Do favorable market conditions lead to costly decisions to go public?[♣]

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Abstract

We investigate the real effects of decisions to undertake an initial public offering of stock in favorable market conditions. Specifically, we examine potential effects on investment expenditures, operating performance and likelihood of survival. We find that the average firm going public during favorable market conditions, characterized by a high investor sentiment index, subsequently increases acquisitions and R&D expenditures. We do not find, however, that these changes in investment lead to worse operating performance or a higher incidence of firm failure. Our findings do not support the hypothesis that decisions to go public in favorable market conditions lead to undesirable real effects.

Keywords: Initial public offerings; Operating performance; Capital budgeting; Mergers and acquisitions.

JEL classifications: G31; G32; G34

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...certain classes of investment are governed by the average expectation of those who deal on the Stock Exchange as revealed in the price of shares, rather than by the genuine expectations of the professional entrepreneur (J.M. Keynes, The General Theory, 1936, p.151)

1. Introduction

Market conditions for initial public offerings of shares (IPOs) vary considerably over time. Several theoretical and empirical studies in finance, reviewed by Ritter and Welch (2002), explore the underlying causes of this time-series variation in market conditions and the implications of the variation for stock return behavior of new offerings. The literature however pays far less attention to the fundamental question underlying the observed patterns in market condition and new listings: Do fluctuations in market conditions have real effects for firms that go public, or do they affect only financial market participants? That is, do market conditions affect companies' post-offering investment policy and performance?

The issue is important because, as Jensen (2005) points out, irrational pricing of corporate securities can lead to wealth-destructing investments and corporate failure. In recent years a number of academics and policy makers have highlighted the potential important real effects of financial markets and debated whether central banks should respond to extreme movements in asset prices[1].

The goal of our study is to shed light on the real consequences of financial markets by examining how favorable conditions in the market for newly listed shares affect the investment decisions and operating performance of firms following an IPO. The IPO market represents an attractive setting to investigate this question because valuation of private firms is more sensitive to general market conditions than that of seasoned firms. As Samuelson (1998) and Lamont and Stein (2008) argue the aggregate market valuation is more likely to be inefficient than the pricing of individual stocks.

We focus our tests on what we call the catering hypothesis, which posits that managers of private companies cater to optimistic investor perceptions by issuing equity in the public markets and engage in aggressive value-destroying investment policy. This hypothesis follows from several lines of argument

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[1] For example, in 2005 Indiana University and *Review of Financial Studies (RFS)* organized a conference entitled "The Causes and Consequences of Recent Financial Market Bubbles." *RFS* published six papers from the conference.

that have been developed in the finance literature. Loughran and Ritter (1995), among others, argue that perceived over-valuation of a firm's shares can motivate owners of a privately held firm to obtain low cost equity capital and go public earlier than in the absence of a high equity valuation. Fischer and Merton (1984) argue that managers should take advantage of irrationally high prices for their firms' equity by issuing stocks and investing the proceeds. Jensen (2005) develops an agency theory of overvalued equity that implies overvalued equity can force managers to actively cater to the stock market by making excessive investments to meet investors' implied, and unrealistic, growth forecasts and sustain the overvaluation. Consistent with Jensen's theory, we conjecture that managers of firms going public during favorable market conditions will cater to investor sentiment and overinvest, thus destroying firm value in projects with negative net present value.

An alternative view, which we call the investment opportunities hypothesis, posits that favorable market conditions for newly listed shares rationally reflect firms' valuable investment opportunities and assets in place. Therefore, going public in favorable market conditions, on average, does not destroy value. For example, Pastor and Veronesi (2005) develop a model in which more firms find it optimal to go public when expected profitability is high, consistent with a high market valuation. Their model predicts that expanded investment opportunities arising in favorable market conditions lead firms to invest more and perform better than firms going public in normal or unfavorable market conditions.

In this paper we construct a simple test to discriminate between the catering and investment opportunities hypotheses. Although both hypotheses predict that favorable market conditions at the time of the IPO should be associated with higher corporate investment, only the catering hypothesis predicts that the post-IPO investment in the wake of favorable market conditions is value-reducing and thus should result in poor performance. Therefore, we examine the relation between the investment activities and operating performance and ultimate survival of firms that undertake an initial public offering during favorable and regular or unfavorable market conditions. We also probe further to understand whether time-variation in market conditions represents rational or behavioral factors. If the time-varying market

conditions are at least partly due to investor sentiment, then we expect market conditions to have a stronger impact on investment and performance of firms that are especially sensitive to sentiment.

Following Baker and Wurgler (2006, 2007), we classify young firms, which are more susceptible to subjective valuations, as especially sensitive to sentiment. Under the catering hypothesis, we also expect firms going public in favorable market conditions to do more acquisitions than firms going public in regular or unfavorable market conditions. Jensen (2005) argues that overvaluation forces managers to make unwarranted value-reducing acquisitions to meet aggressive investor expectations. We study initial public offerings of common stock in the U.S. over the period 1980 through 2004.

In this time period there is substantial variation in the number of firms going public per year and in the pricing of IPOs of common stock. In addition, there is a broad range of age or stage of development of companies that undertake an IPO. About one-third of firms have five or fewer years of operating history at the time they go public, while nearly one-fourth have fifteen or more years of operating history.

We use a variety of alternative criteria to define months of favorable stock market conditions. The test results presented in our tables use definitions of market conditions based on values of Baker and Wurgler's (2006, 2007) monthly investor sentiment index. The Baker-Wurgler index is based on six market-based investor sentiment proxies, which capture the demand shocks of sentiment-driven investors and limits to arbitrage. However, as we describe later in the text, our main findings are robust to definitions based on market-wide as well as industry measures of IPO volume and market to book ratios.

Three aspects of our analysis address the question of how market conditions are transmitted to investment decisions and performance of IPO firms. We start by analyzing operating performance, measured as operating return on cash-adjusted assets (ROA), to see whether firms going public in normal and unfavorable market conditions differ from those going public in favorable conditions. We also examine corporate failures, defined as firms that perform so poorly that their stock is delisted. In contrast to the prediction of the overvaluation hypothesis, we find that the operating performance of firms going public in favorable markets appears to improve following their IPO, and there is no effect on the incidence of firm failure.

We then investigate companies' investment as the channel through which market conditions at the time a firm goes public can influence managerial decision-making and subsequent performance. We start by examining whether state of the market at the IPO has different implications for the type of investment chosen. We consider three types of investments, investment in research and development (R&D), capital expenditures, and acquisitions. Consistent with both hypotheses, we find that firms going public in favorable markets invest more, primarily through more capital expenditures and R&D expenditures. The newly public firms, however, spend similar amounts on acquisitions irrespective of market conditions at the time of the IPO. The interactive effect between market conditions at the time of the IPO and post-IPO investment is positively related to subsequent operating performance and unrelated to the incidence of firm failure. Together, our results suggest that favorable equity market conditions when firms go public do not lead to investment activity that harms the operating performance of firms. Our evidence is more aligned with the idea that favorable market conditions reflect profitable investment opportunities.

2. Favorable market conditions and the decision to go public

Owners of privately held firms have several motivations to undertake an IPO and take their firm public, such as to diversify their holdings, to raise capital, to create public shares for acquisitions, to exploit favorable market conditions, and to improve the liquidity of the firm's shares. In this paper we focus on the motive to respond to favorable market conditions and develop the catering hypothesis about how market conditions influence the decision to go public and affect investment policy and performance following the initial share offering. This hypothesis is built on the following two theories. First, managers of private firms attempt to exploit the favorable market conditions by issuing equity. The favorable market conditions can either represent rational variation in market conditions, such as improvement in firms' investment opportunities, or time-varying investor sentiment towards new offerings. Secondly, managers of highly-valued IPO firms attempt to meet investor lofty expectations through aggressive and possibly value-destroying investment policy. We explore each of these theories in greater detail below.

The idea that irrational stock valuations, or animal spirits, can affect firm financing and investment policy goes back at least to Keynes (1936). A number of studies document that firms seasoned equity issues and initial public offerings during periods of high stock valuations (e.g. Asquith and Mullins (1986), Loughran and Ritter (1995)). The survey of chief financial officers by Graham and Harvey (2001) also indicates that "the amount by which our stock is undervalued or overvalued by the market" is one of the most important factors affecting managers' decision to issue equity. Presumably the gains from overvaluation of shares lead owners to go public earlier than they would otherwise and incur the costs of an earlier IPO. The costs include the effects of becoming publicly traded on managerial incentives. These effects are weakened managerial incentives to maximize firm value due to a smaller proportionate ownership stake of equity, more short-term oriented decision-making in response to influential stockholders who trade actively, and the opportunity costs of managers' effort devoted to stockholder relations and meeting regulatory mandates of publicly traded firms.

In addition, recent theories suggest that market conditions and stock valuation at the time of the offering may not only affect a private firm decision go public, but also its post-offering investment policy and performance. Jensen (2005) develops agency theory of overvalued equity, which posits that managers of overvalued firms attempt to satisfy market expectations by engaging in value destroying acquisition activity and adoption of high risk projects. Rhodes-Kropf and Viswanathan (2004) show that overvaluation leads to ex-post investment mistakes that are correlated with overvaluation at the market and industry level. Brau and Fawcett (2006) document that 51% of CFOs consider the impact of post-IPO stock price on their assessment of the company's value as important.

Consistent with catering theory, we hypothesize that during periods of high investor sentiment, managers will respond to investors' sentiment-driven expectations via excessive capital and R&D expenditures and acquisitions. The alternative hypothesis, which we call the investment opportunities hypothesis, says favorable market conditions and high share valuations at the time owners decide to go public on average accurately represent the value of a firm's investment opportunities. Higher valuations reflect a greater amount of value-increasing investment opportunities. Under this hypothesis, the decision

to go public represents a strategy to raise capital to finance profitable growth. A firm going public raises funds for future investment by issuing equity publicly instead of the presumably higher cost alternatives of issuing equity privately or borrowing.

