.0059	**-0.0071**	**0.1079**			**0.1503**	**Number of observations**	2098
T-stat	(-1.5117)	(0.7874)	(-3.9367)	(4.8797)			(4.3229)	**Adjusted R²**	13.09%

Table 2

Regression set 2: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and OCF). In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	**-0.0569**				-0.0234			**Number of observations**	3073
T-stat	(-3.0549)				(-1.3706)			**Adjusted R^2**	0.03%
Beta Time Fixed Effects	0.0098				-0.0205			**Number of observations**	3073
T-stat	(0.2499)				(-1.2231)			**Adjusted R^2**	4.58%
Beta Industry Fixed Effects	**-0.1040**				0.0036			**Number of observations**	3073
T-stat	(-1.9787)				(.18)			**Adjusted R^2**	3.41%
Beta Time and Industry Fixed Effects	-0.0315				0.0132			**Number of observations**	3073
T-stat	(-.5105)				(.6662)			**Adjusted R^2**	7.95%
Beta without Fixed Effects	**-0.2037**					**0.1453**		**Number of observations**	2103
T-stat	(-9.1506)					(8.0446)		**Adjusted R^2**	2.94%
Beta Time Fixed Effects	**-0.1672**					**0.1491**		**Number of observations**	2103
T-stat	(-4.3051)					(8.4586)		**Adjusted R^2**	8.75%
Beta Industry Fixed Effects	**-0.1272**					**0.1511**		**Number of observations**	2103
T-stat	(-2.6902)					(6.7002)		**Adjusted R^2**	6.49%
Beta Time and Industry Fixed Effects	-0.0775					**0.1590**		**Number of observations**	2103
T-stat	(-1.3711)					(7.1261)		**Adjusted R^2**	11.97%
Beta without Fixed Effects	**-0.2546**						**0.2041**	**Number of observations**	2099
T-stat	(-8.0214)						(6.9887)	**Adjusted R^2**	2.23%
Beta Time Fixed Effects	**-0.2163**						**0.2107**	**Number of observations**	2099
T-stat	(-4.8343)						(7.4213)	**Adjusted R^2**	8.04%
Beta Industry Fixed Effects	**-0.2595**						**0.1963**	**Number of observations**	2099
T-stat	(-4.5424)						(5.6745)	**Adjusted R^2**	5.92%
Beta Time and Industry Fixed Effects	**-0.2023**						**0.2009**	**Number of observations**	2099
T-stat	(-3.1125)						(5.9552)	**Adjusted R^2**	11.30%

Table 3

Regression set 3: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and EBITDA). The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	**-0.2528**	**0.0149**	**-0.0057**	**0.1743**				**Number of observations**	3079
T-stat	(-3.1238)	(2.6676)	(-4.1302)	(9.8673)				**Adjusted R^2**	4.48%
Beta Time Fixed Effects	**-0.2064**	**0.0166**	**-0.0052**	**0.1828**				**Number of observations**	3079
T-stat	(-2.3874)	(3.0327)	(-3.8403)	(10.3896)				**Adjusted R^2**	9.24%
Beta Industry Fixed Effects	-0.0580	0.0008	**-0.0060**	**0.1413**				**Number of observations**	3079
T-stat	(-0.5630)	(0.1216)	(-4.1358)	(7.8620)				**Adjusted R^2**	6.24%
Beta Time and Industry Fixed Effects	0.0004	0.0027	**-0.0057**	**0.1507**				**Number of observations**	3079
T-stat	(0.0035)	(0.3996)	(-3.9441)	(8.4261)				**Adjusted R^2**	10.94%
Beta without Fixed Effects	**-0.2467**	**0.0147**	**-0.0056**	**0.1740**	-0.0039			**Number of observations**	3071
T-stat	(-2.8507)	(2.5868)	(-4.0593)	(9.8263)	(-0.2305)			**Adjusted R^2**	4.43%
Beta Time Fixed Effects	**-0.2047**	**0.0165**	**-0.0052**	**0.1826**	-0.0013			**Number of observations**	3071
T-stat	(-2.2348)	(2.9677)	(-3.7916)	(10.3514)	(-0.0787)			**Adjusted R^2**	9.18%
Beta Industry Fixed Effects	-0.0638	0.0010	**-0.0061**	**0.1407**	0.0022			**Number of observations**	3071
T-stat	(-0.5829)	(0.1525)	(-4.1536)	(7.8120)	(0.1092)			**Adjusted R^2**	6.21%
Beta Time and Industry Fixed Effects	-0.0189	0.0031	**-0.0057**	**0.1499**	0.0103			**Number of observations**	3071
T-stat	(-0.1673)	(0.4615)	(-3.9644)	(8.360)	(0.5255)			**Adjusted R^2**	10.89%
Beta without Fixed Effects	**-0.1769**	0.0044	**-0.0065**	**0.1368**		**0.0998**		**Number of observations**	2186
T-stat	(-2.1171)	(0.7444)	(-3.7161)	(6.4360)		(5.3558)		**Adjusted R^2**	5.23%
Beta Time Fixed Effects	-0.1459	0.0048	**-0.0061**	**0.1456**		**0.1023**		**Number of observations**	2186
T-stat	(-1.6759)	(0.8463)	(-3.6291)	(6.8609)		(5.6385)		**Adjusted R^2**	12.26%
Beta Industry Fixed Effects	0.0199	-0.0053	**-0.0072**	**0.0982**		**0.1109**		**Number of observations**	2186
T-stat	(0.180)	(-0.7022)	(-3.8454)	(4.5258)		(4.8721)		**Adjusted R^2**	7.45%
Beta Time and Industry Fixed Effects	0.0418	-0.0028	**-0.0073**	**0.1072**		**0.1177**		**Number of observations**	2186
T-stat	(0.3726)	(-0.3880)	(-4.0378)	(4.9535)		(5.2474)		**Adjusted R^2**	14.23%
Beta without Fixed Effects	**-0.3032**	0.0106	**-0.0080**	**0.1391**			**0.1466**	**Number of observations**	2182
T-stat	(-3.4577)	(1.8565)	(-4.6517)	(6.5588)			(5.3382)	**Adjusted R^2**	5.21%
Beta Time Fixed Effects	**-0.2706**	**0.0114**	**-0.0077**	**0.1481**			**0.1473**	**Number of observations**	2182
T-stat	(-2.9673)	(2.0552)	(-4.5999)	(7.0006)			(5.5484)	**Adjusted R^2**	12.21%
Beta Industry Fixed Effects	-0.1466	-0.0007	**-0.0076**	**0.1002**			**0.1554**	**Number of observations**	2182
T-stat	(-1.3193)	(-0.0976)	(-4.0799)	(4.6265)			(4.6473)	**Adjusted R^2**	7.36%
Beta Time and Industry Fixed Effects	-0.1237	0.0026	**-0.0077**	**0.1105**			**0.1520**	**Number of observations**	2182
T-stat	(-1.0916)	(0.3697)	(-4.2739)	(5.1025)			(4.6783)	**Adjusted R^2**	13.98%

Table 4

Regression set 4: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and EBITDA). In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	**-0.0569**				-0.0234			**Number of observations**	3073
T-stat	(-3.0549)				(-1.3706)			**Adjusted R²**	0.03%
Beta Time Fixed Effects	0.0098				-0.0205			**Number of observations**	3073
T-stat	(0.2499)				(-1.2231)			**Adjusted R²**	4.58%
Beta Industry Fixed Effects	**-0.1040**				0.0036			**Number of observations**	3073
T-stat	(-1.9787)				(.18)			**Adjusted R²**	3.41%
Beta Time and Industry Fixed Effects	-0.0315				0.0132			**Number of observations**	3073
T-stat	(-.5105)				(.6662)			**Adjusted R²**	7.95%
Beta without Fixed Effects	**-0.1873**					**0.1396**		**Number of observations**	2103
T-stat	(-8.4742)					(7.8557)		**Adjusted R²**	2.94%
Beta Time Fixed Effects	**-0.1623**					**0.1441**		**Number of observations**	2103
T-stat	(-4.0972)					(8.3434)		**Adjusted R²**	8.75%
Beta Industry Fixed Effects	**-0.1190**					**0.1369**		**Number of observations**	2103
T-stat	(-2.5077)					(6.345)		**Adjusted R²**	6.49%
Beta Time and Industry Fixed Effects	-0.0735					**0.1477**		**Number of observations**	2103
T-stat	(-1.2888)					(6.9665)		**Adjusted R²**	11.97%
Beta without Fixed Effects	**-0.2191**						**0.1810**	**Number of observations**	2099
T-stat	(-7.2866)						(6.5818)	**Adjusted R²**	2.23%
Beta Time Fixed Effects	**-0.1851**						**0.1844**	**Number of observations**	2099
T-stat	(-4.1809)						(6.9349)	**Adjusted R²**	8.04%
Beta Industry Fixed Effects	**-0.2535**						**0.1946**	**Number of observations**	2099
T-stat	(-4.4934)						(5.9531)	**Adjusted R²**	5.92%
Beta Time and Industry Fixed Effects	**-0.1978**						**0.1980**	**Number of observations**	2099
T-stat	(-3.0538)						(6.2421)	**Adjusted R²**	11.30%

Table 5

Regression set 5: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio (rel. yearly interest cover), and the relative yearly rank of the Net Debt to Total Assets ratio (rel. yearly rank ND/Assets). The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. Yearly rank EBITDA / Net debt	rel. Yearly rank interest cover	rel. yearly rank ND / Assets		
Beta without Fixed Effects	**-0.2528**	**0.0149**	**-0.0057**	**0.1743**				**Number of observations**	3079
T-stat	(-3.1238)	(2.6676)	(-4.1302)	(9.8673)				**Adjusted R^2**	4.48%
Beta Time Fixed Effects	**-0.2064**	**0.0166**	**-0.0052**	**0.1828**				**Number of observations**	3079
T-stat	(-2.3874)	(3.0327)	(-3.8403)	(10.3896)				**Adjusted R^2**	9.24%
Beta Industry Fixed Effects	-0.0580	0.0008	**-0.0060**	**0.1413**				**Number of observations**	3079
T-stat	(-0.5630)	(0.1216)	(-4.1358)	(7.8620)				**Adjusted R^2**	6.24%
Beta Time and Industry Fixed Effects	0.0004	0.0027	**-0.0057**	**0.1507**				**Number of observations**	3079
T-stat	(0.0035)	(0.3996)	(-3.9441)	(8.4261)				**Adjusted R^2**	10.94%
Beta without Fixed Effects	**-0.2599**	0.0066	-0.0017	**0.1846**	**0.1087**			**Number of observations**	1811
T-stat	(-2.5577)	(0.9491)	(-0.9737)	(7.4436)	(4.4805)			**Adjusted R^2**	6.14%
Beta Time Fixed Effects	**-0.2338**	0.0090	-0.0020	**0.1951**	**0.1057**			**Number of observations**	1811
T-stat	(-2.2145)	(1.3562)	(-1.2160)	(7.8117)	(4.5516)			**Adjusted R^2**	16.35%
Beta Industry Fixed Effects	-0.0650	-0.0085	-0.0012	**0.1421**	**0.1165**			**Number of observations**	1811
T-stat	(-0.4394)	(-0.9696)	(-0.6585)	(5.6273)	(4.4742)			**Adjusted R^2**	8.97%
Beta Time and Industry Fixed Effects	0.0302	-0.0051	**-0.0019**	**0.1503**	**0.1158**			**Number of observations**	1811
T-stat	(0.2050)	(-0.6106)	(-1.0527)	(5.9197)	(4.6460)			**Adjusted R^2**	19.19%
Beta without Fixed Effects	-0.1984	0.0133	**-0.0055**	**0.2006**		-0.0393		**Number of observations**	1656
T-stat	(-1.6249)	(1.7050)	(-2.8857)	(8.3028)		(-1.2812)		**Adjusted R^2**	5.41%
Beta Time Fixed Effects	-0.1289	0.0142	**-0.0048**	**0.2251**		-0.0397		**Number of observations**	1656
T-stat	(-1.0283)	(1.8491)	(-2.5241)	(9.3033)		(-1.3227)		**Adjusted R^2**	9.98%
Beta Industry Fixed Effects	-0.1255	0.0066	**-0.0067**	**0.1646**		-0.0218		**Number of observations**	1656
T-stat	(-0.8378)	(0.7283)	(-3.2483)	(6.7399)		(-0.6843)		**Adjusted R^2**	10.92%
Beta Time and Industry Fixed Effects	-0.0201	0.0064	**-0.0063**	**0.1895**		-0.0245		**Number of observations**	1656
T-stat	(-0.1323)	(0.7175)	(-3.0564)	(7.7665)		(-0.7839)		**Adjusted R^2**	15.10%
Beta without Fixed Effects	**-0.2377**	**0.0144**	**-0.0056**	**0.1741**			-0.0087	**Number of observations**	3071
T-stat	(-2.7350)	(2.5198)	(-4.0024)	(9.8338)			-0.5114	**Adjusted R^2**	4.44%
Beta Time Fixed Effects	**-0.1859**	**0.0158**	**-0.0051**	**0.1829**			-0.0115	**Number of observations**	3071
T-stat	(-2.0236)	(2.8378)	(-3.6858)	(10.3688)			(-0.6930)	**Adjusted R^2**	9.20%
Beta Industry Fixed Effects	-0.0594	0.0010	**-0.0060**	**0.1408**			-0.0002	**Number of observations**	3071
T-stat	(-0.5375)	(0.1402)	(-4.1476)	(7.8165)			(-0.0112)	**Adjusted R^2**	6.21%
Beta Time and Industry Fixed Effects	0.0006	0.0028	**-0.0057**	**0.1503**			-0.0007	**Number of observations**	3071
T-stat	(0.0055)	(0.4094)	(-3.9412)	(8.3869)			(-0.0342)	**Adjusted R^2**	10.89%

Table 6

Regression set 6: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio (rel. yearly interest cover), and the relative yearly rank of the Net Debt to Total Assets ratio (rel. yearly rank ND/Assets). In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. Yearly rank EBITDA / Net debt	rel. Yearly rank interest cover	rel. yearly rank ND / Assets		
Beta without Fixed Effects	**-0.2607**				**0.1756**			**Number of observations**	1811
T-stat	(-9.3260)				(7.7488)			**Adjusted R²**	3.16%
Beta Time Fixed Effects	**-0.2275**				**0.1797**			**Number of observations**	1811
T-stat	(-4.6738)				(8.3272)			**Adjusted R²**	13.27%
Beta Industry Fixed Effects	**-0.2393**				**0.1598**			**Number of observations**	1811
T-stat	(-2.6167)				(6.572)			**Adjusted R²**	7.34%
Beta Time and Industry Fixed Effects	-0.1192				**0.1665**			**Number of observations**	1811
T-stat	(-1.2361)				(7.2084)			**Adjusted R²**	17.52%
Beta without Fixed Effects	-0.0175					**-0.0777**		**Number of observations**	1656
T-stat	(-.5503)					(-2.5294)		**Adjusted R²**	0.33%
Beta Time Fixed Effects	0.0674					**-0.0794**		**Number of observations**	1656
T-stat	(1.4232)					(-2.6275)		**Adjusted R²**	4.15%
Beta Industry Fixed Effects	-0.0824					-0.0392		**Number of observations**	1656
T-stat	(-1.0979)					(-1.2224)		**Adjusted R²**	7.35%
Beta Time and Industry Fixed Effects	0.0251					-0.0429		**Number of observations**	1656
T-stat	(.3087)					(-1.3574)		**Adjusted R²**	10.88%
Beta without Fixed Effects	**-0.0499**						-0.0312	**Number of observations**	3073
T-stat	(-2.7167)						(-1.8446)	**Adjusted R²**	0.08%
Beta Time Fixed Effects	0.0225						**-0.0345**	**Number of observations**	3073
T-stat	(.5762)						(-2.0884)	**Adjusted R²**	4.67%
Beta Industry Fixed Effects	-0.0977						-0.0009	**Number of observations**	3073
T-stat	(-1.8332)						(-.0462)	**Adjusted R²**	3.41%
Beta Time and Industry Fixed Effects	-0.0118						-0.0013	**Number of observations**	3073
T-stat	(-.1898)						(-.069)	**Adjusted R²**	7.94%

Table 7

Regression set 7: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score. The latter two variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. Yearly rank current ratio	piotroski		
Beta without Fixed Effects	**-0.2528**	**0.0149**	**-0.0057**	**0.1743**			**Number of observations**	3079
T-stat	(-3.1238)	(2.6676)	(-4.1302)	(9.8673)			**Adjusted R²**	4.48%
Beta Time Fixed Effects	**-0.2064**	**0.0166**	**-0.0052**	**0.1828**			**Number of observations**	3079
T-stat	(-2.3874)	(3.0327)	(-3.8403)	(10.3896)			**Adjusted R²**	9.24%
Beta Industry Fixed Effects	-0.0580	0.0008	**-0.0060**	**0.1413**			**Number of observations**	3079
T-stat	(-0.5630)	(0.1216)	(-4.1358)	(7.8620)			**Adjusted R²**	6.24%
Beta Time and Industry Fixed Effects	0.0004	0.0027	**-0.0057**	**0.1507**			**Number of observations**	3079
T-stat	(0.0035)	(0.3996)	(-3.9441)	(8.4261)			**Adjusted R²**	10.94%
Beta without Fixed Effects	**-0.2527**	**0.0155**	**-0.0057**	**0.1785**	-0.0073		**Number of observations**	3033
T-stat	(-3.1420)	(2.7684)	(-4.1773)	(10.1386)	(-0.4286)		**Adjusted R²**	4.78%
Beta Time Fixed Effects	**-0.2072**	**0.0171**	**-0.0053**	**0.1864**	-0.0058		**Number of observations**	3033
T-stat	(-2.410)	(3.1120)	(-3.9236)	(10.6295)	(-0.3492)		**Adjusted R²**	9.28%
Beta Industry Fixed Effects	-0.0642	0.0011	**-0.0060**	**0.1451**	0.0072		**Number of observations**	3033
T-stat	(-0.6282)	(0.1635)	(-4.1590)	(8.1085)	(0.3501)		**Adjusted R²**	6.36%
Beta Time and Industry Fixed Effects	-0.0025	0.0027	**-0.0057**	**0.1540**	0.0079		**Number of observations**	3033
T-stat	(-0.0236)	(0.4014)	(-3.9919)	(8.6463)	(0.3938)		**Adjusted R²**	10.80%
Beta without Fixed Effects	**-0.3789**	0.0153	**-0.0048**	**0.2049**		**0.0247**	**Number of observations**	1240
T-stat	(-3.1390)	(1.9087)	(-2.4958)	(7.2706)		2.9942	**Adjusted R²**	7.60%
Beta Time Fixed Effects	**-0.3000**	0.0146	**-0.0049**	**0.2125**		**0.0275**	**Number of observations**	1240
T-stat	(-2.4116)	(1.8472)	(-2.5701)	(7.4563)		(3.1793)	**Adjusted R²**	11.03%
Beta Industry Fixed Effects	**-0.3686**	0.0121	**-0.0056**	**0.1530**		**0.0240**	**Number of observations**	1240
T-stat	(-2.320)	(1.2430)	(-2.6190)	(5.2589)		(2.7978)	**Adjusted R²**	8.99%
Beta Time and Industry Fixed Effects	-0.2539	0.0119	**-0.0059**	**0.1649**		**0.0241**	**Number of observations**	1240
T-stat	(-1.5777)	(1.2330)	(-2.7629)	(5.6355)		(2.7028)	**Adjusted R²**	12.45%

