

"There's No Accounting for Quants"

Evan S. Grace
Diane M. Garnick

Presentation to Northfield
Conference
March 16, 2003

Efficiency at Risk

Return of the Neglect and Revision Effects?

- Earnings Complexity is on the rise
 - Options Accounting
 - Pension Accounting
 - Transition Alternatives

- Fewer Analysts on the job
 - Record lay offs
 - Increase in names per analyst
 - GAAP not generally accepted

- Positioning for Neglect
 - Size is key
 - Less potential for IB business



STATE STREET RESEARCH

SSGA

Theoretical Foundations of Earnings Complexity

Theory vs. Empirical Evidence

- What are reasonable assumptions to make about option expenses?
- Has the actuarial smoothing embedded in pension accounting diluted representational faithfulness of corporate liabilities?
- What are the implications of alternative transition methods for accounting standards?
- What are the implications for investors?



Theoretical Foundations of Earnings Complexity

What are reasonable assumptions to make about options expenses?

- What investors need to make rational decisions:
 - Transparency
 - Timely access to data
 - Representational faithfulness



STATE STREET RESEARCH

SSGA

Theoretical Foundations of Earnings Complexity

What Do We Have? Many Options for Options

- Calculation methods can vary;
 - Intrinsic Value
 - Fair Value

- If fair value is used, dates can vary;
 - Grant Date
 - Exercise Date
 - Vesting Date

- Availability of data varies;
 - Appear on the face of the financials
 - Disclose in the footnotes
 - Long delays in data release diminishes its usefulness
 - Currently annually only, on the 10-K



Theoretical Foundations of Earnings Complexity

Data are difficult to obtain; more difficult to analyze

- Relatively unique: different treatments for same item
 - APB 25 (issued 1973)
 - Requires intrinsic value accounting
 - No charge for at-the-money option issuance
 - SFAS 123 (issued 1996)
 - “Prefers” fair value accounting as of grant date
 - Spread cost over vesting period
 - **Can still use APB 25 if disclose impact, but no method proscribed**
 - EIX Volatility range was 17% -52%
 - SFAS 148 (issued December 2002)
 - Better, more frequent disclosure
 - Three transition methods
 - Prospective, Modified Prospective, Retroactive Restatement



STATE STREET RESEARCH

SSGA

Theoretical Foundations of Earnings Complexity

What are the implications of alternative accounting methods?

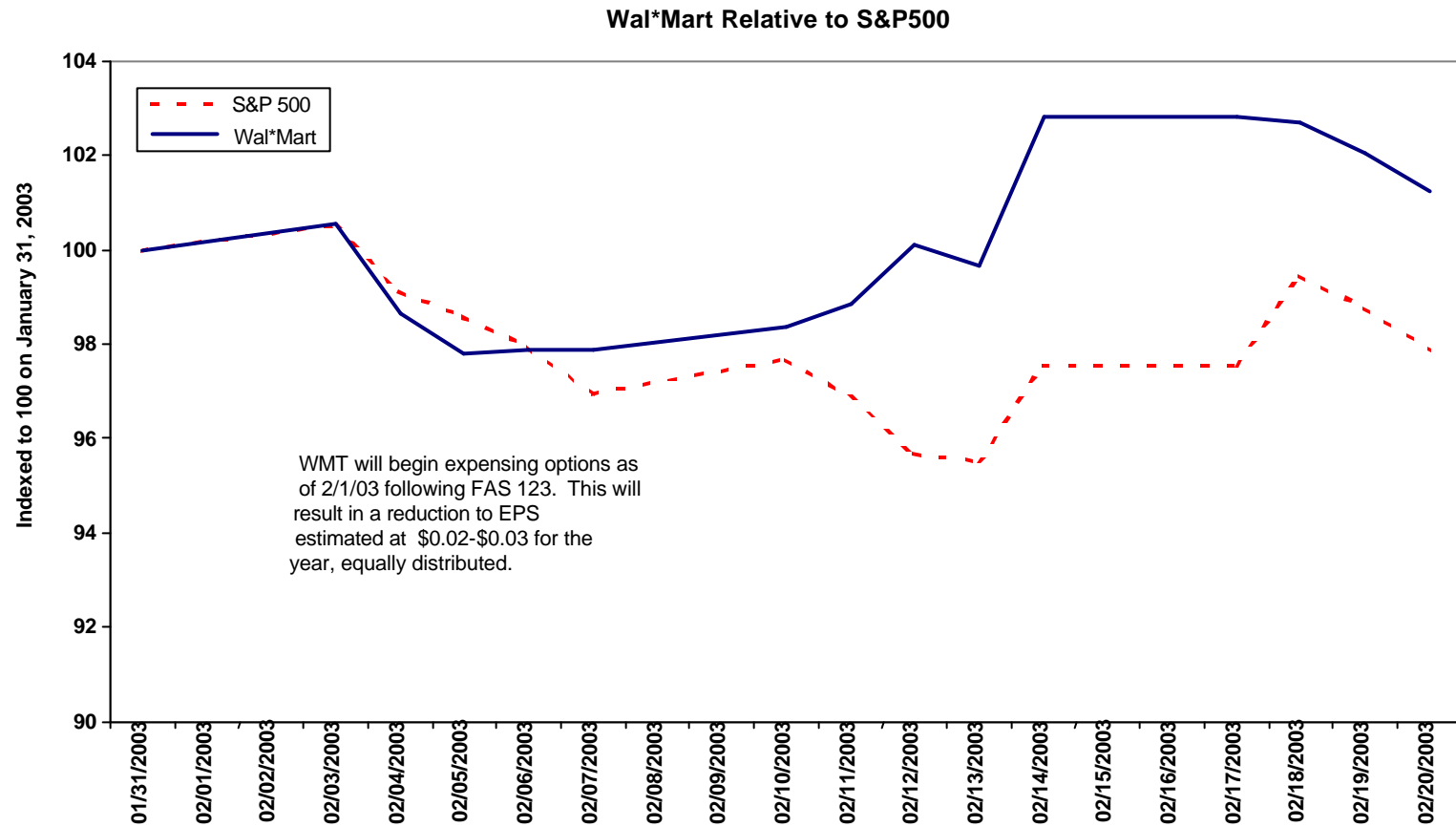
- Inefficient market reactions
 - Wal*Mart will begin expensing options as of 2/1/03
 - Net effect is a \$0.02-\$0.03 incremental expense for 2003