Both hypotheses imply greater capital and R&D investment and acquisitions by companies following IPOs that occur in favorable market conditions as opposed to normal or unfavorable market conditions. However, the hypotheses differ with respect to the quality of the additional investment of favorable market IPOs. The catering hypothesis implies that managers of newly public firms may make an investment that has a negative NPV in response to high stock prices. Thus, catering theory predicts a negative relation between post-IPO investment and operating performance for firms going public in favorable market conditions. The investment opportunities hypothesis implies that the greater a firm's investment opportunities, as reflected in market to book ratio for example, the better is a firm's performance following an IPO. Controlling for the value of investment opportunities, measures of overvaluation or market conditions should not be related to subsequent performance.

Our tests therefore focus on whether and how measures of operating performance in the years following an IPO are related to the amount of investment undertaken by firms that go public in favorable market conditions. We also probe deeper the impact of market conditions on corporate investment and performance by exploiting firm heterogeneity. Specifically, we argue that if favorable market conditions arise at least partly due to investor sentiment, then we expect market conditions to have a stronger impact on investment and performance of younger firms. The valuation of younger firms is arguably more subjective because of many informational problems that are less important for more mature firms.

Our research is related to recent studies that have explored the variation in the volume of IPOs, pricing of IPOs, or post-offering performance. Lowry (2003) establishes a connection between equity market conditions and the likelihood of going public. She finds that more favorable investor sentiment in the pricing of IPOs leads to greater offering volume, but does not study post-offering performance.

Fama and French (2004) document a connection between the volume of new listings of firms and subsequent performance. They find that the number of firms added to the CRSP database, which is

correlated with the incidence of IPOs, is negatively related to these firms' subsequent profitability and positively related to the incidence of failure. However, they do not determine the cause of this relation.

Purnandam and Swaminathan (2004) find a relation between the valuation of companies that undertake an IPO and subsequent performance. In particular, they find that industry-adjusted valuation multiples of companies when they go public are negatively related to profitability following the IPO. However, this study does not address the causes of the poor performance.

In a closely related study, Yung, Colak and Wang (2008) develop a model in which time-varying real investment opportunities lead to time-variation in adverse selection and the volume of initial public offerings. They find that the cross-sectional variance in long-run abnormal returns increases substantially during hot IPO markets and that hot IPOs show higher delisting incidences. Their paper does not address the research questions of our study, such as the effect of post-IPO investment activity on operating performance across different market conditions.

Our research is also related to the literature on the role of the stock market on corporate investment. A number of recent studies investigated to what extent stock mispricing influence corporate investment of seasoned firms. Baker, Stein, and Wurgler (2003) find a high sensitivity of investment to Tobin's q for finance-constrained firms that tend to depend on equity finance, interpreting this finding as evidence that stock market mispricing leads these firms to issue equity and to use the proceeds for investment. Rhodes-Kropf, Robinson, and Viswanathan (2005), among others, find that market overvaluation affects acquisition and merger activity. Unlike these papers, we focus on investment policy and its impact on performance of newly public firms. As we argued above, the IPO market provides a more powerful setting for studying this question because the valuation of private firms is more sensitive to general market conditions.

Together these studies point toward a relation among high stock valuation at the time of an IPO, high volume of IPOs, and poor post-offering performance. The findings suggest that conditions in the market for IPOs of stock are related to decisions to go public and to performance following an IPO.

Our study continues this line of research by addressing directly whether IPOs in the wake of favorable stock market conditions have a cost in terms of increasing investment that harms subsequent performance.

3. Data and variables

In this section, we describe our sample, define our key metrics, explain our classifications of market conditions, and provide summary statistics.

3.1 Sample

Our sample contains all U.S. IPOs between January 1, 1980, and December 31, 2004, reported by the Securities Data Corporation Platinum database (SDC). We restrict the sample to exclude spinoffs, unit offerings, ADRs, reverse leverage buy-outs, equity carve-outs, and offerings by financial service firms and utility companies. We identify 4,879 IPOs that meet these requirements. From the SDC data file we collect the offer date, offer price, initial file range, proceeds, underwriter name(s), and whether the issue was backed by a venture capitalist.

Standard and Poor's Compustat provides the accounting data for our sample of IPOs and the SDC Mergers and Acquisitions database provides information on acquisition transactions. Of the 4,879 IPOs, 4,448 have financial data in the last fiscal year before the offering. In each of our tests, we use as many observations as possible, so the sample is not necessarily the same across regressions.

3.2 Classifications of Market Conditions

We test whether corporate investment and performance of firms that went public in favorable market conditions are different from those of firms going public in less favorable conditions. To conduct this test we need meaningful criteria to define periods in which market conditions, or more specifically expected overvaluation of shares, lead owners of privately held companies to make an initial public equity offering.   One approach is to use directly observable market characteristics, such as market to book ratios or volume of equity offerings, as proxies for time periods when overvaluation of shares is more likely.

We have done our analysis in several ways based on such criteria. The results presented below, however, are based on an index of investor sentiment to identify periods of favorable market conditions, or likely overvaluation, for initial public offerings. In particular, we employ the index defined and discussed in Baker and Wurgler (2007). As we discuss later, we obtain similar findings and reach the same conclusions regardless of our definition of times of favorable market conditions.

The index of investor sentiment is based on six variables used in Baker and Wurgler (2006). The variables are the closed-end fund discount, NYSE share turnover, the number and average first-day returns on IPOs, the equity share in new issues, and the dividend premium. Using monthly data, each variable is regressed on six macroeconomic measures and the residuals of these six regressions are the inputs into formation of the sentiment index. Baker and Wurgler define monthly levels of a sentiment index as the first principal component of the six series of residuals. We retrieved values of the index from www.stern.nyu.edu/~jwurgler.

We see at least two important reasons for using the investor sentiment index. First, consistent with the hypothesis we are testing, the index is an economy wide measure that attempts to isolate attributes of investor sentiment from macroeconomic variables or conditions. Second, Baker and Wurgler (2006) find that the sentiment index appears to capture misvaluation. In particular, for stocks with characteristics that imply misvaluation is more costly to arbitrage or exploit, high levels of investor sentiment are followed by low stock returns. In our context, we presume that companies going public, particularly young firms, are costly to arbitrage when they are overvalued, i.e., in months with a high level of investor sentiment.

Figure 1 presents two time series of the investor sentiment index for our sample period, 1980-2005. Figure 1a shows the monthly index values which range from a high of 2.6 to a low of -1.3, where higher values represent higher levels of investor sentiment. As noted in Baker and Wurgler (2007), the periods of high index values, such as the early 1980s and the late 1990s, match periods that are interpreted by many as periods of a stock market bubble, or overvaluation. However, periods of high sentiment appear quite concentrated in just two time periods. Figure 1b detrends the index series by subtracting

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from each monthly index value the average index value of the preceding twelve months. This series

therefore captures to some extent the recent change in the level of the sentiment index. The results we

present below are based on this detrended series, but our findings are quite similar and our conclusions

are unaffected by doing the analysis with raw values of the index.

We classify each of the 300 months in our sample period as one of favorable, normal, or

unfavorable market conditions. When we use the detrended values of the sentiment index, months in the

top three deciles of detrended index values are classified as ones with favorable market conditions.

Months in the bottom three deciles are classified as having unfavorable market conditions and the other

four deciles of months are classified as normal market conditions. When we use the raw series months

with a sentiment index value above 0.4 are classified as favorable, between -0.2 and 0.4 as normal, and

below -0.2 as unfavorable.

An alternative we employ is to define months as having favorable market conditions when

IPO volume and the market-wide market-to-book ratio (MB) are sufficiently high. Specifically,

following Helwege and Liang (2004), for each month in the sample we compute the three-month centered

moving average of the number of IPOs scaled by the number of public firms at the beginning of the

month. Similarly, we compute the market MB ratio by removing the average MB ratio computed over the

five preceding years from the MB of the month in question. MB is defined as the equally weighted

average across public firms of individual firm equity market value divided by book value, where book

value is measured at the end of the fiscal year. Market value is measured at the end of each month and

book value is lagged by at least four months relative to market value. Favorable market condition months

are then defined as months that are above the median in the distribution of both the monthly moving

average IPO volume and the monthly MB ratio across all the months in the sample. All other months are

defined as normal market condition months.

A difficulty with this definition is that market to book ratio and IPO volume can reflect strong

fundamental conditions in the overall economy. Consequently, the months we define as favorable may

not correspond closely to times of overvaluation, but rather to times of good economic prospects.

Ultimately, what works best is an empirical question and we have to acknowledge that we are conducting a joint test of our classification of market conditions and the implications of market conditions for post-IPO investment and operating performance.

3.3 Classification by firm age

As already noted, Baker and Wurgler (2007) and others argue that overvaluation is more likely to occur and persist among firms for which it is relatively costly to exploit, or arbitrage away, any valuation error. Following this line of argument, we focus some of our tests on firms that go public as young or undeveloped companies. We presume that young companies are both more costly, and difficult, to value reliably and more costly to short sell. Consequently, at the time of going public the valuations of young companies can be farther from their intrinsic value. We argue that the effects of overvaluation on post-IPO investment and performance will be greatest for very young firms.

For each offering in the period 1988-2001 we read the offering prospectus to determine the number of years of operating history, or age, at the time of the offering. Loghran and Ritter (2001) note that the founding date on SDC usually refers to the incorporation date rather than the true date when firm was founded. In contrast, we identify the date on which the firm was founded or began operations. We began by looking for mention of the year a company was founded or established. If these dates were not specified we looked for year in which a firm started operations or was incorporated.

For the offerings in the period 1980-1987 and 2002-2004, we use the foundation date from the IPO sample available on Jay Ritter's website. We define a firm as young if its age at the time of an IPO is less than five years.

3.4 Distribution of IPOs

The number of IPOs displays significant variation over time, with two sharp rises in the number of IPOs in 1983 and the period 1996-1999. After these two peaks, the IPO activity drops significantly. The cross-sectional pattern across age groups is similar to that pattern. Months classified as favorable

conditions represent nearly half of the IPOs with the remaining half about equally divided between months classified as normal or unfavorable conditions. Overall, 48% of IPO firms we classify as young (five years or younger), while in months of favorable market conditions we classify 50% as young. Based on the Fama-French 30 industry groups 32% of IPOs were firms in the computers and computer software industries. In the months of favorable market conditions, there is a small shift in this emphasis with 35% of IPOs in the computers and computer software industries. There are no obvious differences in the age or industry representation of firms that went public in favorable market conditions.

