

# **A Perspective from the Buy-Side Alliance US Large Cap Growth Equities**

**Presented to the Chicago GSB Pakistan Club  
March 4, 2006**

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Senior Vice President and Portfolio Manager**

# AllianceBernstein: Exceptional Breadth and Scope

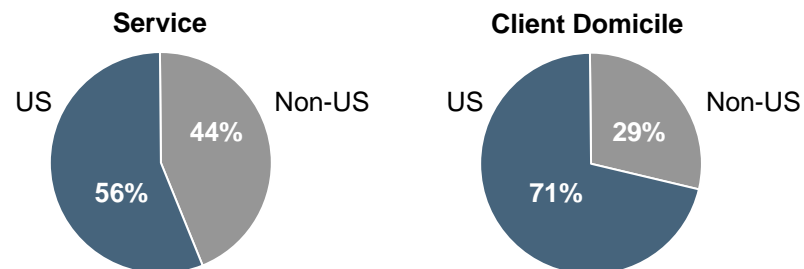
- Diversification allows for continuous investment across all areas of the firm
- Stability ensures unwavering commitment to each disciplined style of investing
- Relationships span client groups and investment strategies, furthering understanding of a client's needs
- We believe global orientation with local knowledge enhances investment expertise and ultimately portfolio returns for clients



## Assets Under Management (\$ Billions)\*\*

By Client Group		By Investment Discipline	
Institutional	\$346	Growth	\$98
Retail	138	Value	194
Private Client	71	Core/Blend Equities	101
<b>Total</b>	<b>\$555</b>	Fixed Income	162
		<b>Total</b>	<b>\$555</b>

## Global Orientation by Service and Client Domicile



As of September 30, 2005

\*AllianceBernstein Institutional Investment Management is the institutional marketing and client-servicing unit of Alliance Capital Management L.P.

\*\*Total assets under management of Alliance Capital Management L.P.

# Continued Investment in Growth Capabilities

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- Increased the size of our growth fundamental research team by over 20%
- Built the most experienced growth fundamental research team in our history
- Made investments in growth research innovation that position us uniquely, including a study to more clearly define what we have to “get right”

## Research Analysts

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	Dec 31, 1999	Dec 31, 2005
Growth—Fundamental	58	71
Growth—Quantitative	6	8
Strategic Change*	0	3
Early Stage Growth	0	7
China Research*	0	5

## Growth Fundamental Analyst Experience

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Average Investment Experience:	12 years
Average Years with Alliance Capital:	6 years

## Research Initiatives

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- Research on Strategic Change
- Early Stage Growth
- Geographic Reach
- Growth Quantitative Research
- Continuing Education Program for Analysts

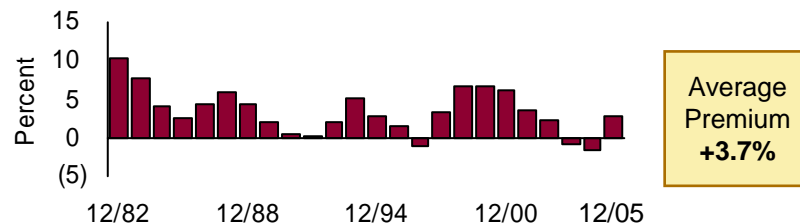
As of December 31, 2005

\*Excludes Amy Raskin (Strategic Change) and Richard Chow (China Research), who are counted under Growth—Fundamental

# Consistently Strong Performance over Time

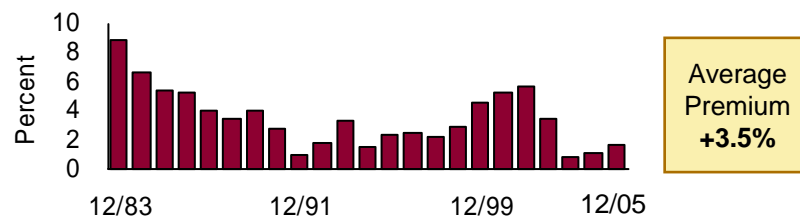
■ Alliance US Large Cap Growth has outperformed in 22 of 25 rolling three-year periods...

**Rolling Three-Year Periods: Relative to Russell 1000 Growth**



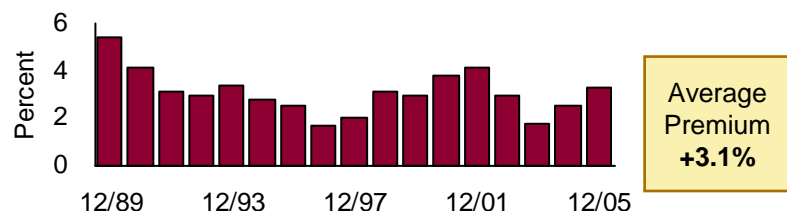
■ ...in all 23 rolling five-year periods...

**Rolling Five-Year Periods: Relative to Russell 1000 Growth**



■ ...and in all 17 rolling 10-year periods

**Rolling 10-Year Periods: Relative to Russell 1000 Growth**



Composite performance data as of December 31, 2005 are preliminary.

The returns presented above are gross of fees. The results do not reflect the deduction of investment-management fees; the client's return will be reduced by the management fees and any other expenses incurred in the management of its account. For example, a US\$100 million account, paying a 0.50% annual fee, with a given rate of 10% compounded over a 10-year period would result in a net-of-fee return of 9.5%. Investment advisory fees are described in Part II of Alliance Capital's Form ADV.

Source: Russell Investment Group and Alliance Capital; see Performance Disclosure.

# Partial Client List: Alliance US Large Cap Growth

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## **Corporate Pension/Benefit Plans**

3M Company  
7-Eleven  
Allied Signal  
American Bar Association  
Army & Airforce Exchange Service  
Avaya Communication  
Baxter International, Inc.  
Belk Store Services, Inc.  
Burlington Northern Santa Fe Corporation  
Campbell Soup  
Canadian Utilities  
Christian Reformed Church in North America  
Cox Enterprises  
Duke Energy Corporation  
E.On Energie  
General Mills, Inc.  
Georgia Pacific Corporation  
Goodrich Corporation  
Hayes-Lemmerz  
Hormel Foods  
IKON Office Systems, Inc.  
INCO United States, Inc.  
JC Penney Company  
MassMutual  
Menasha Corporation  
MTS Systems  
National Construction Pension Fund  
Navy-Marine Corps Relief Society  
Northwest Airlines  
Owens Corning  
Pinnacle West Capital Corporation  
Reynolds American, Inc.  
Royal Caribbean Cruises  
Safeway Stores, Inc.  
SBC Communications  
Shell Oil Company  
SunAmerica  
The Board of Pensions of the Presbyterian Church  
The McClatchy Company  
Total Fina Elf Finance USA, Inc.  
Verizon Investment Management Corporation  
Workers Compensation Reinsurance Association

## **Endowments & Foundations**

American Public Media Group  
Baptist Foundation of Texas  
Barnabas Foundation  
Bok Tower Gardens  
Diocese of Pittsburgh  
Jerome/Camargo Foundation  
Johns Hopkins University  
Lakewood Park Cemetery Association  
Mardag Foundation  
Michigan Catholic Conference  
Minnesota Historical Society  
Rahr Foundation  
St. Louis Art Museum  
The Amherst H. Wilder Foundation  
The Episcopal Diocese of Missouri  
The Saint Paul Chamber Orchestra  
U.S. Holocaust Museum  
University of Missouri Systems

## **Healthcare Service Organizations**

Ascension Health  
Daughters of Charity National Health Systems  
Hartford Hospital  
Mount Carmel Health System Foundation  
South Nassau Communities Hospital  
St. Francis Hospital Foundation  
Suburban Hospital Healthcare System, Inc.  
University of Virginia Health Services Foundation  
William Beaumont Hospital

## **Public Funds**

Alaska Permanent Fund  
City of Austin  
Civil Aviation Authority  
Colorado Public Employees' Retirement Association  
Illinois Municipal Retirement Fund  
Los Angeles City Employees' Retirement System  
Minnesota State Board of Investments  
Nevada Public Employees Retirement System  
New Bedford Retirement System  
New York City Teachers' Variable Fund  
Oregon Public Employees' Retirement System  
Public School Retirement System of Missouri  
St. Paul Teachers' Retirement System  
Utah Retirement System  
Wyoming Retirement System

## **Taft-Hartley & Union Plans**

1199 Health Care Employees Pension Fund  
Bakery & Confectionery Industry Union  
Carpenters Pension Trust Fund of Northern Nevada  
Carpenters Trust of Western Washington  
Chicago Transit Authority  
Hospital Employees Local 338  
IBEW Local #246  
Milwaukee Drivers Pension Trust Fund  
New Jersey Carpenters Funds  
UFCW International Union—Industry Pension Fund  
UNITE HERE National Retirement Fund  
Washington D.C. Transit Employee Benefit Funds

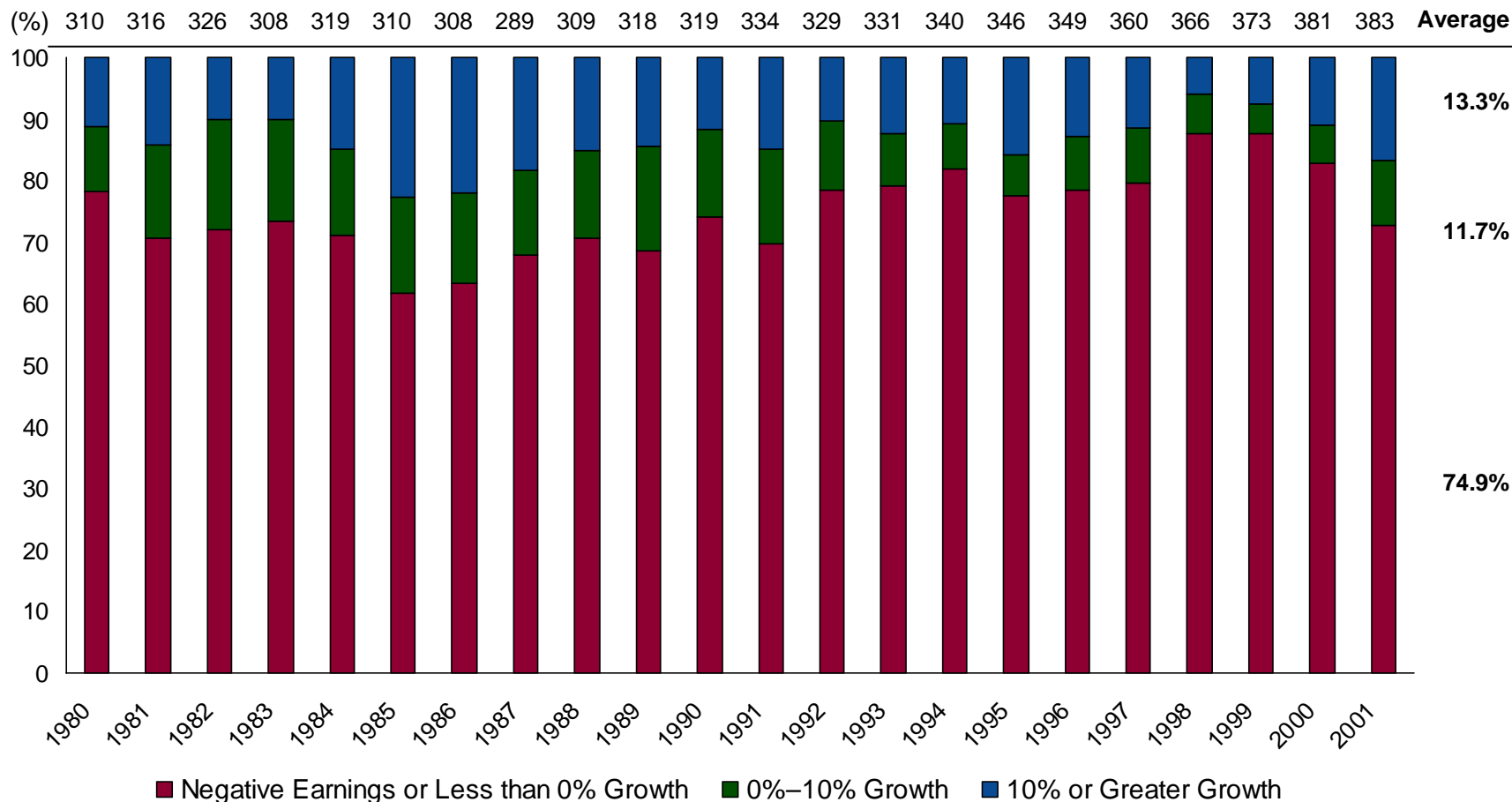
As of December 31, 2005

The clients identified in the list set forth herein were selected based on a variety of factors, including name recognition, industry, geographic region and investment mandate. The investment performance of the accounts managed by Alliance Capital, including those identified on this list, was not considered. The list is neither a statement of a client's experience with, nor an endorsement of, Alliance Capital by the clients identified in the list. It is not known whether the clients identified in the list approve or disapprove of Alliance Capital's advisory services.