- The debate creates confusion in the marketplace
 - Bulls: it's just an accounting change
 - Bears: it was always an expense, now we're counting it
 - Quants: it's a negative estimate revision



Theoretical Foundations of Earnings Complexity

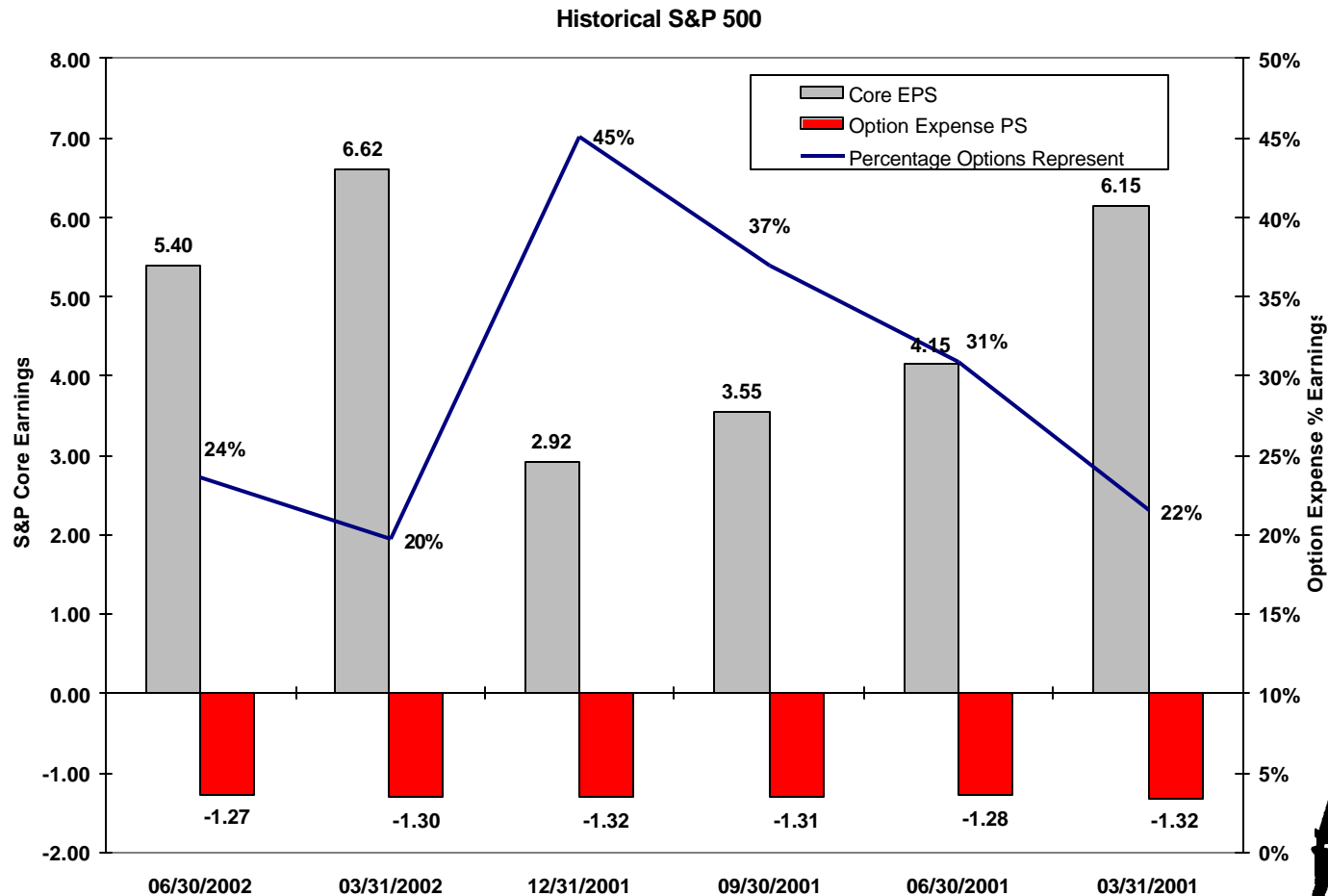
Inefficient Market Reactions



Theoretical Foundations of Earnings Complexity

Impact of Options on Core Earnings

- Options Expensing regained importance as the percentage of earnings represented by options increased



STATE STREET RESEARCH

Theoretical Foundations of Earnings Complexity

Implications of Alternative Transition Methods

- Different pattern of income recognition
 - Prospective: Expense gradually increases
 - Nearly all “early adopters” use this; to be phased out in 2003
 - Modified Prospective: Sudden one-time increase in expense
 - Retroactive Restatement: Restate history such that no change over time

- Example: Coca Cola (source: Bear Stearns)
 - July 2002: Will use prospective method (only choice)
 - \$0.01 per share impact in 2002
 - Post-FAS 148: Changed to modified prospective method
 - \$0.11 per share impact in 2002
 - Old expense would have “ramped up” to \$0.11 over time
 - Impact on profit growth, momentum, possibly revisions



Theoretical Foundations of Earnings Complexity

So what can you do about it?

- It's not in the databases
 - Traditional quant solutions won't work
 - Sell side
 - Accounting research suddenly popular, for some reason...
 - Big resource allocation to options
 - S&P
 - <http://www.standardandpoors.com>
 - Interns/Fundamental analysts



STATE STREET RESEARCH

SSGA

Pensions: Income Statement Impact

- Accounting designed to smooth changes in projected benefit obligation funding status
 - Not necessarily a bad thing, but can be abused
 - Fine art of “Actuarial Smoothing”

- 52 companies in the S&P 500 have positive net pension income, but pension plans in deficit

- “Net pension charge/credit” is in operating income, but not a separate line item
 - Currently reported in either COGS or SG&A

- Example: Pension assumptions impacting EPS growth
 - Cinergy Net Income Growth '00-'01 = \$42 million
 - Pension expense declined \$8 million
 - 20% of net income growth due to pensions



Pensions: Balance Sheet Impact

- Theory: Matching Principle
 - Expense future pension commitments of current employees
 - Set aside current assets to pay for future obligations

- Reality: This asset often doesn't reflect the true funding level
 - Substantial off balance sheet items
 - Unrecognized net actuarial loss
 - Unrecognized prior service cost
 - Unrecognized transition obligation/asset