3.5 Differences in characteristics

We look at differences in the characteristics of IPO firms across classifications of market conditions at the time of the IPO and age of the IPO firm. Table 1 presents the median values for a number of financial variables for the whole sample and sorted on the state of market conditions and age groups. We define the IPO year as the fiscal year in which the IPO takes place.

Firms going public in favorable market conditions stand out as smaller, as measured by book value of assets and sales in the fiscal year preceding the offering. Consistent with the market sentiment theory and overvaluation of IPOs in favorable market conditions, the median post-IPO stock return over the first six months of public trading is below 5% for offerings that occur in favorable market conditions while the median return is more than 10% in the first six months following offerings in unfavorable market conditions. Notable in several dimensions are young firms (age < 5 years) going public in favorable market conditions. These firms stand out for their low sales, high post-IPO market value of equity, low financial leverage, high market to book value of equity, low operating income to assets, high R&D expenditures, high proceeds from the IPO, and high book to market value of equity for their industry.

We also compare the frequency of venture capital involvement in favorable market IPOs with venture capital involvement in regular market IPOs. Barry et al. (1990), among others, argue that venture capital backing of IPOs provides certification of the IPO's value. The argument is that venture capitalists

add value to the going public process through their screening, monitoring, and decision-support functions. Kaplan and Stromberg (2004) further show that VCs play key governance roles in the companies they finance. Therefore, it is natural to conclude that venture capital IPOs are better prepared to go public. We find that 2,036 of the 4,448 IPOs in our total sample were backed by venture capital.

4. Results

This section presents results from a number of tests on the relation between market conditions and issuing firms' post-IPO investment activity and performance. We proceed in three steps. First, we present evidence on the relation between market conditions and post-issue operating performance. Second, we present evidence on the relation between market conditions and post-issue investment. Our objective here is to provide evidence on whether favorable market conditions lead to greater investment following initial public offerings. We also directly examine whether the relation between market conditions and investment depends on the age of the firm. Third, we examine whether and how market conditions interacted with post-IPO investment are associated with post-IPO operating performance. Again, we examine whether the relation depends on the age of the offering firm.

4.1 Market conditions and post-IPO operating performance

In this section, we provide evidence on the role of market conditions in explaining the change in operating performance from the fiscal year before the IPO to the end of the first, second and third fiscal years following the IPO.

As in Mikkelson, Partch and Shah (1997), our primary measure of operating performance is operating income before depreciation, interest, taxes, and extraordinary items (Compustat Item 13), divided by cash adjusted book assets (Item 6-Item 1). This scaling converts operating income into a return on operating assets (ROA). We subtract cash from the assets because initially equity offerings typically increase assets substantially, thus potentially impacting a downward bias to measures of operating income scaled by assets. The alternative is to scale operating income by sales. However, Barber and Lyon (1996)

argue that operating income scaled by sales does not measure directly the asset utilization and therefore might not capture changes in operating performance. We measure the change in operating performance as the performance in post-IPO fiscal year end t minus the abnormal performance in the fiscal year prior to the IPO. Barber and Lyon (1996) argue that changes in performance adjust for mean reversion and generally produce better results than levels of performance.

In our tests, we use an adjusted operating performance as the issuing firm's raw operating performance minus the operating performance of a control firm. For each sample firm and for each year, we choose firms in the same Fama and French (1997) 30 industry that have been listed at least three years at the time of the IPO and have book value of assets closest to that of the sample firm. Among these control firms, we then choose a control firm with the closest operating performance at the time of the IPO.

We estimate the following median regression:

$$ROA_{i,t} - ROA_{i,-1} = \beta_0 + \beta_1 \text{ (Favorable)} + \beta_2 \text{ (Unfavorable)} + \varepsilon_{i,} \qquad (2)$$

where $ROA_{i,t}$ is abnormal operating return on cash-adjusted assets in fiscal year preceding t (the offering occurs in fiscal year 0), and Favorable equals one for offerings that occur in months classified as having favorable market conditions, and Unfavorable equals one for offerings that occur in months of unfavorable market conditions. We perform tests using median regressions so that extreme observations do not affect the results. To ensure that our inference is unaffected by cross-sectional dependence, we include year fixed effects in the regressions. We report t-statistics after adjusting for serial correlation using the Newey-West methodology (1987).

The simple regressions in columns 1, 5 and 9 report the unconditional median change in operating performance over the first 2 and 3 post-IPO years. Depending on whether the change in performance is adjusted, the change through the first post-IPO fiscal year is an increase or decrease of less than 1%. The median profitability declines by about 4% two years after the IPO and by about 5% three years after the IPO. Similar post-IPO decline in profitability is reported in Mikkelson, Partch, and Shah (1997).

We also test whether operating performance changes more for firms going public in favorable

markets. In general, the coefficient on the dummy variable for the full sample of IPOs in favorable market conditions is insignificant or positive and coefficient on the dummy variable for unfavorable conditions is generally insignificant. The most pronounced significant changes in operating performance are on the favorable conditions dummy variable for the subsample of firms that were five years or less in age at the time of the IPO. In all of the regressions, the coefficient is significant and positive. These initial results do not point toward poor performance following IPOs in favorable market conditions.

We chose not to analyze post- IPO stock return performance because our focus is on the asset performance of firms. In addition, the results of long-term performance studies are very sensitive to methodological choices and thus tend to be controversial. Ritter (1991) finds that over a three-year horizon after the offering, IPOs underperform on average by 29% relative to comparable firms. However, Brav and Gompers (1997) and Eckbo and Norli (2006) argue that the underperformance of IPOs largely disappears once proper risk adjustments are introduced.

4.2 Market Conditions and Post-IPO Investment Activity

To provide evidence on the relation between market conditions and post-issue investment, we follow the approach in Kim and Weisbach (2006) and examine several investment measures that potentially capture the use of issue proceeds.

Specifically, we examine post-issue changes in capital expenditures, research and development (R&D) expenditures, and acquisitions up to three years following the fiscal year of the initial public offering. R&D and capital expenditures are measured by Compustat data items 46 and 128. We obtain data on acquisitions from the Thomson Financial Securities Data Company (SDC) Mergers and Acquisitions database, which covers all takeover attempts between 1980 and 2006. We exclude minority stake purchases, acquisitions of remaining interest, acquisitions of a division, asset swaps, divestitures, spin-offs and LBOs. We calculate investment as the accumulation in each variable since the IPO, scaled by book assets at the IPO date:

$\sum_{i=1}^{t} Investment_i / Asset_0$, where t is the event year relative to the fiscal year of the IPO.

All accounting data are converted into 2004 dollars. We winsorize variables at the 1st and 99th percentiles. Event years include year -1, 0, +1, … +5, where year -1 is the fiscal year end before the offering, year 0 is the year of the offering, and years +1 through +5 are the fiscal year one through five years after the offering date.

The catering hypothesis we propose implies differences in the use of IPO proceeds depending on whether the offering took place in favorable market conditions. Under the catering hypothesis, favorable market conditions should be most strongly related to the form of investment that management believes matters to investors. Specifically, Jensen (2005) argues that overvaluation forces managers to make unwarranted value-reducing acquisitions to sustain the overvaluation. Therefore, the catering hypothesis predicts that, all else equal, firms going public in favorable market conditions to do more acquisitions than firms going public in regular or unfavorable market conditions. For each type of investment, we estimate the following baseline model:

$$Investment_{i,t} = \beta_0 + \beta_1 Favorable_0 + \beta_2 Unfavorable_0 + \beta_3 MB(Ind)_0 + \beta_4 ROA(Ind)_0 +$$
$$\beta_5 \operatorname{Re}turn(Ind)_0 + \beta_6 Venture_0 + \beta_7 \sum_{k=1}^{k=30} Industry + \varepsilon \tag{3}$$

The dependent variable, Investment, is the sum of one of the investment measures from year 0 to year t normalized by total book assets (COMPUSTAT Annual Item 6) at the fiscal year-end prior to the IPO date. Because it is not clear how long it takes for market condition to affect investment, we examine the cumulative investment up to three years after the IPO. We define investment as changes in capital expenditures (COMPUSTAT Annual Item 128), R&D expenditures (Item 46), acquisitions and sum of all of these types of investment. Year 0 is the fiscal year the IPO takes place and t is the number of fiscal years after the IPO. Because the investment measures are right-skewed, we use a logarithmic transformation of each investment variable.

We include two dummy variables to capture the state of the market. The dummy variable Favorable equals one if the offering takes place in favorable market conditions, and zero otherwise. The

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dummy variable Unfavorable equals one if the offering takes place in unfavorable market conditions, and zero otherwise.

To control for investment opportunities, we include the industry average market-to-book (MB) ratio and operating performance (ROA) in the quarter prior to the IPO. We use market values and operating performance of comparable firms, instead of firm-specific measures, because valuation numbers are not available for firms before the IPO. Pagano et al (1998) find that the median market-to-book ratio of publicly traded firms in the same industry is an important determinant of when Italian firms go public. Lowry (2003) and Pastor and Veronesi (2005) also use similar variables to control for favorable investment opportunities at the time of IPO. The industry MB is defined as the equally–weighted average of the ratio of market value to book value of assets of all public firms in the same Fama-French industry as the IPO firm. The market value for each firm in the industry is measured at the end of the IPO offering month and book assets at the end of previous fiscal year.

The variable Venture is a dummy variable that takes on the value of one if the IPO firm has venture capital backed, and zero otherwise. We include the Venture dummy variable because VCs tend to play a significant role in the decision-making of their portfolio firms. Specifically, VCs provides guidance to the IPO firms in making discretionary expenditures. To control for heterogeneity in industry characteristics, we include industry fixed effects defined by using Fama and French's (1997) 30-industry group classification. We report heteroscdasticity-consistent White-Huber standard errors.