# How Many Stocks Can Grow 10% or More Three Years in a Row?

## YoY Earnings Growth Rate (US Growth Universe)

Total Stocks:

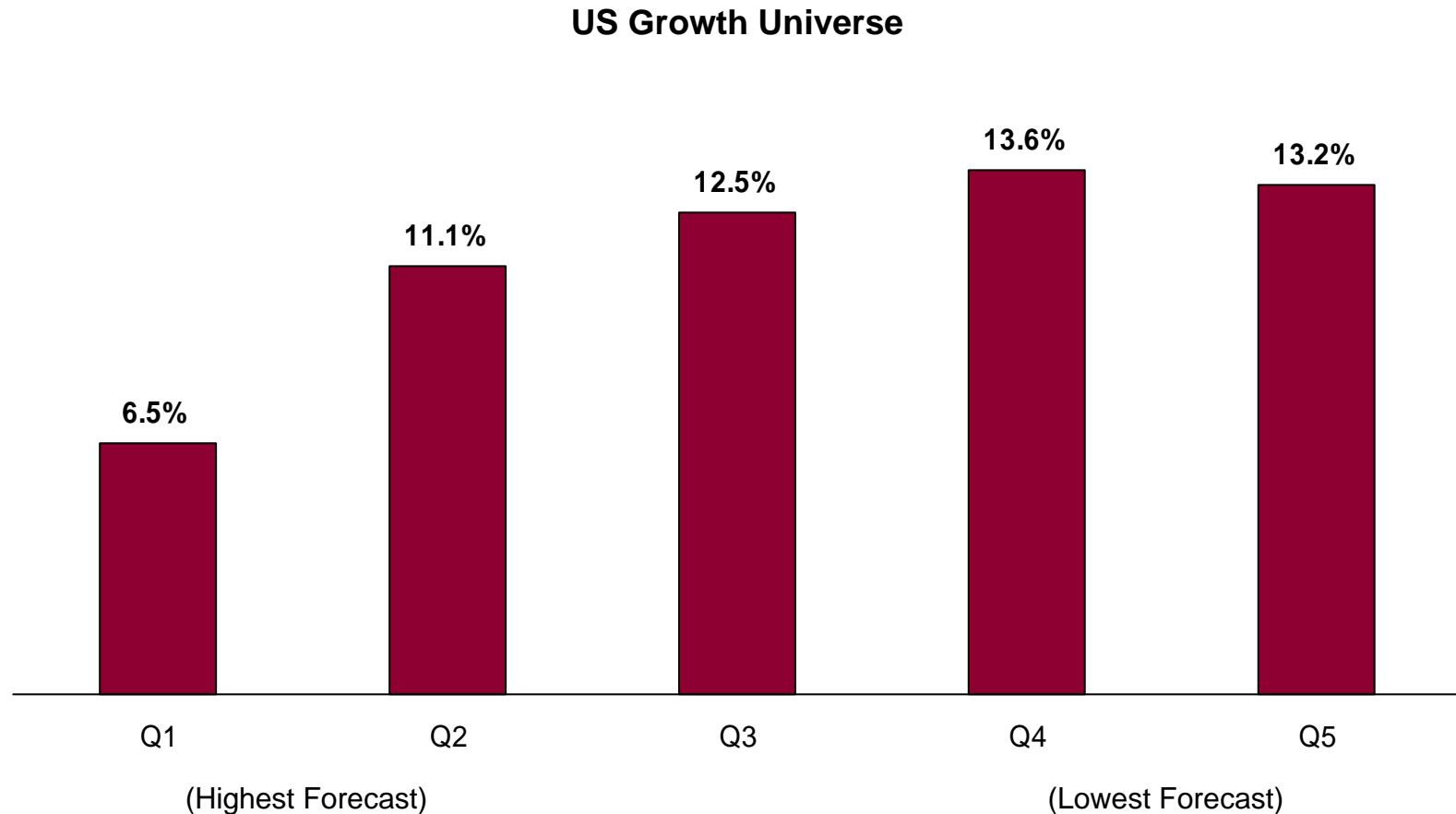


Data from 1980 thru 2004. Based on a universe of US growth equities defined by Alliance Capital using a combination of metrics to screen for growth stocks, including price-to-book, sales growth, retained earnings growth and sales stability. The universe is comparable to the Russell 1000 Growth Index, with a return correlation of over 95% to that of the index in the studied period. Periods are calculated on a three-year forward basis.

Source: CRSP, Compustat, Bernstein and Alliance Capital

# High Expectations For Earnings Growth Don't Lead To Outperformance, Whether It's Long-term Growth...

## Return by Quintile of 5-Year Earnings Forecast



Data from 1982 thru 2004; returns are annualized.

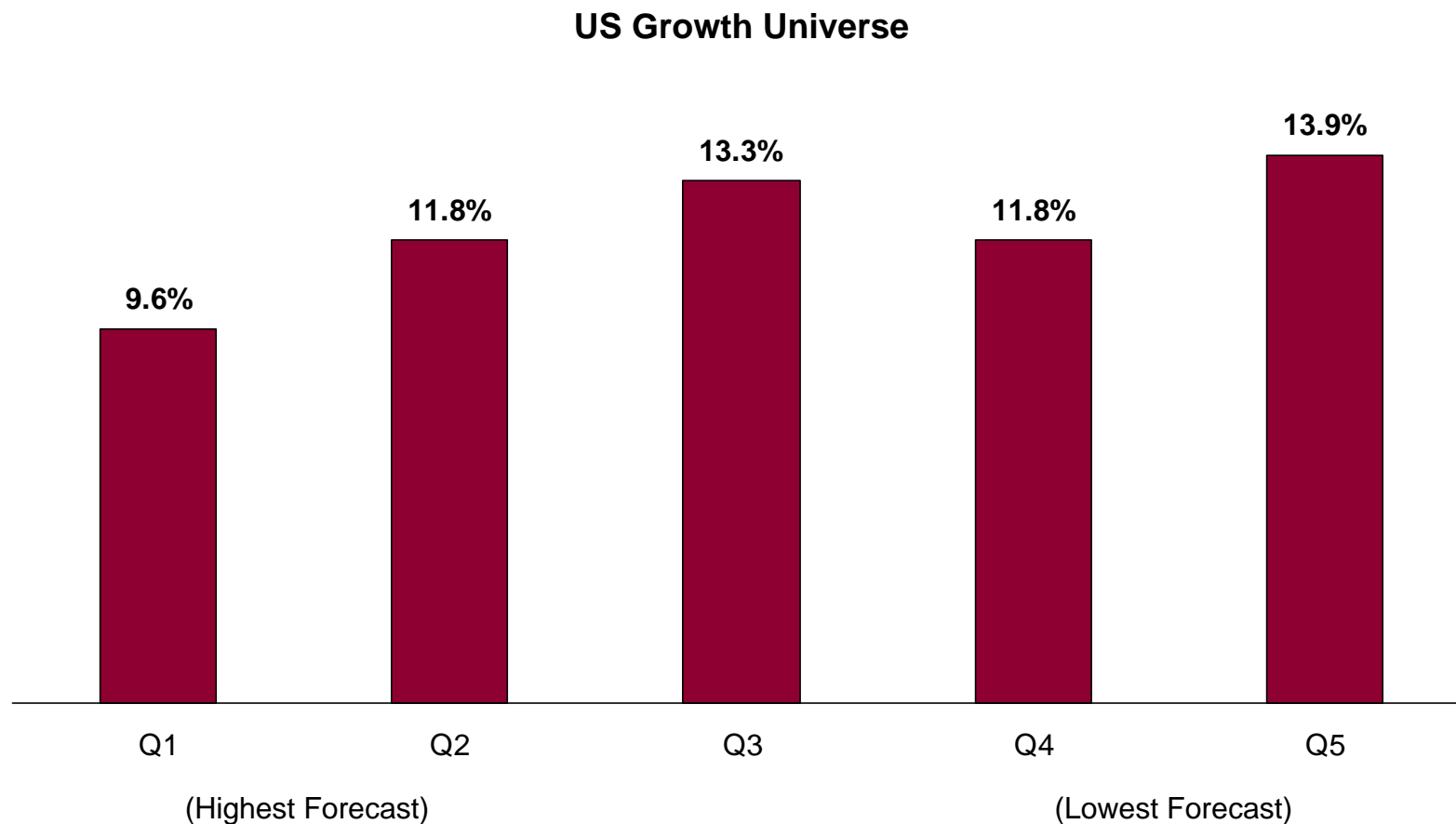
See Appendix A for the definition of the analyzed universe as well as the methodology used to distinguish growth and value segments and form the quintile portfolios.

Source: CRSP, S&P-Compustat, I/B/E/S and Alliance Capital.

## ... or Short-Term

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### Return by Quintile of 1-Year Earnings Forecast



Data from 1977 thru 2004; returns are annualized.

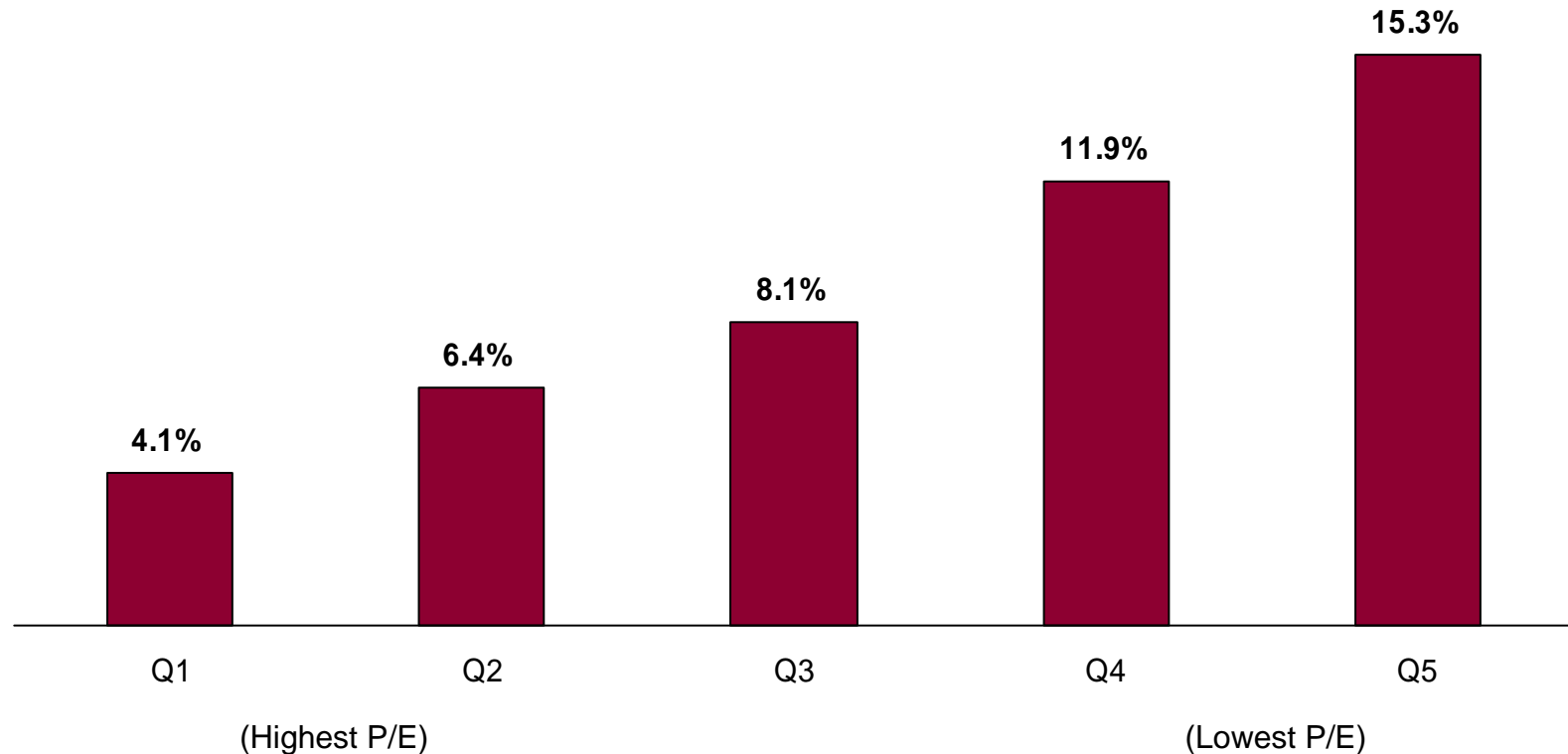
See Appendix A for the definition of the analyzed universe as well as the methodology used to distinguish growth and value segments and form the quintile portfolios.