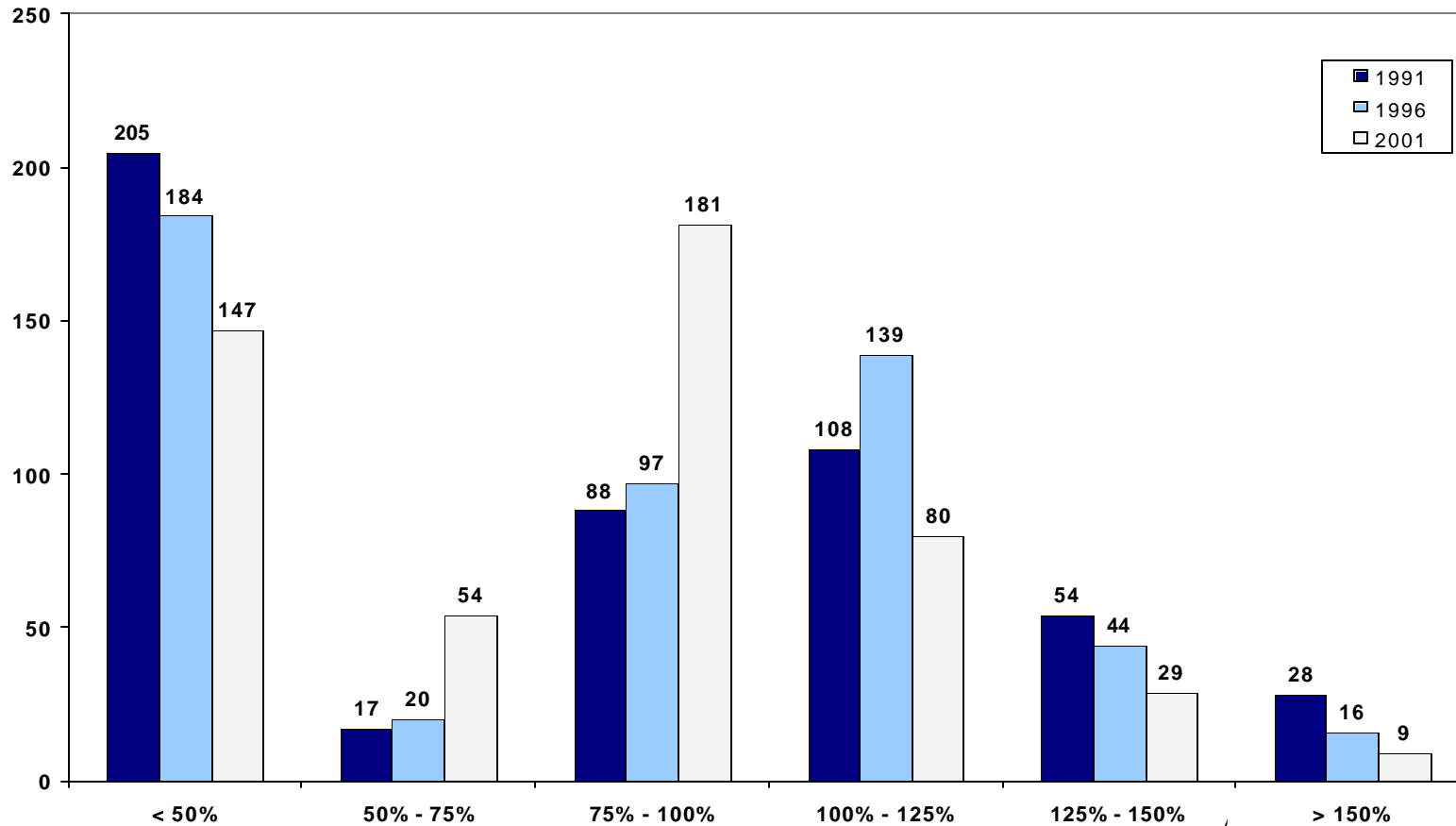
- Example: GM is the poster child
 - Balance Sheet asset: "Prepaid benefit Cost" = \$18.3 Billion
 - Off-Balance Sheet: "Funded Status" = -\$12.6 Billion



Pensions: Funding Crisis?

- Balance Sheet Funding Status improving, but mixed

Historical Funded Status of Current S&P 500 Companies



STATE STREET RESEARCH



Pensions: Funding Requirements

- Key Question: Are contributions necessary? If so, when?
 - ERISA requirement: underfunded if actuarial value of assets is less than 90% of current plan liabilities
 - Funding deficiency subject to excise tax of 5-10%
 - Need IRS Form 5500 to determine this
 - Filed 7-9.5 months after end of plan year
 - Different calculations for funding decision than for annual report
 - Different actuarial methods, assumptions, measurement dates
 - » Example: DJIA average interest rate for funding calculation 100 basis points lower than average interest rate for other financial reporting
 - PBGC Requirement: Underfunded plans must pay additional premiums
 - Additional \$9/\$1,000 underfunded vested benefits



Pensions: What's a Quant To Do?

- Set aside the question of whether pensions “matter” for the market
 - Different treatment of the same obligation for different stocks is the stock picker’s focus

- Simplest screen: Got a DB plan?
 - 142 S&P 500 companies with no DB plan (25 % of mcap)
 - 1,386 Russell 2000 companies with no DB plan (65 % of mcap)

- Size up the potential impact (all in Compustat)
 - Plan Assets/Market Cap
 - Expected Return of Plan Assets
 - Discount Rate
 - Interest Cost
 - Rate of Compensation Increase



Pensions: What's a Quant To Do?

■ Sell side

- As before, sudden, inexplicable interest in accounting research...
- Can provide line item data not easily available elsewhere

■ Interns/Fundamental Analysts

- Tear through Ks and Qs
- Adjust valuation/growth metrics for pension distortions