Table 3 presents the regression estimates of equation (3). Panel A report the results for acquisitions, Panel B for capital expenditures, Panel C for R&D expenditures, and Panel D for the sum of all three types of investment. The results in Panel A show no effect of market conditions on firm acquisition decisions. This result is inconsistent with the catering hypothesis and suggests that firms spend same amount on acquisitions in the first three post-IPO years irrespective of the market conditions at the time of the IPO. Across other investment categories, the coefficient on favorable market conditions is positive and significant on post-issue capital expenditures, R&D expenditures and the sum of all investment types. The effect of favorable market conditions is more pronounced or pervasive among

firms older than five years. There is no effect of unfavorable market conditions on post-IPO investment for any type of investment or age group of IPO firms.

Several control variables are related to IPO firms' investment. Generalizing across the regressions, total investment and the individual types of investment are positively related to the industry market to book ratio of equity, the industry's operating return on assets, and presence of venture capital backing of the IPO firm. Total assets and industry stock return have a negative effect on investment.

In summary, the evidence is consistent with favorable stock market conditions leading to IPOs that are followed up with greater investment. Whether an interaction between favorable market conditions and post-IPO investment helps or harms corporate performance is tested in the following section.

4.3 Market Conditions, Post-IPO Investment Activity and Operating Performance

Our previous results show that operating performance declines following the IPO. Our next set of tests focus on the relation between market conditions, post-issue investment and post-IPO investment. Specifically, we compute the sum of investment made in the year of the IPO (t=0) and the following fiscal year (t=1) and examine the effect of that investment measure on change in operating performance from t = -1 to t = 2 and from t = -1 to t = 3.

We estimate the following baseline model that controls for various other factors that may impact change in abnormal performance of the IPO firms.

$$AROA_{i,t} - AROA_{i,-1} = \beta_0 + \beta_1 Favorable_0 + \beta_2 Unfavorable_0 + \beta_3 Favorable_0 * Investment$$
$$+ \beta_4 Size_0 + \beta_5 Leverage_0 + \beta_6 Venture_0 + \varepsilon \tag{4}$$

The dependent variable is change in abnormal operating performance from the fiscal year before to 2 and 3 years after the IPO. The use of two time intervals reflects the difficulty in measuring the exact length of time that it takes for the investment to impact performance. We include sales, as a proxy for firm size, and book value of financial leverage, a proxy for financial risk, measured in the fiscal year prior

to the IPO. We include the venture capital backing because Brav and Gompers (1997) provide evidence that venture-backed IPOs perform better in the long-run than other IPOs.

We also include various interaction terms to test our hypothesis. We interact the favorable market conditions dummy with each of the measures of investment. Our abnormal operating performance measure explicitly takes industry effects into account, so we do not include industry fixed effects.

Table 4 shows the operating performance results. Panel A presents the results for the change in operating performance from year $t = -1$ to year $t = 2$ and Panel B shows the results for the change from $t = -1$ to $t = 3$. The coefficient on the dummy variable for favorable market conditions is significant for some, but not all regressions, and the sign when significant is inconsistent. The coefficient on the dummy for unfavorable conditions is insignificant. There are no robust effects of market conditions *per se* on post-IPO operating performance.

The main focus of our tests is on the interaction variable between the dummy for favorable market conditions and investment. For the full sample of IPOs, the coefficients on these interactive variables are positive and statistically significant, particularly for R&D expenditures, acquisitions and the sum of all investment types. There is no evidence suggesting that the interaction between IPO stock market conditions and investment by IPO firms is related to poor performance. Indeed, investment by firms undertaking an IPO in favorable market conditions is associated with higher operating performance. This positive effect is observed for the subset of firms older than five years at the time of the IPO, but not for the firms five years or younger. We expected that any negative effect of investment on performance most likely would be observed for young firms. In summary, the evidence on changes in operating performance does not uncover any negative real consequences of IPOs undertaken in favorable market conditions.

5. Additional tests

5.1. Evidence on the incidence of survival

As an alternative measure of firm performance, we examine the status or viability of firms at two intervals following the IPO. Specifically, we identify a firm's outcome as of 24 months (2 years) and 60 months (5 years) after the IPO date. In order to categorize the sample firms into viable and nonviable, we use corporate delistings from the CRSP events file. We classify a firm as viable within the two or five years subsequent to the IPO date if is CRSP delisting codes is 100, the stock is noted as having moved to another national exchange, codes 501-503, or the company is listed as having voluntarily gone private, code 573. Nonviable firms have a code indicating liquidation, codes 400-490, or indicating a delisting from CRSP for reasons likely related to poor performance, codes 500 and 535-590 exclusive of code 573.

Table 5 presents the frequency of the two categories of outcomes as of two and five fiscal years subsequent to the IPO. As shown in Panel A, approximately 3% and 8% of all firms in our sample failed within 2 and 5 years of going public. As expected, younger firms are more likely to fail than mature firms: 11% of young firms and 7% of mature firms failed within 5 years of going public. Panels B, C and D compare the survival outcomes among firms going public in different categories of market conditions. The main result here is that there is no evidence that the frequency of failure is greater among firms that went public in favorable market conditions.

We also estimate binomial logit regression on the two categories of IPO outcomes: viable and nonviable. We estimate the following regression for each post-issue interval:

$$Delist_{i,t} = \beta_0 + \beta_1 Favorable_0 + \beta_2 Unfavorable_0 + + \beta_3 Favorable_0 * Investment$$
$$+ \beta_4 Size_0 + \beta_5 ROA_0 + \beta_6 Leverage_0 + \beta_7 Venture_0 + \varepsilon \tag{5}$$

where Delist is a dummy variable that equals one if a firm delists following the IPO, either within two years or five years. All other variables are defined earlier.

The results of the logit regression are reported in Panel A of Table 9 for firm status two years after the IPO and in Panel B for firm status five years after the IPO. The coefficient represents the marginal effect of a change in a variable on the probability of delisting. For the entire sample of IPOs, the likelihood of failure within two and five years of the offering is negatively related to sales and the presence of venture capital backing. In one regression, the incidence of failure within five years is

positively related to the interaction between R&D expenditures and favorable market conditions. However, the preponderance of coefficients on the interaction of favorable market conditions with investment variables do not explain the likelihood of a firm's failure. In other words, the likelihood for firms to fail does not vary according to conditions in the market for IPOs. This alternative metric of firm performance does not uncover negative real consequences of going public in favorable market conditions.

In an earlier stage of our research we conducted a multinomial logit analysis of post-IPO outcomes. Unviable outcomes were defined as above, but the viable outcomes were split into to two groups. That is, a third category was defined as firms whose outcomes indicated the firm was acquired, codes 200-320. This investigation uncovered no evidence that favorable market conditions leads to a higher incidence of a nonviable outcome within two or five years of going public.

5.2 Late 1990s as an alternative definition of favorable market conditions

The Internet sector of the economy in the late 1990s has been characterized as unprecedented by most standards market valuations. Ofek and Richardson (2003) show evidence that Internet stock price levels were too high to be justified by even exceptional levels of expected earnings growth. However, Pastor and Veronesi (2006) argue that these valuations can reflect the high level of uncertainty about future cash flows of these firms and low equity premium at the time. We do not take a stand on relation between Internet firm's stock prices and fundamentals but rather focus on the connection between market conditions and subsequent investment and performance of technology firms that undertook an IPO during the years 1996 through 1999. High-tech companies are active in SIC codes 3571, 3572, 3575, 3577, 3578 (computer hardware), 3661, 3663, 3669 (communications equipment), 3674 (electronics), 3812 (navigation equipment), 3823, 3825, 3826, 3827, 3829 (measuring and controlling devices), 4899 (communication services), and 7370, 7371, 7372, 7373, 7374, 7375, 7378, and 7379 (software).

We find, but do not report in tables, that investment, particularly acquisitions, is higher for technology firms that went public in the years 1996-1999. However, greater investment for technology firms in the year following their IPO is unrelated to subsequent performance. Focusing on the period of

the stock price run-up of technology stocks provides no support for the overinvestment or investment opportunity hypotheses.

5.3 Stock price effects of acquisition announcements

We also examine the quality of post-IPO investment by measuring stock price reactions to announcements of acquisitions. For all acquisitions undertaken by the end of the first full fiscal year following an IPO we calculated a three-day market adjusted stock return centered on the announcement date reported in SDC. For the full sample of announcements the average abnormal stock return is 1.67% and the median is 1.1%. In a regression analysis of the stock price effects, there is no effect of favorable or unfavorable market conditions of the IPO on the stock price effects while controlling for firm size, firm profitability, industry market to book ratio, size of the acquisition and form of compensation. In fact, there is small positive effect of favorable market conditions in the regression analysis for the subset of firms older than five years at the time of going public.

5.4 Additional investigations

In addition to the definition of market conditions based on the sentiment index, we have defined months of favorable market conditions based on the volume of monthly IPOs, the market to book equity ratio of all stocks and the combination of the two. Specifically, following Helwege and Liang (2004), for each month in the sample we computed the three-month centered moving average of the number of IPOs scaled by the number of public firms at the beginning of the month. Similarly, we compute the market MB ratio by removing the average MB ratio computed over the five preceding years from the MB of the month in question. MB is defined as the equally weighted average across public firms of individual firm equity market value divided by book value, where book value is measured at the end of the fiscal year. Market value is measured at the end of each month and book value is lagged by at least four months relative to market value. Favorable market condition months are then defined as months that are above the median in the distribution of both the monthly moving average IPO volume and the monthly MB ratio

across all the months in the sample. All other months are defined as normal market condition months. Based on this classification of months, investment by firms undertaking an IPO in favorable market conditions does not lead to lower operating performance or a higher incidence of failure as specified in the tests presented above.

We have also used industry level market to book ratios and IPO volume to define IPOs in favorable market conditions. Again, the evidence shows no evidence of unfavorable performance associated with investment interacted with a dummy for the IPO occurring in favorable market conditions.

In addition to measuring performance with operating return on assets, we have used annual sales growth and the ratio of sales to gross costs (Compustat item 6 divided by item 12). The findings of our principal tests are similar and our inferences are unchanged.

Finally, we examine the operating return on assets of other firms in the IPO firm's industry following an IPO. The motivation here is that perhaps favorable market conditions induce going public and increased investment, but the consequences are borne and observed by the industry. We are unable to find evidence that IPOs in favorable markets lead to lower operating performance in the IPO firm's industry.