Source: CRSP, S&P-Compustat, I/B/E/S and Alliance Capital.

# High Expectations Are Also Reflected In High Valuations, Which Underperform

## Return by Quintile of Trailing 12-month Price/Earnings

### US Growth Universe



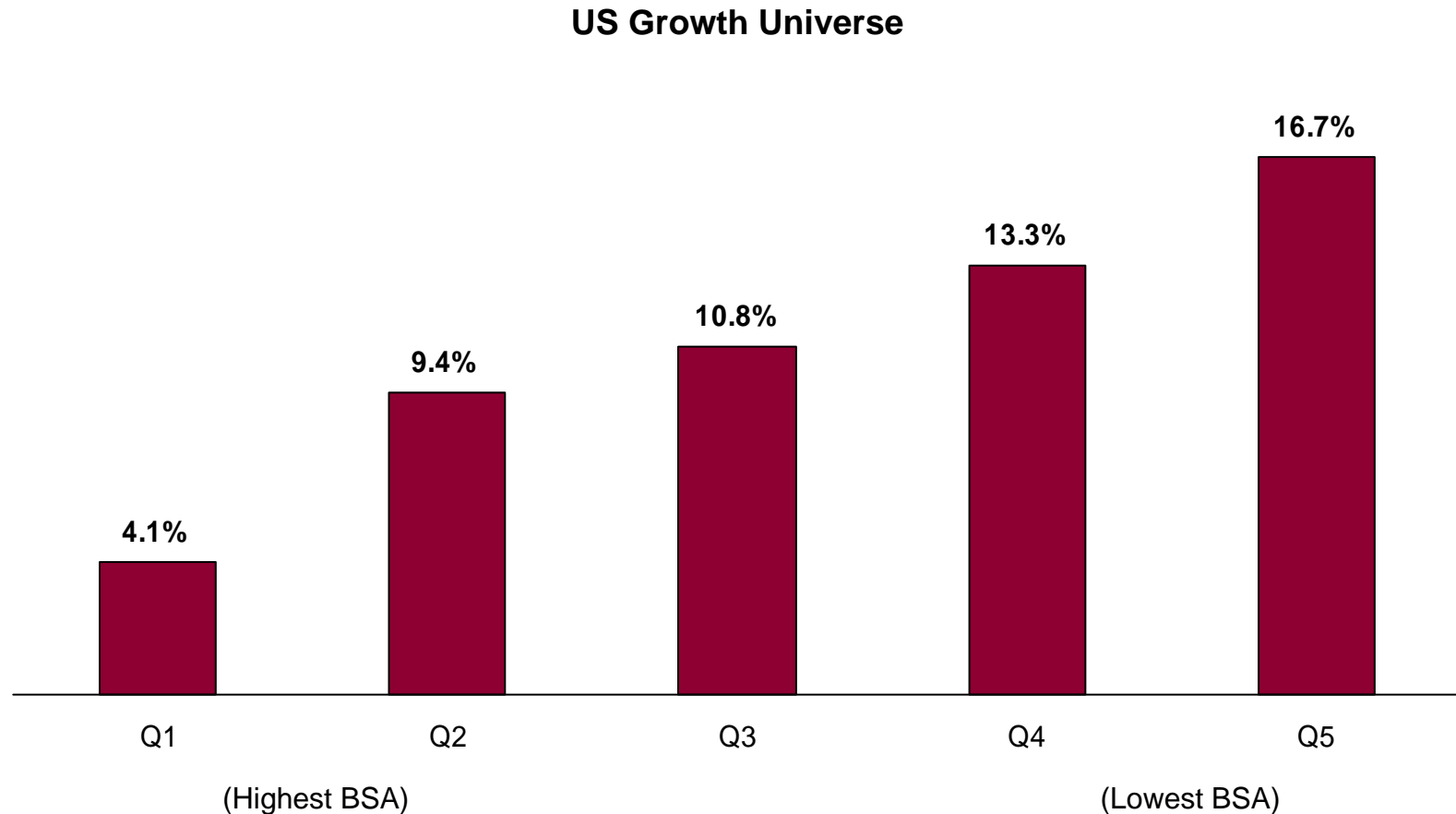
Data from 1973 thru 2004; returns are annualized.

See Appendix A for the definition of the analyzed universe as well as the methodology used to distinguish growth and value segments and form the quintile portfolios.

Source: CRSP, S&P-Compustat and Alliance Capital.

# High Management Expectations, As Exemplified By Balance-Sheet Accruals, Typically Lead To Poor Stock Performance

## Return by Quintile of Balance-Sheet Accruals



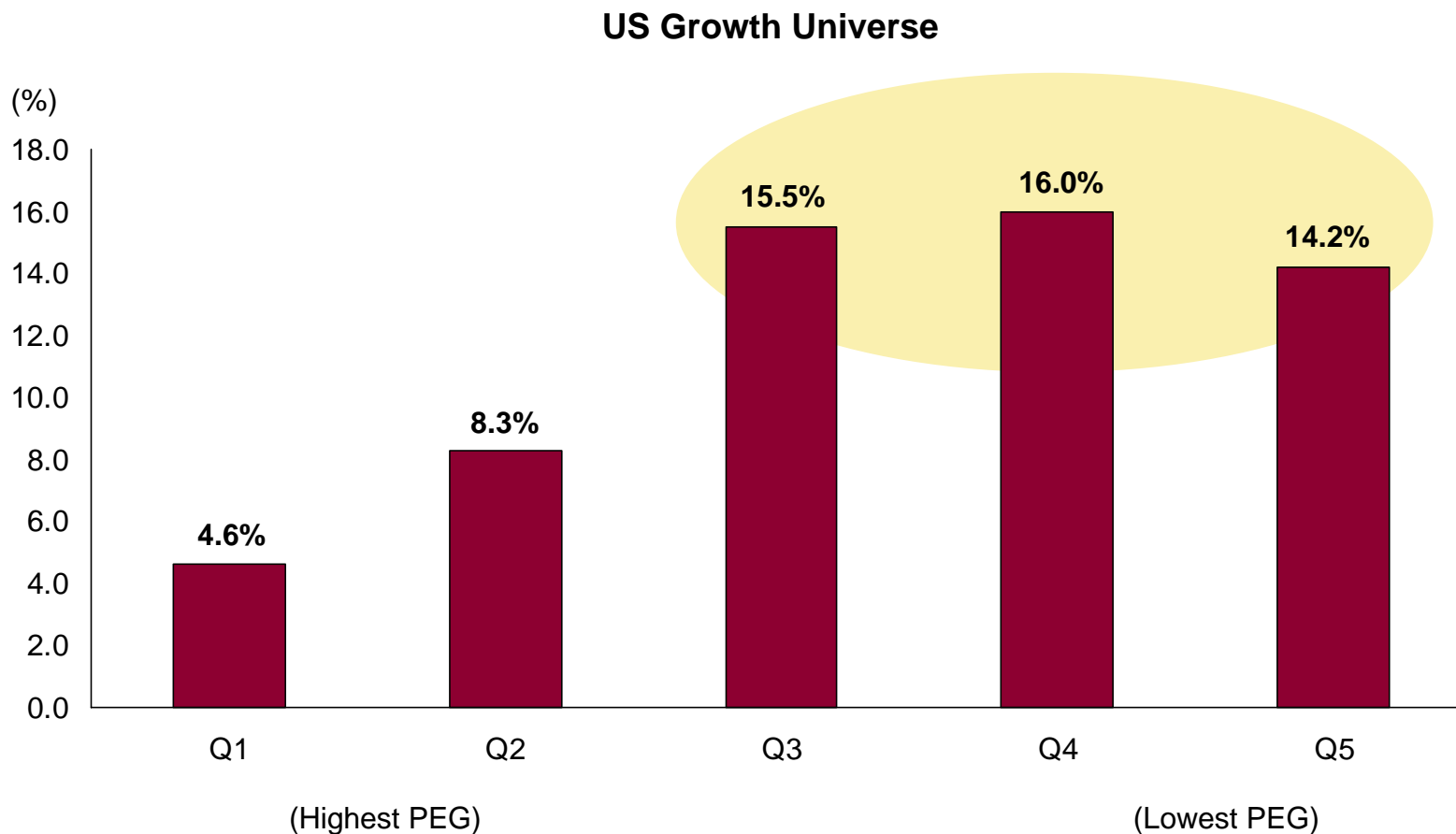
Data from 1974 thru 2004; returns are annualized

See Appendix A for the definition of the analyzed universe as well as the methodology used to distinguish growth and value segments and form the quintile portfolios.

Source: CRSP, S&P-Compustat and Alliance Capital.

# PEG Ratio Is Not a Reliable Predictor of Success

## Return by Quintile of P/E-to-Earnings Growth



Data from 1982 thru 2004; returns are annualized.

See Appendix A for the definition of the analyzed universe as well as the methodology used to distinguish growth and value segments and form the quintile portfolios.

Source: CRSP, S&P-Compustat, I/B/E/S and Alliance Capital

## The Growth Investor's Paradox

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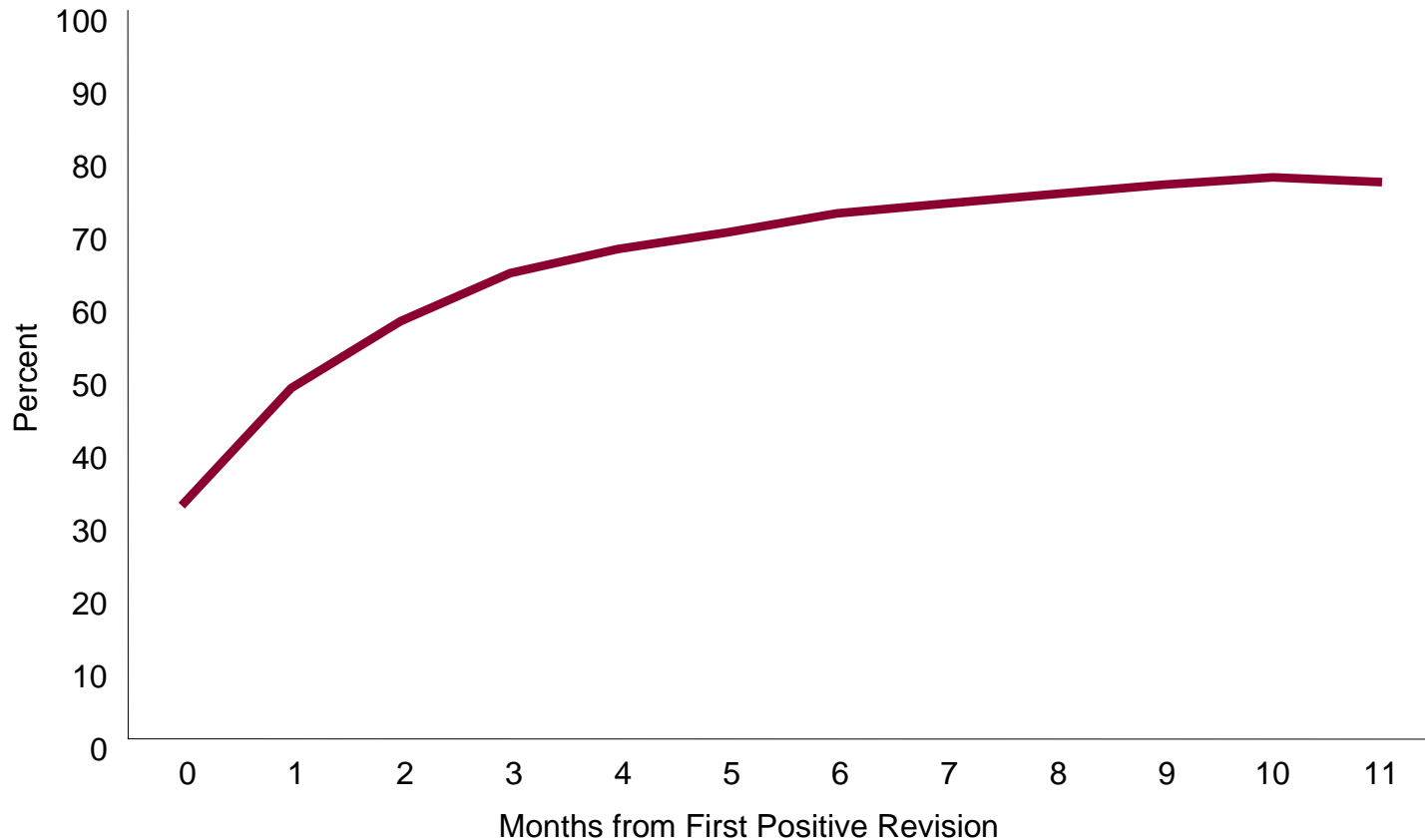
**“Buying stocks that have high growth expectations leads to failure.**