STATE STREET RESEARCH

SSGA

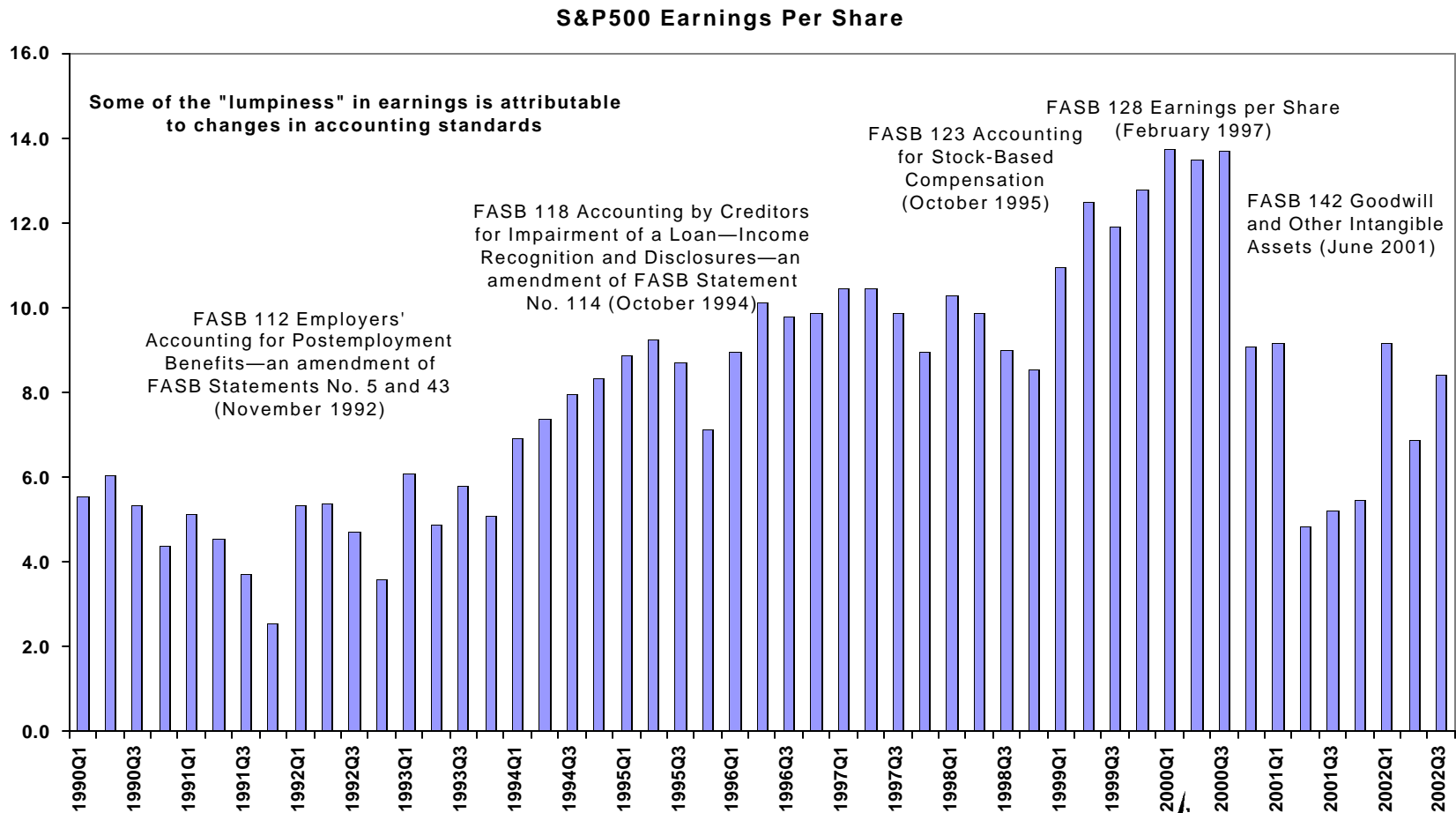
Transition Alternatives

- Common themes with Options and Pensions
 - Data availability is limited; accuracy is questionable
 - Accounting changes impair comparability
 - Cross-sectional and time series data set are impaired