5. Conclusion

We investigate the economic performance firms that go public in favorable stock market conditions. In particular, we study whether and how stock market conditions affect the investment behavior and operating performance of firms that undertake an IPO. One hypothesis is favorable stock market conditions induce firms to raise equity capital, pursue unprofitable investment, and perform poorly. An alternative hypothesis is favorable market conditions reflect firms' valuable investment opportunities and there is no effect of market conditions per se on the investment behavior and subsequent performance of firms.

We analyze U.S. firms that undertook an IPO of common stock in the period 1980 through 2004. We measure favorable market conditions in several ways. Our principal approach is to isolate months

with high levels of investor sentiment as measured by the sentiment index developed by Baker and Wurgler. Alternatively, we use definitions of favorable market conditions based on high IPO volume or high market-wide P/E ratios.

We find very little support for the idea that favorable market conditions lead to growth that is unprofitable. While post-IPO investment activity is higher when the IPO takes place in favorable market conditions, we find no effect of these firms' investment on subsequent operating performance and the incidence of delisting. In addition, we find no effect among young firms, age five years or less at the time of going public, which we believe are the most susceptible to the effects of favorable market conditions. We conclude that stock market conditions or valuations have no undesirable effect on the decision-making and the capital allocation process as revealed through IPO firms' investment behavior and subsequent performance.

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Figure 1: Time-series variation in Baker-Wugler Investor Sentiment Index, January 1980 through December 2005
This figure shows the time variation in the Baker-Wurgler measure of monthly sentiment index. The index is constructed as the first principal component of levels the closed-end fund discount , detrended log turnover, number of IPOs, first-day return on IPOs, dividend premium, and equity share in new issues.

Time Series of Investor Sentiment (1980-2005)
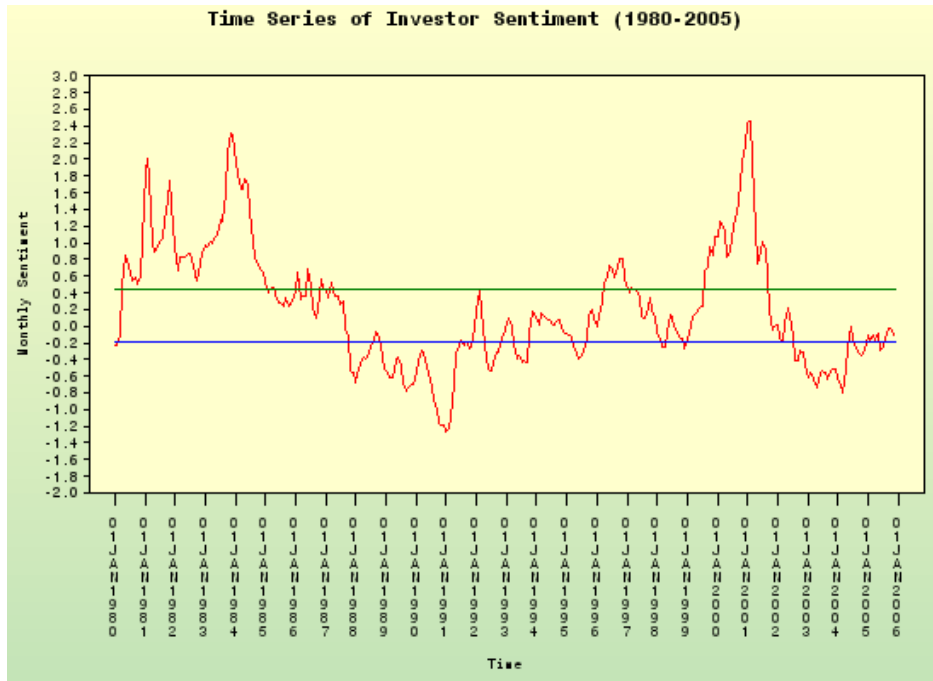
This figure shows the detrended index constructed as monthly index minus its 12 month average.

Time Series of Detrended Investor Sentiment (1980-2005)
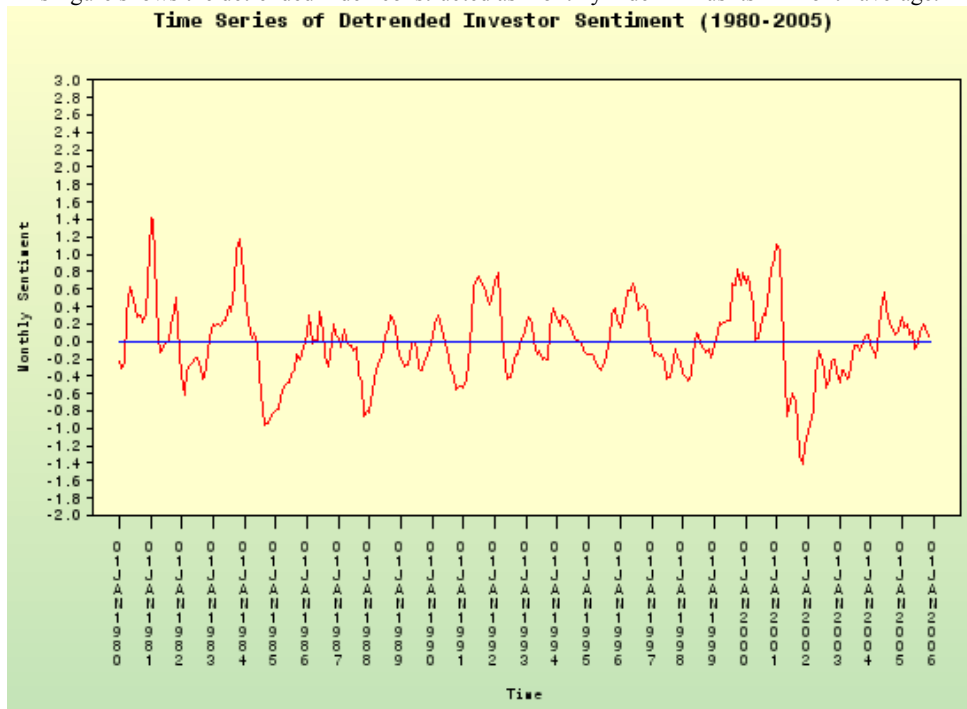
Table 1: Median financial characteristics of firms at the time of the initial offering (updated 5-15-09)

The sample is U.S. initial public offerings of stock in the years 1980-2004. Sales is Compustat Item 12. Book assets is item 6. Market value of equity is computed as Close Price (199) times Shares (25). Market assets to book assets ratio is the ratio of market value of equity plus book value of debt to book value of assets (6). Capex is capital expenditures (128). R&D is research and development expenditures (46). Cash is cash and short-term investment (1).Leverage is long-term debt (9) plus current liabilities (34) over book assets. Return on Assets (ROA) is Operating Income before Depreciation (13) over book assets. IPO Proceeds is the IPO proceeds from the sale of primary shares divided by IPO prior-year total assets.

Market conditions are classified according to a weighted average of Baker and Wurgler's sentiment index for the three months preceding an IPO minus the average of the index for the twelve months preceding an IPO. Months with an adjusted sentiment index in the top three deciles of the distribution over time are classified as favorable. Months in the bottom three deciles are classified as unfavorable.

		Normal market conditions		Unfavorable market conditions		Favorable market conditions	
	All	Age>5	Age<5	Age>5	Age<5	Age>5	Age<5
Offering firm characteristics							
Assets ($ millions)	31.17	41.46	26.55	41.02	23.79	33.3	20.25
Sales ($ millions)	39.7	64.85	23.74	56.63	22.72	48.47	10.82
Market value of equity ($ millions)	144.89	134.75	121.18	131.06	116.12	148.21	236.73
Age (years)	8	14	3	14	3	12	3
Leverage (book value)	0.27	0.28	0.26	0.31	0.27	0.28	0.16
Market value/Book value of equity	4.22	3.2	4.91	3.02	4.56	4.03	11.32
Operating income/Assets	0.15	0.18	0.12	0.18	0.09	0.17	-0.11
Capital expenditures/Assets	0.06	0.06	0.07	0.06	0.07	0.06	0.07
R&D expenditures/Assets	0.1	0.07	0.11	0.07	0.11	0.1	0.17
IPO proceeds ($ millions)	22.5	20	17.16	21.6	19	23.5	32.5
Initial IPO stock return (%)	7.14	5.21	8.63	5.11	7.14	7.1	12.5
Venture Capital Backing	2,036	264	195	313	181	597	486
Industry characteristics							
Industry market value/Book value of equity	1.94	1.84	1.83	1.99	1.97	1.95	2.23
Industry operating income/Assets	0.15	0.14	0.14	0.15	0.15	0.15	0.15
Market characteristics							
Market return: -3 to -1 month (%)	9.53	8.51	10.18	9.36	8.74	9.53	10.34
Market return: +1 to 6 month (%)	6.7	5.97	5.72	11.19	12	4.86	4.86
Sentiment Index	0.2	0.09	0.27	-0.13	-0.08	0.41	0.68
Number of IPOs	4448	779	374	797	353	1412	733

Table 2: Analysis of Univariate Changes in Operating Performance of IPO Firms

This table reports estimates of β from the least absolute deviation (median) regression: $AROA_{i,t} - A\,ROA_{i,0} = \beta\,Favorable_i + \beta_2 Unfavorable_{i+}\,\varepsilon_i$.