Table 8

Regression set 8: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. Yearly rank current ratio	piotroski		
Beta without Fixed Effects	**-0.0683**				-0.0102		**Number of observations**	1656
T-stat	(-3.5333)				(-.5901)		**Adjusted R^2**	0.33%
Beta Time Fixed Effects	-0.0029				**-0.0065**		**Number of observations**	1656
T-stat	(-.073)				(-.3813)		**Adjusted R^2**	4.15%
Beta Industry Fixed Effects	**-0.0970**				-0.0053		**Number of observations**	1656
T-stat	(-2.1584)				(-.2552)		**Adjusted R^2**	7.35%
Beta Time and Industry Fixed Effects	-0.0134				-0.0025		**Number of observations**	1656
T-stat	(-.2407)				(-.1237)		**Adjusted R^2**	10.88%
Beta without Fixed Effects	**-0.2991**					**0.0459**	**Number of observations**	3073
T-stat	(-7.4812)					(5.7251)	**Adjusted R^2**	0.08%
Beta Time Fixed Effects	**-0.2450**					**0.0512**	**Number of observations**	3073
T-stat	(-4.6082)					(6.1167)	**Adjusted R^2**	4.67%
Beta Industry Fixed Effects	**-0.3590**					**0.0405**	**Number of observations**	3073
T-stat	(-4.0788)					(4.9096)	**Adjusted R^2**	3.41%
Beta Time and Industry Fixed Effects	**-0.2575**					**0.0425**	**Number of observations**	3073
T-stat	(-2.7761)					(4.9552)	**Adjusted R^2**	7.94%

Table 9

Regression set 9: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios. The latter three variables are of interest, the first eight are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	**-1.1675**	0.0299	0.0017	-30.3659	-0.1346	-4.5066	**0.0823**	**0.0098**	**0.1555**				**Number of observations**	2282
T-stat	(-3.5014)	(1.1498)	(0.1627)	(-0.3096)	(-1.3503)	(-1.4666)	(4.3443)	(1.9595)	(2.3608)				**Adjusted R²**	1.73%
Beta Time Fixed Effects	**-1.1252**	0.0211	0.0054	-34.3623	-0.0980	-3.9968	**0.0815**	0.0076	**0.1353**				**Number of observations**	2282
T-stat	(-3.1290)	(0.7968)	(0.5097)	(-0.3492)	(-0.9675)	(-1.0875)	(4.2105)	(1.5268)	(1.9572)				**Adjusted R²**	3.17%
Beta Industry Fixed Effects	**-1.3234**	0.0026	0.0030	-74.0598	-0.1234	-3.8133	**0.0979**	0.0096	**0.1810**				**Number of observations**	2282
T-stat	(-3.3566)	(0.0977)	(0.2870)	(-0.7316)	(-1.0970)	(-1.1792)	(4.1766)	(1.7715)	(2.6939)				**Adjusted R²**	2.25%
Beta Time and Industry Fixed Effects	**-1.2598**	-0.0053	0.0064	-76.2203	-0.0712	-2.6349	**0.0940**	0.0080	**0.1672**				**Number of observations**	2282
T-stat	(-2.9892)	(-0.1974)	(0.6046)	(-0.7518)	(-0.6224)	(-0.6678)	(3.9137)	(1.4803)	(2.3654)				**Adjusted R²**	3.59%
Beta without Fixed Effects	**-1.2608**	0.0261	0.0021	-38.9901	-0.1246	-4.7468	**0.0849**	0.0089	**0.1470**	0.0614			**Number of observations**	2274
T-stat	(-3.6601)	(0.9991)	(0.2063)	(-0.3965)	(-1.2457)	(-1.5403)	(4.4352)	(1.7716)	(2.2217)	(1.1351)			**Adjusted R²**	1.72%
Beta Time Fixed Effects	**-1.3044**	0.0168	0.0063	-36.7085	-0.0920	-4.8249	**0.0829**	0.0067	0.1217	0.0686			**Number of observations**	2274
T-stat	(-3.5176)	(0.6298)	(0.6006)	(-0.3722)	(-0.9050)	(-1.3035)	(4.2495)	(1.3344)	(1.7503)	(1.2711)			**Adjusted R²**	3.26%
Beta Industry Fixed Effects	**-1.4269**	-0.0003	0.0033	-77.1297	-0.1070	-4.0561	**0.0981**	0.0094	**0.1723**	0.0713			**Number of observations**	2274
T-stat	(-3.4892)	(-0.0118)	(0.3139)	(-0.7611)	(-0.9454)	(-1.2514)	(4.1749)	(1.7316)	(2.5527)	(1.1231)			**Adjusted R²**	2.21%
Beta Time and Industry Fixed Effects	**-1.4599**	-0.0091	0.0073	-72.2166	-0.0586	-3.6392	**0.0921**	0.0080	**0.1506**	0.0923			**Number of observations**	2274
T-stat	(-3.3569)	(-0.3364)	(0.6833)	(-0.7116)	(-0.5090)	(-0.9170)	(3.8291)	(1.4763)	(2.1156)	(1.4412)			**Adjusted R²**	3.67%
Beta without Fixed Effects	**-0.9589**	0.0109	-0.0164	-146.8296	-0.0955	-5.9715	**0.0790**	0.0102	**0.1938**		-0.0963		**Number of observations**	1692
T-stat	(-2.3960)	(0.3589)	(-0.9377)	(-1.2954)	(-0.7398)	(-1.4167)	(3.5650)	(1.5797)	(2.2416)		(-1.3628)		**Adjusted R²**	1.92%
Beta Time Fixed Effects	**-1.1346**	0.0085	-0.0091	-137.7324	-0.0761	-4.7741	**0.0800**	0.0093	**0.1937**		-0.0819		**Number of observations**	1692
T-stat	(-2.5687)	(0.2765)	(-0.4832)	(-1.2115)	(-0.5760)	(-0.8943)	(3.4942)	(1.4438)	(2.0886)		(-1.1499)		**Adjusted R²**	2.91%
Beta Industry Fixed Effects	**-1.1394**	-0.0209	-0.0183	-178.0099	-0.1265	-5.0224	**0.0901**	0.0112	**0.2453**		-0.0445		**Number of observations**	1692
T-stat	(-2.4098)	(-0.6799)	(-1.0319)	(-1.5328)	(-0.8710)	(-1.1679)	(3.1718)	(1.6263)	(2.7708)		(-0.4964)		**Adjusted R²**	4.34%
Beta Time and Industry Fixed Effects	**-1.2732**	-0.0213	-0.0105	-168.3170	-0.1014	-3.5299	**0.0873**	0.0108	**0.2549**		-0.0174		**Number of observations**	1692
T-stat	(-2.4895)	(-0.6836)	(-0.5506)	(-1.4468)	(-0.6812)	(-0.6354)	(2.9835)	(1.5717)	(2.6867)		(-0.1904)		**Adjusted R²**	5.31%
Beta without Fixed Effects	**-1.0446**	0.0074	-0.0161	-131.9283	-0.1318	-4.8295	**0.0755**	0.0117	**0.1888**			0.0231	**Number of observations**	1688
T-stat	(-2.5161)	(0.2410)	(-0.9174)	(-1.1678)	(-1.0375)	(-1.1596)	(3.4171)	(1.8506)	(2.170)			(0.2318)	**Adjusted R²**	1.81%
Beta Time Fixed Effects	**-1.2589**	0.0045	-0.0086	-125.6764	-0.1050	-3.3726	**0.0778**	0.0106	**0.1896**			0.0404	**Number of observations**	1688
T-stat	(-2.7692)	(0.1461)	(-0.4567)	(-1.1090)	(-0.8060)	(-0.640)	(3.4059)	(1.6713)	(2.0321)			(0.4055)	**Adjusted R²**	2.85%
Beta Industry Fixed Effects	**-1.2017**	-0.0239	-0.0177	-170.6269	-0.1361	-4.3673	**0.0846**	0.0122	**0.2349**			0.0983	**Number of observations**	1688
T-stat	(-2.4974)	(-0.7732)	(-1.0003)	(-1.4711)	(-0.9448)	(-1.0280)	(2.9953)	(1.7722)	(2.6381)			(0.8083)	**Adjusted R²**	4.36%
Beta Time and Industry Fixed Effects	**-1.3662**	-0.0249	-0.0095	-162.7599	-0.1032	-2.9410	**0.0827**	0.0116	**0.2431**			0.1206	**Number of observations**	1688
T-stat	(-2.6310)	(-0.7958)	(-0.4997)	(-1.4013)	(-0.6984)	(-0.5344)	(2.8404)	(1.6924)	(2.5429)			(0.9899)	**Adjusted R²**	5.37%

Table 10

Regression set 10: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	**-0.1960**									0.0157			Number of observations	2274
T-stat	(-3.5320)									(0.3001)			Adjusted R^2	-0.04%
Beta Time Fixed Effects	**-0.2423**									0.0187			Number of observations	2274
T-stat	(-2.1738)									(0.3603)			Adjusted R^2	1.78%
Beta Industry Fixed Effects	-0.2107									0.0536			Number of observations	2274
T-stat	(-1.2992)									(.8502)			Adjusted R^2	0.76%
Beta Time and Industry Fixed Effects	-0.3116									0.0785			Number of observations	2274
T-stat	(-1.6532)									(1.2383)			Adjusted R^2	2.53%
Beta without Fixed Effects	**-0.1956**										0.0368		Number of observations	1692
T-stat	(-2.5089)										(.6001)		Adjusted R^2	-0.04%
Beta Time Fixed Effects	**-0.9321**										-0.0095		Number of observations	1692
T-stat	(-2.1661)										(-.321)		Adjusted R^2	2.67%
Beta Industry Fixed Effects	**-0.9521**										-0.0433		Number of observations	1692
T-stat	(-2.0329)										(-1.4545)		Adjusted R^2	3.88%
Beta Time and Industry Fixed Effects	**-0.9851**										-0.0451		Number of observations	1692
T-stat	(-1.9726)										(-1.5058)		Adjusted R^2	4.89%
Beta without Fixed Effects	**-0.2648**											0.1077	Number of observations	1688
T-stat	(-2.465)											(1.1028)	Adjusted R^2	0.01%
Beta Time Fixed Effects	**-0.3844**											0.1156	Number of observations	1688
T-stat	(-2.5876)											(1.188)	Adjusted R^2	1.36%
Beta Industry Fixed Effects	**-0.4110**											**0.2541**	Number of observations	1688
T-stat	(-2.1788)											(2.1733)	Adjusted R^2	2.74%
Beta Time and Industry Fixed Effects	**-0.5442**											**0.2645**	Number of observations	1688
T-stat	(-2.514)											(2.2641)	Adjusted R^2	4.08%

Table 11

Regression set 11: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios. The latter three variables are of interest, the first eight are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	**-1.1675**	0.0299	0.0017	-30.3659	-0.1346	-4.5066	**0.0823**	**0.0098**	**0.1555**				**Number of observations**	2282
T-stat	(-3.5014)	(1.1498)	(0.1627)	(-0.3096)	(-1.3503)	(-1.4666)	(4.3443)	(1.9595)	(2.3608)				**Adjusted R^2**	1.73%
Beta Time Fixed Effects	**-1.1252**	0.0211	0.0054	-34.3623	-0.0980	-3.9968	**0.0815**	0.0076	**0.1353**				**Number of observations**	2282
T-stat	(-3.1290)	(0.7968)	(0.5097)	(-0.3492)	(-0.9675)	(-1.0875)	(4.2105)	(1.5268)	(1.9572)				**Adjusted R^2**	3.17%
Beta Industry Fixed Effects	**-1.3234**	0.0026	0.0030	-74.0598	-0.1234	-3.8133	**0.0979**	0.0096	**0.1810**				**Number of observations**	2282
T-stat	(-3.3566)	(0.0977)	(0.2870)	(-0.7316)	(-1.0970)	(-1.1792)	(4.1766)	(1.7715)	(2.6939)				**Adjusted R^2**	2.25%
Beta Time and Industry Fixed Effects	**-1.2598**	-0.0053	0.0064	-76.2203	-0.0712	-2.6349	**0.0940**	0.0080	**0.1672**				**Number of observations**	2282
T-stat	(-2.9892)	(-0.1974)	(0.6046)	(-0.7518)	(-0.6224)	(-0.6678)	(3.9137)	(1.4803)	(2.3654)				**Adjusted R^2**	3.59%
Beta without Fixed Effects	**-1.2608**	0.0261	0.0021	-38.9901	-0.1246	-4.7468	**0.0849**	0.0089	**0.1470**	0.0614			**Number of observations**	2274
T-stat	(-3.6601)	(0.9991)	(0.2063)	(-0.3965)	(-1.2457)	(-1.5403)	(4.4352)	(1.7716)	(2.2217)	(1.1351)			**Adjusted R^2**	1.72%
Beta Time Fixed Effects	**-1.3044**	0.0168	0.0063	-36.7085	-0.0920	-4.8249	**0.0829**	0.0067	0.1217	0.0686			**Number of observations**	2274
T-stat	(-3.5176)	(0.6298)	(0.6006)	(-0.3722)	(-0.9050)	(-1.3035)	(4.2495)	(1.3344)	(1.7503)	(1.2711)			**Adjusted R^2**	3.26%
Beta Industry Fixed Effects	**-1.4269**	-0.0003	0.0033	-77.1297	-0.1070	-4.0561	**0.0981**	0.0094	**0.1723**	0.0713			**Number of observations**	2274
T-stat	(-3.4892)	(-0.0118)	(0.3139)	(-0.7611)	(-0.9454)	(-1.2514)	(4.1749)	(1.7316)	(2.5527)	(1.1231)			**Adjusted R^2**	2.21%
Beta Time and Industry Fixed Effects	**-1.4599**	-0.0091	0.0073	-72.2166	-0.0586	-3.6392	**0.0921**	0.0080	**0.1506**	0.0923			**Number of observations**	2274
T-stat	(-3.3569)	(-0.3364)	(0.6833)	(-0.7116)	(-0.5090)	(-0.9170)	(3.8291)	(1.4763)	(2.1156)	(1.4412)			**Adjusted R^2**	3.67%
Beta without Fixed Effects	**-0.9808**	0.0391	-0.0242	-130.2806	-0.0639	-4.1221	**0.0723**	**0.0120**	**0.2187**		-0.0554		**Number of observations**	1778
T-stat	(-2.6458)	(1.3668)	(-1.4886)	(-1.2449)	(-0.5290)	(-1.0764)	(3.6279)	(2.0250)	(2.8887)		(-0.8689)		**Adjusted R^2**	2.28%
Beta Time Fixed Effects	**-1.1757**	0.0315	-0.0179	-120.2668	-0.0528	-3.7999	**0.0721**	0.0105	**0.1769**		-0.0365		**Number of observations**	1778
T-stat	(-2.8622)	(1.0868)	(-1.0189)	(-1.1471)	(-0.4298)	(-0.7832)	(3.4901)	(1.7636)	(2.1391)		(-0.5667)		**Adjusted R^2**	3.37%
Beta Industry Fixed Effects	**-1.2885**	-0.0034	-0.0209	-170.1875	-0.1066	-4.1700	**0.0899**	0.0120	**0.2357**		-0.0210		**Number of observations**	1778
T-stat	(-3.0325)	(-0.1168)	(-1.2821)	(-1.6017)	(-0.7836)	(-1.0695)	(3.5817)	(1.8799)	(3.0867)		(-0.2742)		**Adjusted R^2**	5.75%
Beta Time and Industry Fixed Effects	**-1.4119**	-0.0093	-0.0139	-159.6770	-0.0933	-4.0871	**0.0844**	0.0110	**0.2025**		0.0080		**Number of observations**	1778
T-stat	(-3.0531)	(-0.3165)	(-0.7858)	(-1.5023)	(-0.6689)	(-0.8090)	(3.2634)	(1.7168)	(2.4274)		(0.1024)		**Adjusted R^2**	6.71%
Beta without Fixed Effects	**-1.1411**	0.0354	-0.0238	-118.6501	-0.0903	-3.0160	**0.0733**	**0.0122**	**0.2092**			0.0713	**Number of observations**	1774
T-stat	(-2.9905)	(1.2283)	(-1.4619)	(-1.1389)	(-0.7565)	(-0.8062)	(3.6566)	(2.0732)	(2.7455)			(0.8070)	**Adjusted R^2**	2.27%
Beta Time Fixed Effects	**-1.3646**	0.0272	-0.0173	-112.0024	-0.0714	-2.5962	**0.0741**	0.0104	**0.1669**			0.0916	**Number of observations**	1774
T-stat	(-3.2626)	(0.9308)	(-0.9874)	(-1.0729)	(-0.5874)	(-0.5485)	(3.5701)	(1.7573)	(2.0042)			(1.0376)	**Adjusted R^2**	3.41%
Beta Industry Fixed Effects	**-1.3879**	-0.0063	-0.0204	-164.6245	-0.1128	-3.4955	**0.0873**	**0.0125**	**0.2274**			0.1041	**Number of observations**	1774
T-stat	(-3.1897)	(-0.2168)	(-1.2473)	(-1.5503)	(-0.8333)	(-0.9217)	(3.4763)	(1.9591)	(2.9587)			(0.9815)	**Adjusted R^2**	5.79%
Beta Time and Industry Fixed Effects	**-1.5450**	-0.0130	-0.0130	-155.7947	-0.0908	-3.4487	**0.0823**	0.0114	**0.1915**			0.1345	**Number of observations**	1774
T-stat	(-3.2699)	(-0.4410)	(-0.7385)	(-1.4669)	(-0.6537)	(-0.6978)	(3.1824)	(1.7791)	(2.2788)			(1.2623)	**Adjusted R^2**	6.80%

Table 12

Regression set 12: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	**-0.1960**									0.0157			**Number of observations**	2274
T-stat	(-3.5320)									(0.3001)			**Adjusted R²**	-0.04%
Beta Time Fixed Effects	**-0.2423**									0.0187			**Number of observations**	2274
T-stat	(-2.1738)									(0.3603)			**Adjusted R²**	1.78%
Beta Industry Fixed Effects	-0.2107									0.0536			**Number of observations**	2274
T-stat	(-1.2992)									(.8502)			**Adjusted R²**	0.76%
Beta Time and Industry Fixed Effects	-0.3116									0.0785			**Number of observations**	2274
T-stat	(-1.6532)									(1.2383)			**Adjusted R²**	2.53%
Beta without Fixed Effects	**-0.2249**										0.0601		**Number of observations**	1778
T-stat	(-3.1153)										(1.0666)		**Adjusted R²**	0.01%
Beta Time Fixed Effects	**-0.4065**										0.0699		**Number of observations**	1692
T-stat	(-3.2733)										(1.2418)		**Adjusted R²**	1.64%
Beta Industry Fixed Effects	**-0.3212**										0.1159		**Number of observations**	1692
T-stat	(-2.2197)										(1.6733)		**Adjusted R²**	3.75%
Beta Time and Industry Fixed Effects	**-0.5249**										0.1357		**Number of observations**	1692
T-stat	(-2.974)										(1.9358)		**Adjusted R²**	5.27%
Beta without Fixed Effects	**-0.3124**											0.1515	**Number of observations**	1774
T-stat	(-3.2826)											(1.7564)	**Adjusted R²**	0.12%
Beta Time Fixed Effects	**-0.4912**											0.1592	**Number of observations**	1774
T-stat	(-3.5579)											(1.8561)	**Adjusted R²**	1.76%
Beta Industry Fixed Effects	**-0.5145**											**0.2449**	**Number of observations**	1774
T-stat	(-2.9565)											(2.3848)	**Adjusted R²**	3.90%
Beta Time and Industry Fixed Effects	**-0.7299**											**0.2664**	**Number of observations**	1774
T-stat	(-3.6127)											(2.6019)	**Adjusted R²**	5.43%

