

# **The history and performance of concept stocks**

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## **The history and performance of concept stocks**

(Abstract)

The recent financial literature contains several analyses of the characteristics and performance of various classes of stocks and investment strategies. These include the analysis of value vs. glamour stocks, IPO firms, and contrarian/momentum investment strategies. We examine a previously unexplored class of stocks generally distinct from these groups but discussed regularly in the financial press over the past three decades: concept stocks. Empirically, concept stocks are defined as firms with extremely high levels of market to sales. To many, these stocks appear overvalued. However, proponents argue that because of their unique characteristics, traditional pricing models fail to correctly value these firms. Using a sample extending from 1967 through 1999, we demonstrate that the identity and characteristics of concept stocks have changed dramatically over time. Although the obvious recent examples are Internet and biotech stocks, concept stocks characterize every period. The industries containing the most popular concept stocks evolve from oil and gas extraction in the 60s and 70s, to computer and office equipment in the 80s, and to computer-related services in the 90s. We find that the sales-to-market ratio has decreased considerably over the sample period and that the percentage of firms with positive earnings has sharply declined. In more recent years, concept stocks tend to be larger in terms of market value, less profitable and with a higher level of R&D and capital investment. The analysis of long-run performance of concept stocks, using both Fama-French factors and buy-and-hold returns, reveals significant underperformance. The results are robust to extensive sensitivity analysis and are separate from glamour, IPO, or contrarian effects.

# The history and performance of concept stocks

## 1. Introduction

The recent financial literature contains several interesting empirical analyses of the characteristics and performance of various types of stocks and investment strategies. For example, Fama and French (2001) analyze the “fundamentals, survival rates, and returns” of newly listed firms, DeBondt and Thaler (1985) test long-term contrarian investment strategies, Jegadeesh and Titman (1993) test short-term momentum effects, Lakonishok, Shleifer, and Vishny (1994) and La Porta, Lakonishok, Shleifer, and Vishny (1997) examine investments in value vs. glamour stocks. In the spirit of these analyses, we examine the history and performance of a quite different class of stocks regularly cited in the financial press but not addressed in the academic literature: concept stocks. Concept stocks are generally defined as stocks with extremely low sales to price ratios. The term “concept” relates to the suggestion that investors need to buy into the concept or idea of a company to understand what would otherwise appear to be a high valuation.<sup>1</sup>

Typical of the quotes that have appeared in the financial press about concept stocks over the past three decades is:

*“You could tell it was a concept stock because the financials were so bad. ...The market capitalization was out of proportion to everything but management’s promises.”<sup>2</sup>*

The most obvious recent examples are Internet and biotechnology stocks.<sup>3</sup> Concept stocks, however, are not new to the economy. Indeed, the quote above was written over a decade ago about Fuddruckers, a hamburger chain!

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<sup>1</sup> For example, John C. Boggle Jr. President of Boggle Investment Management, states: “the more overpriced a stock is, the more overpriced it can become. There is no sensible metric for valuing” concept stocks. See: “If ‘concept stocks’ are stuff dreams are made on, does a rude awakening loom?” Heard On The Street, Wall Street Journal, Feb. 17 2000.

<sup>2</sup> Frederick E. Rowe Jr., “Don’t Get Mad, Go Short.” Forbes, June 25, 1990.

<sup>3</sup> A partial list of the literature examining the pricing of Internet stocks includes Cooper, Dimitrov and Rau (2001), Trueman, Wong and Zhang (2001), Demers and Lev (2000), Cornell and Liu (2000) and Hand (2000).

To some observers, the prices of concept stocks are far beyond any reasonable relation to the expectation of future earnings or cash flows. In fact, the companies represented by concept stocks often have little or no positive earnings to evaluate. Concept stocks are typically defined by the ratio of sales to market for the specific reason that metrics such as the price-earnings ratios are meaningless for companies with negative earnings.

Proponents of these stocks argue that you must buy the “concept” in order to understand their valuation. The concept typically relates to unforeseen future earnings that would justify the current price.<sup>4</sup> It is often argued that because of unusually high levels of R&D, advertising or capital expenditures, these firms are difficult to value but have the potential for dramatically higher returns in the future. In this regard, our research is related to the debate on the market valuation of capital expenditures. Lev and Sougiannis (1996) find a positive relationship between R&D capital and subsequent stock returns. Their results are interpreted as either a rational compensation for risks unidentified by existing asset-pricing models or a systematic mispricing for firms with more intangible assets. On the other hand, Chan, Lakonishok, and Sougiannis (2002) show that there is no direct link between investments in R&D and future stock returns. Firms with high R&D earn an average return similar to those without R&D in the subsequent three years. A recent study by Titman, Wei, and Xie (2001) provide evidence that firms with high capital expenditures earn lower benchmark-adjusted stock returns, a result primarily driven by the over-investment problem. Obviously, the evidence is mixed. Moreover, until it is established that high R&D and capital expenditures characterize concept stocks, the linkage to these results remains tenuous.

In its most polite form, disagreement over the valuation of concept stocks can be reduced to disagreements about future performance. Two hypotheses are implied. The first is that concept stocks represent fads in market pricing. That is, for particular reasons, certain stocks receive valuations that are out of proportion with the rest of the market. Some investors tend to get overly excited about owning those “trendy” stocks *regardless of* their past performance. La Porta, Lakonishok, Shleifer and Vishny (1997), for

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<sup>4</sup> A variation is that traditional methods, or the parameters used in these methods are inappropriate. For example, it has been argued that the risk premium utilized to discount expected cash flows from technology stocks is too high.

example, argue for behavioral explanations. Shiller, (1999) cites “Irrational Exuberance.” Along these lines investors overprice securities because they inappropriately extrapolate high growth rates or underestimate the riskiness of a stock.<sup>5</sup> Under the fad or behavioral interpretation, the subsequent performance of concept stocks is predicted to be dismal. The alternative hypothesis is that the pricing of concept stocks accurately reflects the dynamics of their economic fundamentals. Apparent mispricings are instead rational compensation for risks unidentified by existing pricing models (e.g. Fama-French (1993)).<sup>6</sup> The question “Are concept stocks overvalued?” can be addressed empirically. One of the major objectives of this research is to provide such a test.

In the process of testing these hypotheses we document several interesting results. First, the types of firms identified as concept stocks have changed dramatically over the past three decades. This is true of their industrial composition as well as their financial characteristics. We find that the typical concept stock is larger in terms of market value, younger and less profitable than a comparable control firm. However, the characteristics of concept firms have varied considerably over time.

Second, the relative valuation of the typical concept stock has increased sharply over time. The typical concept stock sells for five times sales in the late sixties, two times sales in the mid to late seventies and forty-five times sales by the last year in our sample, 1999. The typical control firm sells for 1.2 times sales at the beginning of our sample period and 1.36 times sales at the end. Third, while more than 95% of concept stocks have positive earnings near the beginning of our sample, less than 40% have positive earnings near the end of our sample. In terms of market value, concept stocks tend to be larger than their matched control firms and the average CRSP firms. Concept firms, however, are significantly smaller than the typical CRSP and matched firms in terms of book value. Fourth, the long run performance of concept stocks is negative relative to control firms. This result holds no matter whether measured by Fama-French (1993) factors or buy and hold returns and are robust to extensive sensitivity analyses. Fifth, consistent with street wisdom, concept stocks have higher levels of research and development and greater capital expenditures than

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<sup>5</sup> See Hirshleifer (2001, forthcoming) for an extensive review of asset psychology and asset pricing.

<sup>6</sup> Other related literature includes Dreman and Berry (1995) who examine price earnings ratios and investor overreaction.

comparison firms. Our study indicates that although concept stocks are R&D-intensive firms, they are less profitable than an average firm. However, in contrast to the high R&D firms examined in Titman, Wei, and Xie (2001), the under-performance in our study is unlikely to be driven by the over-investment problem associated with a higher level of free cash flows. Finally, after controlling for the glamour, contrarian, or IPO effects, the under-performance of concept stocks is still significant. Thus, we do not believe that the concept effect is a metaphor of the glamour or contrarian effects.

This research also complements a recent theoretical model by Daniel, Hirshleifer, and Subrahmanyam (2001). In their model, some or all investors are overconfident about their abilities to interpret the quality of information they have about the values of securities. The implication from investor overconfidence is that the stocks traded by those informed, overconfident individuals eventually under-perform in the long run. In addition, the problem of investor misvaluation could be more severe for firms with fewer tangible assets. Concept stocks are ideal candidates to suffer from such misvaluation since they tend to be younger and more R&D-intensive than other firms in the market.

The remainder of the paper is organized as follows. Section 2 describes the data and the sample selection procedure. The identity and financial characteristics of concept stocks are discussed in Section 3. Section 4 examines the relative performance of concept stocks in terms of both accounting and rates of return. Section 5 concludes.

## **2. Sample Selection**

### *2.1 Background*

As background for understanding concept stocks, we searched the Dow Jones News Retrieval over the 1965 through 1999 period for all articles related to concept stocks. In particular, we identify all articles mentioning the word concept(s) where stock(s) was within five words. Our search has identified over 350

articles.<sup>7</sup> We then examine each of these articles and eliminate those that are irrelevant.<sup>8</sup> Many of the remaining articles comment on the wisdom (or lack thereof) of investing in concept stocks. These articles typically define concept stocks as those with extremely high price-to-earnings or price-to-sales ratios. The vast majority of articles do not give sufficient detail to classify a particular concept. Twenty-eight articles, however, from as far back as 1973, specifically identify a stock or industry as concept stocks. An overview of the concepts identified by these articles is contained in Table A, shown in the Appendix.<sup>9</sup> The table identifies the source and date of the article as well as the companies or industries involved. We have added the CRSP SIC codes of the concept industries and noted key excerpts of the text. It is apparent from the Table that the market's interest in concept stocks is not just a recent phenomenon. Moreover, the concepts, companies and industries identified in these articles are diverse and changing over time.

The specific concepts identified by these articles include discussions of “exciting business ideas” such as “improved management of doctors by doctors” or “the warehousing notion”. Some articles cite buying patterns: “baby boomers with money to invest purchasing the stocks they knew as children.” Other articles cite “inherent quality” or “under-valuation” or “long-term inflation hedges.” Most articles appear skeptical of concept stocks. In a classic rebuke of concept stocks, David Dremen notes in *Forbes* that

*“Netscape is trading at a P/E of 375 and America Online at 41. One is discounting the hereafter, the other is discounting eternity.”<sup>10</sup>*

## 2.2 Defining concept stocks and control samples

As with the “value vs. glamour” and contrarian literature, we need a simple objective criteria to identify concept stocks. Rather than focus on an ad hoc set of newsworthy stocks, we define concept stocks using an objective measure identified with concept stocks in the financial press: the ratio of sales to market. An alternate measure, like price to earnings, fails because it does not recognize firms with negative earnings.

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<sup>7</sup> A similar analysis of Lexis-Nexis identified a few additional concepts including, riverboat gambling, profiting from the Olympic games, Y2K problems, and China entering the World Trade Organization.

<sup>8</sup> For example, articles discussing the “concept of stock valuation” were deleted as were other instances where the words concept and stock appeared but were unrelated to stocks with high valuations difficult to explain by current fundamentals.

<sup>9</sup> A large number of articles appearing in 1998 and 1999 used the phrases concept stock inter-changeably with the discussion of Internet or technology stocks. These are not included in Table A.

The sales to market ratio also differs from the book to market ratio (used in the “value vs. glamour” literature) in that its denominator is an active flow measure, rather than a static, historical variable. We use the sales to market ratio rather than its inverse to avoid outliers caused by firms with extremely low sales.

To identify concept stocks, we begin with the intersection of all non-financial firms listed on the CRSP monthly return files and the merged Compustat annual industrial files for each of the years 1965-99. To ensure that the accounting variables are known before the return variables, we match the accounting data for all firms which have fiscal yearends in months January to May in calendar year t-1 with their returns in calendar year t. We further delete the firms with average stock prices less than \$5 during the selection year to avoid the impact of extreme outliers. For remaining firms we calculate the ratio of sales to the market value of equity at the calendar year end. *Concept stocks* are defined as firms in the lowest sales to market decile at the end of the calendar year. Thus, they comprise the 1<sup>st</sup> through 10<sup>th</sup> percentile of firms ranked in order of the sales to market ratio. The set of concept stocks is redefined at the end of each calendar year. Interestingly, the correlation between book to market and sales to market is only 0.09 for the CRSP/Compustat universe; it drops to 0.07 for the sample we will identify as concept stocks. Thus, our sample of concept stocks shows little overlap with those identified as glamour stocks.<sup>11</sup>

For the first part of our analysis we use a set of control firms matched on size and the book to market ratio. This matching-firm technique is suggested by Barber and Lyon (1996) and implemented in numerous studies such as Loughran and Ritter (1997), Brav, Geczy and Gompers (2000), Eckbo, Masulis, and Norli (2000) and Eckbo and Norli (2001). We select control firms using the following procedure: for each concept stock, select all firms with equity market values within 30% of the concept stock. If the initial subset contains fewer than five candidate firms, we expand the range of equity market value to be within 40% of the concept stock. We also delete potential control firms that are themselves concept stocks in the previous two years to increase independence in statistical tests and also to avoid the benchmark bias discussed in Loughran and Ritter (2000). The firm with the closest book-to-market ratio among the remaining firms is chosen as its

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<sup>10</sup> David Dreman, “Hot spots in a cool market”, *Forbes* 1/1/1996.

<sup>11</sup> To ensure that our results are not driven by the BV/MV effect, we later perform a robustness check on this issue.



control firm. We also show results for the set of all CRSP/Compustat firms with stock price exceeding \$5 (which includes concept stocks). We use the set of all firms because the matching characteristics utilized to identify controls (initially, size and market to book) are of interest themselves; it is also useful to have an alternate benchmark. Except where specified, differences between concept and control firms also hold between concept and all firms. In subsequent sections we also perform extensive sensitivity tests examining alternate control groups by using other firm characteristics such as industry, cash flows and firm age.

### *2.3 The time series of sales to market ratios*

Panel A of Table 1 reveals the sales-to-market ratio for concept stocks, control firms and all firms over the 33 years of our sample. As noted by the sample size in the far right column, approximately 1300 to 3500 firms per year comprise the intersection of CRSP and Compustat firms from which concept and control firms are selected. In general, the total number of firms increases over time. Particularly notable is the dramatic increase between 1981 and 1982. This is because of the addition of newly-listed Nasdaq firms to the CRSP database. Fama and French (2001) also document this increase. Further, since CRSP did not include Nasdaq firms until late 1972 and our later analyses include the discussion of exchanges, we are careful to separate the early pre-NASDAQ period (1967 - 1972).

The body of Panel A reveals the mean and median values of sales to market over the sample period. Several observations are apparent from the table and graphs. First, the mean sales-to-market ratio for concept stocks averages 0.244 over the entire sample; this compares to a value of 1.471 for control firms and 2.780 for the set of all firms. Second, the level of the sales to market ratio has tended to decrease over time for both the concept stocks and the two control samples. Third, the difference between mean and median values of concept stocks and control firms has decreased over the years. The data reveal two distinct plateaus of differences. The sales to market ratio for concept stocks is substantially lower during the late 1980's than during the previous decades. The ratio has experienced even lower, albeit erratic levels during the 1990's, reducing to a low of 0.022 in 1999. The shifts are apparent in both the means and medians. Note that these shifts are accompanied by decreases in the sales-to-market ratio in our control samples. Thus, while the level

of the sales to market ratio has been decreasing over the time of our sample, it has been decreasing faster for concept stocks. Figure 1a displays graphically the relative ratio of sales-to-market between concept stocks and the whole sample while Figure 1b displays the relative ratio of book-to-market between these two samples. One important message from these two plots is that, compared to the CRSP universe, concept stocks have decreasing sales-to-market ratio over time, but their book-to-market ratio remains stable during our sample period. As will be revealed, the composition of the concept stocks also changes substantially over time.

We note that the dramatic shift in the ratio after 1981 is not driven by: (a) a dramatic increase in the level of the stock market or (b) a dramatic shift in the exchange listing composition of concept stocks. The result is consistent with the findings of Fama and French (2001) who report a dramatic decline after 1978 in the percentage of firms paying dividends. They attribute this result to “an increasing tilt of publicly traded firms toward ... low earnings, strong investments, and small size.” With the exception of size (in market value) these are characteristics of concept stocks.

In the remainder of the paper, we condense our sample into six to nine year subperiods for ease of exposition.<sup>12</sup> Subperiods are organized to recognize the first years without Nasdaq (1967-72), the second period prior to the dramatic shift in the market to sales ratios (1973-81) and three remaining and equal subperiods. Panel B of Table 1 displays the sales to market ratios for these subperiods.

### **3. Characteristics of concept stocks**

#### *3.1 Size, age and financial characteristics*

Table 2 reveals the size, age, and financial characteristics of concept and control stocks over the subperiods of our sample. Note that while we report both means and medians, we view the latter as more informative; mean values are more likely to be distorted by extreme values. In addition, we note that the set of all firms includes all concept stocks and is thus biased toward acceptance of the null hypothesis of no

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<sup>12</sup> Results on a yearly basis are available upon request.

difference. Nevertheless, all of the variables analyzed show significant differences for concept stocks either at the mean or median. For most variables, both mean and median are significantly different.

Panel A of Table 2 indicates that concept firms are significantly larger in market value than the associated control firms. Analysis of book value, however, reveals a different story. Mean and median values of book value are significantly smaller for concept stocks in each of the sub-periods analyzed. Book to market ratios are used in the identification of the control sample. This explains why the book to market ratios for control firms are lower than that of the entire sample. Nevertheless, we find that the book to market ratio of concept stocks is significantly lower than that of control firms and the entire sample. Moreover, while even the median book to market ratios exhibit considerable variation over the five sub-periods, the values for concept stocks are always higher. We have previously noted that, in spite of the matching procedure, the correlation between the sales to market ratio and the book to market ratio for the entire sample is only .09.