Transition Alternatives

- Frequency of changes in accounting data impacts validity of back tests



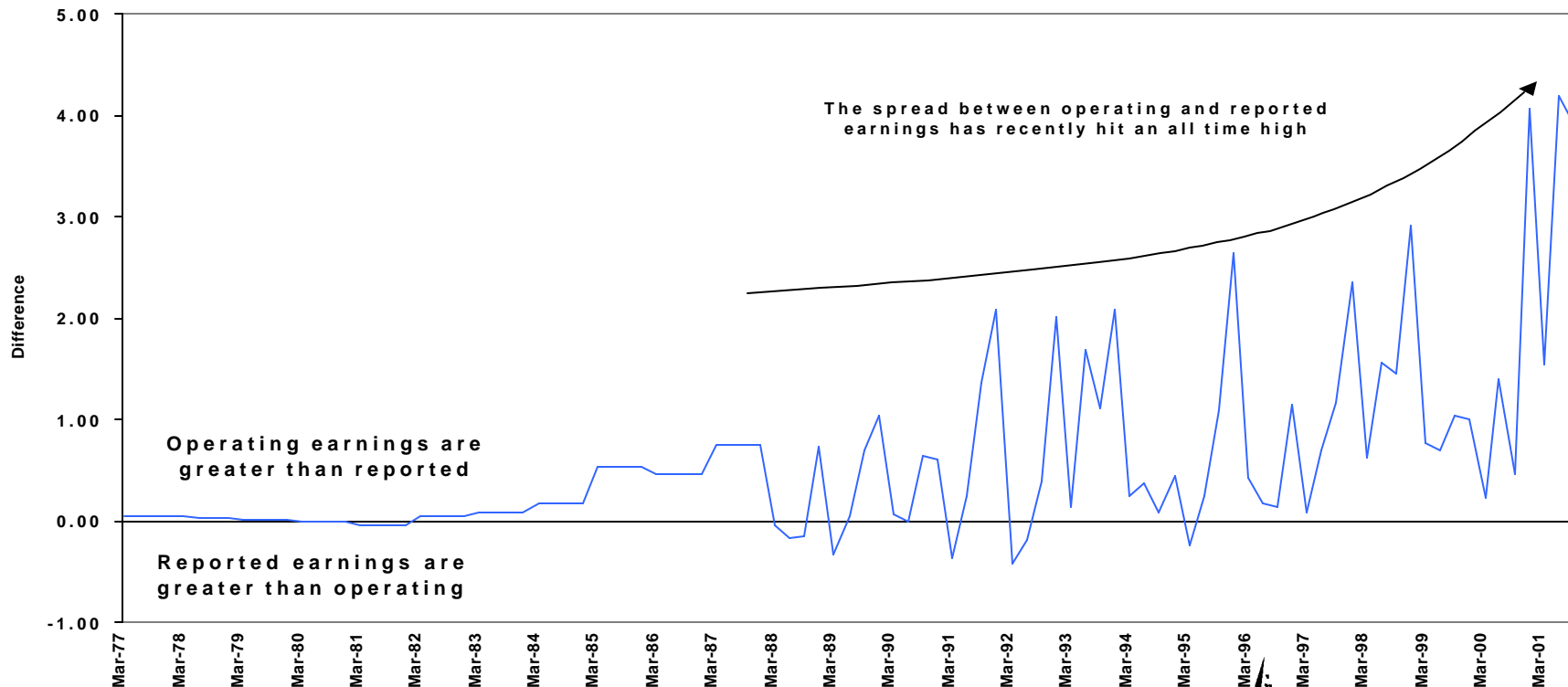
STATE STREET RESEARCH



Transition Alternatives

- Alternative transition methods fuel credibility concerns
 - The spread between reported and operating earnings is near an all time high
 - Integrity of models that rely on accounting data without regard to multiple transition alternatives needs to be questioned