Table 13

Regression set 13: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio, and the relative yearly rank of the Net Debt to Total Assets ratio. The latter three variables are of interest, the first eight are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	rel. Yearly rank EBITDA / Net debt	rel. Yearly rank interest cover	rel. yearly rank ND / Assets		
Beta without Fixed Effects	**-1.1675**	0.0299	0.0017	-30.3659	-0.1346	-4.5066	**0.0823**	**0.0098**	**0.1555**				**Number of observations**	2282
T-stat	(-3.5014)	(1.1498)	(0.1627)	(-0.3096)	(-1.3503)	(-1.4666)	(4.3443)	(1.9595)	(2.3608)				**Adjusted R²**	1.73%
Beta Time Fixed Effects	**-1.1252**	0.0211	0.0054	-34.3623	-0.0980	-3.9968	**0.0815**	0.0076	**0.1353**				**Number of observations**	2282
T-stat	(-3.1290)	(0.7968)	(0.5097)	(-0.3492)	(-0.9675)	(-1.0875)	(4.2105)	(1.5268)	(1.9572)				**Adjusted R²**	3.17%
Beta Industry Fixed Effects	**-1.3234**	0.0026	0.0030	-74.0598	-0.1234	-3.8133	**0.0979**	0.0096	**0.1810**				**Number of observations**	2282
T-stat	(-3.3566)	(0.0977)	(0.2870)	(-0.7316)	(-1.0970)	(-1.1792)	(4.1766)	(1.7715)	(2.6939)				**Adjusted R²**	2.25%
Beta Time and Industry Fixed Effects	**-1.2598**	-0.0053	0.0064	-76.2203	-0.0712	-2.6349	**0.0940**	0.0080	**0.1672**				**Number of observations**	2282
T-stat	(-2.9892)	(-0.1974)	(0.6046)	(-0.7518)	(-0.6224)	(-0.6678)	(3.9137)	(1.4803)	(2.3654)				**Adjusted R²**	3.59%
Beta without Fixed Effects	**-1.0856**	**0.0796**	0.0051	-182.4535	0.0150	-3.7462	**0.0599**	0.0092	0.0789	0.0682			**Number of observations**	1406
T-stat	(-2.5873)	(2.2228)	(0.3899)	(-1.0243)	(0.1069)	(-0.9163)	(2.6513)	(1.6206)	(0.9586)	(0.9321)			**Adjusted R²**	1.64%
Beta Time Fixed Effects	**-1.0970**	0.0485	0.0054	-135.7780	0.0648	-2.9009	**0.0599**	0.0074	-0.0247	0.0955			**Number of observations**	1406
T-stat	(-2.3620)	(1.3250)	(0.4046)	(-0.7601)	(0.4549)	(-0.5744)	(2.5752)	(1.3010)	(-0.2669)	(1.2975)			**Adjusted R²**	3.48%
Beta Industry Fixed Effects	**-2.1438**	0.0197	0.0053	-240.6799	0.0394	-4.7927	**0.0847**	**0.0128**	0.0949	0.0581			**Number of observations**	1406
T-stat	(-3.9576)	(0.5398)	(0.4072)	(-1.2762)	(0.2479)	(-1.1151)	(2.9936)	(2.0419)	(1.1387)	(0.7249)			**Adjusted R²**	4.66%
Beta Time and Industry Fixed Effects	**-2.2711**	-0.0094	0.0058	-186.9803	0.1156	-2.7062	**0.0825**	0.0109	0.0014	0.0934			**Number of observations**	1406
T-stat	(-3.8684)	(-0.2532)	(0.4371)	(-0.9883)	(0.7076)	(-0.4906)	(2.8094)	(1.7360)	(0.0147)	(1.1582)			**Adjusted R²**	6.31%
Beta without Fixed Effects	**-1.2329**	0.0288	-0.0056	28.4821	-0.2340	-5.7763	**0.0858**	**0.0146**	0.0058		0.0362		**Number of observations**	1266
T-stat	(-2.4464)	(0.7336)	(-0.3540)	(0.2134)	(-1.6387)	(-1.2870)	(3.1179)	(2.1127)	(0.0582)		(0.3541)		**Adjusted R²**	1.20%
Beta Time Fixed Effects	**-1.4926**	0.0145	-0.0009	-24.3183	-0.1510	0.3821	**0.0927**	**0.0133**	0.0271		0.0001		**Number of observations**	1266
T-stat	(-2.8171)	(0.3661)	(-0.0524)	(-0.1817)	(-1.0509)	(0.0742)	(3.2927)	(1.9295)	(0.2649)		(0.0010)		**Adjusted R²**	3.19%
Beta Industry Fixed Effects	-0.9456	-0.0172	-0.0009	-38.3629	-0.1751	-5.3553	**0.0923**	0.0110	0.0075		-0.0335		**Number of observations**	1266
T-stat	(-1.5839)	(-0.4247)	(-0.0569)	(-0.2739)	(-1.0757)	(-1.1205)	(2.7989)	(1.4166)	(0.0727)		(-0.3026)		**Adjusted R²**	1.82%
Beta Time and Industry Fixed Effects	**-1.3464**	-0.0345	0.0040	-65.7853	-0.0749	2.2473	**0.1034**	0.0115	0.0411		-0.0630		**Number of observations**	1266
T-stat	(-2.1410)	(-0.8405)	(0.2374)	(-0.4701)	(-0.4567)	(0.4041)	(3.0428)	(1.470)	(0.3878)		(-0.5701)		**Adjusted R²**	3.64%
Beta without Fixed Effects	**-1.3016**	0.0256	0.0023	-45.6781	-0.1173	-4.8055	**0.0861**	0.0085	**0.1447**			0.0843	**Number of observations**	2274
T-stat	(-3.7667)	(0.9797)	(0.2214)	(-0.4636)	(-1.1705)	(-1.5601)	(4.4950)	(1.6952)	(2.1883)			(1.5402)	**Adjusted R²**	1.76%
Beta Time Fixed Effects	**-1.3330**	0.0164	0.0065	-42.2469	-0.0862	-4.8817	**0.0838**	0.0064	0.1208			0.0851	**Number of observations**	2274
T-stat	(-3.5855)	(0.6168)	(0.6173)	(-0.4277)	(-0.8468)	(-1.3199)	(4.2912)	(1.2715)	(1.7378)			(1.5583)	**Adjusted R²**	3.30%
Beta Industry Fixed Effects	**-1.4735**	-0.0007	0.0034	-81.6378	-0.1022	-4.1038	**0.0990**	0.0093	**0.1708**			0.0908	**Number of observations**	2274
T-stat	(-3.5766)	(-0.0272)	(0.3236)	(-0.8050)	(-0.9024)	(-1.2662)	(4.2083)	(1.7252)	(2.5308)			(1.4113)	**Adjusted R²**	2.25%
Beta Time and Industry Fixed Effects	**-1.4922**	-0.0094	0.0074	-76.9303	-0.0555	-3.6601	**0.0930**	0.0080	**0.1508**			0.1030	**Number of observations**	2274
T-stat	(-3.4116)	(-0.3465)	(0.6939)	(-0.7576)	(-0.4815)	(-0.9225)	(3.8611)	(1.4644)	(2.1209)			(1.5948)	**Adjusted R²**	3.69%

Table 14

Regression set 14: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio, and the relative yearly rank of the Net Debt to Total Assets ratio. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	rel. Yearly rank EBITDA / Net debt	rel. Yearly rank interest cover	rel. yearly rank ND / Assets		
Beta without Fixed Effects	**-0.3801**									**0.1694**			**Number of observations**	1406
T-stat	(-4.5649)									(2.5370)			**Adjusted R^2**	0.39%
Beta Time Fixed Effects	**-0.2707**									**0.1626**			**Number of observations**	1406
T-stat	(-1.9669)									(2.4509)			**Adjusted R^2**	2.74%
Beta Industry Fixed Effects	**-1.1453**									**0.1611**			**Number of observations**	1406
T-stat	(-4.2688)									(2.1881)			**Adjusted R^2**	3.36%
Beta Time and Industry Fixed Effects	**-1.1345**									**0.1616**			**Number of observations**	1406
T-stat	(-3.901)									(2.2077)			**Adjusted R^2**	5.53%
Beta without Fixed Effects	**-0.2222**										-0.0369		**Number of observations**	1266
T-stat	(-2.1939)										(-.3719)		**Adjusted R^2**	-0.07%
Beta Time Fixed Effects	**-1.4984**										0.0151		**Number of observations**	1266
T-stat	(-2.8693)										(.3974)		**Adjusted R^2**	3.05%
Beta Industry Fixed Effects	-0.9289										-0.0164		**Number of observations**	1266
T-stat	(-1.5743)										(-.4239)		**Adjusted R^2**	1.82%
Beta Time and Industry Fixed Effects	**-1.2850**										-0.0370		**Number of observations**	1266
T-stat	(-2.0784)										(-.9455)		**Adjusted R^2**	3.62%
Beta without Fixed Effects	**-0.2105**											0.0322	**Number of observations**	2274
T-stat	(-3.8355)											(.6146)	**Adjusted R^2**	-0.03%
Beta Time Fixed Effects	**-0.2496**											0.0275	**Number of observations**	2274
T-stat	(-2.2463)											(.5274)	**Adjusted R^2**	1.79%
Beta Industry Fixed Effects	-0.2281											0.0623	**Number of observations**	2274
T-stat	(-1.3771)											(.9785)	**Adjusted R^2**	0.77%
Beta Time and Industry Fixed Effects	-0.3158											0.0775	**Number of observations**	2274
T-stat	(-1.6547)											(1.2161)	**Adjusted R^2**	2.53%

Table 15

Regression set 15: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score factor. The latter three variables are of interest, the first eight are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	**lagged NCSKEW**	**DTURN OVER**	**turnover**	**ANALYST DUMMY**	**st dev**	**ln mcap**	**p/b**	**MOM**	**rel. Yearly rank current ratio**	**piotroski**		
Beta without Fixed Effects	**-1.1675**	0.0299	0.0017	-30.3659	-0.1346	-4.5066	**0.0823**	**0.0098**	**0.1555**			**Number of observations**	2282
T-stat	(-3.5014)	(1.1498)	(0.1627)	(-0.3096)	(-1.3503)	(-1.4666)	(4.3443)	(1.9595)	(2.3608)			**Adjusted R^2**	1.73%
Beta Time Fixed Effects	**-1.1252**	0.0211	0.0054	-34.3623	-0.0980	-3.9968	**0.0815**	0.0076	**0.1353**			**Number of observations**	2282
T-stat	(-3.1290)	(0.7968)	(0.5097)	(-0.3492)	(-0.9675)	(-1.0875)	(4.2105)	(1.5268)	(1.9572)			**Adjusted R^2**	3.17%
Beta Industry Fixed Effects	**-1.3234**	0.0026	0.0030	-74.0598	-0.1234	-3.8133	**0.0979**	0.0096	**0.1810**			**Number of observations**	2282
T-stat	(-3.3566)	(0.0977)	(0.2870)	(-0.7316)	(-1.0970)	(-1.1792)	(4.1766)	(1.7715)	(2.6939)			**Adjusted R^2**	2.25%
Beta Time and Industry Fixed Effects	**-1.2598**	-0.0053	0.0064	-76.2203	-0.0712	-2.6349	**0.0940**	0.0080	**0.1672**			**Number of observations**	2282
T-stat	(-2.9892)	(-0.1974)	(0.6046)	(-0.7518)	(-0.6224)	(-0.6678)	(3.9137)	(1.4803)	(2.3654)			**Adjusted R^2**	3.59%
Beta without Fixed Effects	**-1.1393**	0.0268	0.0019	-33.5116	-0.1530	-4.5667	**0.0816**	0.0096	**0.1512**	-0.0044		**Number of observations**	2252
T-stat	(-3.4120)	(1.0262)	(0.1863)	(-0.3427)	(-1.5251)	(-1.4822)	(4.2781)	(1.9341)	(2.2873)	(-0.0810)		**Adjusted R^2**	1.65%
Beta Time Fixed Effects	**-1.1554**	0.0196	0.0061	-28.7505	-0.1239	-4.8808	**0.0794**	0.0077	0.1292	-0.0107		**Number of observations**	2252
T-stat	(-3.1759)	(0.7364)	(0.5792)	(-0.2930)	(-1.2144)	(-1.3203)	(4.0721)	(1.5445)	(1.8640)	(-0.1982)		**Adjusted R^2**	3.16%
Beta Industry Fixed Effects	**-1.3095**	0.0009	0.0036	-76.5179	-0.1249	-3.7630	**0.0977**	0.0098	**0.1772**	-0.0405		**Number of observations**	2252
T-stat	(-3.3203)	(0.0341)	(0.3506)	(-0.7582)	(-1.1055)	(-1.1626)	(4.1506)	(1.8206)	(2.6282)	(-0.5946)		**Adjusted R^2**	2.16%
Beta Time and Industry Fixed Effects	**-1.3014**	-0.0050	0.0076	-70.8218	-0.0863	-3.6086	**0.0923**	0.0084	**0.1609**	-0.0468		**Number of observations**	2252
T-stat	(-3.0672)	(-0.1864)	(0.7175)	(-0.7005)	(-0.7515)	(-0.9102)	(3.8299)	(1.5561)	(2.2718)	(-0.6899)		**Adjusted R^2**	3.60%
Beta without Fixed Effects	-0.9823	0.0328	-0.0153	-186.3580	-0.3001	-8.2826	**0.0795**	0.0140	**0.0843**		0.0043	**Number of observations**	1017
T-stat	(-1.7581)	(0.7477)	(-0.6223)	(-1.1453)	(-1.7752)	(-1.5174)	(2.6381)	(1.9011)	(0.6986)		(0.1508)	**Adjusted R^2**	1.74%
Beta Time Fixed Effects	**-1.1877**	0.0143	-0.0096	-216.6243	-0.1512	-2.3211	**0.0861**	0.0133	0.1319		-0.0298	**Number of observations**	1017
T-stat	(-2.0066)	(0.3245)	(-0.3715)	(-1.3297)	(-0.8849)	(-0.3733)	(2.7679)	(1.8128)	(1.0591)		(-0.9780)	**Adjusted R^2**	4.22%
Beta Industry Fixed Effects	-0.7933	-0.0184	-0.0134	-313.2940	-0.2493	-9.3138	**0.0885**	0.0130	0.1076		-0.0019	**Number of observations**	1017
T-stat	(-1.1650)	(-0.4068)	(-0.5330)	(-1.8429)	(-1.3019)	(-1.6239)	(2.4199)	(1.5351)	(0.8613)		(-0.0641)	**Adjusted R^2**	2.26%
Beta Time and Industry Fixed Effects	-1.1989	-0.0371	-0.0101	-312.1105	-0.0797	-1.7711	**0.0999**	0.0137	0.1670		-0.0299	**Number of observations**	1017
T-stat	(-1.6669)	(-0.8114)	(-0.3783)	(-1.8413)	(-0.4104)	(-0.2663)	(2.6341)	(1.6179)	(1.2984)		(-0.9468)	**Adjusted R^2**	4.57%

Table 16

Regression set 16: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	rel. Yearly rank current ratio	piotroski		
Beta without Fixed Effects	**-0.2059**									0.0198		**Number of observations**	2252
T-stat	(-3.3768)									(.3685)		**Adjusted R²**	-0.04%
Beta Time Fixed Effects	**-0.2446**									0.0188		**Number of observations**	1266
T-stat	(-2.1366)									(.3516)		**Adjusted R²**	1.72%
Beta Industry Fixed Effects	-0.1294									-0.0175		**Number of observations**	1266
T-stat	(-.9386)									(-.258)		**Adjusted R²**	0.71%
Beta Time and Industry Fixed Effects	-0.1904									-0.0236		**Number of observations**	1266
T-stat	(-1.1259)									(-.3496)		**Adjusted R²**	2.43%
Beta without Fixed Effects	**-0.3922**										0.0251	**Number of observations**	1017
T-stat	(-2.8575)										(.9213)	**Adjusted R²**	-0.01%
Beta Time Fixed Effects	-0.2418										-0.0069	**Number of observations**	1017
T-stat	(-1.3599)										(-.2407)	**Adjusted R²**	3.06%
Beta Industry Fixed Effects	-0.2028										0.0255	**Number of observations**	1017
T-stat	(-.6711)										(.8851)	**Adjusted R²**	0.52%
Beta Time and Industry Fixed Effects	-0.1299										-0.0016	**Number of observations**	1017
T-stat	(-.4117)										(-.0534)	**Adjusted R²**	3.24%