Panel B.1 reveals the age distribution of concept stocks. Approximately 18% of the concept stocks are IPOs, defined here as any firm listed less than a year on the CRSP tapes. Nearly 61% of concept stocks have been listed five years or less. More than 20% of our concept stocks, however, have been listed longer than ten years; the oldest concept stock has been listed over 69 years. Panel B.2 reveals the average age across the subperiods for concept and control stocks. The age of concept stocks in terms of years listed on CRSP reveals that they are typically four to seven years younger than control firms. It is also evident that the mean and median age of concept stocks is higher in the first two subperiods of our sample; the average age of concept stocks is decreasing over time. This is consistent with the influx of new listings mentioned in Fama and French (2001). Panel B.3 shows the percentage of concept stocks that are IPOs in each subperiod. Over the entire sample period 17.2% of our concept stocks are IPOs. For the subperiods, the average percentage of concept stocks that are IPOs ranges from 1.6% to 27.35%. Thus, while the ages of concept stocks are generally young, less than 20% are IPOs. The annual pattern (not reported) shows that, before 1990, the percentage of IPO concept stocks is higher than 20% in only two out of twenty-four years. However, after 1990, the percentage has increased to higher than 20% in almost every year. It ranges from 16% (in 1998) to

37% (in 1999) with an average of 27% during the post-1990 period. In our analysis of abnormal performance, we will be careful to identify any IPO effect.

In terms of selected financial ratios, we note in Panel C that concept stocks tend to have less leverage relative to their control firms in all sample periods.<sup>13</sup> On the other hand, concept stocks have significantly higher levels of research and development, advertising, and capital expenditures (all expressed as a ratio to sales). Note that in the mid to late nineties, the median level of R&D spending approaches 34% of sales.

Thus, the typical concept stock is smaller in terms of book value, younger, less levered, more research oriented, and spending proportionately more on advertising and capital expenditures than control firms. Whether these increased R&D and capital expenditures pay off over time is related to the empirical questions addressed in the last part of the paper.

### *3.2 Concept Stocks, Profitability and Positive Cash Flows*

Panel D of Table 2 reveals a shift over time in three profitability variables: operating margin, returns on assets, and net profit margin.<sup>14</sup> Each of these variables experience declines in both absolute value and relative to the control firms except for the second subperiod. Thus, there is either an increasing tendency for the market to select unprofitable firms as concept stocks or an increasing proportion of CRSP firms that report negative earnings.

Interestingly, the data also reveal that concept stocks are becoming more liquid across our sample period. The ratio of net working capital to total assets shows a marked increase over the time of our sample both in absolute terms and relative to control firms. This may be a function of shifting industry composition of concept stocks over time.

The percentage of concept stocks with positive earnings and cash flows, displayed in Panel E, has also declined markedly over the sample period both in absolute terms and relative to the control firms. While

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<sup>13</sup> The leverage ratio is defined as debt in current liabilities plus long-term debt normalized by firm market value.

<sup>14</sup> Operating margin is defined as Operating income before depreciation (Compustat #13) divided by Sales (#12). Return on assets is Operating income before depreciation (#13)/Assets (#6). Net Profit margin is Net income (#172)/Sales (#12). Similar results, not shown here are obtained using Return on equity. ROE is Operating income before depreciation (#13)/(Total assets – Total liabilities (#6 - #181)).

more than 95% of the concept stocks have positive earnings in the early 1970s this number experienced a dramatic decline in the early 1980s and again in the 1990s. Interestingly, this corresponds with the dramatic decreases in sales to market ratios previously noted. Our results are again consistent with Fama and French (2001) who also cite that dramatic increase in CRSP firms after 1978 and a sharp decline in profitability after 1982.

### *3.3 Trading Characteristics of Concept Stocks*

The dramatic differences in financial ratios and other firm characteristics raise the question of the identity of the concept stocks. Do certain industries dominate concept stocks? Has the industrial composition changed over time? In how many years do individual stocks appear as concept stocks?

We answer the last question first. Table 3 reveals the trading characteristics of the concept stocks in our sample. Panel A reports the frequency with which individual concept stocks appear across the 33 years of our sample. The vast majority (65.4%) of our firms appear just once or twice as concept stocks. 1,095 firms appear just once as concept stocks; 529 firms appear twice. A very small percentage of firms (3.6%) appear more than ten times.<sup>15</sup>

Panel B reveals a transition matrix for sales to market ratios, the criteria used to identify concept stocks. The body of the table reveals the probability that stocks in a particular decile in year t-1 have moved to a particular decile in year t. For example, 76% of the firms in decile ten remain in decile ten in the next period. Approximately 69% of our concept stocks (decile 1) remain concept stocks in the next year. We also calculate the average transition probability for concept stocks in each of our subperiods and across exchanges. In results not shown, we find that while NASDAQ stocks are more likely to become concept stocks, the stability of concept stocks is higher among NYSE/AMEX firms. Approximately 72% of NYSE/AMEX concept stocks remain concept stocks in the next period. This compares to 66% for NASDAQ firms.

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<sup>15</sup> Four firms appear 23, 24 (2 firms) and 26 times in our sample. These firms are Merck (Ticker symbol: MRK), Syntex (SYN), Homestake Mining (HM), and Callahan Mining (CMN), respectively. As the name suggests, Callahan and Homestake are mining companies. Callahan mines silver while Homestake concentrates on Gold. Merck and Syntex are typically described as research oriented pharmaceutical companies.

### *3.4 Exchanges and Trading Volume*

Panel C of Table 3 reveals the distribution of concept stocks across the NYSE, AMEX and NASDAQ. The composition of our concept stock portfolio has shifted substantially with regard to the exchanges. NASDAQ firms comprise approximately 1.29% of our concept stocks in the 1973-81 period but over 85% of our concept stocks in the 1994-99 period. Of course, while these percentages relate to the composition of our concept stock sample, the total number of firms listed on each of the exchanges differs, both cross-sectionally and across time. Consequently, we also report the percentage of firms listed on a given exchange that are concept stocks. In the early 1970s, for example, around 10% of NYSE firms are concept stocks. By the end of our sample approximately 2% are concept stocks. Interestingly, the proportion of NASDAQ stocks that are also concept stocks has remained relatively stable over the past 10-15 years.

The final columns of Panel C reveal the turnover of concept stocks relative to control firms. Turnover, defined as the annual average of monthly trading volume divided by shares outstanding, averages 9.8 % for concept stocks over the entire period. This is significantly greater than 7.0 % for the control firms and 6.3% for the entire sample. It is also apparent that while trading volume has increased for all firms over the sample period it has increased more dramatically for concept stocks.

### *3.5 The Industry Composition of Concept Stocks*

A summary of the industry distribution of concept stocks is presented in Table 4. At the 2-digit SIC level there are 99 potential industries each year. In Table 4, we select the five industries with the highest number of concept stocks and display them across each year ranked from highest (1) to fifth highest (5).<sup>16</sup> In the case of ties, we do not skip the next rank(s). Thus, it is possible that we report more than five industries. For example, there are two industries ranked third and three industries ranked fifth in 1969.

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<sup>16</sup> We use CRSP SIC codes. Kahle and Walkling (1996) show that CRSP and Compustat SIC codes differ by approximately 40% at the 2-digit level and 80% at the 4-digit level. While this research indicates that the specification and power of Compustat SIC classifications outperforms that of CRSP, it also notes that only the latter reveals historic SICs.

The data reveal interesting shifts in the composition of concept stocks. Throughout the decade of the 60s and 70s “oil and gas extraction” frequently appear among the concept stocks. “Metal mining stocks” were slightly less popular, with slightly lower rank, over a similar period. However, “oil and gas extraction” does not appear in the 91-99 period and “metal mining” does not appear after 1989. On the other hand, “business computer related services” does not appear prior to 1981 except 1969 and 1978; not coincidentally, this is around the time of the initial personal computers. This industry is among the top five in terms of concept stocks in each of the remaining years of the sample. “Engineering, management and research” also enters the sample for the first time in the decade of the 1990s and then appears in five of the eight subsequent years. Finally, four industries appear in almost all of the years of our sample. These are “chemicals and allied products”, “industrial, computer, office equipment”, “electronic and electrical equipment” and “instruments and related products”. For completeness, we also identify with an asterisk, any top 5 concept industry that is also a top 5 industry in terms of the number of IPOs in a particular year. High industry valuations present a fertile time for IPOs. As we have seen from Table 2, this does not necessarily mean that the concept stocks are themselves IPOs; less than 20% of concept stocks are IPOs.

Are the shifts in the composition of concept stocks statistically significant? We calculate the Pearson Chi-square measure that tests the null hypothesis of no variation in the composition of concept stocks across industries over time. The statistic is defined as  $\sum_i (f_i - e_i)^2 / e_i$ , where  $f_i$  is the actual number of concept stocks in industry  $i$  and  $e_i$  is the expected number of concept stocks in industry  $i$ . Since some industries have few companies during our sample period, we only include industries with at least 10 firms to perform the test.<sup>17</sup> The Pearson Chi-square statistic is 3,727 with degrees of freedom equal to 44 (number of industries minus one). The associated p-value, 0.0001, indicates that concept stocks are concentrated in some industries.

### *3.6 The Longevity of Concept Stocks*

In this section we begin our analysis of the investment characteristics of concept stocks. We first address the survival of concept stocks over time by calculating the percentage of concept and control stocks

delisted within ten years after selection. We then compute the mean/median differences in percentage of firms delisted after  $n$  years ( $n = 1$  to 10) between concept stocks and control firms and significance tests for the hypothesis of no difference.

The results (not shown in a table) indicate that the longevity of concept stocks has declined from the late 1970s. Although 2/3 of the concept stocks from 1972 were still trading 10 years later, the corresponding figure for the concept stocks of the decade beginning with 1978 is around 60%. As before this corresponds to the period where negative profitability becomes dominant among concept stocks. The corresponding figures for control firms also show a similar picture. The percentage of firms still listed ten years after selection, declines throughout our sample period. However, the percentage remaining listed is generally higher than that of concept stocks.

### *3.7 Reasons for De-Listing*

Table 5 reveals reasons for de-listing among the concept stocks (Panel A) and control firms (Panel B) while Panel C presents the difference in de-listing between these two samples. Four primary reasons, as classified by CRSP, are shown: acquired by merger; acquired by exchange of stock; liquidated; and dropped by NYSE, AMEX or NASDAQ. The tables reveal that 2249 concept stocks were de-listed over the sample period in comparison to 1920 control firms. For both concept stocks and control firms, the major delisting reason is due to merger, 67.3% for concept stocks and 75.8% for control firms. The second reason for de-listing is that they were dropped from NYSE, AMEX or NASDAQ. This occurs for 26.7% of the concept stocks in comparison to 18.9% of the control firms. Importantly, these are not bankruptcy cases; those are covered under liquidation. The “dropped” cases occur because the firms move to another exchange or because they fail to meet exchange requirements (an insufficient number of market makers, etc).

Further, we test if there is any difference in de-listing between concept stocks and control firms each year. Using a Chi-square test for the null hypothesis of equal proportion of de-listing, Panel C shows that the number of concept stocks de-listed is significantly higher in eleven years and lower in one year than that of

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<sup>17</sup> When we change the requirement of ten firms to five firms, our result is not affected.



control firms. We then test if the difference is significant over the whole sample period. There is no evidence that concept stocks are more likely to be de-listed.

## **4. The Relative Performance of Concept Stocks**

### *4.1 Accounting Performance*

It is argued that the fundamentals of concept stock preclude transparent valuation. We begin our analysis of the relative performance of concept stocks by examining accounting performance. Table 6 reveals changes in key accounting ratios of both concept stocks and control firms from the period 2 years before the selection of the firm as a concept or control stock to 2 years after this period. We test for significant differences in the means of the variables using a two-sided robust t-test. Differences in medians are analyzed with the Wilcoxon signed rank test.<sup>18</sup>

Panel A reveals data on the size and book to market ratios of concept stocks and control firms. Size (market value) was one of the initial criteria used to select control firms. Nevertheless, the market value of concept stocks reverses from significantly greater than the control firms in the two years before year zero to insignificantly less than the value of the control firms in the two years after year zero.

Book values are significantly smaller for concept stocks in each of the five years. The difference between the book to market ratios of concept and control stocks is significant over the 5-year period centered on year zero. The small value of the book to market ratio in year zero is obviously related to the reason these firms were identified as concept stocks (i.e., high market value).

Panel B reveals data on long-term debt, research and development, advertising, and capital expenditures. Concept stocks have significantly smaller amounts of long-term debt than control firms in each of the five years analyzed. However, their levels of R&D and capital expenditures are significantly greater

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<sup>18</sup> To ensure comparability, when either the concept firm or the control firm is delisted, we exclude its counterpart in the sample.

than those of the control stocks for each year analyzed. This is consistent with the popular notion that these firms have unusual potential for future returns.

Panel C reveals several profitability measures in the 5 years surrounding year zero. Values are reported for the operating margin, returns on assets, profit margin, and operating returns on equity. With a few exceptions, concept firms are generally less profitable than their control firm counterparts. We do not observe a definitive trend towards more or less profitability over time.

#### *4.2 Logistic Analysis of Concept Stocks vs. Control Stocks*

Table 7 presents a logistic analysis of the factors related to concept stocks. In particular, we ask: “What variables distinguish concept stocks from the stocks of other companies?” and “Do these variables change over time?” We report the results from annual logistic regressions. In the spirit of Fama and MacBeth (1973), we first run the regressions year by year and then use the time-series coefficients and standard deviations from these time series to calculate the significance of the estimates. The advantage of this procedure is to control for correlation of the regression residuals across firms. The dependent variable is set equal to one for concept stocks and zero for either all other firms or control firms. Separate regressions include industry dummies and year dummies.

Our results indicate that for the overall sample period, the probability of being a concept stock is significantly negatively related to leverage, profitability and age. Surprisingly, after controlling for other factors, the probability of being a concept stock is insignificantly related to being listed on NASDAQ. This result, for the entire 33-year period, is consistent with the shifting patterns of exchange identity of concept stocks noted earlier in the paper. The probability of being a concept stock is significantly positively related to research and development expenditures, capital expenditures, and the book to market ratio. Thus, concept firms are smaller, less levered and less profitable, but are spending significantly more on R&D and capital expenditures. As proxied by the book to market ratio, they have higher growth opportunities. Proponents of concept stocks typically argue that these higher expenditures and greater growth opportunities will translate into higher subsequent returns. We turn to this issue in the next section.

### *4.3 Long-run market returns*

The current literature is divided on the best methodology for identifying long run abnormal returns. Loughran and Ritter (2000) and Barber and Lyon (1997) argue for the use of buy and hold returns. Fama and French (1993, 1998), Mitchell and Stafford (1999), and Brav, Geczy, and Gompers (2000) argue for the use of the Fama-French three-factor model. In our tests of the long-term performance of concept stocks, we use both.

#### *4.3.1 Calendar Time Portfolio Regressions*

In Table 8 we analyze calendar time portfolio regressions using the portfolio return of concept stocks, control stocks, or a zero investment portfolio as indicated. The zero investment portfolios are formed by creating a long position in the concept stocks and a short position in matching firms. Each month we form equal and value weighted portfolios containing all concept stocks chosen in the previous year. The value-weighted portfolios are re-balanced monthly. Matching firms are drawn from a population of NYSE/AMEX/NASDAQ stocks using the combined size and book to market matching procedure. We analyze five sets of regressions. The first and second sets of regressions use the market return and the Fama-French (1993) factors, respectively, as independent variables.<sup>19</sup> The third set of regressions adds the Carhart (1997) momentum factor. The momentum factor is constructed as the return difference of all CRSP firms in the highest and lowest terciles over the previous 11 months.<sup>20</sup> The fourth set of regressions adds turnover for both concept stocks and matched stocks as appropriate. The final set of regressions adds dummy variables for returns in January, December and in “hot” periods. A “hot” period is a dummy variable set equal to one in expansion months and zero in contraction months as designated by the NBER.

Before presenting the results, we note an important methodological issue raised by Loughran and Ritter (2000). They argue that mixing firms with large and small capitalization will result in low power in detecting long-run abnormal returns. The problem is particularly severe when a value-weighted index is used.

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<sup>19</sup> We thank Ken French for providing us with the return series on these three factors.

Our concept stocks exhibit very different size characteristics across time. Consequently, the results presented below should be interpreted with caution.

Since we are interested in the performance of concept stocks relative to that of our control firms, we focus our interpretation on the zero investment portfolios. However, we note that by choosing control firms based on size and book to market ratios, we may be choosing glamour stocks as controls. In contrast, however, our control stocks typically have significantly positive intercepts in the Fama-French regressions. This is the opposite of the typical result for glamour stocks. In the portfolios of concept stocks and control firms, the significantly negative coefficients of the book-to-market variables indicate that both concept and control firms have lower book-to-market ratios relative to the market. The coefficients of SMB suggest that the match firms tend to be smaller than the average firms in the market. The concept firms also tend to be smaller in the equal-weighted portfolios but the coefficients are insignificant in the value-weighted portfolios.

Most importantly, the intercept for the zero investment portfolio is significantly negative in all five sets of regressions. Thus, the concept stocks under-perform their control firms regardless of the set of variables used to control for risk characteristics. Similar results are noted for the value-weighted portfolios shown in panel B.