The dependent variable is operating income divided by beginning of the year assets. Cash adjusted means subtracting cash and equivalents out of assets. Control-firm adjusted means subtracting the ROA of control firms matched on industry and size and performance. The dummy variable Favorable equals one if the offering takes place in favorable market month, and zero otherwise. The dummy variable Unfavorable equals one if the offering takes place in unfavorable market month, and zero otherwise. Market conditions are classified according to a weighted average of Baker and Wurgler's sentiment index for the three months preceding an IPO minus the average of the index for the twelve months preceding an IPO. Months with an adjusted sentiment index in the top three deciles of the distribution over time are classified as favorable. Months in the bottom three deciles are classified as unfavorable. Robust standard errors in parentheses. Significance: * at 10%; ** at 5%; *** at 1%

	One-Year Horizon (ROA,0 -ROA-1)				Three-Year Horizon (ROA,2 -ROA-1)				Four-Year Horizon (ROA,3 -ROA-1)			
	All	All	Age>5	Age<5	All	All	Age>5	Age<5	All	All	Age>5	Age<5
Panel A: Control Firm Adjusted Return on Cash-Adjusted Assets												
Favorable market		0.01	0.006	0.048		0.004	-0.001	0.039		0.012	-0.003	0.081
		[0.004]***	[0.005]	[0.013]***		[0.009]	[0.010]	[0.021]*		[0.009]	[0.010]	[0.034]**
Unfavorable market		0.004	0.006	0.009		-0.008	-0.008	-0.009		-0.011	-0.022	0.013
		[0.004]	[0.005]	[0.015]		[0.011]	[0.011]	[0.025]		[0.010]	[0.011]**	[0.039]
Constant	0.008	0.002	-0.003	0.011	-0.041	-0.041	-0.053	-0.004	-0.048	-0.052	-0.057	-0.021
	[0.002]***	[0.003]	[0.004]	[0.010]	[0.004]***	[0.008]***	[0.008]***	[0.017]	[0.004]***	[0.007]***	[0.008]***	[0.027]
R-squared	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0.01	0.02
Panel B: Return on Cash-Adjusted Assets												
Favorable market		0.01	0.005	0.041		0.002	-0.007	0.034		0.011	-0.003	0.07
		[0.004]**	[0.005]	[0.012]***		[0.009]	[0.011]	[0.019]*		[0.010]	[0.010]	[0.030]**
Unfavorable market		0.004	0.003	0.006		-0.01	-0.016	-0.002		-0.015	-0.022	-0.011
		[0.005]	[0.005]	[0.014]		[0.011]	[0.012]	[0.022]		[0.012]	[0.012]*	[0.035]
Constant	0.008	0.003	0	0.012	-0.043	-0.04	-0.051	-0.006	-0.05	-0.051	-0.06	-0.013
	[0.002]***	[0.004]	[0.004]	[0.010]	[0.004]***	[0.008]***	[0.009]***	[0.015]	[0.004]***	[0.008]***	[0.008]***	[0.024]
R-squared	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0.01	0.02
Panel C: Return on Assets												
Favorable market		0.013	0.007	0.05		0.007	-0.004	0.044		0.018	0.007	0.075
		[0.005]***	[0.004]	[0.010]***		[0.007]	[0.009]	[0.017]**		[0.007]**	[0.010]	[0.021]***
Unfavorable market		0.003	0.004	0.007		-0.009	-0.012	0.001		-0.006	-0.012	0.01
		[0.006]	[0.005]	[0.012]		[0.008]	[0.010]	[0.020]		[0.008]	[0.011]	[0.025]
Constant	-0.008	-0.015	-0.021	0.001	-0.042	-0.042	-0.049	-0.023	-0.047	-0.055	-0.062	-0.03
	[0.002]***	[0.004]***	[0.003]***	[0.008]	[0.003]***	[0.006]***	[0.007]***	[0.014]	[0.003]***	[0.006]***	[0.008]***	[0.017]*
Observations	4449	4449	2989	1460	3751	3751	2579	1172	3366	3366	2327	1039

Table 3: Market Conditions Effect on Post-IPO Investment Activity

The table reports the coefficients of the following regression for all firms, and separately for old and young firms:

$Investment_{i,t} = \beta_0 + \beta_1 Favorable + \beta_2 Unfavorable + \beta_3 X + \varepsilon$.

The dependent variable, Investment, is the sum of one of the four investment measures from year 0 to year t normalized by total book assets (COMPUSTAT Annual Item 6) at the IPO date. Four investment measures include R&D, capital expenditures, acquisitions, and total investment (sum of R&D, capex and acquisitions).

The dummy variable Favorable equals one if the offering takes place in favorable market month, and zero otherwise. The dummy variable Unfavorable equals one if the offering takes place in unfavorable market month, and zero otherwise. Market conditions are classified according to a weighted average of Baker and Wurgler's sentiment index for the three months preceding an IPO minus the average of the index for the twelve months preceding an IPO. Months with an adjusted sentiment index in the top three deciles of the distribution over time are classified as favorable. Months in the bottom three deciles are classified as unfavorable.

We define firm as young if its age at the time of an IPO is less than five years. To control for heterogeneity in industry characteristics, we include industry fixed effects defined by Fama and French's (1997) 30-industry classification. We use a logarithmic transformation of each investment variable in order to minimize the impact of outliers. We report heteroscedasticity-consistent White-Huber standard errors in parentheses.

Panel A: Market Conditions Effect on Post-IPO Acquisition Activity

	All IPOs			Young (Age <5)			Old (Age>5)		
	t=1	t=2	t=3	t=1	t=2	t=3	t=1	t=2	t=3
Favorable Market	0.027	0.03	0.014	-0.009	-0.051	-0.085	0.028	0.045	0.039
	[0.017]	[0.041]	[0.028]	[0.047]	[0.102]	[0.075]	[0.012]**	[0.038]	[0.023]*
Unfavorable Market	0.006	0.016	-0.001	0.014	0.012	-0.006	0.005	0.027	0.006
	[0.018]	[0.045]	[0.030]	[0.048]	[0.110]	[0.079]	[0.013]	[0.043]	[0.025]
Assets $_{t=-1}$	-0.025	-0.056	-0.044	-0.041	-0.096	-0.079	-0.013	-0.026	-0.02
	[0.005]***	[0.012]***	[0.008]***	[0.013]***	[0.028]***	[0.019]***	[0.004]***	[0.012]**	[0.008]***
Industry market	0.341	0.707	0.408	0.59	1.277	0.778	0.14	0.293	0.15
to book $_{t=-1}$	[0.039]***	[0.078]***	[0.052]***	[0.077]***	[0.147]***	[0.105]***	[0.034]***	[0.076]***	[0.045]***
Industry ROA $_{t=-1}$	0.255	0.092	0.443	0.024	-0.79	0.47	0.505	0.63	0.752
	[0.294]	[0.780]	[0.517]	[0.749]	[1.859]	[1.280]	[0.266]*	[0.787]	[0.506]
VC backing	0.073	0.18	0.12	0.117	0.213	0.103	0.029	0.116	0.089
	[0.017]***	[0.040]***	[0.026]***	[0.042]***	[0.091]**	[0.061]*	[0.013]**	[0.040]***	[0.025]***
Constant	-0.417	-3.1	-0.336	-0.655	-3.62	-0.813	-0.214	-2.717	-0.108
	[0.060]***	[0.148]***	[0.117]***	[0.138]***	[0.328]***	[0.233]***	[0.052]***	[0.149]***	[0.124]
Observations	4130	3736	3337	1331	1167	1027	2799	2569	2310
R-squared	0.11	0.12	0.11	0.16	0.19	0.17	0.06	0.07	0.06

Panel B: Market Conditions Effect on Capital Expenditures

	All IPOs			Young (Age <5)			Old (Age>5)		
	t=1	t=2	t=3	t=1	t=2	t=3	t=1	t=2	t=3
Favorable Market	0.056	0.054	0.054	0.088	0.087	0.059	0.04	0.046	0.057
	[0.014]***	[0.018]***	[0.022]**	[0.032]***	[0.042]**	[0.052]	[0.013]***	[0.018]**	[0.022]**
Unfavorable Market	0.002	0.003	-0.01	0.006	0.02	0.012	-0.004	-0.003	-0.023

	[0.015]	[0.020]	[0.025]	[0.034]	[0.047]	[0.059]	[0.014]	[0.019]	[0.024]
Assets $_{t=-1}$	-0.113	-0.131	-0.149	-0.156	-0.177	-0.198	-0.085	-0.101	-0.117
	[0.006]***	[0.007]***	[0.008]***	[0.013]***	[0.014]***	[0.017]***	[0.006]***	[0.007]***	[0.008]***
Industry market	0.125	0.086	0.048	0.167	0.108	0.056	0.071	0.048	0.022
to book $_{t=-1}$	[0.021]***	[0.026]***	[0.031]	[0.043]***	[0.053]**	[0.063]	[0.020]***	[0.025]*	[0.032]
Industry ROA $_{t=-1}$	1.622	2.305	2.758	2.876	3.25	3.347	1.244	1.93	2.511
	[0.282]***	[0.378]***	[0.482]***	[0.590]***	[0.828]***	[1.047]***	[0.301]***	[0.393]***	[0.510]***
VC backing	0.022	0.063	0.091	0.055	0.124	0.166	-0.005	0.023	0.043
	[0.013]*	[0.016]***	[0.020]***	[0.029]*	[0.036]***	[0.044]***	[0.013]	[0.017]	[0.021]**
Constant	0.586	0.819	1.003	0.875	1.178	1.589	0.486	0.705	0.834
	[0.089]***	[0.113]***	[0.133]***	[0.218]***	[0.257]***	[0.334]***	[0.079]***	[0.118]***	[0.132]***
Observations	4082	3677	3271	1316	1146	1003	2766	2531	2268
R-squared	0.25	0.24	0.24	0.28	0.27	0.27	0.23	0.22	0.23