Table 17

Regression set 17: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and OCF). The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	**-0.1739**	**0.0080**	-0.0001	**-0.0160**				**Number of observations**	3079
T-stat	(-6.1747)	(4.1187)	(-0.3112)	(-2.5959)				**Adjusted R²**	0.62%
Beta Time Fixed Effects	**-0.0774**	**0.0079**	0.0004	**-0.0147**				**Number of observations**	3079
T-stat	(-2.8319)	(4.5803)	(1.0214)	(-2.6371)				**Adjusted R²**	22.00%
Beta Industry Fixed Effects	-0.2173	0.0085	**-0.0001**	**-0.0158**				**Number of observations**	3079
T-stat	(-0.5630)	(0.1216)	(-4.1358)	(7.8620)				**Adjusted R²**	0.62%
Beta Time and Industry Fixed Effects	**-0.1189**	**0.0076**	0.0007	**-0.0146**				**Number of observations**	3079
T-stat	(-3.4774)	(3.5342)	(1.4654)	(-2.5663)				**Adjusted R²**	22.14%
Beta without Fixed Effects	**-0.1862**	**0.0083**	-0.0003	**-0.0172**	0.0091			**Number of observations**	3071
T-stat	(-6.2688)	(4.2204)	(-0.5678)	(-2.8227)	(1.5424)			**Adjusted R²**	0.67%
Beta Time Fixed Effects	**-0.0897**	**0.0082**	0.0003	**-0.0158**	0.0091			**Number of observations**	3071
T-stat	(-3.1430)	(4.7236)	(0.7351)	(-2.8667)	(1.7353)			**Adjusted R²**	22.16%
Beta Industry Fixed Effects	**-0.2331**	**0.0085**	-0.0002	**-0.0170**	0.0117			**Number of observations**	3071
T-stat	(-6.1518)	(3.5453)	(-0.3734)	(-2.7320)	(1.7017)			**Adjusted R²**	0.72%
Beta Time and Industry Fixed Effects	**-0.1423**	**0.0078**	0.0006	**-0.0160**	**0.0162**			**Number of observations**	3071
T-stat	(-4.0155)	(3.6587)	(1.2816)	(-2.8483)	(2.6264)			**Adjusted R²**	22.39%
Beta without Fixed Effects	**-0.1397**	0.0043	-0.0003	**-0.0303**		**0.0304**		**Number of observations**	2102
T-stat	(-4.3384)	(1.8548)	(-0.5085)	(-3.7273)		(4.1818)		**Adjusted R²**	1.52%
Beta Time Fixed Effects	**-0.0655**	**0.0054**	0.0002	**-0.0208**		**0.0212**		**Number of observations**	2102
T-stat	(-2.1736)	(2.6808)	(0.2976)	(-2.8625)		(3.3122)		**Adjusted R²**	25.34%
Beta Industry Fixed Effects	**-0.1680**	0.0050	-0.0003	**-0.0289**		**0.0308**		**Number of observations**	2102
T-stat	(-3.8522)	(1.6814)	(-0.4772)	(-3.4137)		(3.3429)		**Adjusted R²**	1.24%
Beta Time and Industry Fixed Effects	**-0.0959**	**0.0066**	0.0003	**-0.0190**		0.0137		**Number of observations**	2102
T-stat	(-2.4062)	(2.5085)	(0.5077)	(-2.5214)		(1.6710)		**Adjusted R²**	25.16%
Beta without Fixed Effects	**-0.1792**	**0.0060**	-0.0008	**-0.0306**			**0.0477**	**Number of observations**	2098
T-stat	(-5.4427)	(2.7515)	(-1.3291)	(-3.8336)			(4.4373)	**Adjusted R²**	1.63%
Beta Time Fixed Effects	**-0.0973**	**0.0065**	-0.0002	**-0.0222**			**0.0395**	**Number of observations**	2098
T-stat	(-3.1643)	(3.4099)	(-0.3341)	(-3.1123)			(4.2049)	**Adjusted R²**	25.69%
Beta Industry Fixed Effects	**-0.2157**	0.0053	-0.0004	**-0.0301**			**0.0591**	**Number of observations**	2098
T-stat	(-5.0884)	(1.8468)	(-0.6387)	(-3.6393)			(4.4465)	**Adjusted R²**	1.70%
Beta Time and Industry Fixed Effects	**-0.1248**	**0.0058**	0.0003	**-0.0224**			**0.0468**	**Number of observations**	2098
T-stat	(-3.2088)	(2.3109)	(0.5463)	(-3.0381)			(4.0296)	**Adjusted R²**	25.75%

Table 18

Regression set 18: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and OCF). In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	**-0.0628**				0.0046			**Number of observations**	3073
T-stat	(-10.0107)				(0.7931)			**Adjusted R²**	-0.01%
Beta Time Fixed Effects	**0.0350**				0.0054			**Number of observations**	3073
T-stat	(2.9326)				(1.0601)			**Adjusted R²**	21.42%
Beta Industry Fixed Effects	**-0.1134**				0.0091			**Number of observations**	3073
T-stat	(-6.3057)				(1.3243)			**Adjusted R²**	0.17%
Beta Time and Industry Fixed Effects	-0.0278				**0.0141**			**Number of observations**	3073
T-stat	(-1.455)				(2.2892)			**Adjusted R²**	21.79%
Beta without Fixed Effects	**-0.0757**					**0.0293**		**Number of observations**	2103
T-stat	(-9.15)					(4.3736)		**Adjusted R²**	0.86%
Beta Time Fixed Effects	0.0153					**0.0217**		**Number of observations**	2103
T-stat	(1.1797)					(3.6912)		**Adjusted R²**	24.81%
Beta Industry Fixed Effects	**-0.0971**					**0.0292**		**Number of observations**	2103
T-stat	(-5.4217)					(3.4175)		**Adjusted R²**	0.63%
Beta Time and Industry Fixed Effects	-0.0006					0.0144		**Number of observations**	2103
T-stat	(-.0319)					(1.8992)		**Adjusted R²**	24.64%
Beta without Fixed Effects	**-0.0893**						**0.0439**	**Number of observations**	2099
T-stat	(-7.7278)						(4.1268)	**Adjusted R²**	0.76%
Beta Time Fixed Effects	0.0014						**0.0371**	**Number of observations**	2099
T-stat	(.0927)						(3.9995)	**Adjusted R²**	25.01%
Beta Industry Fixed Effects	**-0.1395**						**0.0556**	**Number of observations**	2099
T-stat	(-6.5851)						(4.3379)	**Adjusted R²**	1.01%
Beta Time and Industry Fixed Effects	-0.0376						**0.0443**	**Number of observations**	2099
T-stat	(-1.7407)						(3.9591)	**Adjusted R²**	25.18%

Table 19

Regression set 19: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and EBITDA). The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	**-0.1739**	**0.0080**	**-0.0001**	**-0.0160**				**Number of observations**	3079
T-stat	(-6.1747)	(4.1187)	(-0.3112)	(-2.5959)				**Adjusted R²**	0.62%
Beta Time Fixed Effects	**-0.0774**	**0.0079**	**0.0004**	**-0.0147**				**Number of observations**	3079
T-stat	(-2.8319)	(4.5803)	(1.0214)	(-2.6371)				**Adjusted R²**	22.00%
Beta Industry Fixed Effects	-0.2173	0.0085	**-0.0001**	**-0.0158**				**Number of observations**	3079
T-stat	(-0.5630)	(0.1216)	(-4.1358)	(7.8620)				**Adjusted R²**	0.62%
Beta Time and Industry Fixed Effects	-0.1189	0.0076	**0.0007**	**-0.0146**				**Number of observations**	3079
T-stat	(-3.4774)	(3.5342)	(1.4654)	(-2.5663)				**Adjusted R²**	22.14%
Beta without Fixed Effects	**-0.1862**	**0.0083**	**-0.0003**	**-0.0172**	0.0091			**Number of observations**	3071
T-stat	(-6.2688)	(4.2204)	(-0.5678)	(-2.8227)	(1.5424)			**Adjusted R²**	0.67%
Beta Time Fixed Effects	**-0.0897**	**0.0082**	**0.0003**	**-0.0158**	0.0091			**Number of observations**	3071
T-stat	(-3.1430)	(4.7236)	(0.7351)	(-2.8667)	(1.7353)			**Adjusted R²**	22.16%
Beta Industry Fixed Effects	-0.2331	0.0085	**-0.0002**	**-0.0170**	0.0117			**Number of observations**	3071
T-stat	(-6.1518)	(3.5453)	(-0.3734)	(-2.7320)	(1.7017)			**Adjusted R²**	0.72%
Beta Time and Industry Fixed Effects	-0.1423	0.0078	**0.0006**	**-0.0160**	0.0162			**Number of observations**	3071
T-stat	(-4.0155)	(3.6587)	(1.2816)	(-2.8483)	(2.6264)			**Adjusted R²**	22.39%
Beta without Fixed Effects	**-0.1561**	0.0051	**-0.0002**	**-0.0332**		**0.0284**		**Number of observations**	2186
T-stat	(-4.9869)	(2.3446)	(-0.3598)	(-4.1691)		(4.0706)		**Adjusted R²**	1.53%
Beta Time Fixed Effects	-0.0848	0.0072	**0.0001**	**-0.0238**		**0.0148**		**Number of observations**	2186
T-stat	(-2.8756)	(3.7525)	(0.1010)	(-3.3121)		(2.4155)		**Adjusted R²**	25.37%
Beta Industry Fixed Effects	-0.1667	0.0047	**-0.0003**	**-0.0331**		**0.0325**		**Number of observations**	2186
T-stat	(-3.9598)	(1.6281)	(-0.4406)	(-4.0107)		(3.7529)		**Adjusted R²**	0.92%
Beta Time and Industry Fixed Effects	-0.1120	0.0079	**0.0003**	**-0.0221**		**0.0084**		**Number of observations**	2186
T-stat	(-2.9090)	(3.1384)	(0.4472)	(-2.9807)		(1.0948)		**Adjusted R²**	25.13%
Beta without Fixed Effects	**-0.1864**	0.0065	**-0.0007**	**-0.0330**			**0.0412**	**Number of observations**	2182
T-stat	(-5.7702)	(3.0985)	(-1.0971)	(-4.2228)			(4.0743)	**Adjusted R²**	1.54%
Beta Time Fixed Effects	-0.1087	0.0078	**-0.0002**	**-0.0256**			**0.0317**	**Number of observations**	2182
T-stat	(-3.5825)	(4.2278)	(-0.3853)	(-3.6318)			(3.5886)	**Adjusted R²**	25.69%
Beta Industry Fixed Effects	-0.2096	0.0056	**-0.0005**	**-0.0327**			**0.0455**	**Number of observations**	2182
T-stat	(-5.0463)	(2.0305)	(-0.6788)	(-4.0403)			(3.6365)	**Adjusted R²**	0.93%
Beta Time and Industry Fixed Effects	-0.1335	0.0072	**0.0003**	**-0.0254**			**0.0342**	**Number of observations**	2182
T-stat	(-3.5023)	(2.9991)	(0.4444)	(-3.4925)			(3.1263)	**Adjusted R²**	25.50%

Table 20

Regression set 20: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios (rel. Avg yearly rank ND and EBITDA). In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	**-0.0628**				0.0046			**Number of observations**	3073
T-stat	(-10.0107)				(0.7931)			**Adjusted R²**	-0.01%
Beta Time Fixed Effects	0.0350				0.0054			**Number of observations**	3073
T-stat	(2.9326)				(1.0601)			**Adjusted R²**	21.42%
Beta Industry Fixed Effects	**-0.1134**				0.0091			**Number of observations**	3073
T-stat	(-6.3057)				(1.3243)			**Adjusted R²**	0.17%
Beta Time and Industry Fixed Effects	-0.0278				0.0141			**Number of observations**	3073
T-stat	(-1.455)				(2.2892)			**Adjusted R²**	21.79%
Beta without Fixed Effects	**-0.0775**					**0.0260**		**Number of observations**	2103
T-stat	(-9.4386)					(3.9399)		**Adjusted R²**	0.86%
Beta Time Fixed Effects	**0.0224**					**0.0153**		**Number of observations**	2103
T-stat	(1.681)					(2.6304)		**Adjusted R²**	24.81%
Beta Industry Fixed Effects	**-0.0993**					**0.0290**		**Number of observations**	2103
T-stat	(-5.527)					(3.5569)		**Adjusted R²**	0.63%
Beta Time and Industry Fixed Effects	0.0014					**0.0090**		**Number of observations**	2103
T-stat	(.0702)					(1.2495)		**Adjusted R²**	24.64%
Beta without Fixed Effects	**-0.0856**						**0.0352**	**Number of observations**	2099
T-stat	(-7.8106)						(3.5128)	**Adjusted R²**	0.76%
Beta Time Fixed Effects	**0.0114**						**0.0274**	**Number of observations**	2099
T-stat	(.7855)						(3.1401)	**Adjusted R²**	25.01%
Beta Industry Fixed Effects	**-0.1269**						**0.0403**	**Number of observations**	2099
T-stat	(-6.0453)						(3.3164)	**Adjusted R²**	1.01%
Beta Time and Industry Fixed Effects	**-0.0252**						**0.0309**	**Number of observations**	2099
T-stat	(-1.1604)						(2.9142)	**Adjusted R²**	25.18%

Table 21

Regression set 21: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio (rel. yearly interest cover), and the relative yearly rank of the Net Debt to Total Assets ratio (rel. yearly rank ND/Assets). The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	MCap	P/B	MOM	Rel. Yearly Rank EBITDA / Net Debt	Rel. Yearly Rank Interest Cover	Rel. Yearly Rank ND / Assets		
Beta without Fixed Effects	**-0.1739**	**0.0080**	-0.0001	**-0.0160**				**Number of observations**	3079
T-stat	(-6.1747)	(4.1187)	(-0.3112)	(-2.5959)				**Adjusted R²**	0.62%
Beta Time Fixed Effects	**-0.0774**	**0.0079**	0.0004	**-0.0147**				**Number of observations**	3079
T-stat	(-2.8319)	(4.5803)	(1.0214)	(-2.6371)				**Adjusted R²**	22.00%
Beta Industry Fixed Effects	**-0.2173**	**0.0085**	-0.0001	**-0.0158**				**Number of observations**	3079
T-stat	(-6.0049)	(3.5195)	(-0.2094)	(-2.5049)				**Adjusted R²**	0.62%
Beta Time and Industry Fixed Effects	**-0.1189**	**0.0076**	0.0007	**-0.0146**				**Number of observations**	3079
T-stat	(-3.4774)	(3.5342)	(1.4654)	(-2.5663)				**Adjusted R²**	22.14%
Beta without Fixed Effects	**-0.1900**	**0.0080**	-0.0010	**-0.0210**	0.0095			**Number of observations**	1811
T-stat	(-5.2706)	(3.2270)	(-1.6809)	(-2.390)	(1.1073)			**Adjusted R²**	0.82%
Beta Time Fixed Effects	**-0.0863**	**0.0084**	-0.0004	-0.0145	0.0014			**Number of observations**	1811
T-stat	(-2.5080)	(3.9046)	(-0.6897)	(-1.7762)	(0.1902)			**Adjusted R²**	25.50%
Beta Industry Fixed Effects	**-0.2149**	**0.0071**	-0.0007	**-0.0196**	0.0091			**Number of observations**	1811
T-stat	(-4.0338)	(2.2312)	(-0.9849)	(-2.1571)	(0.9677)			**Adjusted R²**	0.88%
Beta Time and Industry Fixed Effects	-0.0945	**0.0063**	0.0000	-0.0145	-0.0002			**Number of observations**	1811
T-stat	(-1.9327)	(2.2914)	(-0.0709)	(-1.7225)	(-0.0197)			**Adjusted R²**	25.62%
Beta without Fixed Effects	**-0.1017**	0.0052	-0.0010	**-0.0167**		-0.0092		**Number of observations**	1656
T-stat	(-2.3886)	(1.9038)	(-1.5036)	(-1.9853)		(-0.8598)		**Adjusted R²**	0.35%
Beta Time Fixed Effects	-0.0155	0.0048	-0.0002	-0.0096		-0.0147		**Number of observations**	1656
T-stat	(-0.3906)	(1.9715)	(-0.3248)	(-1.2514)		(-1.5495)		**Adjusted R²**	21.97%
Beta Industry Fixed Effects	**-0.1398**	0.0050	-0.0012	-0.0158		-0.0075		**Number of observations**	1656
T-stat	(-2.5876)	(1.5368)	(-1.6248)	(-1.7899)		(-0.6508)		**Adjusted R²**	-0.25%
Beta Time and Industry Fixed Effects	-0.0610	0.0042	**-0.0001**	**-0.0091**		-0.0118		**Number of observations**	1656
T-stat	(-1.2348)	(1.4279)	(-0.2032)	(-1.1438)		(-1.1560)		**Adjusted R²**	21.79%
Beta without Fixed Effects	**-0.1929**	**0.0085**	-0.0003	**-0.0172**			**0.0124**	**Number of observations**	3071
T-stat	(-6.4671)	(4.3460)	(-0.6803)	(-2.8341)			(2.1119)	**Adjusted R²**	0.73%
Beta Time Fixed Effects	**-0.0898**	**0.0082**	0.0003	**-0.0157**			0.0088	**Number of observations**	3071
T-stat	(-3.1356)	(4.7280)	(0.7066)	(-2.8520)			(1.6936)	**Adjusted R²**	22.15%
Beta Industry Fixed Effects	**-0.2429**	**0.0087**	-0.0002	**-0.0171**			**0.0155**	**Number of observations**	3071
T-stat	(-6.3540)	(3.6390)	(-0.4210)	(-2.7488)			(2.2951)	**Adjusted R²**	0.80%
Beta Time and Industry Fixed Effects	**-0.1440**	**0.0078**	0.0006	**-0.0159**			**0.0156**	**Number of observations**	3071
T-stat	(-4.0348)	(3.6942)	(1.2438)	(-2.8278)			(2.5890)	**Adjusted R²**	22.39%

Table 22

Regression set 22: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio (rel. yearly interest cover), and the relative yearly rank of the Net Debt to Total Assets ratio (rel. yearly rank ND/Assets). In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	MCap	P/B	MOM	Rel. Yearly Rank EBITDA / Net Debt	Rel. Yearly Rank Interest Cover	Rel. Yearly Rank ND / Assets		
Beta without Fixed Effects	**-0.0748**				**0.0105**			**Number of observations**	1811
T-stat	(-7.6323)				(1.3205)			**Adjusted R²**	0.04%
Beta Time Fixed Effects	**0.0380**				**0.0038**			**Number of observations**	1811
T-stat	(2.4281)				(0.5460)			**Adjusted R²**	24.88%
Beta Industry Fixed Effects	**-0.1197**				**0.0079**			**Number of observations**	1811
T-stat	(-3.658)				(.9114)			**Adjusted R²**	0.48%
Beta Time and Industry Fixed Effects	-0.0034				**-0.0013**			**Number of observations**	1811
T-stat	(-.1085)				(-.1711)			**Adjusted R²**	25.39%
Beta without Fixed Effects	-0.0258					**-0.0124**		**Number of observations**	1656
T-stat	(-2.3834)					(-1.191)		**Adjusted R²**	0.03%
Beta Time Fixed Effects	0.0572					**-0.0178**		**Number of observations**	1656
T-stat	(3.9381)					(-1.9158)		**Adjusted R²**	21.87%
Beta Industry Fixed Effects	-0.0759					-0.0084		**Number of observations**	1656
T-stat	(-2.8565)					(-.7408)		**Adjusted R²**	-0.52%
Beta Time and Industry Fixed Effects	-0.0017					-0.0133		**Number of observations**	1656
T-stat	(-.0654)					(-1.3189)		**Adjusted R²**	21.78%
Beta without Fixed Effects	**-0.0653**						0.0073	**Number of observations**	3073
T-stat	(-10.5643)						(1.283)	**Adjusted R²**	0.02%
Beta Time Fixed Effects	0.0354						**0.0051**	**Number of observations**	3073
T-stat	(2.9755)						(1.0007)	**Adjusted R²**	21.42%
Beta Industry Fixed Effects	-0.1192						0.0125	**Number of observations**	3073
T-stat	(-6.5415)						(1.8511)	**Adjusted R²**	0.22%
Beta Time and Industry Fixed Effects	-0.0282						0.0135	**Number of observations**	3073
T-stat	(-1.4606)						(2.2356)	**Adjusted R²**	21.79%