Panel C examines relative long-term performance on the subsets of control stocks examined in our buy and hold analyses. The subsets examine survivorship, exchange, time period, and IPO effects. In our matching of concept to control firms, we are careful to employ the same criteria for each. That is, concept firms that survive must be matched with control firms that survive; concept firms on NASDAQ must be matched with control firms from NASDAQ, etc. The only exception to this in panel C is that concept stocks that are IPOs are matched against all control firms, not just IPO controls. There are too few IPO firms for a meaningful match.

When firms are de-listed, our procedure implicitly assumes sale of the stock at the last quoted price. It is not hard to imagine that in the event of extreme financial distress, this last quoted price might not be

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<sup>20</sup> In ranking previous-year returns, we skip the last month in the portfolio formation period to reduce the potential bias from bid-ask bounces and monthly return reversals.

realizable. On average, we would expect this problem (if it exists) to impart an upward bias in our measure of concept stock returns. This is because a higher proportion (26.7%) of concept stocks are dropped by NYSE, AMEX and NASDAQ or liquidated in comparison to the figure for control firms (18.9%).

Another way to analyze the impact of any de-listing bias is to examine the sub-sample of firms still trading. Restricting our analysis to those firms that actually survived to the end of our sample eliminates any significant underperformance. Obviously, such foresight is impossible in practice. Still, the results indicate that at least some of our underperformance is due to the firms that fail to survive.

A criterion that *can* be implemented ex ante is the selection of firms with positive earnings or firms on certain exchanges. Our results indicate that firms with positive earnings and subsets of firms on various exchanges perform similarly to the control firms. In addition, concept stocks significantly underperformed in both the post-1981 and the 1967-80 periods. Finally, we note that underperformance is not an IPO effect; it exists for both IPO and non-IPO firms.

#### *4.3.2 Buy and hold returns*

An alternate procedure to analyze long-term performance is to use buy and hold returns [Loughran and Ritter (2000) and Barber and Lyon (1997).] Table 9 and Figure 3 present an analysis of the 5-year buy and hold abnormal returns of concept stocks and their matching firms. In our analysis of 5 year buy and hold abnormal returns we first use the original matching procedure of size and market to book ratio. Barber and Lyon (1995) note the importance of controlling for pre-event performance in choosing matching firms. Essentially, many measures of performance are mean reverting. Failure to control for this produces mis-specified results. As a consequence, we also test for differences with four other sets of control firms. Two sets of control firms are derived by first matching by size and then by earnings and cash flows, respectively. A fourth control sample matches by firms in the same three-digit CRSP SIC code and then by size. A fifth set of control firms are matched by firm age and then by market to book ratio. As before, we require that control firms not have been concept stocks in the previous two years. If concept stock is delisted, we substitute the

control firm's return in the concept return series and vice versa until both firms are delisted. In this case, both firms drop out of the portfolio.

Results for the entire sample are presented in Panel A. Because of the need to match firms and the availability of data, results for the concept stocks vary slightly depending on the criteria chosen. However, regardless of the matching criteria used to form a control sample, we find that the long run performance of concept stocks is negative relative to that of the control samples. It is immediately apparent from Figure 3 that the long run performance of concept stocks is inferior to that of our initial control sample or any other control sample applied. The only exception is the restriction of the concept stocks to NYSE and AMEX firms and years before 1981. These firms perform better than their control sample over the entire five-year period.

When we restrict our analysis to firms still active at the end of our sample, the negative performance is not significant.<sup>21</sup> A separate analysis is conducted on firms with non-negative earnings. To insure an appropriate comparison, both concept and control firms need to have non-negative earnings. The objective here is to analyze whether different returns could be earned by focusing on firms that were already experiencing positive earnings. The level of underperformance is dramatically less, being significant over only a portion of the five years following selection as a concept stock.

To examine the impact of exchange listings, we run separate comparisons for NYSE/AMEX and Nasdaq firms. Listed concept stocks actually outperform the control sample throughout the entire sample period. Results are insignificant, however. In contrast, Nasdaq firms have significant underperformance throughout.

In the next two analyses of Panel B we examine performance before and after 1981. Concept stocks significantly under-perform in the post-1981 period. This is similar to the results noted in the preceding paragraph and is probably related to the increased number of NASDAQ firms found in the post-1981 period.

Finally, we examine the buy and hold performance of IPO and non-IPO firms. Both sets of firms under-perform relative to their control samples. However, the level of underperformance is generally

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<sup>21</sup> Further investigation shows that in fact, concept stocks *significantly under-perform* relative to control firms in 36 out of 60 months. The underperformance is more severe in years three and beyond.

insignificant in the IPO firms. Thus, the level of underperformance noted for concept stocks is not driven by IPO phenomena. We further broaden the definition of IPO concept stocks to include firms with ages of two years or younger. The results still hold. The differences of buy-and-hold returns between the (non-IPO) concept stocks and the control firms are  $-1.31\%$ ,  $-6.33\%$ ,  $-11.04\%$ ,  $-17.61\%$ , and  $-13.76\%$  for years 1 to 5, respectively. The first year's difference is insignificant. The remaining differences are significant beyond the .001 level.

#### *4.3.3 Another look at the glamour and the contrarian effects*

It is well documented that glamour stocks earn lower subsequent returns than value stocks (see, e.g., LaPorta, et. al. (1997)). In addition, stocks that perform well in the past three to five years also earn lower subsequent returns (see, e.g., DeBondt and Thaler (1985)). Since concept stocks in general perform better than other firms in prior years, it is possible that the “concept stock” effect that we have documented is simply driven by the glamour or the contrarian effect.

To examine this possibility more closely, we independently sort the set of concept stocks into terciles each year by (1) the book-to-market ratio and (2) the past 3-year returns. The buy-and-hold returns are then calculated in each tercile. Panel A of Table 10 presents the results using the book-to-market ratio. Rank 1 includes concept stocks with the lowest book-to-market ratio in the previous year while rank 3 includes the ones with the highest ratio. Examining returns of both concept and control stocks across the three terciles confirm the glamour vs. value effect. Subsequent yearly returns are consistently higher as we move from the lowest book to market (glamour stocks) to the highest book to market (value stocks). The difference in returns between concept stocks and control firms, however, is consistently negative suggesting that there is clearly a concept stock effect that is independent of the glamour effect. Although this result is weaker for rank 3, overall, concept stocks have lower returns than control firms in all three ranks. This difference is more evident in Figure 4 that plots the buy-and-hold abnormal returns in the subsequent five years after selection. It suggests that concept stocks under-perform even after we control for the glamour effect. We repeat a similar exercise by replacing the book-to-market ratio with the past 5-year returns as the ranking

criteria. Panel B and the corresponding plot in Figure 4 indicate that the previous results are independent of the contrarian effect. Therefore, the results of underperformance in concept stocks do not appear to be driven by the glamour or the contrarian effect.

#### *4.4 Determinants of success of concept stocks*

Although we have documented that on average, buying concept stocks is not profitable in the long run, some concept firms did seem to turn their ideas into reality. Put more precisely, the cross section of five-year buy and hold returns to concept stocks exhibits considerable cross sectional variation. In this section, we examine via multivariate regression, whether the firm specific variables identified in this research are useful in explaining this cross sectional variation. Applying the Fama-MacBeth procedure, we run the regressions year by year and then use the time-series coefficients to calculate the significance of the estimates.

As shown in Table 11, smaller and Nasdaq firms are more likely to have lower returns once they are chosen as concept stocks.<sup>22</sup> This is consistent with the notion that smaller firms have higher information asymmetry and thus may experience more severe investor misvaluation. The results also show that among concept stocks, those with higher R&D expenditures perform better than those with lower R&D expenses. This link between R&D and subsequent returns is consistent with the research of Lev and Sougiannis (1996). Finally, the significantly positive coefficients of profitability-related variables indicate that profitable concept stocks are associated with higher future returns.

## **5. Summary and Conclusions**

The recent financial literature contains several interesting empirical analyses of selected categories of stocks and selected investment strategies. A heretofore-unaddressed category of stocks, commonly appearing in the financial literature over the past three decades is “concept stocks”. Concept stocks are typically identified as those with extremely low sales to market ratios. Using the intersection of the CRSP/Compustat universe, we define concept firms as those ranked between the 1<sup>st</sup> and 10<sup>th</sup> percentile of the sales to market



ratio for each of the thirty-three years of our sample. Empirically, the identity of concept stocks is quite distinct from glamour stocks, IPOs or stocks identified by contrarian strategies.

Critics argue that concept stocks are grossly overvalued. Proponents argue that their characteristics and prospects elude traditional pricing models. Instead, it is argued that you have to buy the “concept” to appreciate these firms. The concept typically involves some explanation of why future earnings are promising for these firms. The debate over concept stocks is, thus, an empirical question that can only be resolved through an analysis of their characteristics and subsequent performance.

Our examination of these issues documents several key results: First, the industrial and financial characteristics of concept stocks have changed dramatically over time. While the obvious recent examples of concept stocks had been Internet and biotech stocks, the financial press has identify dramatically different concept stocks over the last three decades. The industries containing the most popular concept stocks evolve from oil and gas extraction in the 60s and 70s, to computer and office equipment in the 80s, and to computer-related services in the 90s. Second, the average relative valuation of the typical concept stock has risen dramatically over the thirty-three years of our analysis while the book-to-market ratio of concept stocks does not exhibit systematic changes. At the same time, the percentage of concept stocks with positive earnings has sharply declined; more than 95% have positive earnings near the beginning of our sample, less than 40% have positive earnings near the end. Consistent with street wisdom, concept stocks have higher levels of research and development and greater capital expenditures than comparison firms. Nevertheless, the long run performance of concept stocks is negative relative to control firms. This result holds for both Fama-French (1993) three factors and buy-and-hold returns and is robust to extensive sensitivity analyses. Finally, after controlling for glamour, contrarian, and IPO effects, the under-performance of concept stocks remains significant.

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<sup>22</sup> Nasdaq stocks have insignificantly negative returns if we fail to control for industry effects.

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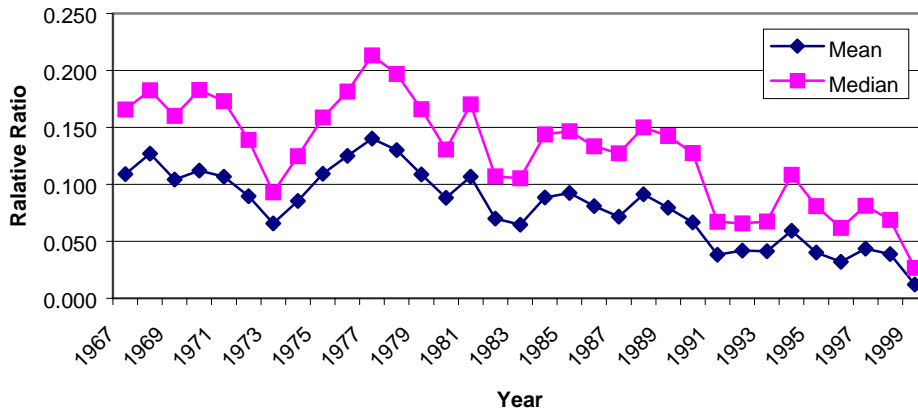
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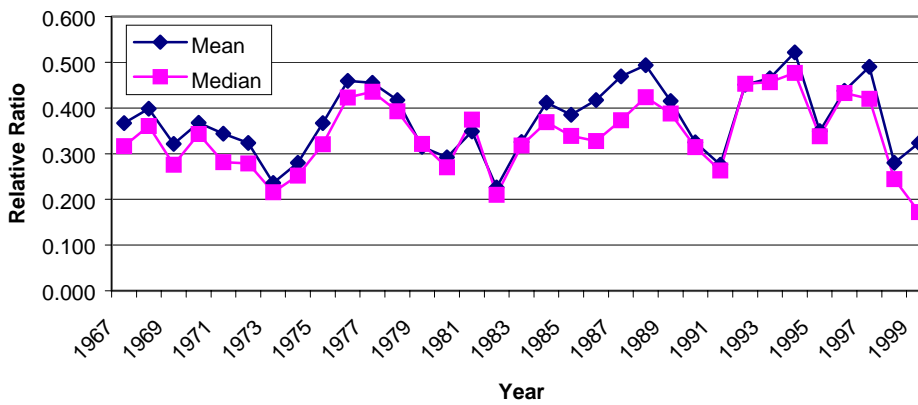
**Figure 1. The Relative Ratios of Concept Stocks to All Firm, 1967 ~ 1999.**

Plots of the sales-to-market and book-to-market ratios for concept stocks relative to all firms reported in both Compustat and CRSP. Concept stocks are defined as the firms in the 1<sup>st</sup> to 10<sup>th</sup> percentile of sales-to-market ratio each year. The equity market value is the market capitalization of common stock at calendar year-end. Book values and market values not used in ratios are deflated using the CPI into 1998 dollars.