**Buying stocks that have low growth expectations is not growth investing.”**

**P.S. GARP just avoids the issue.**

# Sustainable Surprise Is Investable: Positive Earnings Revisions Tend to Follow One Upon Another

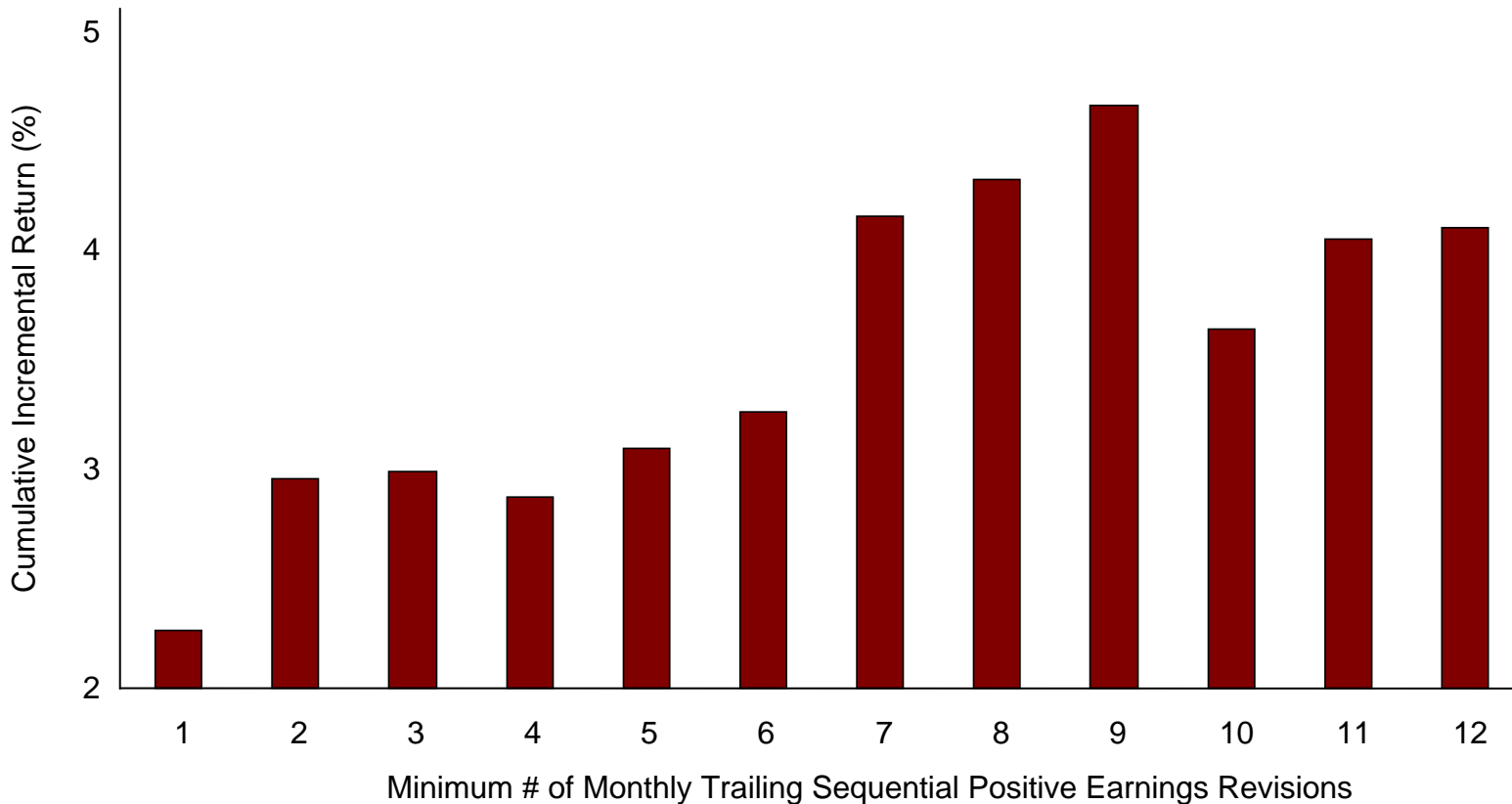
Probability of Positive Earnings Revision, Given a Series of Previous Positive Revisions  
(US Universe)



Data from 1976 thru 2004.  
See Appendix A for universe and calculation methodology.  
Source: CRSP, I/B/E/S and Alliance Capital.

# Sustainable Surprise Works:

## Autocorrelated Positive Revisions Have Been Associated with Good Performance



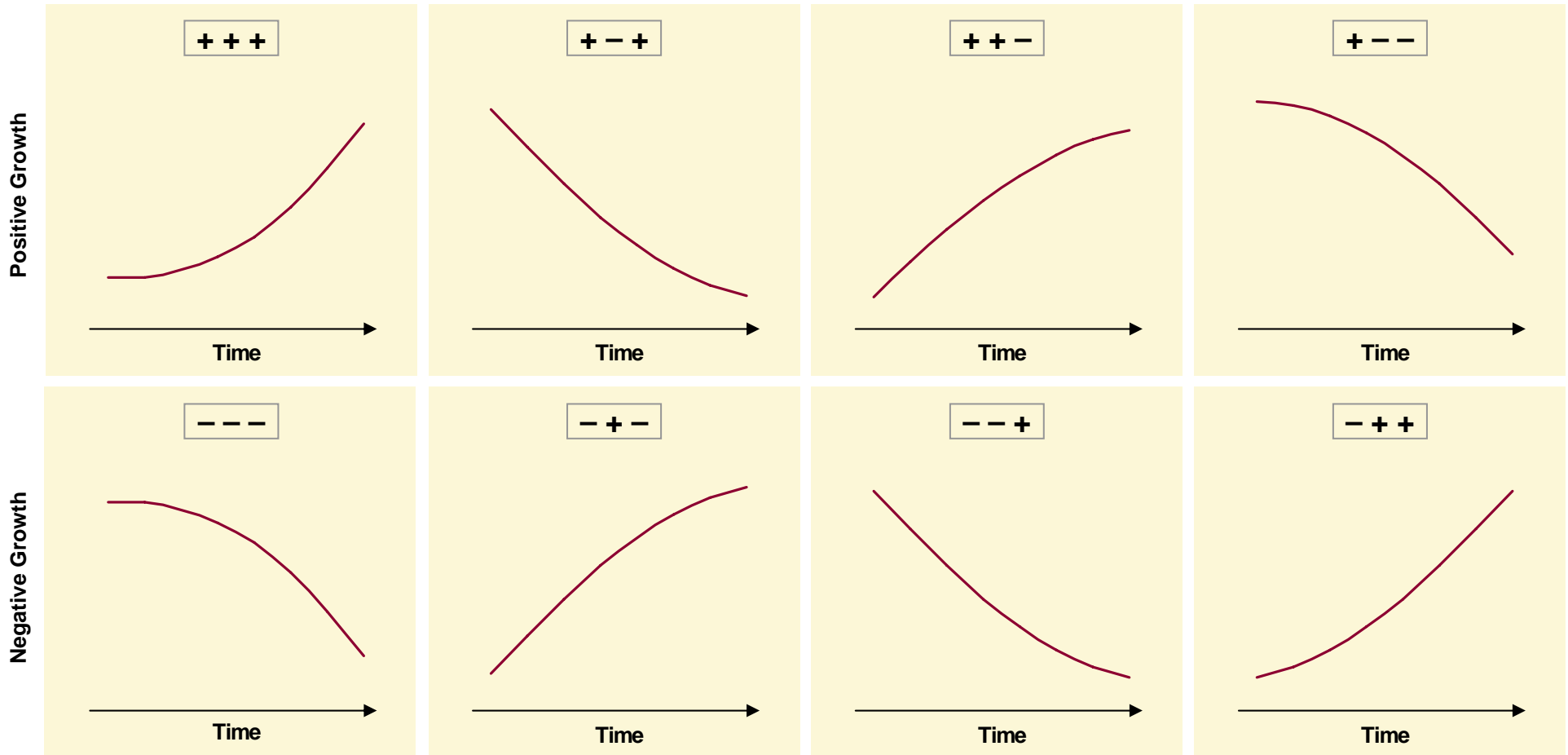
Data from February 1977 thru December 2004; returns are annualized.

Based on a portfolio analysis that measures the impact of autocorrelation of earnings revisions on performance vis-à-vis the number of positive revisions a given company receives. The chart shows the cumulative incremental performance boost for every sequential positive revision. Portfolios were formed on an equal-weighted basis; analysts' revisions are relative to the cap-weighted S&P 500.

See Appendix A for calculation methodology.

Source: CRSP, I/B/E/S and Alliance Capital.