Table 23

Regression set 23: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score. The latter two variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	MCap	P/B	MOM	Rel. Yearly Rank Current Ratio	piotroski		
Beta without Fixed Effects	**-0.1739**	**0.0080**	-0.0001	**-0.0160**			**Number of observations**	3079
T-stat	(-6.1747)	(4.1187)	(-0.3112)	(-2.5959)			**Adjusted R²**	0.62%
Beta Time Fixed Effects	**-0.0774**	**0.0079**	0.0004	**-0.0147**			**Number of observations**	3079
T-stat	(-2.8319)	(4.5803)	(1.0214)	(-2.6371)			**Adjusted R²**	22.00%
Beta Industry Fixed Effects	**-0.2173**	**0.0085**	-0.0001	**-0.0158**			**Number of observations**	3079
T-stat	(-6.0049)	(3.5195)	(-0.2094)	(-2.5049)			**Adjusted R²**	0.62%
Beta Time and Industry Fixed Effects	**-0.1189**	**0.0076**	0.0007	**-0.0146**			**Number of observations**	3079
T-stat	(-3.4774)	(3.5342)	(1.4654)	(-2.5663)			**Adjusted R²**	22.14%
Beta without Fixed Effects	**-0.1718**	**0.0084**	-0.0002	**-0.0160**	-0.0068		**Number of observations**	3033
T-stat	(-6.0924)	(4.2708)	(-0.3945)	(-2.5914)	(-1.1317)		**Adjusted R²**	0.63%
Beta Time Fixed Effects	**-0.0765**	**0.0081**	0.0004	**-0.0145**	-0.0038		**Number of observations**	3033
T-stat	(-2.8011)	(4.6575)	(0.9793)	(-2.6002)	(-0.7232)		**Adjusted R²**	22.16%
Beta Industry Fixed Effects	**-0.2160**	**0.0087**	-0.0001	**-0.0162**	-0.0112		**Number of observations**	3033
T-stat	(-5.9725)	(3.5864)	(-0.1646)	(-2.5618)	(-1.5338)		**Adjusted R²**	0.48%
Beta Time and Industry Fixed Effects	**-0.1162**	**0.0078**	0.0007	**-0.0151**	-0.0127		**Number of observations**	3033
T-stat	(-3.4103)	(3.6158)	(1.5208)	(-2.6538)	(-1.9733)		**Adjusted R²**	22.32%
Beta without Fixed Effects	-0.0919	0.0022	-0.0010	-0.0155		**0.0091**	**Number of observations**	1240
T-stat	(-1.9783)	(0.7004)	(-1.4165)	(-1.4287)		2.8798	**Adjusted R²**	0.58%
Beta Time Fixed Effects	-0.0043	0.0025	-0.0004	-0.0030		**0.0023**	**Number of observations**	1240
T-stat	(-0.0984)	(0.8975)	(-0.5914)	(-0.3051)		(0.7597)	**Adjusted R²**	21.18%
Beta Industry Fixed Effects	**-0.1230**	0.0029	-0.0011	-0.0153		**0.0081**	**Number of observations**	1240
T-stat	(-1.9880)	(0.7680)	(-1.2939)	(-1.3529)		(2.4192)	**Adjusted R²**	-0.23%
Beta Time and Industry Fixed Effects	-0.0342	0.0021	-0.0004	-0.0042		0.0019	**Number of observations**	1240
T-stat	(-0.6017)	(0.6119)	(-0.5393)	(-0.4097)		(0.6105)	**Adjusted R²**	20.70%

Table 24

Regression set 24: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	MCap	P/B	MOM	Rel. Yearly Rank Current Ratio	piotroski		
Beta without Fixed Effects	**-0.0548**				-0.0022		**Number of observations**	1656
T-stat	(-8.2706)				(-.3737)		**Adjusted R^2**	0.03%
Beta Time Fixed Effects	0.0397				**0.0004**		**Number of observations**	1656
T-stat	(3.2502)				(.0758)		**Adjusted R^2**	21.87%
Beta Industry Fixed Effects	**-0.0980**				-0.0075		**Number of observations**	1656
T-stat	(-6.2484)				(-1.0309)		**Adjusted R^2**	-0.52%
Beta Time and Industry Fixed Effects	-0.0057				-0.0091		**Number of observations**	1656
T-stat	(-.3232)				(-1.4148)		**Adjusted R^2**	21.78%
Beta without Fixed Effects	**-0.0580**					**0.0081**	**Number of observations**	3073
T-stat	(-3.869)					(2.6979)	**Adjusted R^2**	0.02%
Beta Time Fixed Effects	**0.0307**					**0.0023**	**Number of observations**	3073
T-stat	(1.7008)					(.8238)	**Adjusted R^2**	21.42%
Beta Industry Fixed Effects	**-0.0825**					**0.0072**	**Number of observations**	3073
T-stat	(-2.4457)					(2.2834)	**Adjusted R^2**	0.22%
Beta Time and Industry Fixed Effects	**-0.0062**					**0.0018**	**Number of observations**	3073
T-stat	(-.1931)					(.6005)	**Adjusted R^2**	21.79%

Table 25

Regression set 25: Returns based on variables (instead of relative ranks)

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), the current ratio, the five year average standard deviation of the OCF / Revenue ratio, and Net Debt / Market Capitalization. The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	current ratio	5y stdev OCF / Revenue	ND/mcap		
Beta without Fixed Effects	**-0.2200**	**0.0136**	**-0.0067**	**0.1880**	-0.0017			**Number of observations**	3033
T-stat	(-2.6141)	(2.4603)	(-4.4710)	(10.4284)	(-0.1947)			**Adjusted R squared**	5.38%
Beta Time Fixed Effects	**-0.1714**	**0.0147**	**-0.0061**	**0.1950**	-0.0045			**Number of observations**	3033
T-stat	(-1.9133)	(2.7277)	(-4.1228)	(10.8772)	(-0.5216)			**Adjusted R squared**	10.08%
Beta Industry Fixed Effects	-0.0224	0.0008	**-0.0077**	**0.1546**	-0.0073			**Number of observations**	3033
T-stat	(-0.1978)	(0.1175)	(-4.8510)	(8.4242)	(-0.7104)			**Adjusted R squared**	6.95%
Beta Time and Industry Fixed Effects	0.0383	0.0018	**-0.0073**	**0.1628**	-0.0103			**Number of observations**	3033
T-stat	(0.3296)	(0.2769)	(-4.6215)	(8.9101)	(-1.0242)			**Adjusted R squared**	11.53%
Beta without Fixed Effects	-0.1012	0.0077	**-0.0058**	**0.1596**		**-0.1502**		**Number of observations**	2102
T-stat	(-1.1260)	(1.2554)	(-3.2760)	(7.2694)		(-4.7382)		**Adjusted R^2**	5.63%
Beta Time Fixed Effects	-0.0586	0.0088	**-0.0054**	**0.1812**		**-0.1418**		**Number of observations**	2102
T-stat	(-0.6277)	(1.4809)	(-3.1651)	(8.3067)		(-4.5903)		**Adjusted R^2**	11.87%
Beta Industry Fixed Effects	0.0701	-0.0004	**-0.0059**	**0.1046**		**-0.2117**		**Number of observations**	2102
T-stat	(0.5728)	(-0.0551)	(-3.1385)	(4.6613)		(-5.8577)		**Adjusted R^2**	8.75%
Beta Time and Industry Fixed Effects	0.1033	0.0021	**-0.0058**	**0.1275**		**-0.2042**		**Number of observations**	2102
T-stat	(0.8323)	(0.2707)	(-3.1940)	(5.7132)		(-5.7993)		**Adjusted R^2**	14.57%
Beta without Fixed Effects	**-0.2616**	**0.0151**	**-0.0049**	**0.1924**			0.0209	**Number of observations**	3071
T-stat	(-3.1967)	(2.6731)	(-3.5608)	(10.6454)			(0.6752)	**Adjusted R^2**	5.28%
Beta Time Fixed Effects	**-0.2217**	**0.0168**	**-0.0043**	**0.1977**			0.0201	**Number of observations**	3071
T-stat	(-2.5356)	(3.030)	(-3.1667)	(10.9991)			(0.6615)	**Adjusted R^2**	9.62%
Beta Industry Fixed Effects	-0.0737	0.0033	**-0.0054**	**0.1558**			0.0203	**Number of observations**	3071
T-stat	(-0.7087)	(0.4825)	(-3.7436)	(8.4719)			(0.5726)	**Adjusted R^2**	6.98%
Beta Time and Industry Fixed Effects	-0.0166	0.0051	**-0.0049**	**0.1633**			0.0181	**Number of observations**	3071
T-stat	(-0.1535)	(0.7529)	(-3.3985)	(8.9301)			(0.51997)	**Adjusted R^2**	11.14%

Table 26

Regression set 26: NCSKEW based on variables (instead of relative ranks)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), the current ratio, the five year average standard deviation of the OCF / Revenue ratio, and Net Debt / Market Capitalization. The latter three variables are of interest, the first eight are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

NCSKEW	Constant	lagged NCSKEW	DTURNOVER	turnover	ANALYST DUMMY	st dev	ln mcap	p/b	MOM	current ratio	5y stdev OCF / Revenue	ND/mcap		
Beta without Fixed Effects	**-0.9879**	0.0336	-0.0089	-114.5206	**-0.2364**	-5.3071	**0.0772**	**0.0107**	**0.1916**	0.0134			**Number of observations**	2252
T-stat	(-2.8407)	(1.2675)	(-0.7683)	(-1.1515)	(-2.2514)	(-1.6771)	(4.0672)	(2.0430)	(2.8232)	(0.4785)			**Adjusted R²**	2.13%
Beta Time Fixed Effects	**-1.0221**	0.0245	-0.0053	-99.9437	**-0.2141**	-6.2823	**0.0738**	**0.0084**	**0.1613**	0.0129			**Number of observations**	2252
T-stat	(-2.7067)	(0.9080)	(-0.4490)	(-1.0011)	(-2.0083)	(-1.6262)	(3.7895)	(1.5901)	(2.2671)	(0.4663)			**Adjusted R²**	3.84%
Beta Industry Fixed Effects	**-1.1983**	0.0058	-0.0082	-156.0883	**-0.2356**	-4.7166	**0.0933**	**0.0113**	**0.2194**	0.0243			**Number of observations**	2252
T-stat	(-2.8247)	(0.2165)	(-0.6932)	(-1.5194)	(-1.9922)	(-1.4277)	(3.9684)	(2.0039)	(3.1698)	(0.7184)			**Adjusted R²**	2.63%
Beta Time and Industry Fixed Effects	**-1.2054**	-0.0024	-0.0049	-142.7519	-0.2066	-5.2107	**0.0874**	0.0094	**0.1936**	0.0216			**Number of observations**	2252
T-stat	(-2.6593)	(-0.0889)	(-0.4092)	(-1.3870)	(-1.7184)	(-1.2717)	(3.6298)	(1.6603)	(2.6654)	(0.6397)			**Adjusted R²**	4.25%
Beta without Fixed Effects	**-0.8776**	0.0422	-0.0200	**-248.5927**	-0.0942	-6.5690	**0.0662**	0.0067	**0.1708**		0.2403		**Number of observations**	1692
T-stat	(-2.2283)	(1.3710)	(-1.1443)	(-2.0749)	(-0.6967)	(-1.5938)	(3.0304)	(1.0436)	(2.0048)		(1.7291)		**Adjusted R²**	2.25%
Beta Time Fixed Effects	**-0.9260**	0.0364	-0.0116	-222.0552	-0.0971	-9.0400	**0.0603**	0.0061	0.1328		0.2644		**Number of observations**	1692
T-stat	(-2.1440)	(1.1682)	(-0.6154)	(-1.8469)	(-0.7074)	(-1.7055)	(2.6682)	(0.9615)	(1.4460)		(1.8837)		**Adjusted R²**	3.19%
Beta Industry Fixed Effects	**-1.0614**	0.0018	-0.0175	**-306.8806**	-0.1461	-6.9183	**0.0835**	0.0065	**0.2146**		0.2387		**Number of observations**	1692
T-stat	(-2.2108)	(0.0575)	(-0.9828)	(-2.4868)	(-0.9730)	(-1.6425)	(2.9665)	(0.9541)	(2.4609)		(1.5533)		**Adjusted R²**	4.94%
Beta Time and Industry Fixed Effects	**-1.0545**	-0.0009	-0.0081	**-282.6750**	-0.1416	-9.2301	**0.0741**	0.0061	**0.1936**		0.2677		**Number of observations**	1692
T-stat	(-2.0493)	(-0.0297)	(-0.4248)	(-2.2874)	(-0.9264)	(-1.6665)	(2.5536)	(0.8813)	(2.0646)		(1.7225)		**Adjusted R²**	5.90%
Beta without Fixed Effects	**-1.2605**	0.0225	0.0039	-16.0960	-0.1322	-4.8799	**0.0905**	0.0078	0.1078			-0.1621	**Number of observations**	2274
T-stat	(-3.5820)	(0.8353)	(0.350)	(-0.1532)	(-1.2497)	(-1.5098)	(4.5544)	(1.5230)	(1.5241)			(-1.6148)	**Adjusted R²**	1.73%
Beta Time Fixed Effects	**-1.2664**	0.0133	0.0076	-17.1334	-0.1135	-5.4371	**0.0875**	0.0062	0.0856			-0.1249	**Number of observations**	2274
T-stat	(-3.3077)	(0.4855)	(0.6678)	(-0.1623)	(-1.0544)	(-1.3936)	(4.3020)	(1.1959)	(1.1565)			(-1.2452)	**Adjusted R²**	3.22%
Beta Industry Fixed Effects	**-1.2955**	-0.0037	0.0027	-56.5204	-0.1010	-4.2023	**0.0962**	0.0085	0.1395			-0.1655	**Number of observations**	2274
T-stat	(-3.1301)	(-0.1353)	(0.2417)	(-0.5232)	(-0.8364)	(-1.2364)	(3.9441)	(1.5363)	(1.9288)			(-1.4350)	**Adjusted R²**	2.37%
Beta Time and Industry Fixed Effects	**-1.2603**	-0.0121	0.0062	-56.8164	-0.0710	-4.4990	**0.0900**	0.0072	0.1200			-0.1423	**Number of observations**	2274
T-stat	(-2.8284)	(-0.4328)	(0.5364)	(-0.5242)	(-0.5781)	(-1.0748)	(3.5962)	(1.2976)	(1.5788)			(-1.2346)	**Adjusted R²**	3.72%

Table 27

Regression set 27: Coskewness based on variables (instead of relative ranks)

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), the current ratio, the five year average standard deviation of the OCF / Revenue ratio, and Net Debt / Market Capitalization. The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	mcap	p/b	MOM	current ratio	5y stdev OCF / Revenue	ND/mcap		
Beta without Fixed Effects	-0.1699	0.0081	**0.0000**	**-0.0140**	-0.0022			**Number of observations**	3033
T-stat	(-5.5598)	(4.0289)	(-0.0694)	(-2.1438)	(-0.6854)			**Adjusted R squared**	0.60%
Beta Time Fixed Effects	-0.0774	0.0078	**0.0007**	**-0.0147**	-0.0003			**Number of observations**	3033
T-stat	(-2.6212)	(4.3869)	(1.3908)	(-2.4876)	(-0.0898)			**Adjusted R squared**	22.06%
Beta Industry Fixed Effects	-0.2229	0.0089	**0.0000**	**-0.0148**	-0.0017			**Number of observations**	3033
T-stat	(-5.3770)	(3.5943)	(-0.0629)	(-2.2048)	(-0.4466)			**Adjusted R squared**	0.35%
Beta Time and Industry Fixed Effects	-0.1381	0.0077	**0.0009**	**-0.0155**	0.0035			**Number of observations**	3033
T-stat	(-3.5740)	(3.4959)	(1.7506)	(-2.5504)	(1.0436)			**Adjusted R squared**	22.24%
Beta without Fixed Effects	**-0.1291**	0.0063	-0.0005	**-0.0305**		**-0.0331**		**Number of observations**	2102
T-stat	(-3.6780)	(2.6098)	(-0.7663)	(-3.5591)		(-2.6724)		**Adjusted R²**	1.16%
Beta Time Fixed Effects	**-0.0469**	**0.0061**	0.0002	**-0.0235**		**-0.0349**		**Number of observations**	2102
T-stat	(-1.4325)	(2.9295)	(0.2714)	(-3.0703)		(-3.2249)		**Adjusted R²**	25.54%
Beta Industry Fixed Effects	**-0.1781**	0.0080	-0.0006	**-0.0294**		**-0.0253**		**Number of observations**	2102
T-stat	(-3.6612)	(2.5310)	(-0.7605)	(-3.2953)		(-1.7620)		**Adjusted R²**	0.94%
Beta Time and Industry Fixed Effects	**-0.0896**	**0.0077**	0.0003	**-0.0226**		-0.0249		**Number of observations**	2102
T-stat	(-2.0246)	(2.8021)	(0.4355)	(-2.8402)		(-1.9840)		**Adjusted R²**	25.42%
Beta without Fixed Effects	**-0.1730**	**0.0082**	-0.0003	**-0.0150**			-0.0174	**Number of observations**	3071
T-stat	(-6.0183)	(4.1031)	(-0.5796)	(-2.3584)			(-1.6006)	**Adjusted R²**	0.63%
Beta Time Fixed Effects	**-0.0818**	**0.0081**	0.0003	**-0.0139**			-0.0110	**Number of observations**	3071
T-stat	(-2.9390)	(4.6082)	(0.7975)	(-2.4240)			(-1.1424)	**Adjusted R²**	22.15%
Beta Industry Fixed Effects	**-0.2226**	**0.0083**	-0.0002	**-0.0154**			-0.0202	**Number of observations**	3071
T-stat	(-6.0401)	(3.4244)	(-0.3823)	(-2.3625)			(-1.6131)	**Adjusted R²**	0.56%
Beta Time and Industry Fixed Effects	**-0.1237**	**0.0075**	0.0006	**-0.0140**			-0.0190	**Number of observations**	3071
T-stat	(-3.5647)	(3.4542)	(1.250)	(-2.3841)			(-1.7029)	**Adjusted R²**	22.29%