S&P500 Reported vs. Operating Earnings



STATE STREET RESEARCH



Common Thread: What are Earnings?

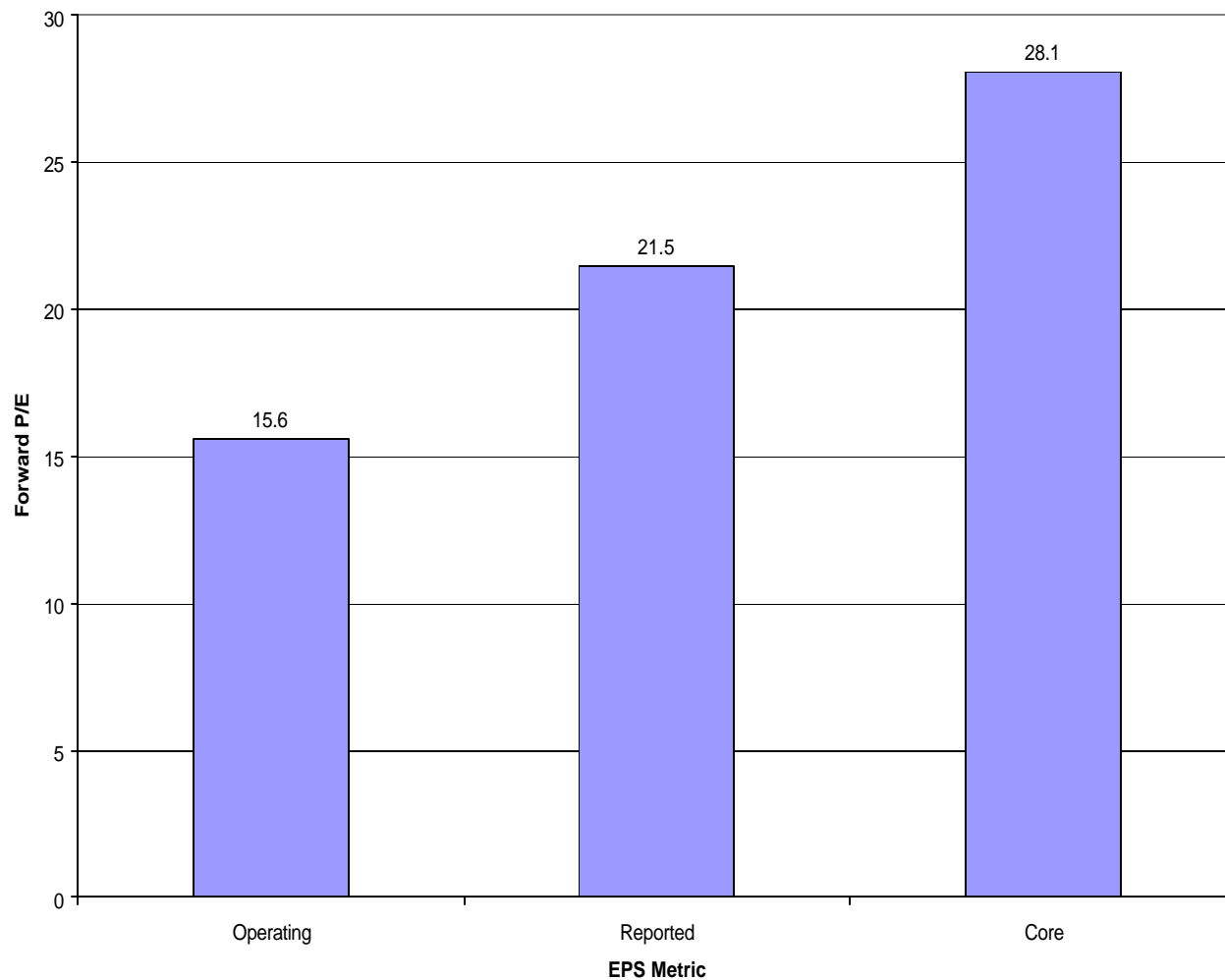
- No clear, agreed upon definition
 - Operating?
 - Best reflection of “continuing operations” of the company
 - Subjective. Too many recurring non-recurring items
 - Reported?
 - Pure in some sense; it’s what actually happened
 - Can be misleading; want to know about core operations
 - Core?
 - Right idea, bad execution. Likely to be revised