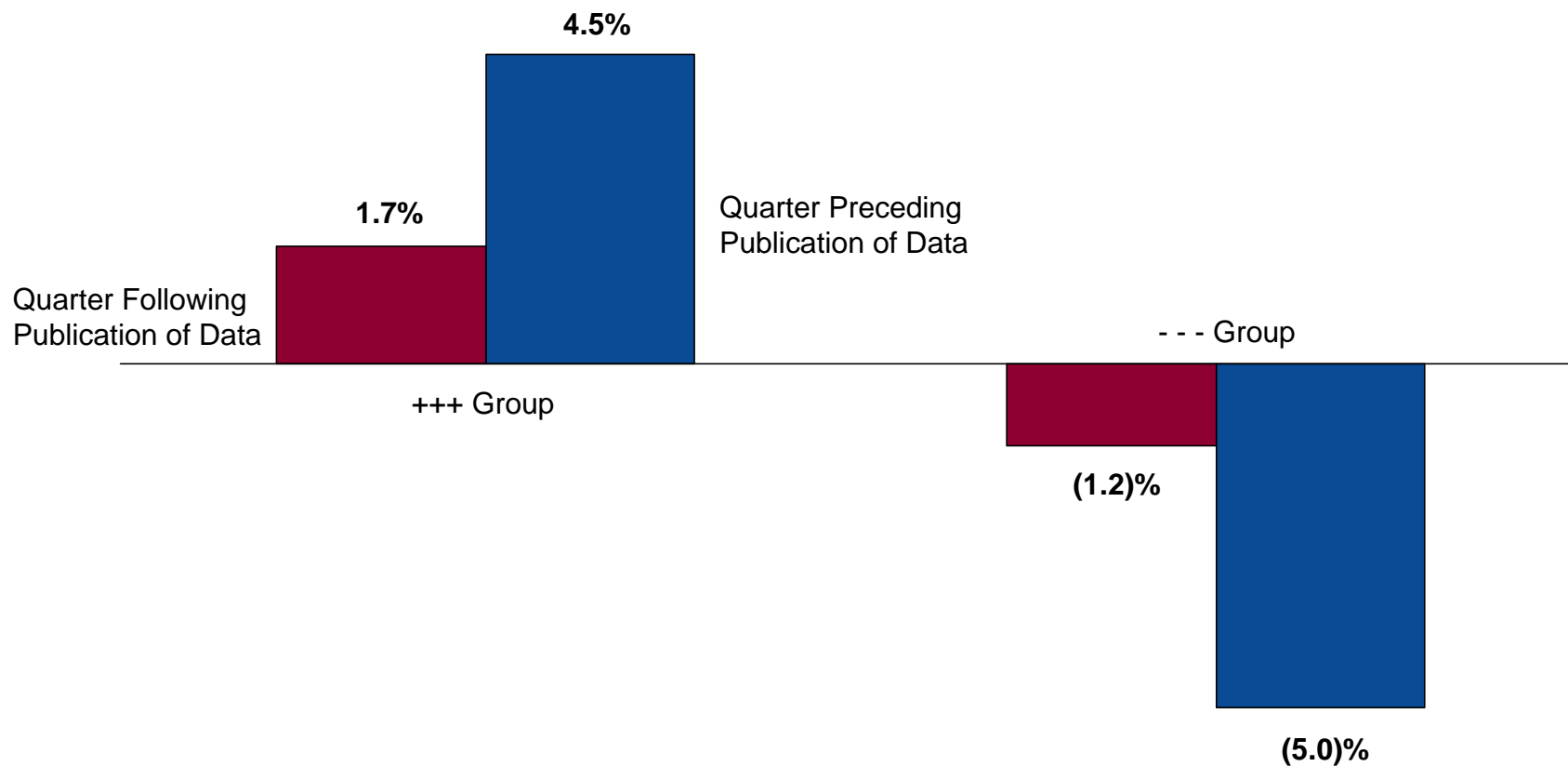
# Growth Trajectories



Source: Alliance Capital

# Accelerating Growers Outperform

## Annualized Quarterly Return Relative to US Universe

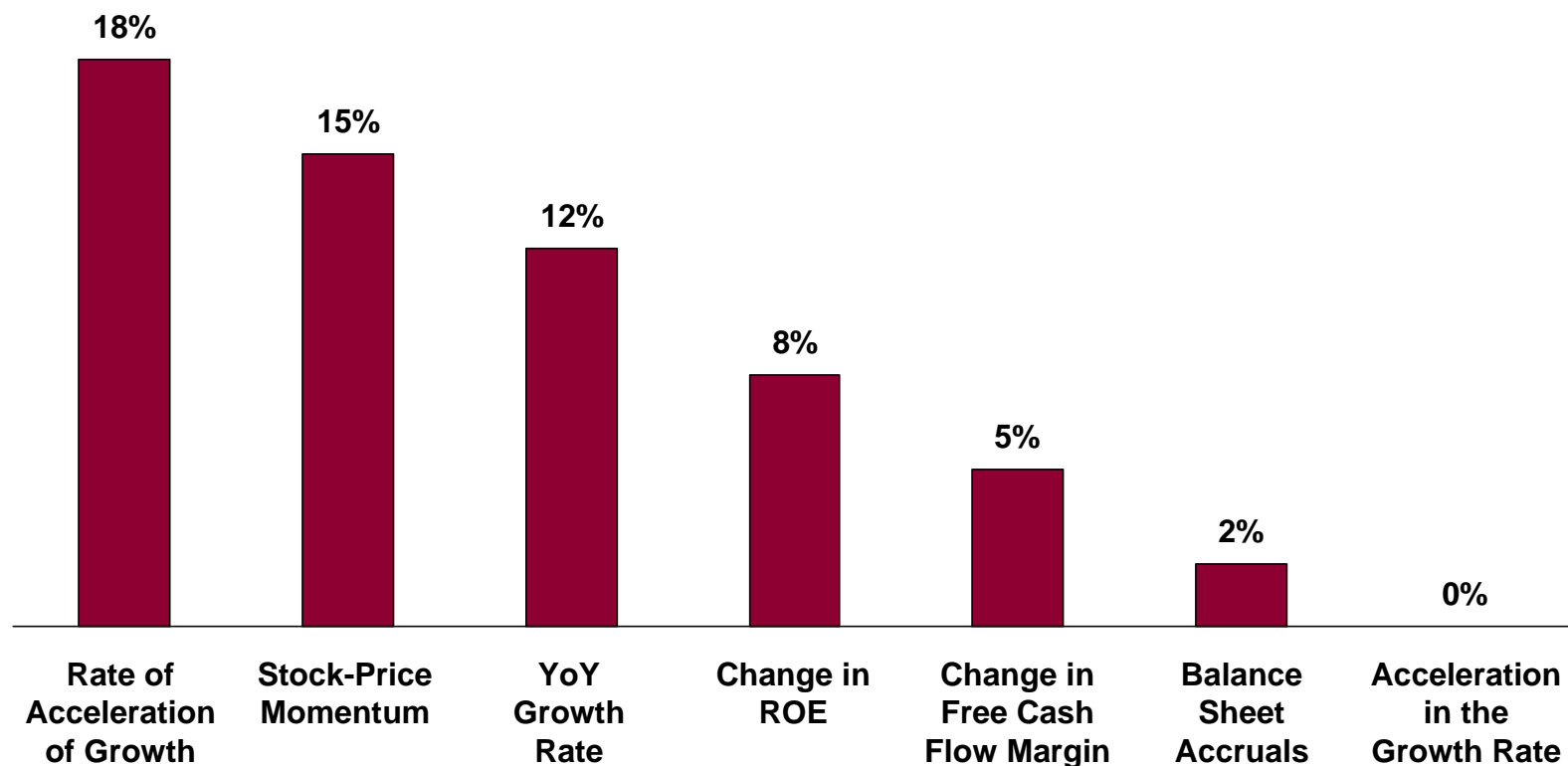


Data from January 1973 thru December 2004  
Measured on a market-cap-weighted basis  
See Appendix A for calculation methodology.  
Source: CRSP, S&P-Compustat and Alliance Capital

# Several Factors Can Help Predict Accelerating Growers

Impact on Likelihood a Stock Would Become '+++' vs. '---'

## Alliance Capital Predictive Factors



The chart reflects the degree to which a standardized change in factor impacts the predicted probability of a stock receiving a +++ designation minus the amount by which the same factor changes the predicted probability of its receiving a --- designation.

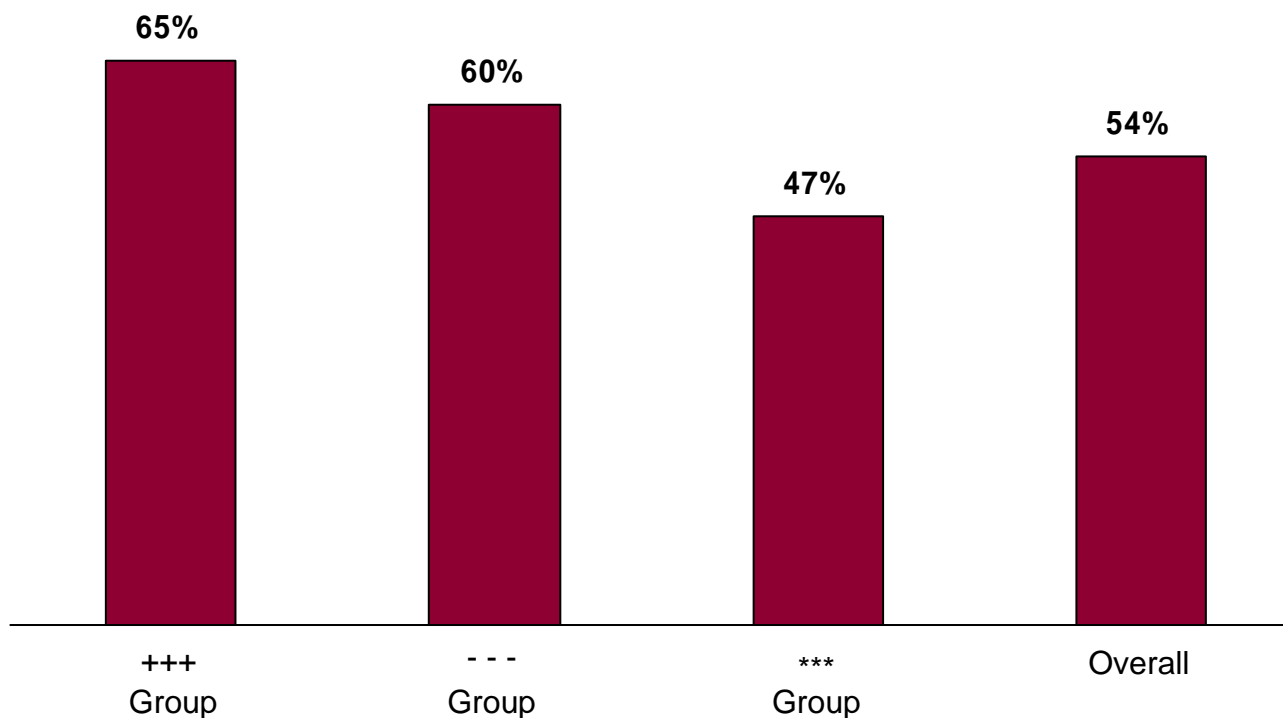
See Appendix A for calculation methodology.

Source: CRSP, S&P-Compustat and Alliance Capital

# Predictions From Our Combined Factors Generally Proved Accurate

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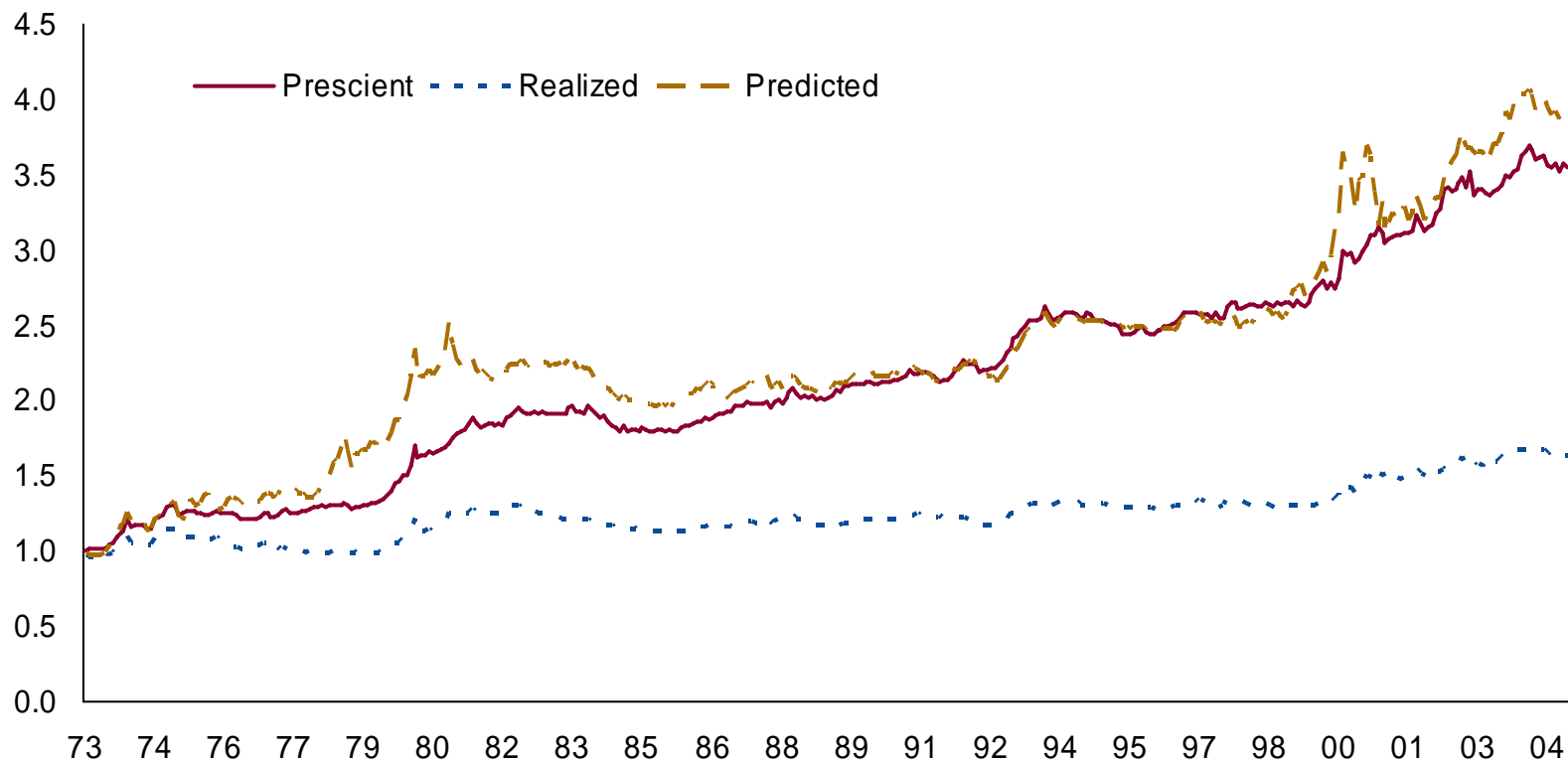
## Accuracy Rates of Model Predictions