**Figure 1a. Sales/MV of Concept Stocks Relative to the Whole Sample**

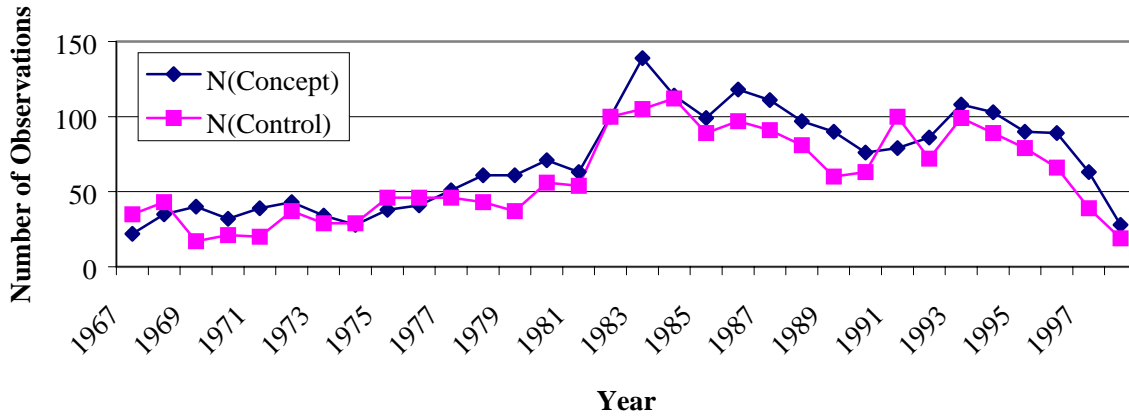


**Figure 1b. BV/MV of Concept Stocks Relative to the Whole Sample**

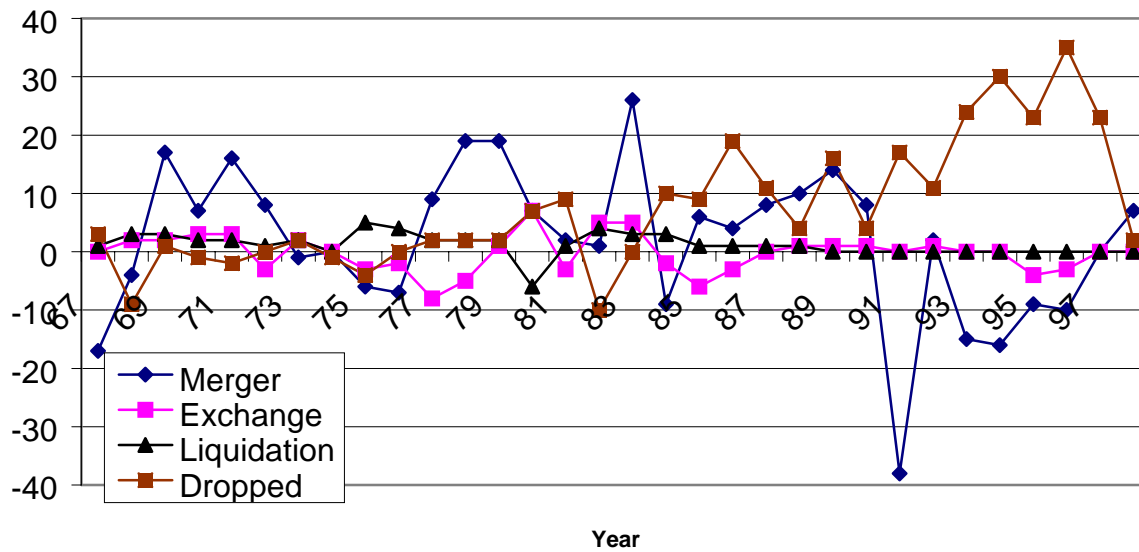


**Figure 2. Total Number of Concept Stocks and Control Firms Delisted Within Ten Years**

**Figure 2a. Total Number of Concept Stocks and Control Firms Delisted Within Ten Years**



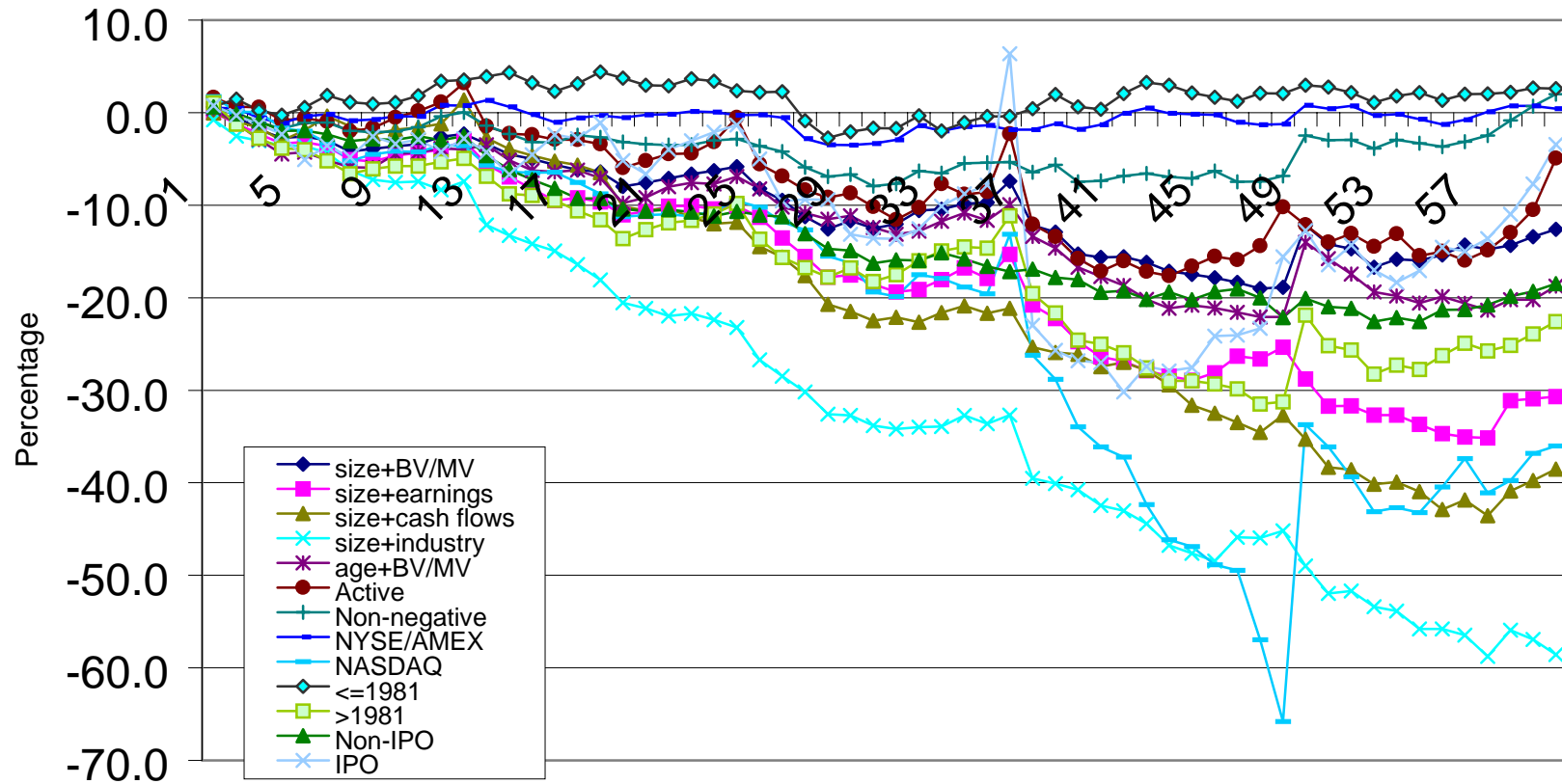
**Figure 2b. Difference in the Number of Delisted Firms Between Concept Stocks and Control Firms**



### **Figure 3. Five-year Buy-and-hold Abnormal Returns**

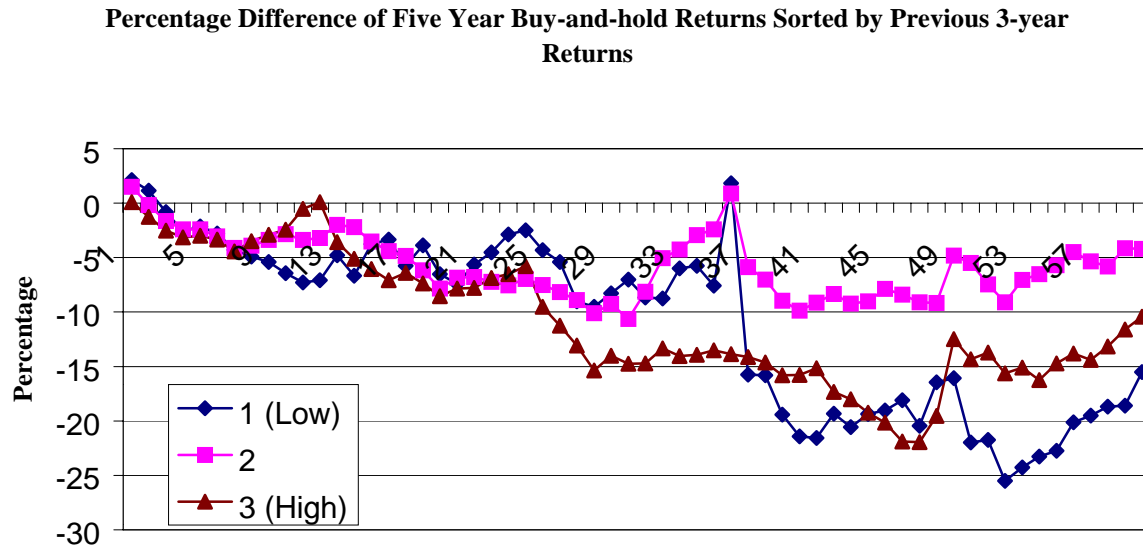
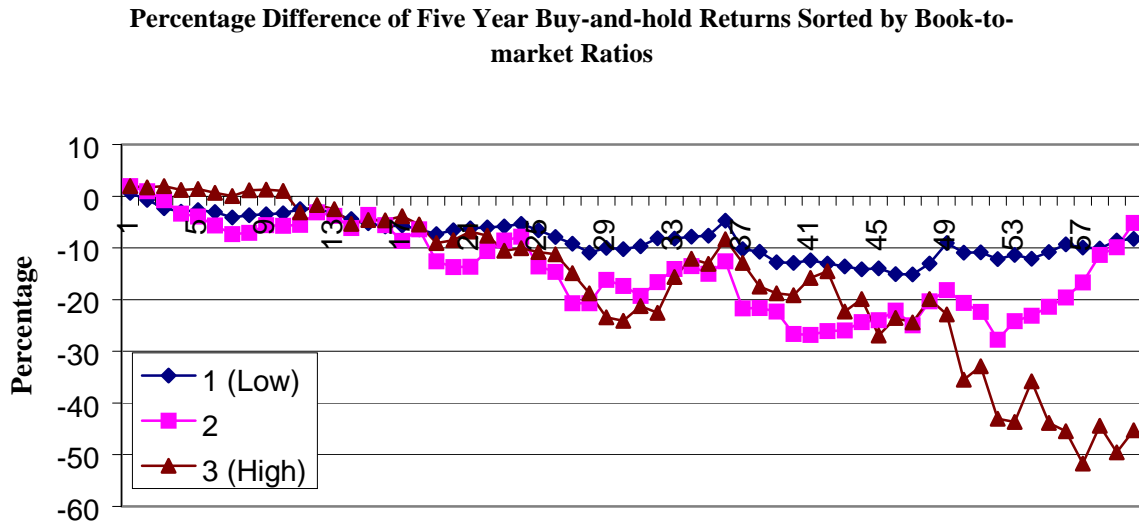
Plot of difference in buy-and-hold returns between concept stocks and control firms. The control firms are chosen using various two-way matching procedures based on firm characteristics. In all procedures, available benchmarks are CRSP firms, and are not concept stocks in the previous two years. The first three subsets of matching candidates are firms that have market values within 30% of the market value of the concept stock. In the first (second, third) procedure, the firm with the closest book-to-market ratio (earnings, cash flows) is chosen as the control firm. If the subset contains fewer than five candidate firms, we expand the range of market value to be within 40%. The fourth subset of matching candidates are firms with the same 3-digit industry code as the concept stock. If the subset contains less than five firms, we include firms with the same 2-digit industry code. The firm with the closest equity market value to that of the concept stock is chosen as the control firm. The fifth procedure matches each concept stocks with the firm that has the same age and the closest book-to-market ratio. The other eight procedures constrain the sample based on other characteristics such as delisting, exchanges, time periods, and IPOs.

## The Difference of Five-Year Buy-and-hold Returns



**Figure 4. Five-year Buy-and-hold Abnormal Returns Based on The Book-to-market Ratio and Past 3-year Returns**

Plot of difference in buy-and-hold returns between concept stocks and control firms.





**Table 1. The Sales-to-market Ratio of the Sample Over Time, 1967 ~ 99**

We report time-series trends of the ratio of sales to equity market value (Sales/MV) for our sample, concept stocks and control firms. The sample universe consists of all non-financial firms in the intersection of CRSP monthly return files and the merged COMPUSTAT annual industrial files from 1965 to 1999. Firms with stock prices less than five dollars are deleted. Concept stocks are defined as the firms in the 1<sup>st</sup> to 10<sup>th</sup> percentile of sales-to-market ratio each year. The equity market value is the market capitalization of common stock at calendar year-end. Book values and market values not used in ratios are deflated using the CPI into 1998 dollars. N is the number of non-missing firms in CRSP each year. Control firms are chosen using a two-way matching procedure involving size and the book-to-market ratio. First, we identify the subset of matching candidates that have market values within 30% of a concept stock and are not concept stocks themselves in the previous two years. From this subset, the firm with the closest book-to-market ratio is chosen as the control firm. If the subset contains fewer than five candidate firms, we expand the range of market value to be within 40%. "Diff" under Control Firms calculates the average/median difference of mean/median between concept stocks and control firms each year, and "Diff" under All Firms calculates the average/median difference of mean/median between concept stocks and all firms in the sample. p-values under Mean are associated with robust t-statistic using a two-sided t-test of no difference in the mean each year. p-values under Median are associated with Wilcoxon signed rank test of no difference in median each year.

**Panel A: Distribution by year**

Year	Concept Stocks		Control Firms		All Firms		N
	Mean	Median	Mean	Median	Mean	Median	
1967	0.184	0.182	0.821	0.622	1.651	1.093	1324
1968	0.170	0.175	0.748	0.601	1.312	0.949	1483
1969	0.237	0.246	1.022	0.810	2.246	1.526	1574
1970	0.310	0.332	1.283	0.885	2.758	1.812	1553
1971	0.259	0.272	1.233	0.808	2.438	1.577	1619
1972	0.252	0.249	1.016	0.696	2.769	1.740	1688
1973	0.334	0.313	1.456	1.016	5.083	3.360	1464
1974	0.616	0.630	3.008	1.728	7.215	5.044	1236
1975	0.519	0.522	2.650	1.613	4.758	3.288	1282
1976	0.512	0.508	2.576	1.555	4.085	2.793	1445
1977	0.584	0.596	2.432	1.805	4.161	2.795	1425
1978	0.582	0.618	2.416	1.878	4.480	3.143	1437
1979	0.463	0.479	1.723	1.482	4.223	2.835	1379
1980	0.335	0.326	1.779	0.952	3.758	2.492	1365
1981	0.426	0.449	1.871	1.125	3.954	2.610	1403
1982	0.200	0.193	2.250	1.292	2.862	1.781	2220
1983	0.141	0.140	1.952	1.176	2.163	1.318	2668
1984	0.228	0.242	1.783	1.126	2.558	1.652	2504
1985	0.197	0.205	1.232	0.722	2.095	1.359	2367
1986	0.162	0.176	1.214	0.791	1.997	1.321	2438
1987	0.185	0.200	1.669	1.098	2.597	1.578	2439
1988	0.209	0.228	1.931	1.219	2.280	1.515	2083
1989	0.179	0.197	1.116	0.813	2.256	1.385	2000
1990	0.196	0.214	1.117	0.821	2.916	1.682	1843
1991	0.079	0.074	1.084	0.636	2.022	1.104	2036
1992	0.074	0.066	1.072	0.780	1.754	0.992	2340
1993	0.064	0.064	1.012	0.652	1.526	0.928	2725
1994	0.103	0.112	1.069	0.643	1.721	1.024	2878
1995	0.069	0.072	0.838	0.470	1.700	0.878	3067
1996	0.047	0.047	0.840	0.535	1.472	0.757	3526
1997	0.060	0.061	0.896	0.639	1.379	0.749	3520
1998	0.067	0.067	0.710	0.443	1.729	0.956	3170
1999	0.022	0.021	0.733	0.230	1.831	0.775	2942
1967-99	0.244	0.205	1.471	0.813	2.780	1.526	68443
<b>Diff</b>			-1.227	-0.614	-2.536	-1.287	
<b>(p-value)</b>			(0.000)	(0.000)	(0.000)	(0.000)	

**Table 1. – Continued –**

**Panel B. Distribution by sub-period**

<u>Period</u>	<u>Concept Stocks</u>		<u>Control Firms</u>		<u>All Firms</u>		<u>N</u>
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	
1967-72	0.235	0.247	1.020	0.752	2.196	1.551	9241
1973-81	0.486	0.508	2.212	1.555	4.635	2.835	12436
1982-87	0.186	0.196	1.683	1.112	2.379	1.468	14636
1988-93	0.133	0.135	1.222	0.797	2.126	1.244	13027
1994-99	0.061	0.064	0.847	0.503	1.639	0.827	19103
<b>1967-99</b>	0.244	0.205	1.471	0.813	2.780	1.526	68443
<b>Diff</b>			-1.227	-0.614	-2.536	-1.287	
<b>(p-value)</b>			(0.000)	(0.000)	(0.000)	(0.000)	

**Table 2. Characteristics of Concept Stocks, 1967 ~ 99**

Descriptive statistics on key variables for our sample over time. We report the results based on five subperiods. Firm market value, in log (millions), is natural logarithm of the summation of the market capitalization of common stock at calendar year-end, debt in liabilities, long-term debt, and preferred stock. Book value is total assets minus total liabilities and preferred stock. Firm book size, in log (000s), is the natural logarithm of book value. Age is defined as the difference between year of interest and the earliest year that the firm has traded stock price available in CRSP. The long-term debt ratio is debt in current liabilities plus long-term debt divided by firm market value. Operating margin is defined as operating income before depreciation divided by sales. Return on assets is defined as operating income before depreciation divided by assets. Profit margin is net income divided by sales. Net working capital ratio is total current assets minus current liabilities divided by assets. Cash flow is defined as operating income before depreciation. Book values and market values not used in ratios are deflated using the CPI into 1998 dollars. Control firms are chosen using a two-way matching procedure involving size and the book-to-market ratio. First, we identify the subset of matching candidates that have market values within 30% of a concept stock and are not concept stocks themselves in the previous two years. From this subset, the firm with the closest book-to-market ratio is chosen as the control firm. If the subset contains fewer than five candidate firms, we expand the range of market value to be within 40%. "Diff" under Control Firms calculates the average/median difference of mean/median between concept stocks and control firms each year, and "Diff" under All Firms calculates the average/median difference of mean/median between concept stocks and all firms in the sample. Panel B does not include the observations in 1972 when we calculate the age distribution of concept stocks due to the fact that CRSP started to include NASDAQ firms into the database in 1972. Therefore, firms with age zero in 1972 are not necessarily IPO firms. P-values under Mean are associated with robust t-statistic using a two-sided t-test of no difference in the mean each year. P-values under Median are associated with Wilcoxon signed rank test of no difference in median each year.

**Panel A: Size and Book-to-market ratio**

Period	Market Value						Firm (Book) Size						Book-to-market Ratio					
	Concept		Control		All Firms		Concept		Control		All Firms		Concept		Control		All Firms	
	Mean	Med.	Mean	Median	Mean	Median	Mean	Medi.	Mean	Median	Mean	Median	Mean	Med.	Mean	Median	Mean	Median
1967-72	6.356	6.410	6.297	6.306	5.534	5.347	5.135	5.135	5.445	5.360	5.300	5.153	0.258	0.186	0.282	0.225	0.742	0.671
1973-81	6.474	6.400	6.425	6.388	5.606	5.472	5.865	5.809	6.152	5.929	5.858	5.736	0.438	0.401	0.488	0.455	1.271	1.028
1982-87	4.920	4.883	4.915	4.873	5.248	5.035	3.633	3.626	4.370	4.196	5.087	4.894	0.265	0.191	0.318	0.265	0.718	0.625
1988-93	5.467	5.335	5.442	5.337	5.564	5.369	4.101	4.057	4.707	4.722	5.285	5.151	0.259	0.211	0.276	0.213	0.651	0.531
1994-99	5.763	5.384	5.746	5.353	5.775	5.559	4.085	3.831	4.679	4.319	5.291	5.024	0.214	0.148	0.219	0.160	0.554	0.420
<b>1967-99</b>	5.858	5.73	5.82	5.75	5.55	5.38	4.68	4.32	5.17	4.80	5.41	5.17	0.30	0.21	0.33	0.23	0.83	0.65
<b>Diff</b>			0.02	0.02	0.10	0.15			-0.57	-0.37	-0.97	-0.90			-0.04	-0.03	-0.62	-0.43
<b>(p-value)</b>			(0.00)	(0.02)	(0.01)	(0.01)			(0.00)	(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)	(0.00)

**Panel B.1. Age Distribution of Concept Stocks (Year 1972 excluded)**

Age	0	1	2	3	4	5	6	7	8	9	10	11 -- 20	21 -- 30	31 -- 40	41 -- 50	51 -- 60	61 -- 69	Total
<b>Count</b>	1196	969	663	476	393	356	330	264	222	176	145	969	226	74	126	78	25	6688
<b>Percent</b>	17.88	14.49	9.91	7.12	5.88	5.32	4.93	3.95	3.32	2.63	2.17	14.49	3.38	1.11	1.88	1.17	0.37	100.00
<b>Cumulative %</b>	17.88	32.37	42.28	49.40	55.28	60.60	65.54	69.48	72.80	75.43	77.60	92.09	95.47	96.58	98.46	99.63	100.00	