Common Thread: What are Earnings?

- Would the real P/E ratio please stand up?

S&P 500 Forward P/E Ratio

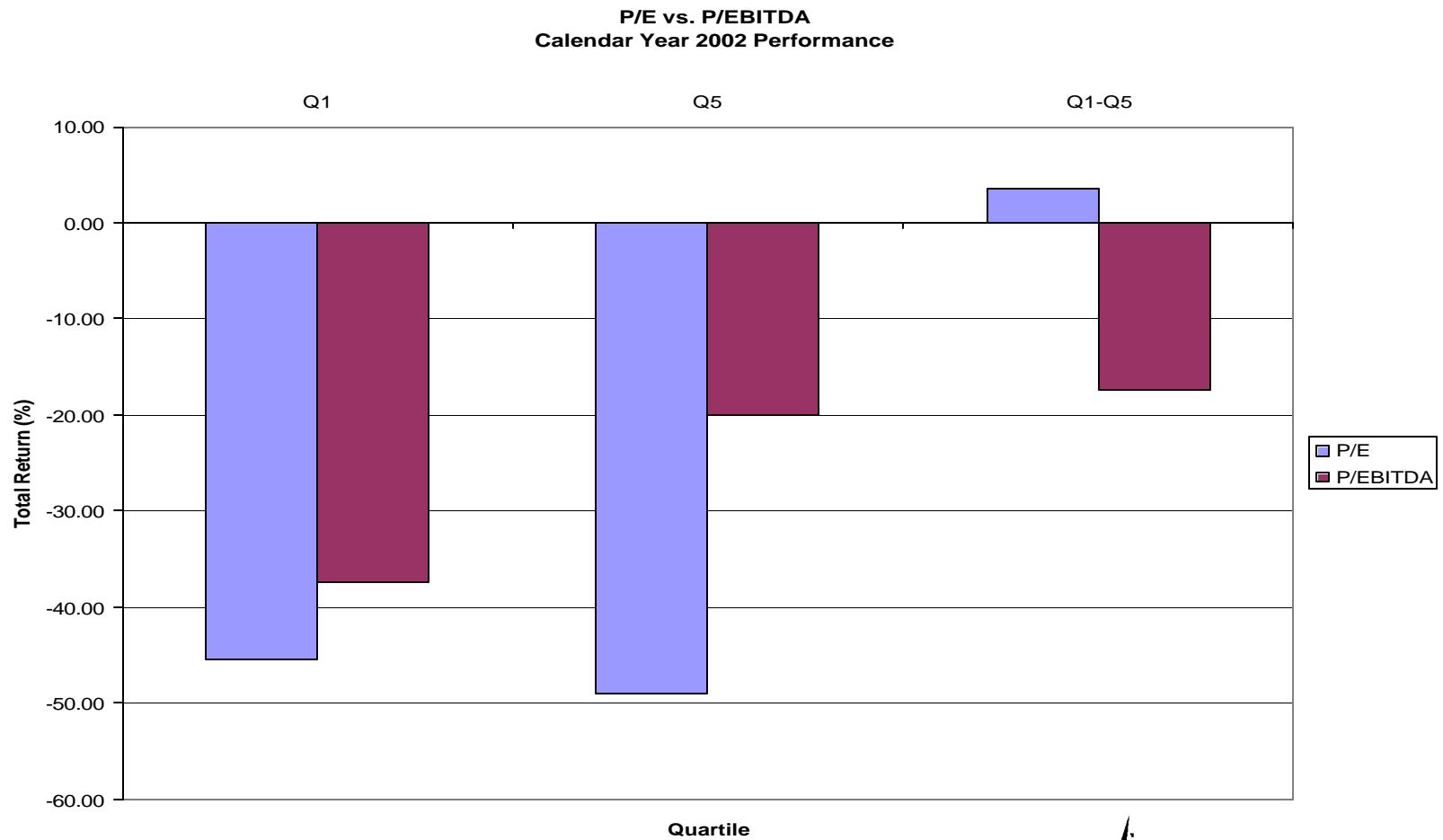


STATE STREET RESEARCH



Common Thread: What are Earnings?