Data from January 1973 thru December 2004 (out-of-sample universe).  
See Appendix A for cohort definition and calculation methodology.  
Source: CRSP, S&P-Compustat and Alliance Capital

# Our Predictive Factors Captured the Potential Return

## Relative Growth of \$1 for '+++' Groupings\* (US Universe)



Through December 31, 2004

\*Relative growth measured against a like-weighted S&P 500 Index (out-of-sample universe)

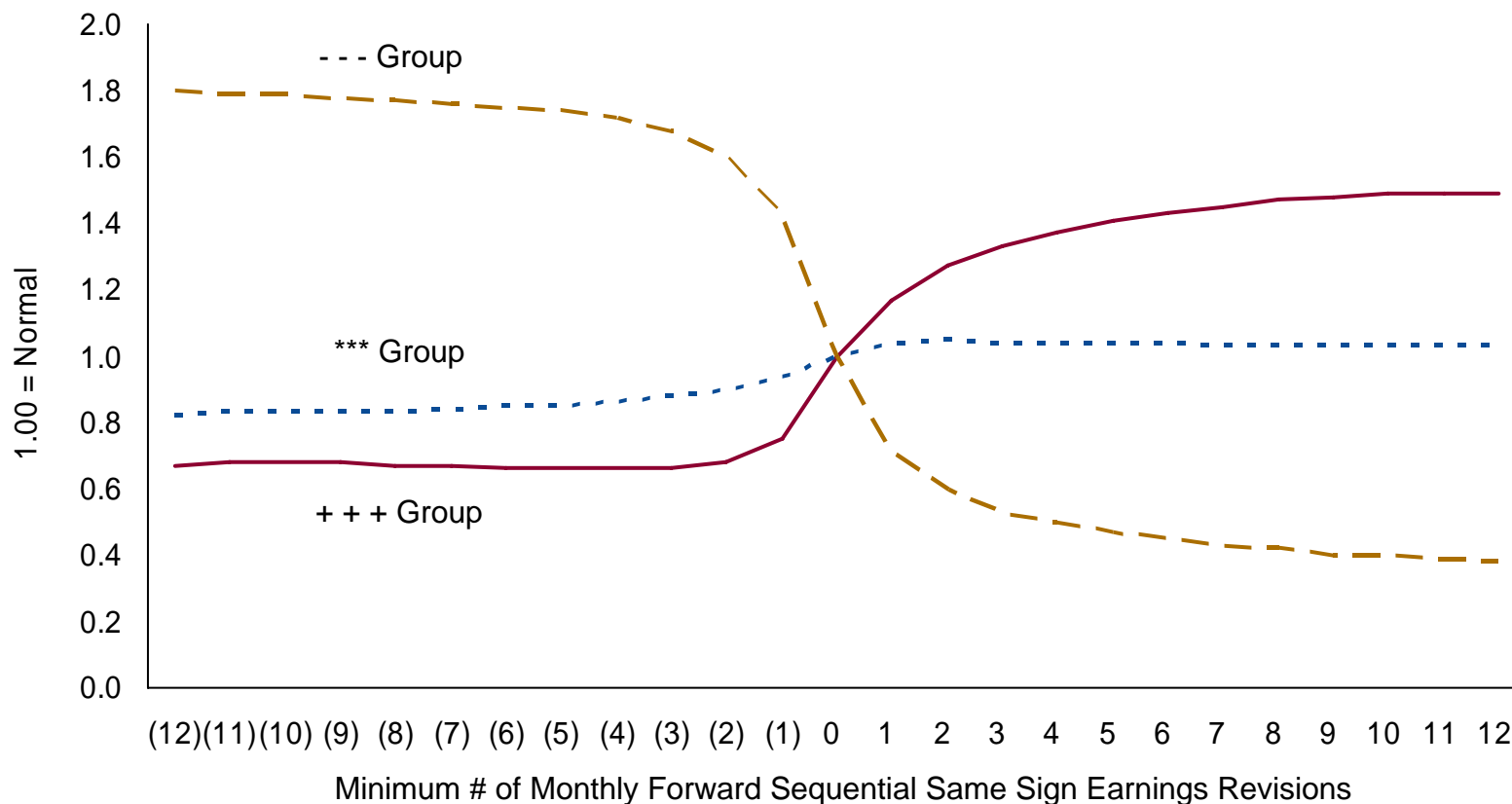
"Prescient" reflects returns for companies based on quarter zero and "Realized" reflects returns for those same companies based on quarter one. "Predicted" reflects returns for companies predicted by Alliance Capital's model to achieve +++ status.

Source: CRSP, S&P-Compustat and Alliance Capital

# Predicted Accelerating Growers Proved To Be Serial Surprisers

## Over/Underrepresentation Among Predicted Cohorts

Revisions in Same Direction



Data from March 1976 thru December 2004 (out-of-sample universe).  
 See Appendix A for calculation methodology.  
 Source: CRSP, S&P-Compustat, I/B/E/S and Alliance Capital

# Alliance US Large Cap Growth: Product Overview

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## Performance Objective

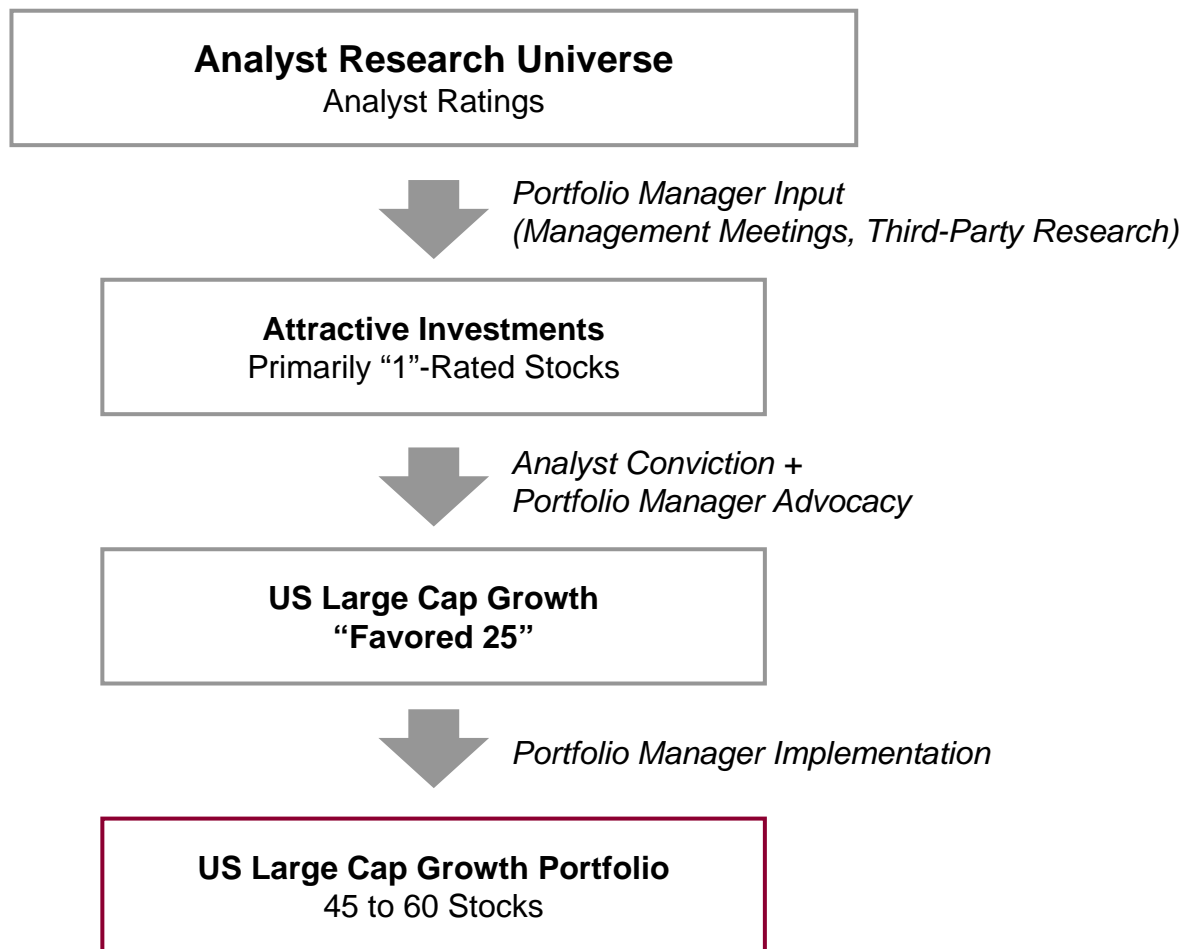
- 200-plus basis points premium over full market cycles (vs. Russell 1000 Growth and S&P 500)
- Returns are driven by bottom-up stock selection

## Investment Approach

- On-the-ground research seeks to identify companies:
  - With strong prospective growth characteristics at reasonable prices
  - Where our company view differs meaningfully from consensus view
- Stock selection reflects the optimal combination of research conviction and manager advocacy
- Our core portfolio holdings, the “Favored 25”, is constructed by the portfolio management team

# Investment Process Overview

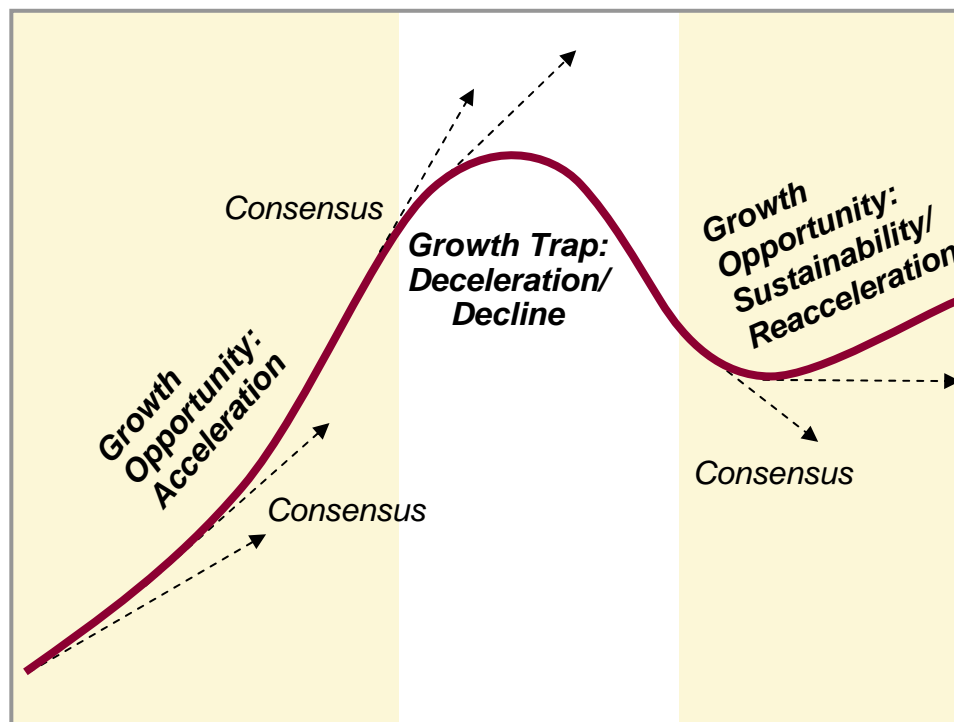
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As of December 31, 2005

# Investment Philosophy: Find Underestimated Earnings-Growth Potential

## Earnings-Growth Cycle



- We seek out companies likely to grow earnings faster or sustain them longer than consensus expects
- We define growth broadly, beyond forecast growth, to be flexible across sectors and company life cycles