Table 28

Regression set 28: Negative conditional skewness (NCSKEW) for firms with no analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	-0.4148	-0.0534	0.0021	153.8543	-8.0729	0.0263	0.0123	-0.0216				**Number of observations**	273
T-stat	(-0.2967)	(-0.8147)	(0.1016)	(0.9160)	(-1.0838)	(0.2787)	(0.9014)	(-0.1161)				**Adjusted R²**	-1.18%
Beta Time Fixed Effects	-0.7458	-0.0326	0.0137	145.3992	-11.5392	0.0775	0.0054	0.0634				**Number of observations**	273
T-stat	(-0.5078)	(-0.4931)	(0.6522)	(0.8626)	(-1.4339)	(0.7992)	(0.3887)	(0.3364)				**Adjusted R²**	3.64%
Beta Industry Fixed Effects	0.7280	**-0.1750**	0.0003	270.3041	-4.8446	-0.0298	0.0092	-0.3125				**Number of observations**	273
T-stat	(0.4077)	(-2.3447)	(0.0125)	(1.4661)	(-0.5389)	(-0.2463)	(0.4929)	(-1.4284)				**Adjusted R²**	-3.07%
Beta Time and Industry Fixed Effects	1.7479	-0.1420	0.0207	203.7537	-13.0158	-0.0442	0.0031	-0.1912				**Number of observations**	273
T-stat	(0.8916)	(-1.8649)	(0.8507)	(1.0845)	(-1.2927)	(-0.3516)	(0.1599)	(-0.8626)				**Adjusted R²**	0.36%
Beta without Fixed Effects	-0.7611	-0.0498	0.0018	126.6571	-8.5548	0.0331	0.0108	-0.0430	0.2504			**Number of observations**	273
T-stat	(-0.5334)	(-0.7605)	(0.0873)	(0.7478)	(-1.1477)	(0.3499)	(0.7844)	(-0.2302)	(1.1916)			**Adjusted R²**	-1.02%
Beta Time Fixed Effects	-1.2626	-0.0305	0.0136	121.4787	-12.2022	0.0853	0.0032	0.0375	0.2948			**Number of observations**	273
T-stat	(-0.8371)	(-0.4586)	(0.6475)	(0.7111)	(-1.5152)	(0.8792)	(0.2262)	(0.1984)	(1.3869)			**Adjusted R²**	3.81%
Beta Industry Fixed Effects	-0.0054	**-0.1697**	0.0018	244.9355	-6.1537	-0.0171	0.0122	-0.3367	0.3799			**Number of observations**	273
T-stat	(-0.0029)	(-2.2721)	(0.0775)	(1.3218)	(-0.6805)	(-0.1410)	(0.6476)	(-1.5347)	(1.2310)			**Adjusted R²**	-2.83%
Beta Time and Industry Fixed Effects	0.4985	-0.1364	0.0219	163.8241	-15.0681	-0.0139	0.0076	-0.2242	0.5486			**Number of observations**	273
T-stat	(0.2367)	(-1.7830)	(0.9019)	(0.8594)	(-1.4885)	(-0.1097)	(0.3956)	(-1.010)	(1.6865)			**Adjusted R²**	0.83%
Beta without Fixed Effects	-0.8109	-0.0811	-0.0135	-9.3252	-3.6704	0.0624	0.0062	0.1700		-0.2204		**Number of observations**	166
T-stat	(-0.4169)	(-0.9350)	(-0.4089)	(-0.0467)	(-0.3053)	(0.4764)	(0.2987)	(0.6126)		(-0.7097)		**Adjusted R²**	-1.99%
Beta Time Fixed Effects	-2.2615	-0.0430	0.0034	6.5480	-2.5360	0.1937	-0.0047	0.3457		-0.2530		**Number of observations**	166
T-stat	(-1.0688)	(-0.4808)	(0.1005)	(0.0324)	(-0.1930)	(1.4059)	(-0.2214)	(1.1764)		(-0.7926)		**Adjusted R²**	2.01%
Beta Industry Fixed Effects	-1.4303	-0.1804	-0.0513	158.4137	13.0463	0.0913	0.0065	0.1983		-0.0094		**Number of observations**	166
T-stat	(-0.5871)	(-1.7373)	(-1.1797)	(0.6992)	(0.9170)	(0.5495)	(0.2557)	(0.5815)		(-0.0142)		**Adjusted R²**	-4.86%
Beta Time and Industry Fixed Effects	-1.5335	-0.1480	-0.0153	98.0069	10.5660	0.1552	-0.0074	0.3728		-0.2513		**Number of observations**	166
T-stat	(-0.5478)	(-1.3320)	(-0.3189)	(0.4149)	(0.6459)	(0.8504)	(-0.2655)	(1.0181)		(-0.3511)		**Adjusted R²**	-4.47%
Beta without Fixed Effects	-1.4971	-0.0855	-0.0096	7.1601	-2.9674	0.0766	0.0142	0.1459			0.3160	**Number of observations**	166
T-stat	(-0.7598)	(-0.9849)	(-0.2919)	(0.0361)	(-0.2478)	(0.5877)	(0.7155)	(0.5184)			(0.6379)	**Adjusted R²**	-2.05%
Beta Time Fixed Effects	-3.1401	-0.0457	0.0058	20.9608	-0.5538	0.2137	0.0038	0.3228			0.3379	**Number of observations**	166
T-stat	(-1.4568)	(-0.5098)	(0.1683)	(0.1045)	(-0.0425)	(1.5504)	(0.1854)	(1.0870)			(0.6654)	**Adjusted R²**	1.89%
Beta Industry Fixed Effects	-1.7721	-0.1802	-0.0429	138.8950	10.4544	0.0662	0.0180	0.1588			0.7151	**Number of observations**	166
T-stat	(-0.7240)	(-1.7430)	(-0.9754)	(0.6148)	(0.7287)	(0.3975)	(0.660)	(0.4656)			(1.0431)	**Adjusted R²**	-3.94%
Beta Time and Industry Fixed Effects	-2.0473	-0.1469	-0.0061	74.1155	8.8443	0.1296	0.0066	0.3390			0.8616	**Number of observations**	166
T-stat	(-0.7264)	(-1.3310)	(-0.1255)	(0.3156)	(0.5421)	(0.7216)	(0.2316)	(0.9288)			(1.1994)	**Adjusted R²**	-3.23%

Table 29

Regression set 29: Negative conditional skewness (NCSKEW) for firms with no analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	-0.4148	-0.0534	0.0021	153.8543	-8.0729	0.0263	0.0123	-0.0216				**Number of observations**	273
T-stat	(-0.2967)	(-0.8147)	(0.1016)	(0.9160)	(-1.0838)	(0.2787)	(0.9014)	(-0.1161)				**Adjusted R²**	-1.18%
Beta Time Fixed Effects	-0.7458	-0.0326	0.0137	145.3992	-11.5392	0.0775	0.0054	0.0634				**Number of observations**	273
T-stat	(-0.5078)	(-0.4931)	(0.6522)	(0.8626)	(-1.4339)	(0.7992)	(0.3887)	(0.3364)				**Adjusted R²**	3.64%
Beta Industry Fixed Effects	0.7280	**-0.1750**	0.0003	270.3041	-4.8446	-0.0298	0.0092	-0.3125				**Number of observations**	273
T-stat	(0.4077)	(-2.3447)	(0.0125)	(1.4661)	(-0.5389)	(-0.2463)	(0.4929)	(-1.4284)				**Adjusted R²**	-3.07%
Beta Time and Industry Fixed Effects	1.7479	-0.1420	0.0207	203.7537	-13.0158	-0.0442	0.0031	-0.1912				**Number of observations**	273
T-stat	(0.8916)	(-1.8649)	(0.8507)	(1.0845)	(-1.2927)	(-0.3516)	(0.1599)	(-0.8626)				**Adjusted R²**	0.36%
Beta without Fixed Effects	-0.7611	-0.0498	0.0018	126.6571	-8.5548	0.0331	0.0108	-0.0430	0.2504			**Number of observations**	273
T-stat	(-0.5334)	(-0.7605)	(0.0873)	(0.7478)	(-1.1477)	(0.3499)	(0.7844)	(-0.2302)	(1.1916)			**Adjusted R²**	-1.02%
Beta Time Fixed Effects	-1.2626	-0.0305	0.0136	121.4787	-12.2022	0.0853	0.0032	0.0375	0.2948			**Number of observations**	273
T-stat	(-0.8371)	(-0.4586)	(0.6475)	(0.7111)	(-1.5152)	(0.8792)	(0.2262)	(0.1984)	(1.3869)			**Adjusted R²**	3.81%
Beta Industry Fixed Effects	-0.0054	**-0.1697**	0.0018	244.9355	-6.1537	-0.0171	0.0122	-0.3367	0.3799			**Number of observations**	273
T-stat	(-0.0029)	(-2.2721)	(0.0775)	(1.3218)	(-0.6805)	(-0.1410)	(0.6476)	(-1.5347)	(1.2310)			**Adjusted R²**	-2.83%
Beta Time and Industry Fixed Effects	0.4985	-0.1364	0.0219	163.8241	-15.0681	-0.0139	0.0076	-0.2242	0.5486			**Number of observations**	273
T-stat	(0.2367)	(-1.7830)	(0.9019)	(0.8594)	(-1.4885)	(-0.1097)	(0.3956)	(-1.010)	(1.6865)			**Adjusted R²**	0.83%
Beta without Fixed Effects	-0.6797	-0.0845	-0.0136	40.1419	-5.0136	0.0306	0.0174	0.0480		0.1353		**Number of observations**	162
T-stat	(-0.3914)	(-0.9931)	(-0.4399)	(0.2176)	(-0.4441)	(0.2727)	(0.9248)	(0.1815)		(0.4847)		**Adjusted R²**	-2.53%
Beta Time Fixed Effects	-1.6167	-0.0531	-0.0043	32.3049	-6.5145	0.0982	0.0013	0.1091		0.0211		**Number of observations**	162
T-stat	(-0.8428)	(-0.6009)	(-0.1332)	(0.1717)	(-0.5180)	(0.8127)	(0.0644)	(0.3756)		(0.0719)		**Adjusted R²**	-0.06%
Beta Industry Fixed Effects	-0.8685	-0.1668	-0.0480	185.9773	6.7410	0.0376	0.0167	0.0083		0.3762		**Number of observations**	162
T-stat	(-0.4009)	(-1.5834)	(-1.2041)	(0.9185)	(0.5066)	(0.2624)	(0.7240)	(0.0261)		(0.7296)		**Adjusted R²**	-1.97%
Beta Time and Industry Fixed Effects	-1.0606	-0.1263	-0.0218	190.6926	-0.5293	0.0480	0.0118	0.0121		0.1523		**Number of observations**	162
T-stat	(-0.4045)	(-1.1067)	(-0.4889)	(0.8925)	(-0.0334)	(0.2930)	(0.4573)	(0.0339)		(0.2530)		**Adjusted R²**	-3.62%
Beta without Fixed Effects	-1.7904	-0.0919	-0.0127	35.1350	-5.7028	0.0608	0.0199	-0.0533			**0.8625**	**Number of observations**	162
T-stat	(-1.0183)	(-1.0952)	(-0.4177)	(0.1958)	(-0.5133)	(0.5518)	(1.1193)	(-0.2003)			(2.0218)	**Adjusted R²**	-0.01%
Beta Time Fixed Effects	-3.0903	-0.0595	-0.0015	34.4840	-6.4507	0.1435	0.0071	0.0019			**0.9552**	**Number of observations**	162
T-stat	(-1.6065)	(-0.6871)	(-0.0465)	(0.1896)	(-0.5264)	(1.2025)	(0.3788)	(0.0065)			(2.2331)	**Adjusted R²**	3.40%
Beta Industry Fixed Effects	-1.8064	-0.1725	-0.0381	164.2777	2.9461	0.0322	0.0297	-0.0688			**1.1577**	**Number of observations**	162
T-stat	(-0.8318)	(-1.6642)	(-0.9592)	(0.8220)	(0.2236)	(0.2346)	(1.2478)	(-0.2193)			(1.9085)	**Adjusted R²**	0.61%
Beta Time and Industry Fixed Effects	-2.4044	-0.1190	-0.0070	167.1706	-4.9643	0.0559	0.0277	-0.0414			**1.3783**	**Number of observations**	162
T-stat	(-0.9217)	(-1.0739)	(-0.1589)	(0.8022)	(-0.3193)	(0.3503)	(1.0647)	(-0.1204)			(2.2331)	**Adjusted R²**	1.02%

Table 30

Regression set 30: Negative conditional skewness (NCSKEW) for firms with no analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio, and the relative yearly rank of the Net Debt to Total Assets ratio. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. Yearly rank EBITDA / Net debt	rel. Yearly rank interest cover	rel. yearly rank ND / Assets		
Beta without Fixed Effects	-0.4148	-0.0534	0.0021	153.8543	-8.0729	0.0263	0.0123	-0.0216				**Number of observations**	273
T-stat	(-0.2967)	(-0.8147)	(0.1016)	(0.9160)	(-1.0838)	(0.2787)	(0.9014)	(-0.1161)				**Adjusted R²**	-1.18%
Beta Time Fixed Effects	-0.7458	-0.0326	0.0137	145.3992	-11.5392	0.0775	0.0054	0.0634				**Number of observations**	273
T-stat	(-0.5078)	(-0.4931)	(0.6522)	(0.8626)	(-1.4339)	(0.7992)	(0.3887)	(0.3364)				**Adjusted R²**	3.64%
Beta Industry Fixed Effects	0.7280	**-0.1750**	0.0003	270.3041	-4.8446	-0.0298	0.0092	-0.3125				**Number of observations**	273
T-stat	(0.4077)	(-2.3447)	(0.0125)	(1.4661)	(-0.5389)	(-0.2463)	(0.4929)	(-1.4284)				**Adjusted R²**	-3.07%
Beta Time and Industry Fixed Effects	1.7479	-0.1420	0.0207	203.7537	-13.0158	-0.0442	0.0031	-0.1912				**Number of observations**	273
T-stat	(0.8916)	(-1.8649)	(0.8507)	(1.0845)	(-1.2927)	(-0.3516)	(0.1599)	(-0.8626)				**Adjusted R²**	0.36%
Beta without Fixed Effects	1.4020	-0.0974	0.0044	-131.6916	-21.0651	-0.1156	0.0209	**-0.6107**	0.3835			**Number of observations**	108
T-stat	(0.8120)	(-0.8030)	(0.0668)	(-0.2471)	(-1.9302)	(-1.0491)	(0.8949)	(-2.1651)	(1.3099)			**Adjusted R²**	-0.88%
Beta Time Fixed Effects	0.0443	-0.1264	0.0551	9.5888	**-27.9334**	-0.0309	0.0129	**-0.7756**	0.4327			**Number of observations**	108
T-stat	(0.0241)	(-1.0061)	(0.7940)	(0.0173)	(-2.3099)	(-0.2717)	(0.5337)	(-2.4671)	(1.4367)			**Adjusted R²**	7.15%
Beta Industry Fixed Effects	0.7238	-0.2935	0.0092	-266.2920	**-41.3671**	-0.2253	**0.0857**	**-0.8308**	-0.0459			**Number of observations**	108
T-stat	(0.2462)	(-1.8573)	(0.1098)	(-0.3835)	(-2.7912)	(-1.3082)	(2.5464)	(-2.5401)	(-0.1122)			**Adjusted R²**	-3.70%
Beta Time and Industry Fixed Effects	-1.7245	**-0.3816**	0.0782	161.4740	**-56.3381**	-0.0815	**0.0899**	**-1.1547**	0.1474			**Number of observations**	108
T-stat	(-0.4972)	(-2.2732)	(0.8751)	(0.2248)	(-3.2508)	(-0.4460)	(2.4293)	(-3.0015)	(0.3589)			**Adjusted R²**	7.22%
Beta without Fixed Effects	-0.1149	-0.0929	0.0045	214.1909	-12.8285	0.0271	0.0235	-0.2878		-0.2274		**Number of observations**	172
T-stat	(-0.0629)	(-1.0429)	(0.1893)	(0.9856)	(-1.3522)	(0.2326)	(1.3371)	(-1.1613)		(-0.5536)		**Adjusted R²**	-1.73%
Beta Time Fixed Effects	-0.9688	-0.0867	0.0097	231.2390	-11.8596	0.0836	0.0199	-0.1293		-0.2508		**Number of observations**	172
T-stat	(-0.4936)	(-0.9472)	(0.3851)	(1.0183)	(-1.1422)	(0.6725)	(1.0628)	(-0.5001)		(-0.5854)		**Adjusted R²**	-2.03%
Beta Industry Fixed Effects	3.4878	**-0.2676**	0.0041	350.1629	-15.4600	-0.1146	0.0127	**-0.7365**		-0.3356		**Number of observations**	172
T-stat	(1.3276)	(-2.6135)	(0.1531)	(1.3669)	(-1.3356)	(-0.6828)	(0.4747)	(-2.3790)		(-0.6685)		**Adjusted R²**	-1.28%
Beta Time and Industry Fixed Effects	3.7519	**-0.2917**	0.0236	348.0054	-16.8523	-0.1117	0.0154	**-0.7010**		-0.5650		**Number of observations**	172
T-stat	(1.2406)	(-2.6071)	(0.7985)	(1.2521)	(-1.2969)	(-0.6021)	(0.5326)	(-2.0634)		(-1.0410)		**Adjusted R²**	-2.94%
Beta without Fixed Effects	-0.7830	-0.0561	0.0020	115.4544	-8.0716	0.0326	0.0099	-0.0447			0.2532	**Number of observations**	273
T-stat	(-0.5512)	(-0.8577)	(0.0985)	(0.6795)	(-1.0855)	(0.3457)	(0.7175)	(-0.2394)			(1.3911)	**Adjusted R²**	-0.83%
Beta Time Fixed Effects	-1.2275	-0.0376	0.0140	114.4657	-11.4573	0.0841	0.0027	0.0407			0.2511	**Number of observations**	273
T-stat	(-0.8155)	(-0.5665)	(0.6636)	(0.6664)	(-1.4228)	(0.8668)	(0.1910)	(0.2155)			(1.3588)	**Adjusted R²**	3.78%
Beta Industry Fixed Effects	0.0372	**-0.1752**	0.0015	229.4652	-5.8193	-0.0186	0.0124	-0.3216			0.3355	**Number of observations**	273
T-stat	(0.020)	(-2.350)	(0.0654)	(1.2277)	(-0.6458)	(-0.1535)	(0.6559)	(-1.4715)			(1.2689)	**Adjusted R²**	-2.78%
Beta Time and Industry Fixed Effects	0.7523	-0.1448	0.0216	151.9920	-14.0614	-0.0216	0.0075	-0.2006			0.4046	**Number of observations**	273
T-stat	(0.3604)	(-1.8943)	(0.8856)	(0.7869)	(-1.3934)	(-0.1705)	(0.3843)	(-0.9051)			(1.4625)	**Adjusted R²**	0.50%