**Panel B.2. Firm Age by Subperiods**

Period	Concept		Control		All Firms	
	Mean	Median	Mean	Median	Mean	Median
1967-72	10.376	7.000	15.414	7.000	14.047	7.500
1973-81	15.285	12.000	20.072	13.000	19.009	14.000
1982-87	5.272	2.000	12.954	12.500	14.724	12.500
1988-93	6.359	3.000	13.597	9.500	14.793	11.500
1994-99	3.639	2.000	13.142	8.500	12.310	6.000
<b>1967-99</b>	8.8	4.0	15.5	10.0	15.3	11.0
<b>Diff</b>			-7.63	-4.00	-7.59	-5.00
<b>(p-value)</b>			(0.00)	(0.00)	(0.00)	(0.00)

**Table 2. – Continued –**

**Panel B.3. Percentage of Concept Stocks That Are IPO Firms, by Subperiods**

<u>Period</u>	<u># IPOs</u>	<u># Concepts</u>	<u>Percentage</u>
1967-72	94	927	10.14%
1973-81	20	1248	1.60%
1982-87	303	1465	20.68%
1988-93	268	1305	20.54%
1994-99	523	1912	27.35%
<b>1967-99</b>	<b>1208</b>	<b>6857</b>	<b>17.62%</b>

**Panel C: Debt, R&D, Advertising and Capital Expenditures**

<u>Period</u>	<u>Long-Term Debt Ratio</u>						<u>R&amp;D/Sales</u>						<u>Adv/Sales</u>						<u>Capex/Sales</u>							
	<u>Concept</u>		<u>Control</u>		<u>All Firms</u>		<u>Concept</u>		<u>Control</u>		<u>All Firms</u>		<u>Concept</u>		<u>Control</u>		<u>All Firms</u>		<u>Concept</u>		<u>Control</u>		<u>All Firms</u>			
	Mean	Med.	Mean	Median	Mean	Median	Mean	Med.	Mean	Median	Mean	Median	Mean	Med.	Mean	Median	Mean	Median	Mean	Med.	Mean	Median	Mean	Median		
1967-72	0.08	0.03	0.13	0.09	0.24	0.23	0.02	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.19	0.07	0.05	0.04	0.07	0.04
1973-81	0.12	0.08	0.19	0.16	0.34	0.31	0.02	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.27	0.11	0.06	0.05	0.09	0.04
1982-87	0.05	0.01	0.17	0.12	0.23	0.19	0.24	0.06	0.02	0.00	0.04	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.29	0.12	0.06	0.03	0.10	0.05
1988-93	0.04	0.01	0.14	0.06	0.21	0.16	0.54	0.11	0.03	0.00	0.08	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.34	0.13	0.05	0.03	0.10	0.05
1994-99	0.03	0.00	0.11	0.03	0.17	0.09	0.80	0.34	0.07	0.01	0.12	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.39	0.17	0.06	0.04	0.12	0.05
<b>1967-99</b>	0.07	0.02	0.15	0.10	0.25	0.20	29.61%	4.00%	2.54%	0.00%	4.79%	0.00%	1.39%	0.003%	1.190%	0.001%	1.02%	0.001%	29.4%	12.0%	5.7%	3.8%	9.4%	4.6%		
<b>Diff</b>			-0.09	-0.06	-0.19	-0.19			0.16	0.04	0.15	0.04			0.00	0.00	0.00	0.00			0.21	0.09	0.18	0.07		
<b>(p-value)</b>			(0.00)	(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)	(0.00)			(0.06)	(0.16)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)	(0.00)		

**Panel D: Profitability and Liquidity Characteristics**

<u>Period</u>	<u>Operating Margin</u>						<u>ROA</u>						<u>Profit Margin</u>						<u>Net Working Capital/Total Assets</u>					
	<u>Concept</u>		<u>Control</u>		<u>All Firms</u>		<u>Concept</u>		<u>Control</u>		<u>All Firms</u>		<u>Concept</u>		<u>Control</u>		<u>All Firms</u>		<u>Concept</u>		<u>Control</u>		<u>All Firms</u>	
	Mean	Med.	Mean	Median	Mean	Median	Mean	Med.	Mean	Median	Mean	Median	Mean	Med.	Mean	Median	Mean	Median	Mean	Med.	Mean	Median	Mean	Median
1967-72	0.30	0.26	0.12	0.12	0.14	0.12	0.10	0.09	0.08	0.08	0.06	0.05	0.13	0.13	0.04	0.05	0.05	0.04	0.32	0.32	0.41	0.37	0.37	0.33
1973-81	0.33	0.28	0.13	0.13	0.14	0.12	0.11	0.11	0.09	0.09	0.07	0.07	0.15	0.13	0.06	0.05	0.06	0.05	0.26	0.22	0.31	0.31	0.30	0.31
1982-87	-0.18	0.17	0.12	0.12	0.09	0.11	-0.01	0.05	0.07	0.08	0.04	0.05	-0.28	0.10	0.04	0.05	0.01	0.04	0.45	0.44	0.33	0.33	0.33	0.32
1988-93	-0.65	0.12	0.13	0.13	0.05	0.11	-0.07	0.03	0.07	0.09	0.04	0.05	-0.82	0.06	0.04	0.05	-0.05	0.04	0.50	0.55	0.31	0.27	0.33	0.31
1994-99	-1.24	-0.57	0.12	0.12	-0.03	0.12	-0.23	-0.15	0.04	0.07	0.01	0.05	-1.44	-0.69	0.02	0.05	-0.14	0.04	0.56	0.61	0.32	0.30	0.34	0.31
<b>1967-99</b>	-0.23	0.23	0.12	0.12	0.09	0.12	-0.01	0.09	0.07	0.08	0.05	0.06	-0.40	0.11	0.04	0.05	-0.01	0.04	0.40	0.42	0.33	0.31	0.33	0.31
<b>Diff</b>			-0.59	0.10	-0.53	0.11			-0.12	-0.01	-0.09	0.03			-0.67	0.07	-0.60	0.07			0.02	0.11	0.03	0.11
<b>(p-value)</b>			(0.003)	(0.569)	(0.004)	(0.511)			(0.000)	(0.010)	(0.008)	(0.930)			(0.001)	(0.489)	(0.001)	(0.445)			(0.007)	(0.020)	(0.001)	(0.007)

Table 2. – Continued –

**Panel E: Percentage of Firms with Positive Earnings/Cash Flows**

<b>Period</b>	<b>% of Firms with Positive Earnings</b>			<b>% of Firms with Positive Cash Flows</b>		
	<b>Concept</b>	<b>Control</b>	<b>All</b>	<b>Concept</b>	<b>Control</b>	<b>All</b>
1967-72	97.1	96.0	94.1	97.1	96.0	97.3
1973-81	98.9	99.8	96.5	98.9	99.8	98.9
1982-87	70.4	92.6	85.8	70.4	92.6	92.3
1988-93	55.8	96.7	83.6	55.8	96.7	92.3
1994-99	35.5	90.2	77.1	35.5	90.2	86.5
<b>1967-99</b>	74.0	95.5	88.2	74.0	95.5	93.9
<b>Diff</b>						
<b>Mean</b>		-28.1	-18.5		-28.1	-25.1
<b>(p-value)</b>		(0.000)	(0.001)		(0.000)	(0.000)
<b>Median</b>		-17.2	-7.9		-17.2	-14.2
<b>(p-value)</b>		(0.000)	(0.005)		(0.000)	(0.000)

**Table 3. Trading Characteristics**

Panel A reports the number of firms associated with the frequency of being selected as concept stocks in our sample period. For example, 1095 firms appear as concept stocks once during our sample period, 529 firms twice, ... and so on. Panel B reports the probability of a stock moving between deciles from period t-1 to t. The sample universe consists of all nonfinancial firms in the intersection of CRSP monthly return files and the merged COMPUSTAT annual industrial files from 1965 to 1999. Firms with stock prices less than five dollars are deleted. Each year we sort all stocks in our sample universe and define concept stocks as the firms in the 1<sup>st</sup> to 10<sup>th</sup> percentile of sales-to-market ratio each year. The probability in Panel B is estimated as  $p(i,j) = n(i,j)/n(i)$  where  $n(i)$  is the number of firms in decile i at time t-1 and  $n(i,j)$  is the number of firms moving from decile i at time t-1 to decile j at time t. Panel C reports the number of concept stocks based on exchanges. Trading volume (as average turnover) is defined as the annual average of monthly trading volume divided by shares outstanding for all concept stocks, control firms and the whole sample. "Diff" under Control Firms calculates the average/median difference of mean/median between concept stocks and control firms each year, and "Diff" under All Firms calculates the average/median difference of mean/median between concept stocks and all firms in the sample. P-values under Mean are associated with robust t-statistic using a two-sided t-test of no difference in mean each year. P-values under Median are associated with Wilcoxon signed rank test of no difference in median each year.

**Panel A: Number of Years Firms are Concept Stocks**

Years	Number of Firms	Percentage	Cumulative %
1	1095	44.08%	44.08%
2	529	21.30%	65.38%
3	287	11.55%	76.93%
4	174	7.00%	83.94%
5	91	3.66%	87.60%
6	69	2.78%	90.38%
7	62	2.50%	92.87%
8	33	1.33%	94.20%
9	31	1.25%	95.45%
10	23	0.93%	96.38%
11	14	0.56%	96.94%
12	20	0.81%	97.75%
13	12	0.48%	98.23%
14	10	0.40%	98.63%
15	8	0.32%	98.95%
16	8	0.32%	99.28%
17	3	0.12%	99.40%
18	4	0.16%	99.56%
19	2	0.08%	99.64%
21	1	0.04%	99.68%
22	4	0.16%	99.84%
23	1	0.04%	99.88%
24	2	0.08%	99.96%
26	1	0.04%	100.00%
Total	2484		

**Panel B: Stability of Concept Stocks**

Period t-1	Period t									
	1(Concept)	2	3	4	5	6	7	8	9	10
1(Concept)	<b>0.694</b>	0.221	0.050	0.018	0.008	0.003	0.002	0.001	0.002	0.001
2	0.115	<b>0.459</b>	0.269	0.090	0.040	0.015	0.008	0.003	0.002	0.001
3	0.013	0.172	<b>0.374</b>	0.249	0.105	0.049	0.021	0.010	0.005	0.002
4	0.003	0.042	0.181	<b>0.334</b>	0.238	0.116	0.054	0.020	0.010	0.003
5	0.002	0.013	0.060	0.188	<b>0.310</b>	0.242	0.112	0.050	0.018	0.005
6	0.001	0.004	0.023	0.071	0.194	<b>0.303</b>	0.248	0.109	0.038	0.008
7	0.001	0.003	0.006	0.027	0.081	0.192	<b>0.318</b>	0.259	0.096	0.017
8	0.001	0.001	0.003	0.010	0.026	0.081	0.206	<b>0.357</b>	0.259	0.056
9	0.001	0.000	0.002	0.003	0.008	0.021	0.061	0.202	<b>0.453</b>	0.250
10	0.000	0.000	0.000	0.001	0.002	0.002	0.011	0.038	0.185	<b>0.760</b>

**Table 3. – Continued –**

**Panel C: Exchanges and Trading Volume**

<b>Period</b>	<b>Number of Concept Stocks</b>			<b>% of Concept Stocks from various exchanges</b>			<b>% of Firms on an exchange That are Concept Stocks</b>			<b>Trading Volume (Turnover)</b>					
	<b>NYSE</b>	<b>AMEX</b>	<b>NASDAQ</b>	<b>NYSE</b>	<b>AMEX</b>	<b>NASDAQ</b>	<b>NYSE</b>	<b>AMEX</b>	<b>NASDAQ</b>	<b>Concept</b>		<b>Control</b>		<b>All Firms</b>	
										<b>Mean</b>	<b>Median</b>	<b>Mean</b>	<b>Median</b>	<b>Mean</b>	<b>Median</b>
1967-72	656	260	13	70.40%	28.16%	1.43%	10.37%	9.78%	4.87%	0.043	0.022	0.042	0.022	0.038	0.025
1973-81	892	340	16	71.52%	27.19%	1.29%	9.68%	11.35%	7.09%	0.038	0.020	0.035	0.022	0.029	0.021
1982-87	358	153	957	24.45%	10.50%	65.05%	5.33%	7.55%	16.49%	0.081	0.069	0.056	0.042	0.058	0.045
1988-93	287	125	896	23.08%	9.55%	67.36%	4.93%	10.02%	15.06%	0.127	0.092	0.086	0.062	0.078	0.050
1994-99	143	120	1653	7.53%	6.31%	86.16%	2.06%	9.45%	15.00%	0.230	0.165	0.151	0.103	0.128	0.087
<b>1967-99</b>	2336	998	3535	42.32%	17.33%	40.35%	6.77%	9.79%	11.28%	0.098	0.074	0.070	0.051	0.063	0.043
<b>Diff</b>												0.014	0.016	0.019	0.013
<b>(p-value)</b>												(0.000)	(0.000)	(0.000)	(0.000)

**Table 4. Industry Distribution of Concept Stocks, 1967 ~ 1999**

We report the top 5 industries by ranking the number of concept stocks for industries with at least 3 concept stocks in the industry each year. We calculate the number of concept stocks for each industry each year. Firms with the same two-digit SIC codes (from CRSP) are categorized in the same industry. The industry with an asterisk (\*) indicates that it is also among the top five IPO industries in that year.

SIC	Industry Name	1967	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99			
7	Agricultural Services																																				
10	Metal Mining	3	3	4	4	4	4	3	3	3	3	4	3	4	4	5						5		4													
12	Coal Mining																																				
13	Oil and Gas Extraction	1	1	1	2	1*	1	1	2*	1*	1*	1*	1*	1*	1*	1*	5*	5					4	4		4*											
20	Food and Kindred Products																																				
23	Apparel and Other Finished Products																																				
24	Lumber and Wood Products																																				
26	Paper and Allied Products																																				
27	Printing and Publishing												5		5																						
28	Chemicals and Allied Products	2*	2*	2	1	1	2	2*	1	2	2	2	2	2	3	3	4	4*	2	1	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	2*	3			
29	Petroleum and Coal Products																																				
30	Rubber and Misc. Plastics Products																																				
32	Stone, Clay, Glass, Concrete Products																																				
34	Fabricated Metal Products															5																					
35	Industrial, Computer, Office Equipment	5*	3*	3*		4		4*	4*	5		3	3	4	3	4	1	2	5	5	4					5			5	5					5		
36	Electronic & Other Electric Equipment		5	5	4	3	5	5		4	4*	5*		3*	2*	2*	1*	3*	3*	4*	5*	5*	5*		4	4*	2*	2*	3*	4*	4	4	4	2*			
38	Instruments and Related Products		4*	3	5	2*	3*	4*	5*		5*		4*	5*			2*	3*	4*	3*	3*	3*	3*	3*	2	3	2*	2*	2	4	4*	3*	3*	3			
39	Miscellan. Manufacturing Industries																																				
44	Water Transportation																																				
48	Communications (Multimedia)					5																			5			5									
49	Electric, Gas, and Sanitary Services	4		5	3	3					4	4																									
50	Wholesale Trade-Durable Goods																																				
51	Wholesale Trade-NonDurable Goods																																				
56	Apparel and Accessory Stores																																				
58	Eating and Drinking Places																																				
59	Miscellaneous Retail																																				
70	Hotels and Other Lodging Places																																				
73	Business Computer Related Services			5*										5*			3*	1*	1*	2*	2*	2*	2*	2*	3*	2*	3*	3*	3*	3*	3*	3*	3*	3*	1*		
78	Motion Pictures																																				
79	Amusement & Recreation Services																																				
80	Health Services																									5*	5	5*									
82	Educational Services																																				
87	Engineering, Management & Research																												4			5	5	5*	4		



**Table 5. Delisting Reasons for Concept Stocks and Control Firms, 1967 ~ 1999**

We report the total number of firms delisted within ten years after being selected as concept stocks. Delisting reasons are from CRSP. Mergers are the firms acquired in merger. Exchanges are the firms acquired by exchange of stock or company stocks or exchanged for other financial instruments such as preferred stock or cash. Liquidations the firms stopped trading as result of company liquidation. Dropped firms are those delisted by NYSE, AMEX or Nasdaq. P-values in Panel C are associated with the Chi-square test for the null hypothesis under which the proportions of delisted concept stocks and control firms are equal. \*\*\*, \*\*, \* indicate a significance level of 1%, 5%, and 10%, respectively.