# Putting Our Philosophy into Practice: Research Framework

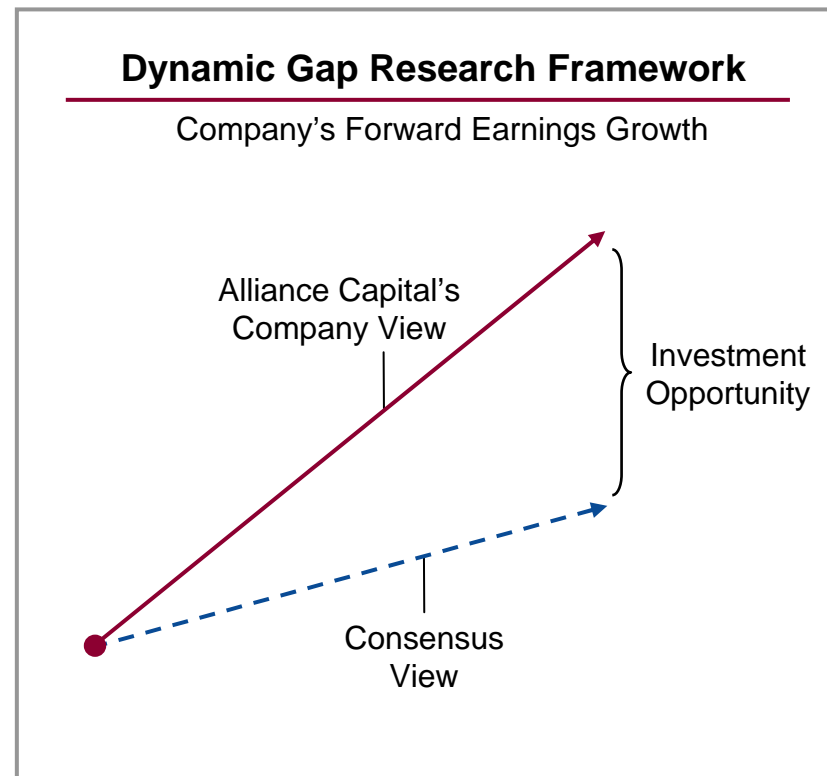
The best growth opportunities are where our company view vs. consensus is most differentiated

## Key Factors in Establishing our Company View

- In-depth evaluation of business model
- Direct interaction with management
- Comprehensive industry analysis
- Interviews with suppliers, customers and competitors

## Understanding the Consensus View

- What is the market looking at?
- Does our view differ meaningfully from the market? Why?
- Is it significant enough to invest in?



# Dynamic Gap in Action: Apple Computer

## What Consensus Saw in 2004

- iPod share loss
- Margin erosion

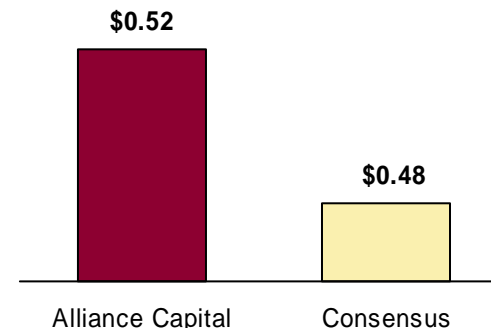
## What We Saw

- Share gains, suggesting unit sales 3.5 million higher than consensus
- Little or no margin erosion due to lack of competition

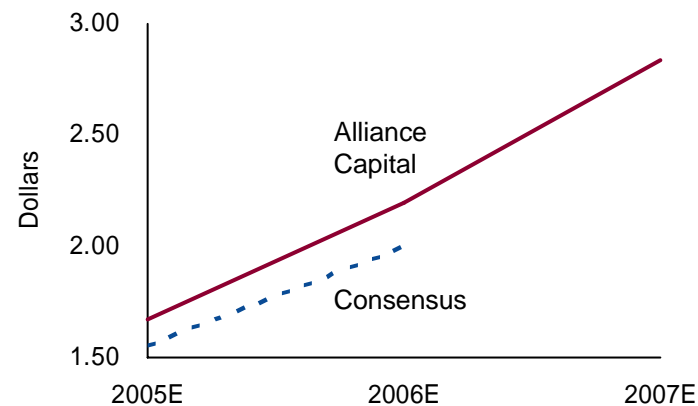
## What We See Today

- iPod reinvigorating Macintosh platform
- Consensus fears that Intel platform shift will disrupt Mac business overstated
- PC units growing 25%-plus to 5.8 million units (vs. 9% consensus forecast)
- Took profits but maintaining meaningful position

## September 30, 2004\* EPS Forecasts (2005E)



## December 31, 2005 EPS Forecasts



\*Approximate inception of significant investment

Source: I/B/E/S and Alliance Capital; see Disclosure on Stock Examples.

# The “Favored 25”: Our Highest Conviction Stocks

- A stock’s ranking and position size reflect our conviction about its fundamental growth prospects and valuation as compared to consensus
- We aggregate each managers’ best choices to create our core portfolio holdings, the “Favored 25”
- Our portfolios are concentrated:
  - At least 65% in “Favored 25”
  - At least 80% in “Top 35”
- Stocks are sold as consensus view converges to our company view

Securities	Suggested Weights
1 Google	3.5%–6.0%
2 Apple Computer	
3 Yahoo!	
4 Procter & Gamble	
5 QUALCOMM	
6 Genentech	3.0%–5.0%
7 Halliburton	
8 Broadcom	
9 eBay	
10 General Electric	
11 Teva Pharmaceutical	2.0%–3.5%
12 WellPoint	
13 UnitedHealth Group	
14 Marvell Technology	
15 Juniper Networks	
16 Corning	1.5%–3.0%
17 Lowe’s	
18 Target	
19 Alcon	
20 AIG	
21 Nabors Industries	1.0%–2.5%
22 St. Jude Medical	
23 Franklin Resources	
24 Legg Mason	
25 Boeing	
26 Goldman Sachs	0.5%–2.0%
27 Amgen	
28 Electronic Arts	
29 Gilead Sciences	
30 Network Appliance	
31 E.W. Scripps	
32 Caremark Rx	
33 Merrill Lynch	
34 UBS	
35 Texas Instruments	
36 “Non-Favored 35” ↓	0.0%–1.5%

**Strongest  
Manager Advocacy  
+  
Strongest  
Research Conviction**

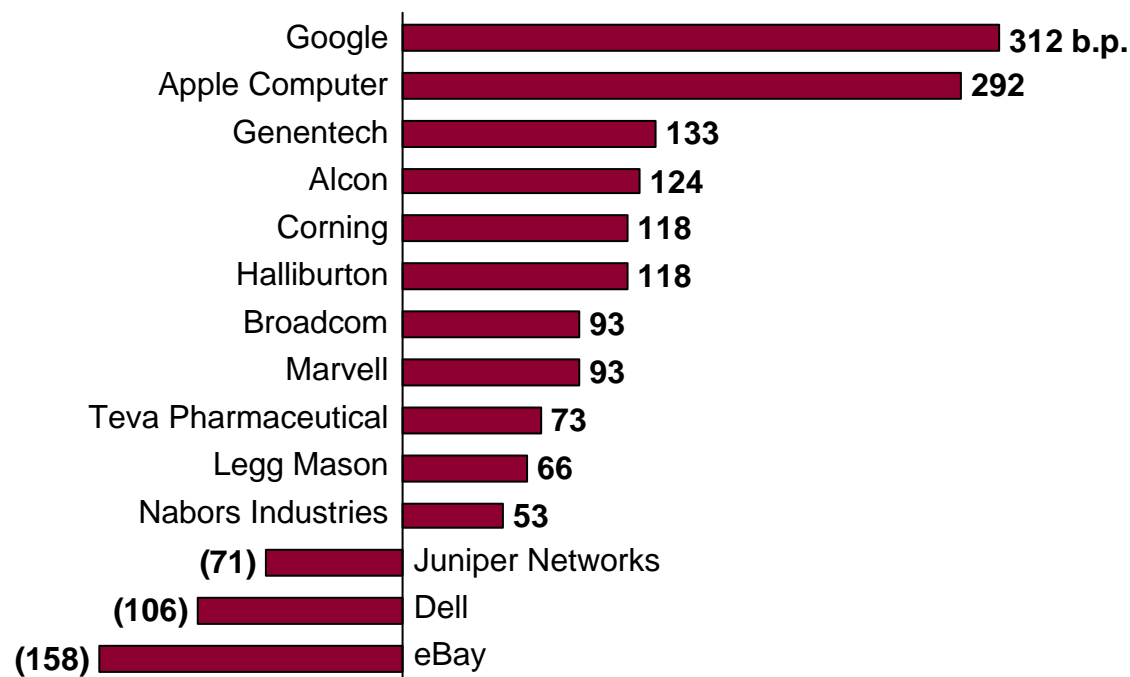
**High  
Manager Advocacy  
+  
High  
Research Conviction**

As of December 31, 2005

Source: Alliance Capital; see Disclosure on Stock Examples.

# Broad-Based Security Contributions: 2005 Attribution

## 50+ b.p. Contributors and Detractors\* US Large Cap Growth vs. Russell 1000 Growth (Basis Points)



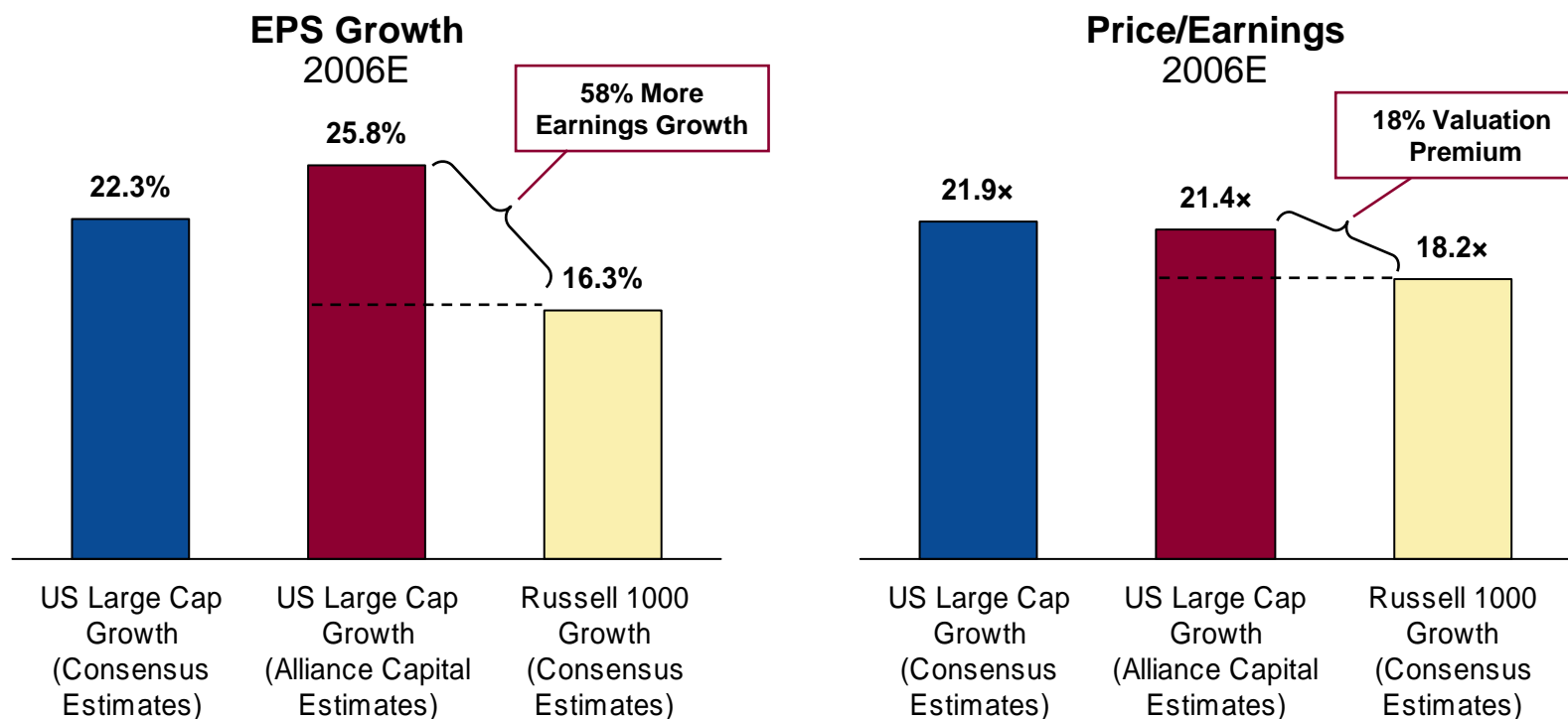
Based on a representative US Large Cap Growth account

\*Measured against the Russell 1000 Growth Index using the Global Industry Classification sector scheme

Source: Russell Investment Group and Alliance Capital; see Disclosure on Stock Examples.