Table 31

Regression set 31: Negative conditional skewness (NCSKEW) for firms with no analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. Yearly rank current ratio	piotroski		
Beta without Fixed Effects	-0.4148	-0.0534	0.0021	153.8543	-8.0729	0.0263	0.0123	-0.0216			**Number of observations**	273
T-stat	(-0.2967)	(-0.8147)	(0.1016)	(0.9160)	(-1.0838)	(0.2787)	(0.9014)	(-0.1161)			**Adjusted R²**	-1.18%
Beta Time Fixed Effects	-0.7458	-0.0326	0.0137	145.3992	-11.5392	0.0775	0.0054	0.0634			**Number of observations**	273
T-stat	(-0.5078)	(-0.4931)	(0.6522)	(0.8626)	(-1.4339)	(0.7992)	(0.3887)	(0.3364)			**Adjusted R²**	3.64%
Beta Industry Fixed Effects	0.7280	**-0.1750**	0.0003	270.3041	-4.8446	-0.0298	0.0092	-0.3125			**Number of observations**	273
T-stat	(0.4077)	(-2.3447)	(0.0125)	(1.4661)	(-0.5389)	(-0.2463)	(0.4929)	(-1.4284)			**Adjusted R²**	-3.07%
Beta Time and Industry Fixed Effects	1.7479	-0.1420	0.0207	203.7537	-13.0158	-0.0442	0.0031	-0.1912			**Number of observations**	273
T-stat	(0.8916)	(-1.8649)	(0.8507)	(1.0845)	(-1.2927)	(-0.3516)	(0.1599)	(-0.8626)			**Adjusted R²**	0.36%
Beta without Fixed Effects	-0.2485	-0.0525	0.0038	137.4702	-8.2942	0.0248	0.0124	-0.0372	-0.1528		**Number of observations**	272
T-stat	(-0.1787)	(-0.8056)	(0.1887)	(0.8233)	(-1.1204)	(0.2638)	(0.9121)	(-0.1991)	(-0.9144)		**Adjusted R²**	-1.21%
Beta Time Fixed Effects	-0.6509	-0.0350	0.0161	146.9023	-11.8609	0.0683	0.0059	0.0465	-0.1425		**Number of observations**	272
T-stat	(-0.4335)	(-0.5264)	(0.7585)	(0.8674)	(-1.4692)	(0.7015)	(0.4189)	(0.2440)	(-0.8328)		**Adjusted R²**	2.18%
Beta Industry Fixed Effects	0.6175	**-0.1699**	0.0009	260.9314	-4.4087	-0.0211	0.0104	-0.2913	-0.0899		**Number of observations**	272
T-stat	(0.3450)	(-2.2828)	(0.0393)	(1.4080)	(-0.4921)	(-0.1747)	(0.5473)	(-1.3288)	(-0.3485)		**Adjusted R²**	-3.77%
Beta Time and Industry Fixed Effects	1.6301	-0.1413	0.0214	201.0129	-12.9145	-0.0412	0.0048	-0.1708	-0.0802		**Number of observations**	272
T-stat	(0.8061)	(-1.8433)	(0.8690)	(1.0513)	(-1.2804)	(-0.3262)	(0.2453)	(-0.7650)	(-0.3050)		**Adjusted R²**	-1.29%
Beta without Fixed Effects	-0.7878	-0.1085	0.0072	86.6851	-20.9564	0.0566	0.0252	-0.4433		0.0540	**Number of observations**	124
T-stat	(-0.4005)	(-1.0386)	(0.1650)	(0.3580)	(-1.7203)	(0.4540)	(1.3952)	(-1.4379)		(0.4910)	**Adjusted R²**	-1.28%
Beta Time Fixed Effects	-1.6882	-0.0790	0.0297	126.4794	-19.1382	0.1174	0.0219	-0.2404		0.0835	**Number of observations**	124
T-stat	(-0.7730)	(-0.7281)	(0.6214)	(0.4907)	(-1.4054)	(0.8487)	(1.1193)	(-0.7195)		(0.6657)	**Adjusted R²**	-2.62%
Beta Industry Fixed Effects	0.8631	-0.1911	0.0109	161.9504	-25.7009	0.0274	0.0334	-0.6896		0.0651	**Number of observations**	124
T-stat	(0.3020)	(-1.5621)	(0.2133)	(0.5404)	(-1.7220)	(0.1478)	(1.1150)	(-1.8207)		(0.4793)	**Adjusted R²**	-4.60%
Beta Time and Industry Fixed Effects	-0.0998	-0.1490	0.0653	168.2951	-30.8878	0.1347	0.0347	-0.5037		0.0355	**Number of observations**	124
T-stat	(-0.0273)	(-1.1448)	(1.1520)	(0.5026)	(-1.7551)	(0.5885)	(1.0704)	(-1.1771)		(0.2242)	**Adjusted R²**	-5.87%

Table 32

Regression set 32: Negative conditional skewness (NCSKEW) for firms with analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of the Operating Cash Flow to revenue ratio (rel. yearly rank 5y stdev OCF/Revenue), and the relative average yearly rank of the previous two ratios. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev OCF / Revenue	rel. Avg .yearly rank ND and OCF		
Beta without Fixed Effects	**-1.2799**	0.0549	0.0004	-278.5334	-3.4957	**0.0813**	0.0086	**0.2003**				**Number of observations**	2009
T-stat	(-3.8759)	(1.8890)	(0.0275)	(-1.8994)	(-0.9744)	(4.2449)	(1.5857)	(2.8147)				**Adjusted R²**	2.35%
Beta Time Fixed Effects	**-1.3198**	0.0415	0.0021	**-297.2602**	-0.6590	**0.0840**	0.0065	**0.1664**				**Number of observations**	2009
T-stat	(-3.6227)	(1.3950)	(0.1558)	(-2.0039)	(-0.1416)	(4.1916)	(1.1946)	(2.1909)				**Adjusted R²**	3.51%
Beta Industry Fixed Effects	**-1.7879**	**0.0172**	-0.0013	**-352.2237**	-4.0850	**0.0946**	0.0087	**0.2249**				**Number of observations**	2009
T-stat	(-4.3066)	(0.5841)	(-0.0986)	(-2.2982)	(-1.1015)	(3.9660)	(1.5191)	(3.1296)				**Adjusted R²**	3.93%
Beta Time and Industry Fixed Effects	**-1.7376**	0.0049	0.0001	**-362.2228**	-1.2538	**0.0911**	0.0072	**0.1937**				**Number of observations**	2009
T-stat	(-3.8819)	(0.1617)	(0.010)	(-2.3443)	(-0.2508)	(3.6663)	(1.2523)	(2.5183)				**Adjusted R²**	4.99%
Beta without Fixed Effects	**-1.3273**	0.0495	0.0009	-288.3843	-3.7151	**0.0829**	0.0079	**0.1936**	0.0367			**Number of observations**	2001
T-stat	(-3.9025)	(1.6883)	(0.0670)	(-1.9622)	(-1.0315)	(4.2767)	(1.4533)	(2.7083)	(0.6692)			**Adjusted R²**	2.28%
Beta Time Fixed Effects	**-1.4460**	0.0362	0.0032	**-300.7185**	-1.6876	**0.0839**	0.0059	**0.1546**	0.0453			**Number of observations**	2001
T-stat	(-3.8743)	(1.2048)	(0.2373)	(-2.0245)	(-0.3584)	(4.1518)	(1.0706)	(2.0202)	(0.8235)			**Adjusted R²**	3.54%
Beta Industry Fixed Effects	**-1.8078**	**0.0130**	-0.0012	**-356.0769**	-4.2209	**0.0939**	0.0086	**0.2194**	0.0252			**Number of observations**	2001
T-stat	(-4.2321)	(0.4376)	(-0.0869)	(-2.3195)	(-1.1356)	(3.9248)	(1.4937)	(3.0392)	(0.3909)			**Adjusted R²**	3.83%
Beta Time and Industry Fixed Effects	**-1.8378**	0.0007	0.0010	**-358.6362**	-2.3014	**0.0884**	0.0071	**0.1814**	0.0448			**Number of observations**	2001
T-stat	(-4.0159)	(0.0220)	(0.0742)	(-2.3173)	(-0.4571)	(3.5431)	(1.2378)	(2.3405)	(0.6868)			**Adjusted R²**	4.96%
Beta without Fixed Effects	**-0.9364**	0.0383	-0.0245	**-375.1958**	-6.1018	**0.0736**	0.0093	**0.2039**		-0.0949		**Number of observations**	1526
T-stat	(-2.3478)	(1.1470)	(-0.980)	(-2.1768)	(-1.2926)	(3.2948)	(1.3632)	(2.2042)		(-1.3151)		**Adjusted R²**	2.24%
Beta Time Fixed Effects	**-1.1412**	0.0328	-0.0168	**-373.8955**	-5.0568	**0.0736**	0.0085	0.1771		-0.0784		**Number of observations**	1526
T-stat	(-2.5194)	(0.9677)	(-0.5992)	(-2.1582)	(-0.7673)	(3.1029)	(1.2423)	(1.7789)		(-1.0736)		**Adjusted R²**	3.10%
Beta Industry Fixed Effects	**-1.3625**	-0.0061	-0.0273	**-418.2769**	-6.2197	**0.0771**	0.0104	**0.2481**		-0.0645		**Number of observations**	1526
T-stat	(-2.7623)	(-0.1807)	(-1.0836)	(-2.3453)	(-1.3061)	(2.6716)	(1.4166)	(2.6340)		(-0.7171)		**Adjusted R²**	5.67%
Beta Time and Industry Fixed Effects	**-1.4536**	-0.0101	-0.0185	**-416.1019**	-5.2776	**0.0723**	0.0099	**0.2321**		-0.0326		**Number of observations**	1526
T-stat	(-2.6986)	(-0.2966)	(-0.6536)	(-2.3246)	(-0.7722)	(2.3956)	(1.3539)	(2.2787)		(-0.3543)		**Adjusted R²**	6.45%
Beta without Fixed Effects	**-1.0204**	0.0354	-0.0255	**-348.7262**	-4.8243	**0.0702**	0.0108	**0.1999**			-0.0146	**Number of observations**	1522
T-stat	(-2.4668)	(1.0523)	(-1.0113)	(-2.0350)	(-1.0401)	(3.1443)	(1.5862)	(2.1480)			(-0.1462)	**Adjusted R²**	2.12%
Beta Time Fixed Effects	**-1.2795**	0.0293	-0.0167	**-353.9457**	-3.2312	**0.0723**	0.0097	0.1751			0.0141	**Number of observations**	1522
T-stat	(-2.7712)	(0.8579)	(-0.5893)	(-2.0522)	(-0.5016)	(3.0420)	(1.4209)	(1.7457)			(0.1410)	**Adjusted R²**	3.03%
Beta Industry Fixed Effects	**-1.3807**	-0.0089	-0.0278	**-407.1490**	-5.5188	**0.0729**	0.0110	**0.2431**			0.0112	**Number of observations**	1522
T-stat	(-2.7394)	(-0.2635)	(-1.0994)	(-2.2816)	(-1.1740)	(2.5443)	(1.5084)	(2.5626)			(0.0906)	**Adjusted R²**	5.63%
Beta Time and Industry Fixed Effects	**-1.5112**	-0.0138	-0.0175	**-407.1042**	-4.5578	**0.0692**	0.0104	**0.2253**			0.0510	**Number of observations**	1522
T-stat	(-2.7606)	(-0.4008)	(-0.6142)	(-2.2723)	(-0.6741)	(2.2990)	(1.4281)	(2.1907)			(0.4122)	**Adjusted R²**	6.45%

Table 33

Regression set 33: Negative conditional skewness (NCSKEW) for firms with analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the Net Debt to Market Cap ratio, the relative yearly rank of the five-year standard deviation of EBITDA to revenue ratio (rel. yearly rank 5y stdev EBITDA/Revenue), and the relative average yearly rank of the previous two ratios. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. yearly rank ND / MCAP	rel. yearly rank 5y stdev EBITDA / Revenue	rel. Avg .yearly rank ND and EBITDA		
Beta without Fixed Effects	**-1.2799**	0.0549	0.0004	-278.5334	-3.4957	**0.0813**	0.0086	**0.2003**				**Number of observations**	2009
T-stat	(-3.8759)	(1.8890)	(0.0275)	(-1.8994)	(-0.9744)	(4.2449)	(1.5857)	(2.8147)				**Adjusted R²**	2.35%
Beta Time Fixed Effects	**-1.3198**	0.0415	0.0021	**-297.2602**	-0.6590	**0.0840**	0.0065	**0.1664**				**Number of observations**	2009
T-stat	(-3.6227)	(1.3950)	(0.1558)	(-2.0039)	(-0.1416)	(4.1916)	(1.1946)	(2.1909)				**Adjusted R²**	3.51%
Beta Industry Fixed Effects	**-1.7879**	**0.0172**	-0.0013	**-352.2237**	-4.0850	**0.0946**	0.0087	**0.2249**				**Number of observations**	2009
T-stat	(-4.3066)	(0.5841)	(-0.0986)	(-2.2982)	(-1.1015)	(3.9660)	(1.5191)	(3.1296)				**Adjusted R²**	3.93%
Beta Time and Industry Fixed Effects	**-1.7376**	0.0049	0.0001	**-362.2228**	-1.2538	**0.0911**	0.0072	**0.1937**				**Number of observations**	2009
T-stat	(-3.8819)	(0.1617)	(0.010)	(-2.3443)	(-0.2508)	(3.6663)	(1.2523)	(2.5183)				**Adjusted R²**	4.99%
Beta without Fixed Effects	**-1.3273**	0.0495	0.0009	-288.3843	-3.7151	**0.0829**	0.0079	**0.1936**	0.0367			**Number of observations**	2001
T-stat	(-3.9025)	(1.6883)	(0.0670)	(-1.9622)	(-1.0315)	(4.2767)	(1.4533)	(2.7083)	(0.6692)			**Adjusted R²**	2.28%
Beta Time Fixed Effects	**-1.4460**	0.0362	0.0032	**-300.7185**	-1.6876	**0.0839**	0.0059	**0.1546**	0.0453			**Number of observations**	2001
T-stat	(-3.8743)	(1.2048)	(0.2373)	(-2.0245)	(-0.3584)	(4.1518)	(1.0706)	(2.0202)	(0.8235)			**Adjusted R²**	3.54%
Beta Industry Fixed Effects	**-1.8078**	**0.0130**	-0.0012	**-356.0769**	-4.2209	**0.0939**	0.0086	**0.2194**	0.0252			**Number of observations**	2001
T-stat	(-4.2321)	(0.4376)	(-0.0869)	(-2.3195)	(-1.1356)	(3.9248)	(1.4937)	(3.0392)	(0.3909)			**Adjusted R²**	3.83%
Beta Time and Industry Fixed Effects	**-1.8378**	0.0007	0.0010	**-358.6362**	-2.3014	**0.0884**	0.0071	**0.1814**	0.0448			**Number of observations**	2001
T-stat	(-4.0159)	(0.0220)	(0.0742)	(-2.3173)	(-0.4571)	(3.5431)	(1.2378)	(2.3405)	(0.6868)			**Adjusted R²**	4.96%
Beta without Fixed Effects	**-0.9343**	**0.0688**	-0.0330	**-381.5756**	-4.2065	**0.0704**	0.0103	**0.2507**		-0.0880		**Number of observations**	1616
T-stat	(-2.5232)	(2.2199)	(-1.4258)	(-2.3790)	(-0.9820)	(3.4979)	(1.6214)	(3.1421)		(-1.3414)		**Adjusted R²**	2.89%
Beta Time Fixed Effects	**-1.1424**	0.0576	-0.0248	**-377.9592**	-3.5842	**0.0708**	0.0091	**0.1941**		-0.0659		**Number of observations**	1616
T-stat	(-2.7212)	(1.8275)	(-0.9512)	(-2.3462)	(-0.6068)	(3.3148)	(1.4269)	(2.2236)		(-0.9907)		**Adjusted R²**	3.74%
Beta Industry Fixed Effects	**-1.4939**	0.0147	-0.0280	**-443.3096**	-5.3376	**0.0884**	0.0096	**0.2700**		-0.1009		**Number of observations**	1616
T-stat	(-3.3766)	(0.4742)	(-1.2154)	(-2.6965)	(-1.2458)	(3.4801)	(1.4131)	(3.3793)		(-1.3065)		**Adjusted R²**	8.03%
Beta Time and Industry Fixed Effects	**-1.5742**	0.0055	-0.0182	**-438.5073**	-5.1466	**0.0831**	0.0087	**0.2253**		-0.0673		**Number of observations**	1616
T-stat	(-3.2643)	(0.1740)	(-0.7013)	(-2.6590)	(-0.8433)	(3.1457)	(1.2823)	(2.5692)		(-0.8554)		**Adjusted R²**	8.72%
Beta without Fixed Effects	**-1.0733**	0.0663	-0.0340	**-354.0362**	-2.6276	**0.0702**	0.0109	**0.2453**			-0.0052	**Number of observations**	1612
T-stat	(-2.8390)	(2.1202)	(-1.4632)	(-2.2212)	(-0.6340)	(3.4610)	(1.7208)	(3.0542)			(-0.0585)	**Adjusted R²**	2.77%
Beta Time Fixed Effects	**-1.3241**	0.0546	-0.0250	**-358.9867**	-1.5923	**0.0724**	0.0093	**0.1904**			0.0248	**Number of observations**	1612
T-stat	(-3.1505)	(1.7152)	(-0.9544)	(-2.2387)	(-0.2803)	(3.3712)	(1.4657)	(2.1645)			(0.2779)	**Adjusted R²**	3.67%
Beta Industry Fixed Effects	**-1.4977**	0.0121	-0.0302	**-433.1032**	-4.0710	**0.0858**	0.0100	**0.2710**			-0.0608	**Number of observations**	1612
T-stat	(-3.3048)	(0.3857)	(-1.3061)	(-2.6311)	(-0.9804)	(3.3788)	(1.4753)	(3.3662)			(-0.5614)	**Adjusted R²**	7.93%
Beta Time and Industry Fixed Effects	**-1.6169**	0.0025	-0.0192	**-432.0777**	-3.7804	**0.0816**	0.0090	**0.2263**			-0.0221	**Number of observations**	1612
T-stat	(-3.2882)	(0.0786)	(-0.7378)	(-2.6157)	(-0.6364)	(3.0870)	(1.3302)	(2.5573)			(-0.2022)	**Adjusted R²**	8.67%