**Panel A: Concept Stocks\***

	<b>Merger</b>	<b>%</b>	<b>Exchange</b>	<b>%</b>	<b>Liquidation</b>	<b>%</b>	<b>Dropped</b>	<b>%</b>	<b>N</b>
<b>1967</b>	12	54.5%	1	4.5%	1	4.5%	8	36.4%	22
<b>1968</b>	19	54.3%	2	5.7%	3	8.6%	11	31.4%	35
<b>1969</b>	29	72.5%	2	5.0%	3	7.5%	6	15.0%	40
<b>1970</b>	23	71.9%	4	12.5%	2	6.3%	3	9.4%	32
<b>1971</b>	32	82.1%	3	7.7%	2	5.1%	2	5.1%	39
<b>1972</b>	37	86.0%	3	7.0%	1	2.3%	2	4.7%	43
<b>1973</b>	27	79.4%	2	5.9%	3	8.8%	2	5.9%	34
<b>1974</b>	21	75.0%	3	10.7%	3	10.7%	1	3.6%	28
<b>1975</b>	28	73.7%	2	5.3%	5	13.2%	3	7.9%	38
<b>1976</b>	33	80.5%	1	2.4%	5	12.2%	2	4.9%	41
<b>1977</b>	44	86.3%	2	3.9%	3	5.9%	2	3.9%	51
<b>1978</b>	50	82.0%	4	6.6%	4	6.6%	3	4.9%	61
<b>1979</b>	48	78.7%	6	9.8%	3	4.9%	4	6.6%	61
<b>1980</b>	53	74.6%	7	9.9%	3	4.2%	8	11.3%	71
<b>1981</b>	49	77.8%	2	3.2%	1	1.6%	11	17.5%	63
<b>1982</b>	59	59.0%	7	7.0%	4	4.0%	30	30.0%	100
<b>1983</b>	78	56.1%	9	6.5%	4	2.9%	48	34.5%	139
<b>1984</b>	68	59.6%	4	3.5%	3	2.6%	39	34.2%	114
<b>1985</b>	61	61.6%	5	5.1%	1	1.0%	32	32.3%	99
<b>1986</b>	70	59.3%	1	0.8%	1	0.8%	46	39.0%	118
<b>1987</b>	75	67.6%	0	0.0%	1	0.9%	35	31.5%	111
<b>1988</b>	75	77.3%	1	1.0%	1	1.0%	20	20.6%	97
<b>1989</b>	66	73.3%	1	1.1%	0	0.0%	23	25.6%	90
<b>1990</b>	59	77.6%	1	1.3%	0	0.0%	16	21.1%	76
<b>1991</b>	50	63.3%	0	0.0%	0	0.0%	29	36.7%	79
<b>1992</b>	59	68.6%	1	1.2%	0	0.0%	26	30.2%	86
<b>1993</b>	55	50.9%	0	0.0%	0	0.0%	53	49.1%	108
<b>1994</b>	65	63.1%	0	0.0%	0	0.0%	38	36.9%	103
<b>1995</b>	56	62.2%	0	0.0%	0	0.0%	33	36.7%	90
<b>1996</b>	52	58.4%	0	0.0%	0	0.0%	36	40.4%	89
<b>1997</b>	36	57.1%	0	0.0%	0	0.0%	26	41.3%	63
<b>1998</b>	25	89.3%	0	0.0%	0	0.0%	3	10.7%	28
<b>Total</b>	<b>1514</b>	<b>67.3%</b>	<b>74</b>	<b>3.3%</b>	<b>57</b>	<b>2.5%</b>	<b>601</b>	<b>26.7%</b>	<b>2249</b>

\* In 1995-1997, three concept stocks (one in each year) are classified as "Foreign" by CRSP. They are domestic securities becoming foreign.

Table 5. – Continued –

<b>Panel B: Control Firms*</b>									
	<b>Merger</b>	<b>%</b>	<b>Exchange</b>	<b>%</b>	<b>Liquidation</b>	<b>%</b>	<b>Dropped</b>	<b>%</b>	<b>N</b>
<b>1967</b>	29	82.9%	1	2.9%	0	0.0%	5	14.3%	35
<b>1968</b>	23	53.5%	0	0.0%	0	0.0%	20	46.5%	43
<b>1969</b>	12	70.6%	0	0.0%	0	0.0%	5	29.4%	17
<b>1970</b>	16	76.2%	1	4.8%	0	0.0%	4	19.0%	21
<b>1971</b>	16	80.0%	0	0.0%	0	0.0%	4	20.0%	20
<b>1972</b>	29	78.4%	6	16.2%	0	0.0%	2	5.4%	37
<b>1973</b>	28	96.6%	0	0.0%	1	3.4%	0	0.0%	29
<b>1974</b>	21	72.4%	3	10.3%	3	10.3%	2	6.9%	29
<b>1975</b>	34	73.9%	5	10.9%	0	0.0%	7	15.2%	46
<b>1976</b>	40	87.0%	3	6.5%	1	2.2%	2	4.3%	46
<b>1977</b>	35	76.1%	10	21.7%	1	2.2%	0	0.0%	46
<b>1978</b>	31	72.1%	9	20.9%	2	4.7%	1	2.3%	43
<b>1979</b>	29	78.4%	5	13.5%	1	2.7%	2	5.4%	37
<b>1980</b>	46	82.1%	0	0.0%	9	16.1%	1	1.8%	56
<b>1981</b>	47	87.0%	5	9.3%	0	0.0%	2	3.7%	54
<b>1982</b>	58	58.0%	2	2.0%	0	0.0%	40	40.0%	100
<b>1983</b>	52	49.5%	4	3.8%	1	1.0%	48	45.7%	105
<b>1984</b>	77	68.8%	6	5.4%	0	0.0%	29	25.9%	112
<b>1985</b>	55	61.8%	11	12.4%	0	0.0%	23	25.8%	89
<b>1986</b>	66	68.0%	4	4.1%	0	0.0%	27	27.8%	97
<b>1987</b>	67	73.6%	0	0.0%	0	0.0%	24	26.4%	91
<b>1988</b>	65	80.2%	0	0.0%	0	0.0%	16	19.8%	81
<b>1989</b>	52	86.7%	0	0.0%	0	0.0%	7	11.7%	60
<b>1990</b>	51	81.0%	0	0.0%	0	0.0%	12	19.0%	63
<b>1991</b>	88	88.0%	0	0.0%	0	0.0%	12	12.0%	100
<b>1992</b>	57	79.2%	0	0.0%	0	0.0%	15	20.8%	72
<b>1993</b>	70	70.7%	0	0.0%	0	0.0%	29	29.3%	99
<b>1994</b>	81	91.0%	0	0.0%	0	0.0%	8	9.0%	89
<b>1995</b>	65	82.3%	4	5.1%	0	0.0%	10	12.7%	79
<b>1996</b>	62	93.9%	3	4.5%	0	0.0%	1	1.5%	66
<b>1997</b>	36	92.3%	0	0.0%	0	0.0%	3	7.7%	39
<b>1998</b>	18	94.7%	0	0.0%	0	0.0%	1	5.3%	19
<b>Total</b>	<b>1456</b>	<b>75.8%</b>	<b>82</b>	<b>4.3%</b>	<b>19</b>	<b>1.0%</b>	<b>362</b>	<b>18.9%</b>	<b>1920</b>

\* In 1989, one control firm is classified as "Foreign" by CRSP. It is a domestic security becoming foreign.

**Table 5. – Continued –**

**Panel C: Difference in Numbers between Concept Stocks and Control Firms**

Difference = Concept minus Control

(For example, in 1967, there were 17 *fewer* concept stocks delisted because of merger than control firms.)

Year	Merger	Exchange	Liquidation	Dropped	Sum of the Differences	(p-value)
67	-17	0	1	3	-13	(0.221)
68	-4	2	3	-9	-8	(0.420)
69	17	2	3	1	23	(0.000)***
70	7	3	2	-1	11	(0.096)*
71	16	3	2	-2	19	(0.004)***
72	8	-3	1	0	6	(0.522)
73	-1	2	2	2	5	(0.476)
74	0	0	0	-1	-1	(0.880)
75	-6	-3	5	-4	-8	(0.285)
76	-7	-2	4	0	-5	(0.697)
77	9	-8	2	2	5	(0.527)
78	19	-5	2	2	18	(0.046)**
79	19	1	2	2	24	(0.005)***
80	7	7	-6	7	15	(0.113)
81	2	-3	1	9	9	(0.272)
82	1	5	4	-10	0	(0.924)
83	26	5	3	0	34	(0.004)***
84	-9	-2	3	10	2	(0.857)
85	6	-6	1	9	10	(0.297)
86	4	-3	1	19	21	(0.098)*
87	8	0	1	11	20	(0.041)**
88	10	1	1	4	16	(0.112)
89	14	1	0	16	30	(0.003)***
90	8	1	0	4	13	(0.195)
91	-38	0	0	17	-21	(0.027)**
92	2	1	0	11	14	(0.169)
93	-15	0	0	24	9	(0.374)
94	-16	0	0	30	14	(0.182)
95	-9	-4	0	23	11	(0.589)
96	-10	-3	0	35	23	(0.027)**
97	0	0	0	23	24	(0.013)*
98	7	0	0	2	9	(0.172)
<b>Total</b>	<b>58</b>	<b>-8</b>	<b>38</b>	<b>239</b>	<b>329</b>	

**Table 6. Accounting Performance of Concept Stocks and Control Firms, 1967 ~ 1999**

We compare the accounting performance of concept stocks with that of control firms two years before and after the concept stocks are selected (Year 0). Market value is natural logarithm of the summation of the market capitalization of common stock at calendar year-end, debt in liabilities, long-term debt, and preferred stock. Book value is total assets minus total liabilities and preferred stock. Age is defined as the difference between year of interest and the earliest year that the firm has traded stock price available in CRSP. Long-term debt ratio (LTD) is debt in current liabilities plus long-term debt divided by firm market size. Operating margin is defined as operating income before depreciation divided by sales. Return on assets is defined as operating income before depreciation divided by assets. Profit margin is net income divided by sales. Return on equity is operating income before depreciation divided by the sum of book value and preferred stock. Book values and market values not used in ratios are deflated using the CPI into 1998 dollars. Control firms are chosen using a two-way matching procedure involving size and the book-to-market ratio. First, we identify the subset of matching candidates that have market values within 30% of a concept stock and are not concept stocks themselves in the previous two years. From this subset, the firm with the closest book-to-market ratio is chosen as the control firm. If the subset contains fewer than five candidate firms, we expand the range of market value to be within 40%. "Difference" calculates the mean/median difference between concept stocks and control firms each year. P-values under Mean, as reported in parentheses, are associated with robust t-statistic using a two-sided t-test of no difference in mean each year. P-values under Median are associated with Wilcoxon signed rank test of no difference in median each year.

**Panel A: Size and Book-to-market values**

Year	<u>Market Value</u>		<u>Log(Book Value)</u>		<u>BV/MV</u>		<u>N</u>
	Mean	Median	Mean	Median	Mean	Median	
<b>Concept Stocks</b>							
-2	5.946	5.766	4.880	4.767	0.338	0.252	3335
-1	5.878	5.692	4.726	4.556	0.312	0.234	4381
0	5.715	5.535	4.436	4.285	0.280	0.208	6838
+1	5.942	5.802	4.924	4.808	0.349	0.271	4987
+2	6.172	6.077	5.323	5.257	0.407	0.323	3866
<b>Control Firms</b>							
-2	5.905	5.799	5.381	5.282	0.445	0.351	3335
-1	5.826	5.676	5.242	5.089	0.397	0.313	4381
0	5.699	5.516	4.980	4.785	0.308	0.241	6838
+1	5.941	5.823	5.361	5.133	0.400	0.326	4987
+2	6.148	6.051	5.690	5.503	0.491	0.388	3866
<b>Difference (Concept - Control)</b>							
-2	0.049 (0.225)	0.052 (0.058)	-0.468 (0.000)	-0.385 (0.000)	-0.119 (0.000)	-0.084 (0.000)	
-1	0.057 (0.036)	0.063 (0.008)	-0.552 (0.000)	-0.329 (0.000)	-0.091 (0.000)	-0.057 (0.000)	
0	0.019 (0.000)	0.017 (0.000)	-0.676 (0.000)	-0.351 (0.000)	-0.031 (0.000)	-0.004 (0.000)	
+1	0.002 (0.930)	0.008 (0.674)	-0.631 (0.000)	-0.333 (0.000)	-0.052 (0.000)	-0.033 (0.000)	
+2	0.022 (0.522)	-0.009 (0.745)	-0.650 (0.000)	-0.275 (0.000)	-0.081 (0.000)	-0.050 (0.000)	

Table 6. – Continued –

**Panel B: Debt, R&D, Advertising and Capital Expenditures**

Year	<u>LTD</u>		<u>R&amp;D/Sales</u>		<u>Adv/Sales</u>		<u>Capex/Sales</u>	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
<b>Concept Stocks</b>								
-2	0.0747	0.0192	0.2767	0.0206	0.01093	0.00002	0.246	0.100
-1	0.0639	0.0157	0.3334	0.0370	0.01208	0.00003	0.273	0.112
0	0.0590	0.0127	0.3917	0.0536	0.01467	0.00004	0.313	0.131
+1	0.0765	0.0219	0.3042	0.0440	0.01250	0.00002	0.260	0.110
+2	0.0956	0.0319	0.2460	0.0366	0.01328	0.00001	0.225	0.100
<b>Control Firms</b>								
-2	0.1577	0.1043	0.0246	0.0000	0.01501	0.00000	0.058	0.041
-1	0.1517	0.0932	0.0280	0.0000	0.01201	0.00000	0.055	0.039
0	0.1457	0.0929	0.0316	0.0000	0.01174	0.00000	0.056	0.038
+1	0.1503	0.0995	0.0276	0.0000	0.01282	0.00000	0.061	0.041
+2	0.1652	0.1158	0.0283	0.0000	0.01391	0.00000	0.063	0.042
<b>Difference (Concept - Control)</b>								
-2	-0.0893 (0.000)	-0.0367 (0.000)	0.2422 (0.000)	0.0000 (0.000)	-0.00096 (0.290)	0.00000 (0.000)	0.194 (0.000)	0.054 (0.000)
-1	-0.0871 (0.000)	-0.0442 (0.000)	0.2620 (0.000)	0.0048 (0.000)	-0.00019 (0.797)	0.00000 (0.000)	0.212 (0.000)	0.068 (0.000)
0	-0.0824 (0.000)	-0.0378 (0.000)	0.2709 (0.000)	0.0275 (0.000)	0.00200 (0.051)	0.00001 (0.000)	0.237 (0.000)	0.079 (0.000)
+1	-0.0701 (0.000)	-0.0348 (0.000)	0.2217 (0.000)	0.0127 (0.000)	-0.00056 (0.534)	0.00000 (0.000)	0.193 (0.000)	0.064 (0.000)
+2	-0.0676 (0.000)	-0.0359 (0.000)	0.1937 (0.000)	0.0226 (0.000)	-0.00076 (0.401)	0.00000 (0.000)	0.161 (0.000)	0.056 (0.000)

**Panel C: Profitability Characteristics**

Year	<u>Operating Margin</u>		<u>ROA</u>		<u>Profit Margin</u>		<u>ROE</u>	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
<b>Concept Stocks</b>								
-2	-0.121	0.220	0.113	0.158	-0.272	0.110	0.181	0.262
-1	-0.245	0.210	0.085	0.144	-0.394	0.106	0.127	0.228
0	-0.424	0.182	0.025	0.107	-0.590	0.094	0.003	0.164
+1	-0.193	0.202	0.071	0.140	-0.346	0.102	0.073	0.220
+2	-0.058	0.210	0.103	0.152	-0.212	0.102	0.154	0.248
<b>Control Firms</b>								
-2	0.127	0.122	0.194	0.193	0.045	0.051	0.475	0.376
-1	0.127	0.126	0.193	0.194	0.045	0.051	0.531	0.390
0	0.123	0.124	0.186	0.191	0.038	0.051	0.563	0.409
+1	0.135	0.129	0.198	0.199	0.054	0.056	0.622	0.394
+2	0.135	0.125	0.194	0.192	0.055	0.053	0.410	0.374
<b>Difference (Concept - Control)</b>								
-2	-0.227 (0.028)	0.120 (0.213)	-0.076 (0.001)	-0.019 (0.003)	-0.298 (0.004)	0.072 (0.213)	-0.296 (0.000)	-0.105 (0.000)
-1	-0.290 (0.010)	0.111 (0.435)	-0.093 (0.000)	-0.040 (0.000)	-0.359 (0.002)	0.070 (0.435)	-0.350 (0.000)	-0.182 (0.000)
0	-0.358 (0.003)	0.083 (0.720)	-0.120 (0.000)	-0.046 (0.000)	-0.440 (0.001)	0.061 (0.733)	-0.450 (0.000)	-0.192 (0.000)
+1	-0.229 (0.014)	0.097 (0.430)	-0.103 (0.000)	-0.042 (0.000)	-0.304 (0.002)	0.054 (0.510)	-0.460 (0.003)	-0.174 (0.000)
+2	-0.152 (0.052)	0.101 (0.180)	-0.080 (0.000)	-0.037 (0.000)	-0.228 (0.004)	0.052 (0.194)	-0.233 (0.000)	-0.135 (0.000)

**Table 7. Logistic Analysis of Concept Stocks versus Control Firms**

In the spirit of Fama and MacBeth, Logit regressions are estimated for each year of the 1967-99 period. The dependent variable takes one for concept stocks and zero otherwise. Firm age is defined as the difference between year of interest and the earliest year that the firm has traded stock price available in CRSP. Long-term debt (LTD) ratio is debt in current liabilities plus long-term debt divided by firm market size. Book value is total assets minus total liabilities and preferred stock. Firm book size is the natural logarithm of book value. Return on assets is defined as operating income before depreciation divided by assets. Return on equity is operating income before depreciation divided by the sum of book value and preferred stock. Nasdaq is a dummy variable equal to one if the firm stock trades in Nasdaq and zero if in NYSE/AMEX. Trading volume (as average turnover) is defined as the annual average of monthly trading volume divided by shares outstanding. Positive earnings is a dummy variable equal to one if the firm reports positive earnings in the selection year and zero otherwise. Following Fama and French (2001), we reports means of the regression estimates across years. Robust standard errors are computed using White (1980) procedure. P-values are in parentheses.