Panel C: Market Conditions Effect on R&D Expenditures

	All IPOs			Young (Age <5)			Old (Age>5)		
	t=1	t=2	t=3	t=1	t=2	t=3	t=1	t=2	t=3
Favorable Market	0.04	0.04	0.037	0.062	0.041	0.012	0.025	0.034	0.041
	[0.013]***	[0.018]**	[0.023]	[0.029]**	[0.041]	[0.051]	[0.014]*	[0.019]*	[0.024]*
Unfavorable Market	-0.009	-0.007	-0.014	-0.009	-0.012	-0.04	-0.007	-0.001	0.003
	[0.014]	[0.020]	[0.025]	[0.030]	[0.044]	[0.056]	[0.015]	[0.021]	[0.027]
Assets $_{t=-1}$	-0.091	-0.115	-0.133	-0.129	-0.154	-0.166	-0.075	-0.098	-0.12
	[0.006]***	[0.007]***	[0.008]***	[0.011]***	[0.014]***	[0.016]***	[0.006]***	[0.008]***	[0.010]***
Industry market	0.235	0.266	0.259	0.255	0.281	0.23	0.205	0.237	0.26
to book $_{t=-1}$	[0.022]***	[0.029]***	[0.036]***	[0.040]***	[0.054]***	[0.067]***	[0.025]***	[0.034]***	[0.042]***
Industry ROA $_{t=-1}$	-0.962	-0.914	-0.99	-0.589	-0.137	0.347	-1.064	-1.238	-1.534
	[0.287]***	[0.391]**	[0.507]*	[0.593]	[0.821]	[1.056]	[0.315]***	[0.426]***	[0.562]***
VC backing	0.216	0.292	0.37	0.284	0.383	0.49	0.179	0.24	0.304
	[0.014]***	[0.018]***	[0.023]***	[0.029]***	[0.039]***	[0.048]***	[0.015]***	[0.020]***	[0.025]***
Constant	0.317	0.411	0.531	0.335	0.348	0.243	0.332	0.45	0.58
	[0.105]***	[0.130]***	[0.153]***	[0.134]**	[0.184]*	[0.195]	[0.134]**	[0.159]***	[0.178]***
Observations	4078	3682	3277	1318	1153	1008	2760	2529	2269
R-squared	0.43	0.46	0.48	0.44	0.46	0.48	0.43	0.45	0.48

Panel D: Market Condition Effect on All Investment

	All IPOs			Young (Age <5)			Old (Age>5)		
	t=1	t=2	t=3	t=1	t=2	t=3	t=1	t=2	t=3
Favorable Market	0.098	0.063	0.068	0.12	0.053	-0.002	0.078	0.068	0.093

	[0.022]***	[0.028]**	[0.033]**	[0.052]**	[0.065]	[0.078]	[0.021]***	[0.027]**	[0.033]***
Unfavorable Market	0.011	-0.003	-0.022	0.016	-0.002	-0.042	0.009	0.002	-0.009
	[0.023]	[0.031]	[0.036]	[0.055]	[0.071]	[0.084]	[0.022]	[0.031]	[0.037]
Assets $_{t=-1}$	-0.184	-0.209	-0.232	-0.242	-0.269	-0.292	-0.148	-0.169	-0.193
	[0.008]***	[0.009]***	[0.010]***	[0.016]***	[0.019]***	[0.022]***	[0.008]***	[0.010]***	[0.011]***
Industry market	0.539	0.541	0.513	0.711	0.709	0.68	0.373	0.392	0.374
to book $_{t=-1}$	[0.039]***	[0.044]***	[0.052]***	[0.075]***	[0.086]***	[0.100]***	[0.038]***	[0.044]***	[0.053]***
Industry ROA $_{t=-1}$	0.616	0.31	0.483	1.651	0.822	1.655	0.382	0.141	0.152
	[0.461]	[0.595]	[0.710]	[0.941]*	[1.245]	[1.502]	[0.515]	[0.654]	[0.780]
VC backing	0.209	0.273	0.344	0.288	0.351	0.417	0.148	0.211	0.277
	[0.021]***	[0.026]***	[0.031]***	[0.046]***	[0.056]***	[0.066]***	[0.021]***	[0.027]***	[0.032]***
Constant	0.515	0.853	1.172	0.716	1.132	1.505	0.539	0.833	1.151
	[0.129]***	[0.154]***	[0.175]***	[0.246]***	[0.297]***	[0.349]***	[0.144]***	[0.174]***	[0.192]***
Observations	4031	3624	3213	1304	1133	986	2727	2491	2227
R-squared	0.33	0.32	0.32	0.33	0.31	0.29	0.32	0.31	0.32

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: The effect of market conditions and post-IPO investment on operating performance

The table reports OLS estimates of $AROA_{i,,t} - AROA_{i,-1} = \beta_0 + \beta_1 Favorable + \beta_2 Unfavorable + \beta_3\ Favorable\ x\ Instestment_{0,1} + \beta_4\ X + \varepsilon.$

The dependent variable is change in control-firm adjusted ROA from fiscal year prior to IPO (t=-1) to years 2 and 3 after IPO (t=2 and t=3). Control firm is matched on the Fama-French's (1997) 30 industry and size and performance.

The dummy variable Favorable equals one if the offering takes place in favorable market month, and zero otherwise. The dummy variable Unfavorable equals one if the offering takes place in unfavorable market month, and zero otherwise. Market conditions are classified according to a weighted average of Baker and Wurgler's sentiment index for the three months preceding an IPO minus the average of the index for the twelve months preceding an IPO. Months with an adjusted sentiment index in the top three deciles of the distribution over time are classified as favorable. Months in the bottom three deciles are classified as unfavorable. Heteroscedasticity-consistent White-Huber standard errors are in brackets.

Panel A: Investment Effect on Change in AROA from t=-1 to t=2

	All	All	All	All	Young	Young	Young	Young	Old	Old	Old	Old
Favorable market	0.028	-0.008	-0.03	-0.055	-0.001	-0.069	-0.038	-0.112	0.104	0.12	0.007	0.071
	[0.030]	[0.033]	[0.026]	[0.030]*	[0.019]	[0.030]**	[0.016]**	[0.022]***	[0.075]	[0.099]	[0.074]	[0.090]
Unfavorable market	-0.039	-0.038	-0.031	-0.04	-0.016	-0.022	-0.018	-0.023	-0.055	-0.051	-0.036	-0.047
	[0.030]	[0.030]	[0.027]	[0.029]	[0.024]	[0.023]	[0.023]	[0.024]	[0.082]	[0.080]	[0.075]	[0.077]
Acquisitions	0.119				-0.049				0.209			
	[0.030]***				[0.024]**				[0.040]***			
Favorable market x x acquisitions	0.089				0.181				-0.002			
	[0.052]*				[0.043]***				[0.062]			
Capital expend.		0.161				0.006				0.219		
		[0.053]***				[0.045]				[0.071]***		
Favorable market x x capital exp.		0.148				0.27				0.01		
		[0.084]*				[0.090]***				[0.106]		
R&D expend.			0.339				0.191				0.46	
			[0.056]***				[0.077]**				[0.070]***	
Favorable market x x R&D expend			0.208				0.226				0.155	
			[0.088]**				[0.091]**				[0.117]	
Total investment				0.179				0.036				0.258
				[0.026]***				[0.031]				[0.044]***
Favorable market x x total investment				0.111				0.2				0.01
				[0.043]**				[0.041]***				[0.067]
Sales$_{t=-1}$	-0.004	0.012	0.037	0.03	0.013	0.022	0.039	0.031	-0.028	-0.013	0.035	0.014
	[0.009]	[0.008]	[0.005]***	[0.007]***	[0.008]	[0.006]***	[0.006]***	[0.008]***	[0.018]	[0.018]	[0.015]**	[0.017]
Leverage$_{t=-1}$	0.171	0.145	0.165	0.157	0.161	0.142	0.148	0.149	0.243	0.211	0.275	0.238
	[0.052]***	[0.054]**	[0.052]***	[0.051]***	[0.067]**	[0.064]**	[0.063]**	[0.063]**	[0.088]**	[0.101]**	[0.084]***	[0.093]**
VC backing	0.232	0.256	0.105	0.185	0.135	0.144	0.056	0.111	0.386	0.435	0.203	0.333
	[0.043]***	[0.045]***	[0.041]**	[0.042]***	[0.025]***	[0.024]***	[0.023]**	[0.023]***	[0.074]***	[0.075]***	[0.076]**	[0.078]***
Constant	-0.171	-0.264	-0.322	-0.358	-0.215	-0.252	-0.321	-0.292	-0.131	-0.247	-0.349	-0.402
	[0.045]***	[0.048]***	[0.034]***	[0.035]***	[0.037]***	[0.038]***	[0.025]***	[0.033]***	[0.092]	[0.115]**	[0.086]***	[0.104]***
Observations	3734	3689	3686	3642	2568	2536	2532	2500	1166	1153	1154	1142
R-squared	0.07	0.07	0.12	0.1	0.05	0.06	0.09	0.07	0.1	0.08	0.14	0.11

Panel B: Investment Effect on Change in AROA from t=-1 to t=3

	All	All	All	All	Young	Young	Young	Young	Old	Old	Old	Old
Favorable market	0.066	0.02	-0.032	-0.067	0.031	-0.06	-0.049	-0.142	0.156	0.177	0.029	0.079
	[0.031]**	[0.037]	[0.027]	[0.029]**	[0.023]	[0.036]	[0.021]**	[0.027]***	[0.075]**	[0.082]**	[0.087]	[0.093]
Unfavorable market	-0.042	-0.043	-0.033	-0.042	-0.011	-0.019	-0.014	-0.018	-0.075	-0.079	-0.043	-0.06
	[0.041]	[0.041]	[0.037]	[0.039]	[0.025]	[0.025]	[0.024]	[0.026]	[0.096]	[0.094]	[0.086]	[0.091]
Acquisitions	0.128				-0.071				0.225			
	[0.040]***				[0.024]***				[0.031]***			
Favorable market x x acquisitions	0.118				0.211				0.029			
	[0.056]**				[0.053]***				[0.053]			
Capital expend.		0.162				-0.029				0.249		
		[0.065]**				[0.061]				[0.080]***		
Favorable market x x capital exp.		0.181				0.339				0.005		
		[0.110]				[0.099]***				[0.139]		
R&D expend.			0.327				0.161				0.475	
			[0.077]***				[0.085]*				[0.124]***	
Favorable market x x R&D expend			0.359				0.401				0.268	
			[0.100]***				[0.075]***				[0.177]	
Total investment				0.178				0.002				0.277
				[0.030]***				[0.035]				[0.040]***
Favorable market x x total investment				0.182				0.298				0.057
				[0.043]***				[0.038]***				[0.083]
Sales$_{t=-1}$	-0.013	0.004	0.034	0.026	0.002	0.011	0.035	0.023	-0.03	-0.014	0.038	0.019
	[0.009]	[0.007]	[0.006]***	[0.007]***	[0.012]	[0.010]	[0.008]***	[0.010]**	[0.019]	[0.019]	[0.016]**	[0.016]
Leverage$_{t=-1}$	0.181	0.155	0.171	0.166	0.186	0.166	0.166	0.172	0.206	0.182	0.252	0.209
	[0.051]***	[0.053]***	[0.051]***	[0.050]***	[0.054]***	[0.053]***	[0.051]***	[0.052]***	[0.101]*	[0.110]	[0.100]**	[0.106]*
VC backing	0.27	0.298	0.122	0.213	0.158	0.167	0.061	0.129	0.428	0.483	0.223	0.362
	[0.060]***	[0.064]***	[0.049]**	[0.055]***	[0.031]***	[0.031]***	[0.021]***	[0.024]***	[0.093]***	[0.093]***	[0.094]**	[0.096]***
Constant	-0.166	-0.258	-0.323	-0.359	-0.211	-0.236	-0.328	-0.273	-0.107	-0.234	-0.337	-0.404
	[0.053]***	[0.055]***	[0.039]***	[0.047]***	[0.053]***	[0.057]***	[0.032]***	[0.043]***	[0.105]	[0.117]*	[0.100]***	[0.114]***
Observations	3352	3312	3308	3269	2318	2287	2286	2255	1034	1025	1022	1014
R-squared	0.09	0.08	0.16	0.13	0.06	0.07	0.14	0.1	0.12	0.09	0.16	0.14