# ...Relative to Consensus, and at Attractive Valuations

## US Large Cap Growth vs. Russell 1000 Growth



As of December 31, 2005  
Based on a representative US Large Cap Growth account  
Source: Russell Investment Group and Alliance Capital

# Finding Underappreciated Growth in Financials, Industrials

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## Representative Holdings

	Industry	2006 EPS Growth Forecasts	
		Alliance Capital	Consensus
<b>Financials</b>			
Legg Mason	Capital Markets	45%	30%
JPMorgan Chase	Diversified Financial	19	14
Northern Trust	Capital Markets	15	11
UBS	Capital Markets	10	-3
<b>Industrials</b>			
Boeing	Aerospace	11%	9%
Halliburton	Energy Equipment	26	20

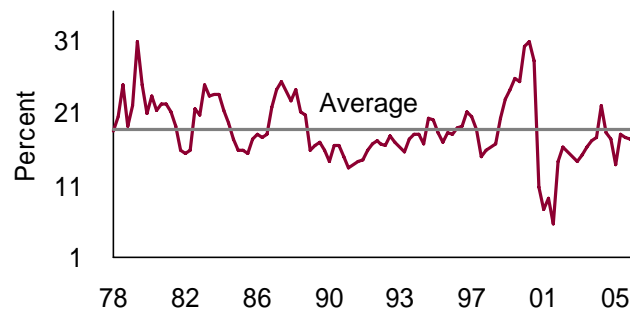
As of December 31, 2005

Source: I/B/E/S and Alliance Capital; see Disclosure on Stock Examples.

# Ample Opportunity to Add Return as Growth Valuations Normalize

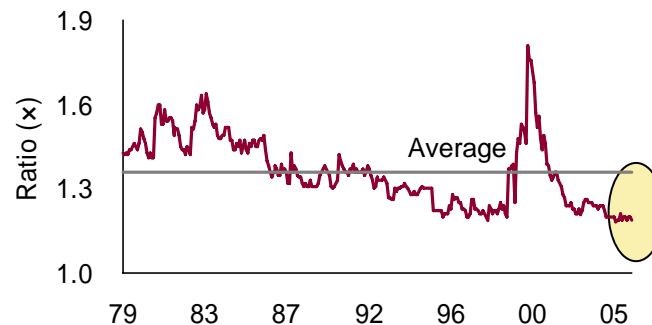
- Although anticipated earnings improvement for growth stocks is close to its long-term pace...

## Russell 1000 Growth EPS Growth: 1-Year Forecast



- ...the premium that investors pay for superior rates of growth is near an all-time low, an anomaly we don't expect to last

## Relative Valuation Composite\*: R1000G vs. S&P 500



\*Composite is one-third price-to-cash flow, one-third forward P/E and one-third price-to-sales; through September 30, 2005.  
Source: I/B/E/S, Russell Investment Group, Standard & Poor's and Alliance Capital

# Alliance Growth Equity Business: Key Objectives

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- Clear investment philosophy and process
- Research staff—right people/structure
- Tight research/portfolio construction linkage
- Ongoing research initiatives to foster increased scope, innovation and accuracy
- Long-term investment success

## Disclosure on Stock Examples

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References to specific securities are presented to illustrate the application of our investment philosophy only and are not to be considered recommendations by Alliance Capital. The specific securities identified and described in this presentation do not represent all of the securities purchased, sold or recommended for the portfolio, and it should not be assumed that investments in the securities identified were or will be profitable. Upon request, we will furnish a listing of all investments made during the prior one-year period.

# Performance Disclosure

## Alliance Capital US Large Cap Growth

Period	Composite Assets (USD Millions)	% of Firm Assets	Composite Accounts at end of Period	Gross Return (%)	Net Return (%)	Composite Dispersion (%)	Firm Assets (USD Billions)	Russell 1000 Growth Index Return (%)	S&P 500 Index Return (%)
2004	20,288.8	4.28	162	7.81	7.48	1.23	474.0	6.30	10.87
2003	25,056.8	5.97	210	24.70	24.31	1.57	420.0	29.75	28.68
2002	21,338.7	6.15	241	(29.77)	(30.01)	1.96	346.9	(27.89)	(22.10)
2001	29,790.6	7.23	288	(17.15)	(17.41)	3.53	412.2	(20.42)	(11.88)
2000	36,868.4	8.19	291	(16.71)	(17.46)	2.11	450.0	(22.42)	(9.11)
1999	46,987.1	12.76	251	32.94	31.97	3.23	368.3	33.16	21.04
1998	33,003.6	11.51	175	52.25	51.16	2.43	286.7	38.71	28.58
1997	18,889.9	8.64	121	37.62	36.62	4.96	218.7	30.49	33.36
1996	15,827.6	8.66	111	23.64	22.73	1.29	182.8	23.12	22.96
1995	11,680.0	7.97	85	40.00	38.98	1.86	146.5	37.18	37.58
3 Year*				(1.90)	(2.21)	0.69		(0.18)	3.59
5 Year*				(8.21)	(8.61)	1.20		(9.29)	(2.30)
10 Year*				12.13	11.48	1.11		9.59	12.07

\*annualized through most recent year-end

1) PRESENTATION OF THE FIRM—Alliance Capital Management L.P. (“ACMLP”) is a registered investment advisor. AllianceBernstein (the “Firm”) is the institutional and retail sales, marketing and client service unit of ACMLP. The Firm has prepared and presented this report in compliance with the Performance Presentation Standards of the Association for Investment Management and Research (AIMR-PPS<sup>®</sup>), the US and Canadian Versions of the Global Investment Performance Standards (GIPS<sup>®</sup>). AIMR has not been involved in the preparation or review of this report. Prior to the merger of Alliance Capital Management L.P. (“Alliance Capital”) and Sanford C. Bernstein & Co., Inc. (“Bernstein”) in October 2000, the firms were reporting under the name of Alliance Capital Management L.P. and Sanford C. Bernstein & Co., Inc., respectively. Alliance Capital Management L.P. formerly received verification from KPMG LLP for the calendar years prior to 2002. Ernst & Young LLP is currently performing a verification/examination on 2002 and 2003.

2) COMPOSITE STRUCTURE—The Alliance Capital US Large Cap Growth composite (“Composite”) includes all fee-paying discretionary tax-exempt accounts with assets over \$10 million in US dollars. The US Large Cap Growth investment team seeks to generate a premium through research-driven stock selection. Using research predominantly produced by Alliance Capital's analysts, the Team strives to buy companies whose growth potential appears likely to outpace market expectations. The Composite includes the equity segment of balanced accounts. In these portfolios, the asset allocation mix is generally determined by client guidelines and cash flows are allocated in accordance with these guidelines. The creation date of this Composite was prior to December 1992, the first year that this composite was AIMR verified. The US Large Cap Growth team leader transitioned out of the investment group, effective May 1, 2003. The strategy has not been modified.

3) A complete list and description of all composites managed by the Firm is available upon request via email to: [CompositeRequests@AllianceBernstein.com](mailto:CompositeRequests@AllianceBernstein.com).

4) TOTAL RETURN METHODOLOGY AND FEE STRUCTURE—Performance figures in this presentation have been presented gross and net of investment-management fees. Net performance figures have been calculated by deducting the highest fee charged to an account in the Composite, which was an annual fee of 0.75% from inception of the composite to December 31, 1999 and 0.90% from January 1, 2000 to December 31, 2000. From January 2001 forward, the Composite's net-of-fee return is based upon a weighted average of the actual fee rates charged to each account in the composite. The fee applied was 0.31%. Net-of-fee performance figures reflect the compounding effect of such fees. The investment advisory fee schedule is disclosed in Part II of ACMLP's Form ADV.

5) RATE OF RETURN—No representation is made that the performance shown in this presentation is indicative of future performance. A portfolio could incur losses as well as gains. Performance figures for each account are calculated monthly on a trade-date basis using a total rate-of-return calculation. Monthly market values include income accruals, realized and unrealized gains and losses and reflect the daily weighting of cash flows. The Composite results are asset weighted on a monthly basis. Performance results include the reinvestment of dividends and other earnings. Returns are calculated in US dollars.

6) DISPERSION—The dispersion of annual returns was calculated based on the asset-weighted standard deviation.

7) The benchmark, which is not covered by the report of independent accountants, is the Russell 1000 Growth. The index measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

As of December 31, 2004

# Appendix A: Methodology

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## Process

### ■ Data Gathering

Basic data for the calculations in this white paper were collected at the beginning of every month using the previous night's known values. Financial-statement data from S&P-Compustat are lagged two months to avoid "look-ahead" bias. Figures from quarterly statements (earnings, sales, etc) are rolling four-quarter annualizations. If quarterly statements are not available, annual statements are used. Each month financial-statement data are "winsorized" (extreme values are truncated) at the fifth- and ninety-fifth-percentile values.

### ■ Definition of the Universe of Stocks Analyzed

Unless otherwise noted, the universe of stocks used in this white paper encompassed the union of the constituents of the S&P 500 Index, the Russell 1000 Index, the Alliance Capital and Bernstein Investment Research and Management coverage. On average, that universe accounted for 821 stocks. The S&P 500 is the oldest subset in this group; before the advent of the other subsets, there were only these 500 stocks in the universe. The Russell 1000 data were initiated January 1, 1979; Alliance Capital coverage data collection began August 1, 1991; and Bernstein coverage data collection began March 1, 1980.

### ■ Growth and Value Subsets

At the beginning of each month, the universe of stocks is ranked by book-to-price and is split in half on capitalization. The low B/P half is designated growth, and the high B/P half is designated value.

While high B/P may be an intuitive criterion for value, low B/P is admittedly an extremely naïve way to define growth. Although we acknowledge the caveats surrounding such a definition, we decided to apply it to this study because the definition, however flawed, is still considered a practical standard in the business.

### ■ Quintile Portfolio Formation

At the beginning of each month, the style subset of stocks (growth or value) is ranked on the factor in question (e.g. earnings-to-price ratio, free-cash-flow margin, etc) and the subset is split into five groups with an equal count of companies in each group. Stocks within a quintile are equal-weighted.

### ■ S&P 500 Aggregations

Data items can be computed for the S&P 500 companies as a whole, as if it were one company. Ratio items are computed by separately summing the values in the numerator and the denominator and dividing at the end. For example,  $ROES\&P500 = \text{sum}(\text{Earnings}) / \text{sum}(\text{Book})$  for all companies in the S&P 500. The factors computed this way are: GrowthRate, ROE, FCFMargin and by extension their differences: delGrowthRate, delROE, delFCFMargin. All other aggregations are simple, equal-weighted averages over the set of stocks that make up the S&P 500.

# Appendix A: Methodology (continued)

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## Process

## Methodology

### ■ Realized or After-the-Fact Cohort Assignment

At the beginning of each month, the universe of stocks is sorted into cohorts based on the most current published financial-statement data (see “Data Gathering”).

### ■ Prescient Cohort Formation

At the beginning of each month, the universe of stocks is sorted into cohorts based on the next quarter’s financial-statement data. Thus, we define prescience as one quarter look ahead.

### ■ Predicted Cohort Assignment

We performed a multiple discriminant analysis to build a model that would predict cohort membership one quarter in advance of its being realized. Only factors known at the time are used to make the prediction to avoid look-ahead bias. Those factors are GrowthRate, delGrowthRate, deldelGrowthRate, delROE, delFCFMargin, Mom, and BSA. They are made relative to the S&P 500 before being used as inputs to the model.

All the results shown are based on predictions made when new financial-statement data became available; the prediction is held constant until new data are available. Generally, that means new predictions are made every quarter for each company as new financial statements are published. All results shown are out-of-sample.

### ■ Minimum Number of Monthly Sequential Same-Sign Earnings Revisions

As shown in the displays of this presentation, we collect stocks into minimum same-sign history count of earnings revisions (SSHC) groups; each successive SSHC value is a strict subset of the stocks from the preceding group. For example, the group SSHC 3 contains stocks that have had at least three positive earnings revisions in a row; those in SSHC 4 are the subset that has had at least four positive earnings revisions in a row.

### ■ Normalized Probability

The display shows the conditional probability of a stock being in a cohort given that it is about to experience a streak of SSHC. The figures are normalized by the underlying probability that the stock will be in a given cohort. For example, a stock with SSHC=4 (i.e., one that will have positive earnings revisions at least four months in a row) has a 40.1% chance of being in the +++ cohort. Without knowing anything about SSHC, there is a 32.2% chance that a stock is a +++. Thus, the normalized probability that is displayed is  $40.1 / 32.2 = 1.24$ .