Explanatory Variable	Concepts versus All other firms					Concepts versus Controls				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
<i>Size, age, exchange, and volume variables</i>										
Firm age	-0.011 (0.011)		-0.026 (0.000)			-0.051 (0.000)		-0.103 (0.000)		
Log (Book value)		-0.028 (0.272)		-0.084 (0.000)			-0.179 (0.000)		-0.544 (0.004)	
Nasdaq		-1.133 (0.130)		-0.584 (0.296)	-0.393 (0.469)		1.740 (0.176)		0.825 (0.544)	1.814 (0.108)
Trading volume		-0.680 (0.440)		-0.216 (0.852)			0.108 (0.952)		4.094 (0.113)	
<i>Leverage, investment, advertising, and capital expenditure characteristics</i>										
Long-term debt	-11.90 (0.000)	-12.05 (0.000)	-13.57 (0.000)	-13.94 (0.000)	-14.88 (0.000)	-12.22 (0.000)	-13.16 (0.000)	-24.04 (0.000)	-25.91 (0.000)	-25.76 (0.000)
R&D/BV	6.183 (0.000)	6.174 (0.000)	8.232 (0.000)	10.278 (0.000)	8.788 (0.000)	11.989 (0.000)	14.167 (0.000)	14.391 (0.000)	24.273 (0.000)	18.743 (0.000)
Adv/BV	-0.838 (0.294)	-0.827 (0.321)	-0.578 (0.570)	-0.811 (0.434)	-0.993 (0.281)	3.470 (0.045)	3.682 (0.042)	6.326 (0.127)	3.512 (0.363)	2.608 (0.368)
Capital expenditure	9.430 (0.000)	9.569 (0.000)	8.935 (0.000)	9.191 (0.000)	9.227 (0.000)	14.931 (0.000)	15.972 (0.000)	27.515 (0.000)	29.087 (0.000)	24.984 (0.000)
Book-to-market	-7.452 (0.000)	-7.372 (0.000)	-8.235 (0.000)	-7.594 (0.000)	-7.781 (0.000)	-1.837 (0.000)	-1.882 (0.000)	-6.652 (0.000)	-5.249 (0.000)	-5.427 (0.000)
<i>Profitability-related variables</i>										
Return on assets					-3.629 (0.000)					-4.158 (0.000)
Return on equity	-2.055 (0.000)	-2.083 (0.000)	-2.219 (0.000)			-2.729 (0.000)	-2.775 (0.000)	-3.754 (0.000)		
Positive earnings			0.842 (0.270)	-0.406 (0.395)				-1.298 (0.337)	-1.298 (0.394)	
Intercept	1.429 (0.000)	1.404 (0.000)	-1.972 (0.046)	-1.481 (0.149)	-1.776 (0.056)	0.973 (0.000)	1.225 (0.003)	6.226 (0.023)	5.329 (0.066)	1.959 (0.376)
Industry Dummy			Yes	Yes	Yes			Yes	Yes	Yes

All regressions are significant at the 1% level.

**Table 8. Calendar-Time Portfolio Regressions, 01/1967 ~ 12/1999.**

The dependent variable is the portfolio return of concept stocks, match firms or the zero investment portfolios. The zero investment portfolio is formed by going long in concept stocks and short in matching firms. Each month we form equal- and value-weighted portfolios containing all concept stocks chosen in the previous year. The portfolios are rebalanced monthly. Matching firms are drawn from the population of NYSE/AMEX/Nasdaq by matching size and book-to-market. MktRP, SMB, and HML are the Fama and French (1993) market, size, and book-to-market factors, respectively. PRIYR is Carhart (1997) momentum factor and is constructed as the return difference of all CRSP firms in the highest and the lowest terciles over the previous twelve months. Volume is calculated as the monthly trading volume divided by total shares outstanding (turnover ratio). Jan and Dec are January and December dummies. Hot is a dummy variable assigned to 1/0 in expansion/contraction months designated by NBER. Panel C reports the regression intercepts from Carhart four-factor models. Standard errors are computed using White (1980) robust estimator. p-values are in parentheses.

**Panel A: Equally-Weighted Portfolios**

Portfolio	Inter.	MktRP	SMB	HML	PRIYR	Volume (Concept)	Volume (Match)	Jan	Dec	Hot	Adj. Rsq				
<b>Concept</b>	-0.005	(0.007)	1.346	(0.000)							0.745				
<b>Control</b>	0.019	(0.000)	1.257	(0.000)							0.785				
<b>Zero</b>	-0.024	(0.000)	0.089	(0.017)							0.017				
<b>Concept</b>	-0.002	(0.156)	1.025	(0.000)	0.709	(0.000)	-0.673	(0.000)			0.883				
<b>Control</b>	0.020	(0.000)	1.021	(0.000)	0.803	(0.000)	-0.273	(0.000)			0.920				
<b>Zero</b>	-0.022	(0.000)	0.005	(0.901)	-0.094	(0.099)	-0.400	(0.000)			0.139				
<b>Concept</b>	-0.001	(0.286)	1.025	(0.000)	0.694	(0.000)	-0.683	(0.000)	-0.033	(0.450)	0.883				
<b>Control</b>	0.019	(0.000)	1.020	(0.000)	0.840	(0.000)	-0.250	(0.000)	0.078	(0.011)	0.922				
<b>Zero</b>	-0.021	(0.000)	0.004	(0.920)	-0.146	(0.013)	-0.432	(0.000)	-0.111	(0.025)	0.154				
<b>Concept</b>	-0.002	(0.296)	1.024	(0.000)	0.696	(0.000)	-0.680	(0.000)	-0.031	(0.478)	0.883				
<b>Control</b>	0.014	(0.000)	1.015	(0.000)	0.844	(0.000)	-0.229	(0.000)	0.083	(0.007)	0.924				
<b>Zero</b>	-0.017	(0.000)	-0.009	(0.826)	-0.153	(0.007)	-0.448	(0.000)	-0.117	(0.021)	0.157				
<b>Concept</b>	0.002	(0.565)	1.017	(0.000)	0.699	(0.000)	-0.715	(0.000)	0.027	(0.543)	0.887				
<b>Control</b>	0.022	(0.000)	1.016	(0.000)	0.849	(0.000)	-0.244	(0.000)	0.109	(0.001)	0.929				
<b>Zero</b>	-0.021	(0.000)	0.000	(0.998)	-0.155	(0.006)	-0.468	(0.000)	-0.084	(0.105)	0.164				
									0.016	(0.001)	-0.008	(0.079)	-0.007	(0.053)	0.887
									0.007	(0.065)	-0.001	(0.811)	-0.012	(0.000)	0.929
									0.008	(0.107)	-0.007	(0.105)	0.005	(0.218)	0.164

**Table 8. – Continued –**

**Panel B: Value-Weighted Portfolios**

Portfolio	Inter.	MktRP	SMB	HML	PRIYR	Volume (Concept)	Volume (Match)	Jan	Dec	Hot	Adj. Rsq
<b>Concept</b>	0.006 (0.000)	1.148 (0.000)									0.701
<b>Control</b>	0.017 (0.000)	1.157 (0.000)									0.789
<b>Zero</b>	-0.010 (0.000)	-0.010 (0.795)									-0.002
<b>Concept</b>	0.010 (0.000)	0.938 (0.000)	-0.051 (0.355)	-0.853 (0.000)							0.820
<b>Control</b>	0.019 (0.000)	1.032 (0.000)	-0.002 (0.968)	-0.488 (0.000)							0.831
<b>Zero</b>	-0.009 (0.000)	-0.094 (0.034)	-0.048 (0.511)	-0.365 (0.000)							-0.065
<b>Concept</b>	0.011 (0.000)	0.938 (0.000)	-0.058 (0.336)	-0.857 (0.000)	-0.016 (0.739)						0.819
<b>Control</b>	0.018 (0.000)	1.032 (0.000)	0.051 (0.443)	-0.455 (0.000)	0.114 (0.018)						0.836
<b>Zero</b>	-0.007 (0.000)	-0.095 (0.036)	-0.110 (0.172)	-0.402 (0.000)	-0.130 (0.016)						0.080
<b>Concept</b>	0.004 (0.019)	0.922 (0.000)	-0.026 (0.648)	-0.841 (0.000)	-0.001 (0.984)	0.074 (0.002)					0.827
<b>Control</b>	0.008 (0.000)	1.022 (0.000)	0.067 (0.278)	-0.421 (0.000)	0.126 (0.006)		0.170 (0.000)				0.851
<b>Zero</b>	-0.004 (0.091)	-0.110 (0.011)	-0.071 (0.337)	-0.427 (0.000)	-0.118 (0.030)	0.152 (0.033)	-0.289 (0.028)				0.109
<b>Concept</b>	0.005 (0.035)	0.907 (0.000)	-0.034 (0.547)	-0.888 (0.000)	0.064 (0.188)	0.076 (0.001)		0.021 (0.000)	-0.004 (0.289)	-0.003 (0.193)	0.834
<b>Control</b>	0.017 (0.000)	1.025 (0.000)	0.074 (0.225)	-0.435 (0.000)	0.147 (0.002)		0.192 (0.000)	0.006 (0.188)	-0.001 (0.857)	-0.012 (0.001)	0.855
<b>Zero</b>	-0.011 (0.006)	-0.126 (0.002)	-0.087 (0.236)	-0.459 (0.000)	-0.076 (0.184)	0.145 (0.043)	-0.296 (0.025)	0.015 (0.010)	-0.004 (0.509)	0.008 (0.059)	0.120



Table 8. – Continued –

Panel C: Coefficients of Intercepts Based on Various Subsamples

(I). Active concept and control firms (Still Active in 1999)

	Equal-weighted		Value-weighted	
Concept	0.003	(0.049)	0.005	(0.001)
Control	0.001	(0.152)	0.003	(0.016)
Zero	0.001	(0.425)	0.002	(0.297)

(II). Firms with non-negative earnings

	Equal-weighted		Value-weighted	
Concept	0.001	(0.287)	0.004	(0.001)
Control	0.000	(0.797)	0.002	(0.115)
Zero	0.001	(0.321)	0.003	(0.112)

(III). NYSE/AMEX Firms

	Equal-weighted		Value-weighted	
Concept	-0.001	(0.440)	0.000	(0.777)
Control	-0.002	(0.098)	0.001	(0.202)
Zero	0.001	(0.589)	-0.001	(0.511)

(IV). NASDAQ Firms

	Equal-weighted		Value-weighted	
Concept	-0.006	(0.115)	-0.004	(0.338)
Control	-0.001	(0.869)	-0.002	(0.605)
Zero	-0.005	(0.258)	-0.002	(0.665)

(V). Years before 1981 (<= 1981)

	Equal-weighted		Value-weighted	
Concept	0.002	(0.319)	0.006	(0.000)
Control	0.017	(0.000)	0.013	(0.000)
Zero	-0.015	(0.000)	-0.008	(0.000)

(VI). Years after 1981 (> 1981)

	Equal-weighted		Value-weighted	
Concept	-0.003	(0.151)	0.015	(0.000)
Control	0.023	(0.000)	0.022	(0.000)
Zero	-0.025	(0.000)	-0.007	(0.009)

(VII). Non-IPO Firms

	Equal-weighted		Value-weighted	
Concept	0.001	(0.215)	0.004	(0.003)
Control	0.019	(0.000)	0.018	(0.000)
Zero	-0.018	(0.000)	-0.014	(0.000)

(VIII). IPO Firms

	Equal-weighted		Value-weighted	
Concept	-0.002	(0.560)	0.001	(0.740)
Control	0.022	(0.000)	0.023	(0.000)
Zero	-0.024	(0.000)	-0.022	(0.000)

**Table 9. Five-year buy-and-hold abnormal returns (BHARs) of concept stocks and their matching firms, 1967 - 1999.**

BHARs are calculated as the difference between the equal-weighted portfolio returns of concept stocks and control firms. The control firms are chosen using various two-way matching procedures. In all procedures, available benchmarks are CRSP firms, and are not concept stocks in the previous two years. The first three subsets of matching candidates are firms that have market values within 30% of the market value of the concept stock. In the first (second, third) procedure, the firm with the closest book-to-market ratio (earnings, cash flows) is chosen as the control firm. If the subset contains fewer than five candidate firms, we expand the range of market value to be within 40%. The fourth subset of matching candidates are firms with the same 3-digit industry code as the concept stock. If the subset contains less than five firms, we include firms with the same 2-digit industry code. The firm with the closest equity market value to that of the concept stock is chosen as the control firm. The fifth procedure matches each concept stocks with the firm that has the same age and the closest book-to-market ratio. The other procedures constrain the sample based on other characteristics such as delisting, exchanges, time periods, and IPOs. "Diff" reports the cross-sectional difference of buy-and-hold returns between the concept stocks and the control firms. The robust t-statistics, t(Diff), are calculated using a two-sided test of no difference. P-values are in parentheses.

**Panel A: Whole Sample**

Matching Procedure	Year	Concept (%)	Control (%)	Diff (%)	t(Diff)	p-value	N
Size and Book-to-market	1	11.92%	14.24%	-2.32%	-1.89	(0.058)	6535
	2	19.00	24.84	-5.85	-2.71	(0.007)	6175
	3	30.69	38.10	-7.41	-1.99	(0.047)	5759
	4	46.11	64.98	-18.88	-4.55	(0.000)	5351
	5	64.55	77.15	-12.60	-2.91	(0.004)	4979
Size and Return on Equity	1	11.62%	14.61%	-2.99%	-2.47	(0.014)	6526
	2	19.21	29.27	-10.06	-4.59	(0.000)	6162
	3	31.09	46.42	-15.33	-4.11	(0.000)	5734
	4	44.87	70.22	-25.35	-6.80	(0.000)	5307
	5	66.90	97.59	-30.69	-6.46	(0.000)	4920
Size and Operating Margin	1	11.78%	10.40%	1.38%	1.22	(0.224)	6538
	2	20.17	32.02	-11.85	-5.38	(0.000)	6165
	3	30.87	52.01	-21.14	-5.41	(0.000)	5711
	4	44.38	77.06	-32.68	-9.86	(0.000)	5376
	5	65.50	104.02	-38.52	-7.64	(0.000)	4898
Industry and Size	1	12.18%	19.62%	-7.44%	-6.14	(0.000)	6483
	2	18.98	42.20	-23.22	-10.07	(0.000)	6107
	3	31.70	64.39	-32.69	-8.61	(0.000)	5681
	4	46.05	91.23	-45.18	-12.97	(0.000)	5248
	5	67.95	126.50	-58.55	-12.90	(0.000)	4851
Firm Age and Book-to-market	1	11.95%	15.91%	-3.97%	-3.10	(0.002)	6539
	2	18.58	25.47	-6.89	-3.25	(0.001)	6195
	3	30.47	40.43	-9.96	-2.60	(0.009)	5784
	4	46.57	68.67	-22.10	-4.94	(0.000)	5376
	5	64.83	83.58	-15.75	-3.97	(0.000)	4990

**Panel B: Long-run Performance Based on Subsamples**

**(I). Active concept and control firms (Still Active in 1999)**

Matching Procedure	Year	Concept (%)	Control (%)	Diff (%)	t(Diff)	p-value	N
Size and Book-to-market	1	19.10%	15.92%	3.19%	1.68	(0.094)	3377
	2	29.07	29.60	-0.53	-0.14	(0.886)	3089
	3	44.81	47.11	-2.31	-0.32	(0.749)	2801
	4	57.46	67.65	-10.20	-1.54	(0.124)	2537
	5	82.41	87.37	-4.96	-0.61	(0.542)	2322

**(II). Firms with non-negative earnings**

Matching Procedure	Year	Concept (%)	Control (%)	Diff (%)	t(Diff)	p-value	N
Size and Book-to-market	1	13.34%	13.32%	0.02%	0.02	(0.987)	4357
	2	21.43	24.27	-2.84	-1.53	(0.125)	4227
	3	33.17	38.50	-5.33	-2.02	(0.043)	4096
	4	55.11	61.96	-6.85	-1.43	(0.153)	3940
	5	75.57	73.59	1.98	0.37	(0.712)	3768

**Table 9. – Continued –**

**(III). NYSE/AMEX Firms**

<b>Matching Procedure</b>	<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>	<b>N</b>
<b>Size and Book-to-market</b>	<b>1</b>	11.50%	10.74%	0.76%	0.67	(0.506)	3293
	<b>2</b>	21.03	21.29	-0.27	-0.14	(0.892)	3230
	<b>3</b>	31.86	33.70	-1.83	-0.72	(0.470)	3173
	<b>4</b>	50.10	51.34	-1.24	-0.33	(0.740)	3105
	<b>5</b>	71.30	70.87	0.43	0.08	(0.932)	3024

**(IV). NASDAQ Firms**

<b>Matching Procedure</b>	<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>	<b>N</b>
<b>Size and Book-to-market</b>	<b>1</b>	12.57%	16.15%	-3.58%	-1.60	(0.110)	3191
	<b>2</b>	16.12	25.65	-9.53	-2.40	(0.017)	2890
	<b>3</b>	29.01	43.17	13.15	-1.70	(0.090)	2538
	<b>4</b>	42.13	107.94	-65.81	-5.32	(0.000)	2200
	<b>5</b>	57.44	93.46	-36.02	-4.28	(0.000)	1902

**(V). Years before 1981 (<= 1981)**

<b>Matching Procedure</b>	<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>	<b>N</b>
<b>Size and Book-to-market</b>	<b>1</b>	11.44%	7.89%	3.55%	2.74	(0.006)	2019
	<b>2</b>	20.52	18.16	2.36	1.05	(0.295)	2011
	<b>3</b>	32.52	32.94	-0.42	-0.14	(0.890)	2002
	<b>4</b>	49.38	47.33	2.06	0.52	(0.601)	1987
	<b>5</b>	68.64	66.06	2.59	0.50	(0.615)	1973

**(VI). Years after 1981 (> 1981)**

<b>Matching Procedure</b>	<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>	<b>N</b>
<b>Size and Book-to-market</b>	<b>1</b>	12.14%	17.08%	-4.94%	-2.95	(0.003)	4516
	<b>2</b>	18.26	28.07	-9.81	-3.26	(0.001)	4164
	<b>3</b>	29.72	40.85	-11.14	-2.03	(0.042)	3757
	<b>4</b>	44.17	75.41	-31.24	-5.07	(0.000)	3364
	<b>5</b>	61.86	84.43	-22.57	-3.57	(0.000)	3006

**(VII). Non-IPO Firms**

<b>Matching Procedure</b>	<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>	<b>N</b>
<b>Size and Book-to-market</b>	<b>1</b>	14.16%	16.71%	-2.55%	-1.96	(0.050)	6334
	<b>2</b>	20.07	30.74	-10.67	-5.15	(0.000)	6090
	<b>3</b>	28.71	45.88	-17.16	-6.86	(0.000)	5808
	<b>4</b>	45.49	67.63	-22.14	-5.47	(0.000)	5544
	<b>5</b>	64.67	83.16	-18.49	-4.31	(0.000)	5237

**(VI). IPO Firms**

<b>Matching Procedure</b>	<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>	<b>N</b>
<b>Size and Book-to-market</b>	<b>1</b>	9.71%	12.53%	-2.82%	-0.74	(0.460)	1305
	<b>2</b>	20.07	21.43	-1.35	-0.18	(0.860)	1166
	<b>3</b>	43.26	36.89	6.36	0.35	(0.728)	1009
	<b>4</b>	28.35	43.94	-15.58	-1.76	(0.079)	846
	<b>5</b>	49.67	53.09	-3.43	-0.29	(0.771)	712

**Table 10. Five-year buy-and-hold abnormal returns (BHARs) of concept stocks and their matching firms sorted by the book-to-market ratios and the past 3-year returns**

BHARs are calculated as the difference between the equal-weighted portfolio returns of concept stocks and control firms. "Diff" reports the cross-sectional difference of buy-and-hold returns between the concept stocks and the control firms. The robust t-statistics, t (Diff), are calculated using a two-sided test of no difference. P-values are in parentheses.