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Frequency distribution of IPOs across states of the market and age groups classified as viable and nonviable within 2 years and 5 years

The table reports the frequency of the two categories of outcomes at 24 months and 60 months after the IPO date. We classify a firm as viable within the two or five years subsequent to the IPO date if is CRSP delisting codes is 100, or the stock is noted as having moved to another national exchange, codes 501-503. Nonviable firms have a code indicating liquidation, codes 400-490, or indicating a delisting from CRSP for reasons likely related to poor performance, codes 500 and 535-590.

Panel A: All Firms

	Firm Status: 2 year					Firm Status: 5 year					
Age	Viable	Viable	Failed	Failed	Total	Viable	Viable	Failed	Failed	Total	
	No.	col %	No.	col %	No.	No.	col %	No.	col %	No.	
Age>5	3126	97.2	91	2.8	3217	Age>5	2870	92.8	223	7.2	3093
Age<5	1586	95.4	76	4.6	1662	Age<5	1453	89.4	172	10.6	1625
Total	4712	96.6	167	3.4	4879	Total	4323	91.6	395	8.4	4718

Panel B: Regular Market

Age>5	821	97	25	3	846	Age>5	719	93.1	53	6.9	772
Age<5	414	95.4	20	4.6	434	Age<5	360	87.4	52	12.6	412
Total	1235	96.5	45	3.5	1280	Total	1079	91.1	105	8.9	1184

Panel C: Unfavorable Market

Age>5	843	97	26	3	869	Age>5	797	92.4	66	7.6	863
Age<5	378	94.7	21	5.3	399	Age<5	348	87.9	48	12.1	396
Total	1221	96.3	47	3.7	1268	Total	1145	90.9	114	9.1	1259

Panel D: Favorable Market

Age>5	1462	97.3	40	2.7	1502	Age>5	1354	92.9	104	7.1	1458
Age<5	794	95.8	35	4.2	829	Age<5	745	91.2	72	8.8	817
Total	2256	96.8	75	3.2	2331	Total	2099	92.3	176	7.7	2275

Table 6: Logit regressions on status of firms by the end of two and five years after an initial public offering

The dependent variable is one, representing firm failure, if the CRSP delisting code indicates liquidation, codes 400-490, or a delisting for reasons related to poor performance, codes 500 and 535-590. The table presents marginal effects and standard errors (in brackets).

The dummy variable Favorable equals one if the offering takes place in favorable market month, and zero otherwise. The dummy variable Unfavorable equals one if the offering takes place in unfavorable market month, and zero otherwise. Market conditions are classified according to a weighted average of Baker and Wurgler's sentiment index for the three months preceding an IPO minus the average of the index for the twelve months preceding an IPO. Months with an adjusted sentiment index in the top three deciles of the distribution over time are classified as favorable. Months in the bottom three deciles are classified as unfavorable.

Panel A: Logit regressions on status of firms by the end of two years after an IPO

VARIABLES	All	All	All	All	Old	Old	Old	Old	Young	Young	Young	Young
Favorable market	0.003	0.004	0.001	0.004	0	0.003	0.001	0.004	0.007	0.007	0.004	0.007
	[0.005]	[0.007]	[0.006]	[0.007]	[0.006]	[0.008]	[0.006]	[0.008]	[0.009]	[0.014]	[0.013]	[0.015]
Unfavorable market	0.007	0.008	0.006	0.008	0.004	0.006	0.003	0.005	0.013	0.015	0.014	0.015
	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.012]	[0.015]	[0.015]	[0.015]
Assets$_{t=-1}$	-0.007**	-0.007**	-0.008**	-0.008**	-0.005**	-0.005**	-0.006**	-0.005**	-0.005*	-0.008**	-0.008*	-0.010**
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]	[0.002]	[0.002]	[0.003]	[0.003]	[0.003]
Operating return$_{t=-1}$	-0.001	-0.001	-0.001	-0.001	0.001	0	-0.002	0.001	-0.001	-0.001	-0.001	-0.001
	[0.001]	[0.001]	[0.001]	[0.001]	[0.003]	[0.003]	[0.003]	[0.003]	[0.001]	[0.001]	[0.001]	[0.001]
Leverage$_{t=-1}$	0.004*	0.004*	0.005*	0.005*	0.002	0.002	0.003	0.003	0.014**	0.017**	0.019**	0.017**
	[0.002]	[0.002]	[0.002]	[0.002]	[0.003]	[0.003]	[0.003]	[0.003]	[0.005]	[0.006]	[0.007]	[0.006]
Venture capital backing	-0.015**	-0.016**	-0.011*	-0.014**	-0.010*	-0.011*	-0.006	-0.012*	-0.022*	-0.029**	-0.026*	-0.021*
	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.009]	[0.011]	[0.012]	[0.010]
Acquisitions	-0.005				0.006				-0.056			
	[0.007]				[0.006]				[0.031]			
Favorable market x acquisitions	-0.001				-0.004				0.039			
	[0.009]				[0.008]				[0.037]			
Capital expenditures		0				0.007				-0.013		
		[0.007]				[0.009]				[0.013]		
Favorable market x capital expend			-0.002				-0.005				0.003	
			[0.008]				[0.011]				[0.017]	
R&D expenditures		-0.015				-0.015				-0.017		
		[0.008]				[0.011]				[0.015]		
Favorable market x R&D expend				0.006				-0.004				0.013
				[0.010]				[0.013]				[0.017]
Total investment				-0.005				0.003				-0.019
				[0.005]				[0.006]				[0.010]
Favorable market x total investment				-0.001								-0.005
				[0.006]				[0.007]				[0.012]
Obs.	4130	4082	4078	4031	2799	2766	2760	2727	1331	1316	1318	1304

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Panel B: Logit regressions on status of firms by the end of five years after an IPO

VARIABLES	All	All	All	All	Old	Old	Old	Old	Young	Young	Young	Young
Favorable market	0.001	-0.001	-0.008	-0.002	0.01	0.007	0.001	0.006	-0.012	-0.014	-0.026	-0.014
	[0.009]	[0.012]	[0.010]	[0.012]	[0.011]	[0.014]	[0.010]	[0.014]	[0.018]	[0.024]	[0.021]	[0.024]
Unfavorable market	0.018	0.018	0.014	0.017	0.019	0.021	0.015	0.018	0.019	0.019	0.014	0.021
	[0.011]	[0.011]	[0.011]	[0.011]	[0.013]	[0.013]	[0.012]	[0.013]	[0.020]	[0.021]	[0.021]	[0.020]
Assets$_{t=-1}$	-0.021**	-0.022**	-0.025**	-0.025**	-0.020**	-0.019**	-0.023**	-0.021**	-0.017**	-0.022**	-0.022**	-0.025**
	[0.002]	[0.002]	[0.002]	[0.002]	[0.003]	[0.003]	[0.003]	[0.003]	[0.005]	[0.005]	[0.005]	[0.005]
Operating return$_{t=-1}$	0	0	-0.002	-0.001	-0.002	-0.001	-0.012**	-0.003	0	0.001	0	-0.001
	[0.002]	[0.002]	[0.002]	[0.002]	[0.004]	[0.004]	[0.005]	[0.004]	[0.004]	[0.005]	[0.003]	[0.003]
Leverage$_{t=-1}$	0.009	0.010*	0.013*	0.011*	0.004	0.004	0.005	0.005	0.025*	0.028*	0.026	0.025*
	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.006]	[0.005]	[0.012]	[0.013]	[0.014]	[0.013]
Venture capital backing	-0.041**	-0.043**	-0.024**	-0.034**	-0.036**	-0.036**	-0.019*	-0.032**	-0.059**	-0.065**	-0.045*	-0.044**
	[0.007]	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]	[0.009]	[0.008]	[0.016]	[0.017]	[0.018]	[0.016]
Acquisitions	-0.019				-0.001				-0.05			
	[0.012]				[0.013]				[0.026]			
Favorable market x acquisitions	-0.006				-0.015				0.01			
	[0.016]				[0.018]				[0.034]			
Capital expenditures		-0.014				0.007				-0.049*		
		[0.013]				[0.017]				[0.023]		
Favorable market x capital expend			0.002				0.003				0.004	
			[0.016]				[0.020]				[0.032]	
R&D expenditures			-0.075**				-0.097**				-0.070**	
			[0.017]				[0.023]				[0.027]	
Favorable market x R&D expend				0.039*				0.047				0.04
				[0.019]				[0.024]				[0.032]
Total investment				-0.032**				-0.019				-0.056**
				[0.010]				[0.012]				[0.016]
Favorable market x total investment				0.008				0.007				
				[0.012]				[0.014]				[0.022]
Obs.	3988	3941	3937	3891	2687	2654	2649	2616	1301	1287	1288	1275