Table 34

Regression set 34: Negative conditional skewness (NCSKEW) for firms with analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of the EBITDA to Net Debt ratio, the relative yearly rank of the interest coverage ratio, and the relative yearly rank of the Net Debt to Total Assets ratio. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. Yearly rank EBITDA / Net debt	rel. Yearly rank interest cover	rel. yearly rank ND / Assets		
Beta without Fixed Effects	**-1.2799**	0.0549	0.0004	-278.5334	-3.4957	**0.0813**	0.0086	**0.2003**				**Number of observations**	2009
T-stat	(-3.8759)	(1.8890)	(0.0275)	(-1.8994)	(-0.9744)	(4.2449)	(1.5857)	(2.8147)				**Adjusted R²**	2.35%
Beta Time Fixed Effects	**-1.3198**	0.0415	0.0021	**-297.2602**	-0.6590	**0.0840**	0.0065	**0.1664**				**Number of observations**	2009
T-stat	(-3.6227)	(1.3950)	(0.1558)	(-2.0039)	(-0.1416)	(4.1916)	(1.1946)	(2.1909)				**Adjusted R²**	3.51%
Beta Industry Fixed Effects	**-1.7879**	0.0172	-0.0013	**-352.2237**	-4.0850	**0.0946**	0.0087	**0.2249**				**Number of observations**	2009
T-stat	(-4.3066)	(0.5841)	(-0.0986)	(-2.2982)	(-1.1015)	(3.9660)	(1.5191)	(3.1296)				**Adjusted R²**	3.93%
Beta Time and Industry Fixed Effects	**-1.7376**	0.0049	0.0001	**-362.2228**	-1.2538	**0.0911**	0.0072	**0.1937**				**Number of observations**	2009
T-stat	(-3.8819)	(0.1617)	(0.010)	(-2.3443)	(-0.2508)	(3.6663)	(1.2523)	(2.5183)				**Adjusted R²**	4.99%
Beta without Fixed Effects	**-1.1944**	**0.1009**	0.0029	-218.2366	-1.7816	**0.0681**	0.0084	0.1664	0.0399			**Number of observations**	1298
T-stat	(-2.8861)	(2.6545)	(0.2178)	(-1.1379)	(-0.3755)	(2.9257)	(1.4293)	(1.9098)	(0.5264)			**Adjusted R²**	1.96%
Beta Time Fixed Effects	**-1.3080**	0.0708	0.0030	-191.5001	3.2894	**0.0751**	0.0072	0.0740	0.0732			**Number of observations**	1298
T-stat	(-2.7787)	(1.8189)	(0.2201)	(-0.9858)	(0.5175)	(3.0522)	(1.2174)	(0.7494)	(0.9561)			**Adjusted R²**	3.40%
Beta Industry Fixed Effects	**-2.0921**	0.0387	0.0029	-304.0155	-3.4985	**0.0997**	0.0096	**0.1931**	0.0274			**Number of observations**	1298
T-stat	(-3.8257)	(1.0089)	(0.2164)	(-1.4849)	(-0.7147)	(3.4390)	(1.4864)	(2.2011)	(0.3306)			**Adjusted R²**	6.04%
Beta Time and Industry Fixed Effects	**-2.2841**	0.0110	0.0033	-249.1485	2.1910	**0.1005**	0.0080	0.1032	0.0676			**Number of observations**	1298
T-stat	(-3.7990)	(0.2792)	(0.2467)	(-1.2022)	(0.3146)	(3.2677)	(1.2405)	(1.0359)	(0.8076)			**Adjusted R²**	7.22%
Beta without Fixed Effects	**-1.5725**	0.0780	-0.0333	-159.1251	-1.4512	**0.0893**	0.0116	0.1157		0.0589		**Number of observations**	1094
T-stat	(-3.1060)	(1.7001)	(-1.1149)	(-0.7476)	(-0.2573)	(3.1621)	(1.5202)	(1.0519)		(0.5723)		**Adjusted R²**	1.77%
Beta Time Fixed Effects	**-2.1057**	0.0651	-0.0277	-289.0574	13.1124	**0.1098**	0.0107	0.1289		0.0184		**Number of observations**	1094
T-stat	(-3.8533)	(1.3961)	(-0.8484)	(-1.3526)	(1.8440)	(3.7001)	(1.4082)	(1.1271)		(0.1794)		**Adjusted R²**	4.19%
Beta Industry Fixed Effects	**-1.7239**	0.0197	-0.0448	-205.7910	-2.0639	**0.0856**	0.0090	0.1352		-0.0079		**Number of observations**	1094
T-stat	(-2.7980)	(0.4160)	(-1.4736)	(-0.9157)	(-0.3523)	(2.5158)	(1.0822)	(1.1928)		(-0.0703)		**Adjusted R²**	3.83%
Beta Time and Industry Fixed Effects	**-2.3293**	0.0022	-0.0394	-279.5501	13.4220	**0.1059**	0.0098	**0.1510**		-0.0366		**Number of observations**	1094
T-stat	(-3.5142)	(0.0456)	(-1.1824)	(-1.2420)	(1.7571)	(2.9399)	(1.1794)	(1.2816)		(-0.3269)		**Adjusted R²**	5.87%
Beta without Fixed Effects	**-1.3528**	0.0495	0.0011	**-294.0574**	-3.8420	**0.0838**	0.0076	**0.1918**			0.0569	**Number of observations**	2001
T-stat	(-3.9772)	(1.6858)	(0.0798)	(-1.9984)	(-1.0659)	(4.3210)	(1.3940)	(2.6830)			(1.0005)	**Adjusted R²**	2.31%
Beta Time Fixed Effects	**-1.4593**	0.0362	0.0033	**-304.6292**	-1.9133	**0.0843**	0.0056	**0.1531**			0.0603	**Number of observations**	2001
T-stat	(-3.9113)	(1.2029)	(0.2459)	(-2.0496)	(-0.4054)	(4.1735)	(1.0217)	(2.0009)			(1.0547)	**Adjusted R²**	3.56%
Beta Industry Fixed Effects	**-1.8299**	0.0130	-0.0011	**-357.1288**	-4.2718	**0.0943**	0.0085	**0.2183**			0.0384	**Number of observations**	2001
T-stat	(-4.2666)	(0.4385)	(-0.0824)	(-2.3270)	(-1.1487)	(3.9386)	(1.4863)	(3.0223)			(0.5756)	**Adjusted R²**	3.84%
Beta Time and Industry Fixed Effects	**-1.8493**	0.0007	0.0010	**-360.0219**	-2.4145	**0.0886**	0.0071	**0.1808**			0.0522	**Number of observations**	2001
T-stat	(-4.0319)	(0.0228)	(0.0729)	(-2.3272)	(-0.4788)	(3.5532)	(1.2262)	(2.3331)			(0.7749)	**Adjusted R²**	4.97%

Table 35

Regression set 35: Negative conditional skewness (NCSKEW) for firms with analyst coverage

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), relative yearly rank of current assets to current liabilities ratio (rel. Yearly rank current ratio), and the Piotroski (2000) F-Score. The latter three variables are of interest, the first seven are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	lagged NCSKEW	DTURN OVER	turnover	st dev	ln mcap	p/b	MOM	rel. Yearly rank current ratio	piotroski		
Beta without Fixed Effects	**-1.2799**	0.0549	0.0004	-278.5334	-3.4957	**0.0813**	0.0086	**0.2003**			**Number of observations**	2009
T-stat	(-3.8759)	(1.8890)	(0.0275)	(-1.8994)	(-0.9744)	(4.2449)	(1.5857)	(2.8147)			**Adjusted R²**	2.35%
Beta Time Fixed Effects	**-1.3198**	0.0415	0.0021	**-297.2602**	-0.6590	**0.0840**	0.0065	**0.1664**			**Number of observations**	2009
T-stat	(-3.6227)	(1.3950)	(0.1558)	(-2.0039)	(-0.1416)	(4.1916)	(1.1946)	(2.1909)			**Adjusted R²**	3.51%
Beta Industry Fixed Effects	**-1.7879**	**0.0172**	-0.0013	**-352.2237**	-4.0850	**0.0946**	0.0087	**0.2249**			**Number of observations**	2009
T-stat	(-4.3066)	(0.5841)	(-0.0986)	(-2.2982)	(-1.1015)	(3.9660)	(1.5191)	(3.1296)			**Adjusted R²**	3.93%
Beta Time and Industry Fixed Effects	**-1.7376**	0.0049	0.0001	**-362.2228**	-1.2538	**0.0911**	0.0072	**0.1937**			**Number of observations**	2009
T-stat	(-3.8819)	(0.1617)	(0.010)	(-2.3443)	(-0.2508)	(3.6663)	(1.2523)	(2.5183)			**Adjusted R²**	4.99%
Beta without Fixed Effects	**-1.3070**	0.0500	0.0008	-276.5229	-3.2610	**0.0806**	0.0086	**0.1932**	0.0241		**Number of observations**	1980
T-stat	(-3.9391)	(1.7020)	(0.0632)	(-1.8892)	(-0.9048)	(4.1673)	(1.5967)	(2.7038)	(0.4212)		**Adjusted R²**	2.24%
Beta Time Fixed Effects	**-1.4025**	0.0388	0.0028	-286.6403	-1.3347	**0.0815**	0.0068	**0.1589**	0.0212		**Number of observations**	1980
T-stat	(-3.7949)	(1.2890)	(0.2059)	(-1.9364)	(-0.2837)	(4.0235)	(1.2577)	(2.0858)	(0.3715)		**Adjusted R²**	3.50%
Beta Industry Fixed Effects	**-1.7590**	**0.0139**	0.0000	**-358.8226**	-4.0038	**0.0920**	0.0089	**0.2167**	0.0050		**Number of observations**	1980
T-stat	(-4.2342)	(0.4684)	(-0.0018)	(-2.3428)	(-1.0769)	(3.8340)	(1.5502)	(3.0043)	(0.0696)		**Adjusted R²**	3.84%
Beta Time and Industry Fixed Effects	**-1.7592**	0.0038	0.0017	**-362.0765**	-2.3808	**0.0869**	0.0075	**0.1844**	0.0061		**Number of observations**	1980
T-stat	(-3.9063)	(0.1254)	(0.1246)	(-2.3442)	(-0.4711)	(3.4794)	(1.3093)	(2.3908)	(0.0844)		**Adjusted R²**	5.01%
Beta without Fixed Effects	**-1.1866**	0.0746	-0.0168	**-662.8479**	-5.7166	**0.0748**	0.0100	0.2355		-0.0001	**Number of observations**	893
T-stat	(-2.0522)	(1.5042)	(-0.5043)	(-2.3295)	(-0.8449)	(2.3783)	(1.2176)	(1.7530)		(-0.0022)	**Adjusted R²**	2.57%
Beta Time Fixed Effects	**-1.6407**	0.0564	-0.0171	**-764.9674**	8.4030	**0.0953**	0.0100	**0.2884**		-0.0336	**Number of observations**	893
T-stat	(-2.5972)	(1.1238)	(-0.4757)	(-2.6904)	(0.9971)	(2.8385)	(1.2194)	(2.0785)		(-1.0619)	**Adjusted R²**	5.19%
Beta Industry Fixed Effects	-1.0146	0.0087	-0.0235	**-835.9820**	-8.3505	0.0624	0.0092	**0.2803**		-0.0091	**Number of observations**	893
T-stat	(-1.4051)	(0.1696)	(-0.6861)	(-2.7422)	(-1.1772)	(1.6245)	(0.9842)	(2.0177)		(-0.2859)	**Adjusted R²**	3.60%
Beta Time and Industry Fixed Effects	-1.4993	-0.0103	-0.0273	**-875.5594**	5.4781	0.0787	0.0104	**0.3277**		-0.0339	**Number of observations**	893
T-stat	(-1.9314)	(-0.1980)	(-0.7328)	(-2.8723)	(0.6041)	(1.9173)	(1.1220)	(2.2864)		(-1.0257)	**Adjusted R²**	5.77%

Table 36

Regression set 36: Returns

This table summarizes the results obtained by regressing returns at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), and the average of the relative ranks of Net Debt / Mcap, OCF / Revenue, and Current ratio. The latter variable is of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	MCap	P/B	MOM	Rel. Yearly Rank ND/MCAP and OCF and Curr Ratio		
Beta without Fixed Effects	**-0.2528**	**0.0149**	**-0.0057**	**0.1743**		**Number of observations**	3079
T-stat	(-3.1238)	(2.6676)	(-4.1302)	(9.8673)		**Adjusted R²**	4.48%
Beta Time Fixed Effects	**-0.2064**	**0.0166**	**-0.0052**	**0.1828**		**Number of observations**	3079
T-stat	(-2.3874)	(3.0327)	(-3.8403)	(10.3896)		**Adjusted R²**	9.24%
Beta Industry Fixed Effects	-0.0580	0.0008	**-0.0060**	**0.1413**		**Number of observations**	3079
T-stat	(-0.5630)	(0.1216)	(-4.1358)	(7.8620)		**Adjusted R²**	6.24%
Beta Time and Industry Fixed Effects	0.0004	0.0027	-0.0057	**0.1507**		**Number of observations**	3079
T-stat	(0.0035)	(0.3996)	(-3.9441)	(8.4261)		**Adjusted R²**	10.94%
Beta without Fixed Effects	**-0.2997**	0.0104	**-0.0071**	**0.1475**	**0.1410**	**Number of observations**	3071
T-stat	(-3.3768)	(1.760)	(-4.1731)	(6.9247)	(3.5180)	**Adjusted R²**	4.62%
Beta Time Fixed Effects	**-0.2632**	**0.0117**	**-0.0067**	**0.1646**	**0.1374**	**Number of observations**	3071
T-stat	(-2.8538)	(2.0255)	(-4.0176)	(7.7737)	(3.5279)	**Adjusted R²**	10.35%
Beta Industry Fixed Effects	-0.1908	0.0022	**-0.0077**	**0.0972**	**0.2061**	**Number of observations**	3071
T-stat	(-1.7109)	(0.2862)	(-4.2333)	(4.4663)	(3.8906)	**Adjusted R²**	7.52%
Beta Time and Industry Fixed Effects	-0.1630	0.0053	**-0.0075**	**0.1150**	**0.1958**	**Number of observations**	3071
T-stat	(-1.4257)	(0.7046)	(-4.2632)	(5.3047)	(3.7778)	**Adjusted R²**	12.83%

Table 37

Regression set 37: Negative conditional skewness (NCSKEW)

This table summarizes the results obtained by regressing NCSKEW at time t on several variables at time t-1. The independent variables include the NCSKEW measured in one period prior (lagged NCSKEW), the DTURNOVER factor, the turnover, the analyst control variable, the standard deviation, the natural logarithm of the Market Capitalization, the price to book ratio (p/b), the "momentum" indicator (MOM), and the average of the relative ranks of Net Debt / Mcap, OCF / Revenue, and Current ratio. The latter variable is of interest, the first eight are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	Lagged NCSKEW	Dturnover	Turnover	Analyst Dummy	St Dev	Ln MCap	P/B	MOM	Rel. Yearly Rank ND/MCAP and OCF and Curr Ratio		
Beta without Fixed Effects	**-1.1675**	0.0299	0.0017	-30.3659	-0.1346	-4.5066	**0.0823**	0.0098	0.1555		**Number of observations**	2282
T-stat	(-3.5014)	(1.1498)	(0.1627)	(-0.3096)	(-1.3503)	(-1.4666)	(4.3443)	(1.9595)	(2.3608)		**Adjusted R^2**	1.73%
Beta Time Fixed Effects	**-1.1252**	0.0211	0.0054	-34.3623	-0.0980	-3.9968	**0.0815**	0.0076	0.1353		**Number of observations**	2282
T-stat	(-3.1290)	(0.7968)	(0.5097)	(-0.3492)	(-0.9675)	(-1.0875)	(4.2105)	(1.5268)	(1.9572)		**Adjusted R^2**	3.17%
Beta Industry Fixed Effects	**-1.3234**	0.0026	0.0030	-74.0598	-0.1234	-3.8133	**0.0979**	0.0096	**0.1810**		**Number of observations**	2282
T-stat	(-3.3566)	(0.0977)	(0.2870)	(-0.7316)	(-1.0970)	(-1.1792)	(4.1766)	(1.7715)	(2.6939)		**Adjusted R^2**	2.25%
Beta Time and Industry Fixed Effects	**-1.2598**	-0.0053	0.0064	-76.2203	-0.0712	-2.6349	**0.0940**	0.0080	**0.1672**		**Number of observations**	2282
T-stat	(-2.9892)	(-0.1974)	(0.6046)	(-0.7518)	(-0.6224)	(-0.6678)	(3.9137)	(1.4803)	(2.3654)		**Adjusted R^2**	3.59%
Beta without Fixed Effects	**-1.0829**	0.0055	-0.0151	-128.5500	-0.1416	-4.6662	**0.0741**	0.0119	**0.1823**	0.0777	**Number of observations**	2274
T-stat	(-2.6174)	(0.1785)	(-0.8613)	(-1.1420)	(-1.1038)	(-1.1202)	(3.3574)	(1.8885)	(2.1001)	(0.5620)	**Adjusted R^2**	1.77%
Beta Time Fixed Effects	**-1.2410**	0.0044	-0.0076	-120.9480	-0.1200	-3.8512	**0.0756**	0.0110	**0.1854**	0.0759	**Number of observations**	2274
T-stat	(-2.7382)	(0.1402)	(-0.4051)	(-1.0715)	(-0.9128)	(-0.7299)	(3.3109)	(1.7394)	(1.9931)	(0.5512)	**Adjusted R^2**	2.91%
Beta Industry Fixed Effects	**-1.1347**	-0.0239	-0.0169	-175.7913	-0.1303	-4.4957	**0.0851**	0.0119	**0.2379**	0.0330	**Number of observations**	2274
T-stat	(-2.3606)	(-0.7682)	(-0.9527)	(-1.5219)	(-0.9062)	(-1.0561)	(3.0076)	(1.7442)	(2.6760)	(0.1760)	**Adjusted R^2**	4.25%
Beta Time and Industry Fixed Effects	**-1.2636**	-0.0228	-0.0088	-167.9314	-0.1036	-3.5644	**0.0842**	0.0114	**0.2516**	0.0290	**Number of observations**	2274
T-stat	(-2.4347)	(-0.7234)	(-0.4645)	(-1.4527)	(-0.7027)	(-0.6455)	(2.8850)	(1.6730)	(2.6384)	(0.1548)	**Adjusted R^2**	5.38%

Table 38

Regression set 38: Coskewness

This table summarizes the results obtained by regressing coskewness at time t on several variables at time t-1. The independent variables include the natural logarithm of the Market Capitalization (mcap), the price to book ratio (p/b), the "momentum" indicator (MOM), and the average of the relative ranks of Net Debt / Mcap, OCF / Revenue, and Current ratio. The latter three variables are of interest, the first three are used as control variables. In addition, all regressions are performed under four different conditions: no fixed effects, time fixed effects, industry fixed effects, and, finally, time and industry fixed effects combined.

	Constant	MCap	P/B	MOM	Rel. Yearly Rank ND/MCAP and OCF and Curr Ratio		
Beta without Fixed Effects	**-0.1739**	**0.0080**	-0.0001	**-0.0160**		**Number of observations**	3079
T-stat	(-6.1747)	(4.1187)	(-0.3112)	(-2.5959)		**Adjusted R²**	0.62%
Beta Time Fixed Effects	**-0.0774**	**0.0079**	0.0004	**-0.0147**		**Number of observations**	3079
T-stat	(-2.8319)	(4.5803)	(1.0214)	(-2.6371)		**Adjusted R²**	22.00%
Beta Industry Fixed Effects	**-0.2173**	**0.0085**	-0.0001	**-0.0158**		**Number of observations**	3079
T-stat	(-6.0049)	(3.5195)	(-0.2094)	(-2.5049)		**Adjusted R²**	0.62%
Beta Time and Industry Fixed Effects	**-0.1189**	**0.0076**	0.0007	**-0.0146**		**Number of observations**	3079
T-stat	(-3.4774)	(3.5342)	(1.4654)	(-2.5663)		**Adjusted R²**	22.14%
Beta without Fixed Effects	**-0.1715**	**0.0056**	-0.0008	**-0.0260**	**0.0472**	**Number of observations**	3071
T-stat	(-5.1612)	(2.5558)	(-1.2660)	(-3.2650)	(3.1463)	**Adjusted R²**	1.15%
Beta Time Fixed Effects	**-0.0870**	**0.0062**	-0.0002	**-0.0180**	**0.0351**	**Number of observations**	3071
T-stat	(-2.8121)	(3.2241)	(-0.2794)	(-2.5291)	(2.6828)	**Adjusted R²**	25.41%
Beta Industry Fixed Effects	**-0.2043**	0.0053	-0.0006	**-0.0264**	**0.0647**	**Number of observations**	3071
T-stat	(-4.8180)	(1.8148)	(-0.8623)	(-3.1876)	(3.2128)	**Adjusted R²**	1.18%
Beta Time and Industry Fixed Effects	**-0.1103**	**0.0062**	0.0002	**-0.0182**	**0.0360**	**Number of observations**	3071
T-stat	(-2.8349)	(2.4457)	(0.3079)	(-2.4640)	(2.0405)	**Adjusted R²**	25.40%