**Panel A. The book-to-market ratio**

<b>Rank: BV/MV 1 (Low)</b>					
<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>
1	11.57%	13.87%	-2.31%	-1.67	(0.095)
2	17.06	22.42	-5.36	-2.44	(0.015)
3	29.73	34.46	-4.73	-1.00	(0.317)
4	43.40	56.43	-13.03	-2.77	(0.006)
5	64.62	72.88	-8.27	-1.56	(0.120)

<b>Rank: BV/MV 2</b>					
<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>
1	11.09%	14.24%	-3.15%	-0.88	(0.378)
2	25.17	32.99	-7.82	-0.72	(0.471)
3	33.15	45.74	-12.59	-1.57	(0.117)
4	43.66	63.98	-20.32	-2.34	(0.020)
5	77.20	82.40	-5.19	-0.34	(0.731)

<b>Rank: BV/MV 3 (High)</b>					
<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>
1	19.74%	21.41%	-1.67%	-0.30	(0.766)
2	26.32	36.39	-10.06	-1.17	(0.243)
3	52.69	61.01	-8.32	-0.44	(0.664)
4	74.88	94.79	-19.91	-0.90	(0.371)
5	85.48	130.77	-45.29	-1.76	(0.081)

**Panel B. The past 3-year returns**

<b>Rank: Pr3yr 1 (Low)</b>					
<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>
1	7.13%	14.21%	-7.08%	-2.79	(0.005)
2	25.08	27.59	-2.51	-0.35	(0.729)
3	43.55	41.71	1.84	0.12	(0.903)
4	44.06	60.51	-16.44	-2.25	(0.025)
5	66.37	81.88	-15.51	-1.47	(0.143)

<b>Rank: Pr3yr 2</b>					
<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>
1	11.06%	14.27%	-3.21%	-1.49	(0.137)
2	12.06	19.03	-6.97	-2.47	(0.014)
3	30.09	29.21	0.88	0.15	(0.879)
4	42.38	51.55	-9.17	-1.31	(0.190)
5	58.09	62.29	-4.20	-0.64	(0.525)

<b>Rank: Pr3yr 3 (High)</b>					
<b>Year</b>	<b>Concept (%)</b>	<b>Control (%)</b>	<b>Diff (%)</b>	<b>t(Diff)</b>	<b>p-value</b>
1	13.87%	13.78%	0.10%	0.05	(0.958)
2	19.67	25.44	-5.78	-2.01	(0.045)
3	25.39	39.26	-13.87	-3.66	(0.000)
4	45.92	65.45	-19.53	-2.71	(0.007)
5	71.61	82.03	-10.42	-1.33	(0.184)

**Table 11. Determining the success of concept stocks**

The Fama-MacBeth regressions are performed cross-sectionally each year and then the average of the time series of each coefficient is calculated. The dependent variable is the cumulative five-year buy-and-hold return for each concept stock. Firm's market value is the market capitalization of common stock at calendar year-end. Firm age is defined as the difference between year of interest and the earliest year that the firm has traded stock price available in CRSP. Long-term debt (LTD) ratio is debt in current liabilities plus long-term debt divided by firm market size. Book value is total assets minus total liabilities and preferred stock. Firm book size is the natural logarithm of book value. Returns on assets is defined as operating income before depreciation divided by assets. Returns on equity is operating income before depreciation divided by the sum of book value and preferred stock. Nasdaq is a dummy variable equal to one if the firm stock trades in Nasdaq and zero if in NYSE/AMEX. Trading volume (as average turnover) is defined as the annual average of monthly trading volume divided by total shares outstanding. Positive earnings is a dummy variable if returns on earnings is positive for the firm and zero otherwise. Industry dummy variables are constructed at the 2-digit SIC level. P-values (in parentheses) are associated with White (1980) robust standard errors.

<b>Explanatory Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
<i>Size, age, exchange, and volume variables</i>					
<b>Firm age</b>	-0.007 (0.131)		-0.002 (0.450)		
<b>Log(Book value)</b>		0.078 (0.070)		0.090 (0.040)	
<b>Nasdaq</b>		-0.091 (0.557)		-0.271 (0.038)	-0.233 (0.091)
<b>Trading volume</b>		-1.330 (0.175)		-1.378 (0.172)	
<i>Leverage, investment, advertising, and capital expenditure characteristics</i>					
<b>Long-term debt</b>	-0.19 (0.521)	-0.61 (0.088)	0.30 (0.486)	-0.21 (0.673)	0.33 (0.464)
<b>R&amp;D/BV</b>	0.520 (0.276)	0.846 (0.045)	1.459 (0.025)	1.473 (0.016)	1.409 (0.017)
<b>Adv/BV</b>	2.696 (0.246)	2.834 (0.239)	1.277 (0.569)	1.611 (0.489)	1.384 (0.557)
<b>Capital expenditure</b>	-0.077 (0.624)	-0.045 (0.755)	-0.127 (0.332)	-0.120 (0.353)	-0.116 (0.371)
<b>Book-to-market</b>	0.337 (0.064)	0.167 (0.390)	0.344 (0.080)	0.118 (0.556)	0.296 (0.107)
<i>Profitability-related variables</i>					
<b>Return on assets</b>					0.537 (0.003)
<b>Return on equity</b>	0.433 (0.041)	0.352 (0.079)	0.511 (0.037)		
<b>Positive earnings</b>			0.028 (0.895)	0.019 (0.923)	
<b>Intercept</b>	0.516 (0.004)	0.203 (0.346)	0.222 (0.444)	0.078 (0.754)	0.276 (0.223)
<b>Industry Dummy</b>			Yes	Yes	Yes
<b>Average Adjusted R<sup>2</sup></b>	0.063	0.082	0.114	0.132	0.121

## Appendix A. Summary of Search Results from Dow Jones News Retrieval Over the 1965 Through 2000 Period.

We report the search results from Dow Jones News Retrieval over the 1965 through 2000 period. We search major newswire, newspapers, magazines, and trade journals as defined by Dow Jones & Company. The key words are concept(s) where stock(s) was within five words. To save space, we only report the results up to 1997 because during the period of 1998 to 2000, most articles use concept stocks and Internet-related stocks interchangeably. This table reports the articles mentioning either concept industries or companies with concept stocks, or both. SIC codes are from CRSP. Key quotes are excerpted from the articles.

Date	Publisher <sup>1</sup>	Industry Mentioned	Company Mentioned	SIC	Key Quotes
09/09/1973	NYT		Syntex	2834	... concept stocks are generally nourished by exciting business ideas ...
			Bausch & Lomb	3861	
			Levitz Furniture	5712	
			Robbins A H	2834	
12/15/1973	Forbes	Railroads	Union Pacific	4011	Are ... railroads the concept stocks of tomorrow? ... Look at ... the inherent quality ...
			Southern Railway	4011	
			Norfolk & Western	4011	
06/10/1980	NYT	Precious Metal Energy	Hecla Mining	1041	Precious metal issues ... as long-term inflation hedges.
			Homestake Mining	1041	
			Dome Mines	1041	
			Callahan Mining	1044	
			Day Mines	1041	
			Tejon Ranch	211	
			ASA Ltd.	6723	
			Asarco Inc.	3356	
09/26/1983	Barron's	Medical Practice	American Surgery Centers	8080	Firms with outpatient surgery ... have been anointed 'concept stocks.'
			Medical 21	8011	
			Surgery Centers Corp	8090	
01/21/1985	Barron's	Retail --Warehouse	Home Depot	5211	Warehouse notion is the hottest thing in retailing ... ... baby boomers ... are ... likely to purchase ... stocks in companies they grew up with. Concept stocks. Stocks with plenty of growth potential.
03/11/1985	Forbes		McDonald's	5812	
			Apple Computer	3573	
			The Limited	5621	
			Wal-Mart	5311	
			Lorimar	7814	
			The Gap Stores	5651	
			Wherehouse Entertainment	5733	
05/09/1988	NYT	Steel	U.S. Surgical Corp.	3840	U.S. steel makers see growing demand.
			Bethlehem Steel	3312	
			Deere	3523	
			Caterpillar	3531	

Appendix A. – Continued –

<b>Date</b>	<b>Publisher<sup>1</sup></b>	<b>Industry Mentioned</b>	<b>Company Mentioned</b>	<b>SIC</b>	<b>Key Quotes</b>
05/29/1989	Barron's	Cellular telephones Cable-television Technology Biotechnology			... one area we shy away from are the concept stocks, the stocks that are currently losing money and will continue to lose money in the near future, but are supposedly going to earn small fortunes sometime in the 'Nineties.
02/27/1990	Globe	Waste management	Waste Management Inc.	4953	... Waste-management stocks look good, perhaps too good, at the present time.
04/30/1990	WSJ	Technology	Browning-Ferris Industries Integrated Systems	4953 7370	"Every once in a while, the market gives you a chance to be brave," ... A "concept" stock with little history ... it's expensive at 40. But its Product ... will be in demand.
06/05/1990	WP	Service	Urcarco Inc.	6141	What makes Urcarco worth all this money? Certainly not anything visible on the financial statements. ... What you are really paying for here is a concept. ... bringing professional management to ... the \$40 billion used car business.
06/25/1990	Forbes	Service Pharmaceutical Service	Fuddruckers Vipont Pharmaceutical Tiffany & Co.	5810 2830 3911	You could tell it was a concept stock because the financials were so bad. ... The earnings were paltry and the market capitalization was out of proportion to everything but management's promises.
01/21/1991	Forbes	Medical Practice	Neurogen Corp.	2830	... will be more effective than ... Valium and ... Prozac.
02/01/1993	Forbes	Casual Dining	Fresh Choice Lone Star Steakhouse Cracker Barrel	5810 5810 5810	... these are concept stocks. You aren't buying earnings or assets. Concepts are moonbeams. And who is to say what a moonbeam is worth?
03/09/1993	WSJ	Biotechnology	Chiron Genzyme Biogen	2830 2830 2830	... all three have solid near-term earnings potential, more than one revenue-producing drug, and promising new-product pipelines. ... "A lot of investors burnt by 'single-concept' stocks are pouring money into Chiron," ...
07/12/1993	BW	Multimedia	Walt Disney Viacom Acclaim Entertainment Broderbund Software Electronic Arts NTN Communications America Online	7812 4841 7372 7370 7370 7389 7375	Walt Street often swoons over "concept" stocks, and multimedia -- the combination of computers, telecommunications, audio, and video into a powerful system in every home -- is one heck of a concept.
12/27/1993	BW	Health Care			A resuscitation of health-care stocks ... should help drive small caps in the year ahead.

**Appendix A. – Continued –**

<b>Date</b>	<b>Publisher<sup>1</sup></b>	<b>Industry Mentioned</b>	<b>Company Mentioned</b>	<b>SIC</b>	<b>Key Quotes</b>
01/03/1994	Forbes	Telecommunications Multimedia			“... Small concept stocks ... are almost a sure bet” for decline. ... Watch out for ... current buzzwords ... Payoffs are way in the future, and nobody knows who, if anyone, will be the winners.
10/16/1994	Dallas		IBM <sup>2</sup> Xerox <sup>2</sup> Microsoft <sup>2</sup>	3571 3861 7370	“The really good ones usually come out early in the cycle ... Everyone has a story ... but it’s difficult to translate into companies that will grow over time.
04/06/1995	IBD	Biotechnology <sup>2</sup> Semiconductors <sup>2</sup> Computers <sup>2</sup> Medical Practice	InPhyNet	8090	... it’s really a new industry in the sense that nobody really organized ... doctors on a large basis before. So, they’re really concept stocks.
10/10/1995	FP	Entertainment	IMAX Iwerks <sup>3</sup>	7990 7990	One analyst ... is so impressed he won’t give a target price. ... “The upside’s wide open. It’s very large.”
01/01/1996	Forbes		Netscape America Online Spyglass	7370 7375 7370	Netscape is trading at a P/E of 375 and America Online at 41. One is discounting the hereafter, the other is discounting eternity.
03/04/1996	Fortune	Emerging Technology			How do you judge what is good value in emerging technology companies? ... I don’t buy concept stocks. If it’s a software company we look at price-to-sales.
03/11/1996	Forbes	Technology	Netscape UUNet Compaq Intel Texas Instruments Philips Electronics NV	7370 4810 7379 3679 3674 6711	Once again we heard the “this time it’s different” two-step from many analysts and market strategists. Tech stocks, the general consensus said, would continue their torrid climb because multinational demand would increase rapidly for years. Whenever they say “this time it’s different,” tighten your grip on your wallet.
05/06/1996	Forbes		“trendy stocks”		... why do people keep flocking to growth and concept stocks selling at huge premiums...? Because emotion favors the premium-priced stocks. They are fashionable. They are hot. They make great cocktail party chatter. There is an impressive and growing body of evidence demonstrating that investors and speculators don’t necessarily learn from experience. Emotion overrides logic time after time.



Appendix A. – Continued –

Date	Publisher <sup>1</sup>	Industry Mentioned	Company Mentioned	SIC	Key Quotes
07/14/1996	WP		Polaroid Corp. <sup>4</sup>	3861	These are young, high-technology, high-concept stocks that have little profit but lots of potential – and lots of hype from investment firms and newsletters.
			Walt Disney <sup>4</sup>	7812	
			Avon Products <sup>4</sup>	2844	
			Presstek	2750	
08/05/1996	Fortune	Biotech			... concept stocks – companies in areas like biotech and Internet services that have great ideas but no actual profit.
10/14/1996	Barron's	Internet services	Novatek International	3440	Concept stocks, by their very nature, fire investors' imagination and dull their critical faculties.
12/16/1996	Forbes		America Online	7375	Anyone remember the two-tier market of the early 1970s, when the Nifty Fifty rose into never-never land? Large institutional investors lined up to buy the fastest-growing big-cap stocks – the Avons, Xeroxes, Polaroids – whose futures were guaranteed by the experts of the day. ... like the two-tier market of the 1970s, today's mania for concept stocks will end in a stampede for the exits.
			Intuit	7370	
			Presstek	2750	
			Yahoo! Inc.	7375	
			Netscape	7370	
			Excite	7370	
			PeopleSoft	7370	
			Total System Services	6153	
			Cascade Communications	3670	
			Ascend Communications	7370	
01/22/1997	WSJ		Loral	3679	... a large part of the stock's price is a tribute to ... starry-eyed visions of emerging satellite businesses, which they don't really know how to value.
02/17/2000	WSJ		VerticalNet	7310	Concepts are "castles in the air" by definition, so how does Mr. Bogle quantify concept stocks? ... First, the stocks have extremely high price-to-sales ratios. Price to earnings ratios won't work because these companies so often are losing money.
			Leap Wireless Intl.	3660	
			Geoworks	7370	
			ZixIt	3670	
			General Magic	7373	
			<b>Sunrise Technologies</b>	<b>3840</b>	

<sup>1</sup> NYT: New York Times. Globe: The Globe and Mail. WSJ: Wall Street Journal. WP: The Washington Post. BW: Business Week. Dallas: The Dallas Morning News. IBD: Investor's Business Daily. FP: The Financial Post.

<sup>2</sup> These companies were NOT chosen as concept stocks at that time (1994). Instead, "...Finding the great growth stock is always the dream. In the '50s it was IBM; in the '60s it was Xerox; more recently it has been Microsoft. Probably the future will have other technology-based companies." ... "Most concept stocks do terribly – look at biotech, semiconductors and computers."

<sup>3</sup> Iwerks was considered by the writer as a past concept stock. " ... Iwerks Entertainment Inc., proved to be one of the biggest duds as far as concept stocks go."

<sup>4</sup> These companies were NOT chosen as concept stocks at that time (1996). Instead, "In what was called the 'two-tier market' of the 1970s, Investors went wild over a few blue-chip stocks ... Shares of such companies as Polaroid Corp., Walt Disney Co. and Avon Products Inc. went through the roof while the vast majority of stocks languished."