■ Back Test Implications



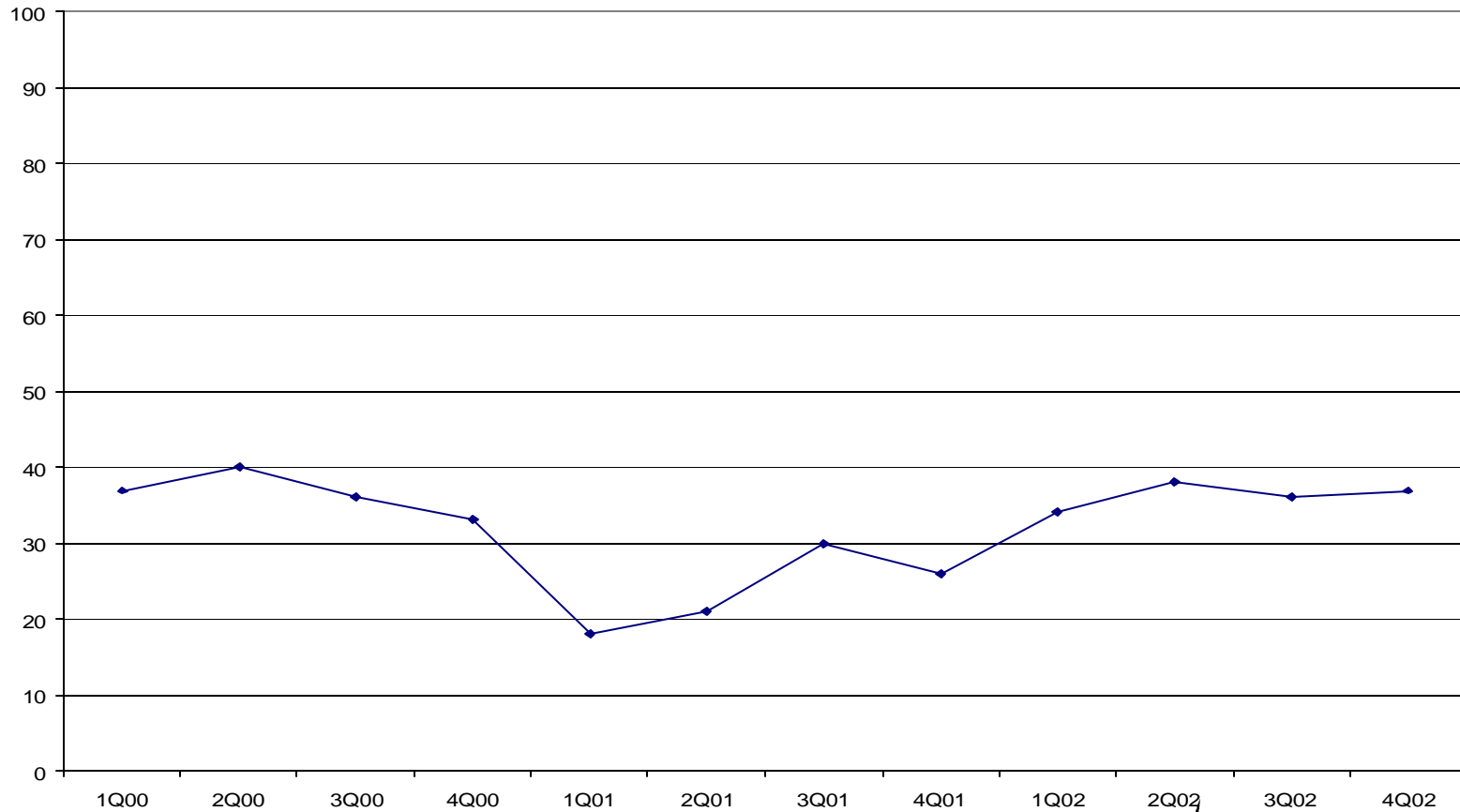
STATE STREET RESEARCH



It's Not Just Tech

- "Pro-forma" earnings have an impact across all sectors

S&P 500:
Percentage of Companies where GAAP=Pro Forma



STATE STREET RESEARCH



What is to be Done?

■ Sector-Specific Models

- Solves problem of cross-sector comparisons
 - Define sectors carefully: also includes large industries
 - Comparability across time can still be a challenge
 - Check for consistency in returns
 - Dynamic weighting schemes

■ Earnings Quality Variables

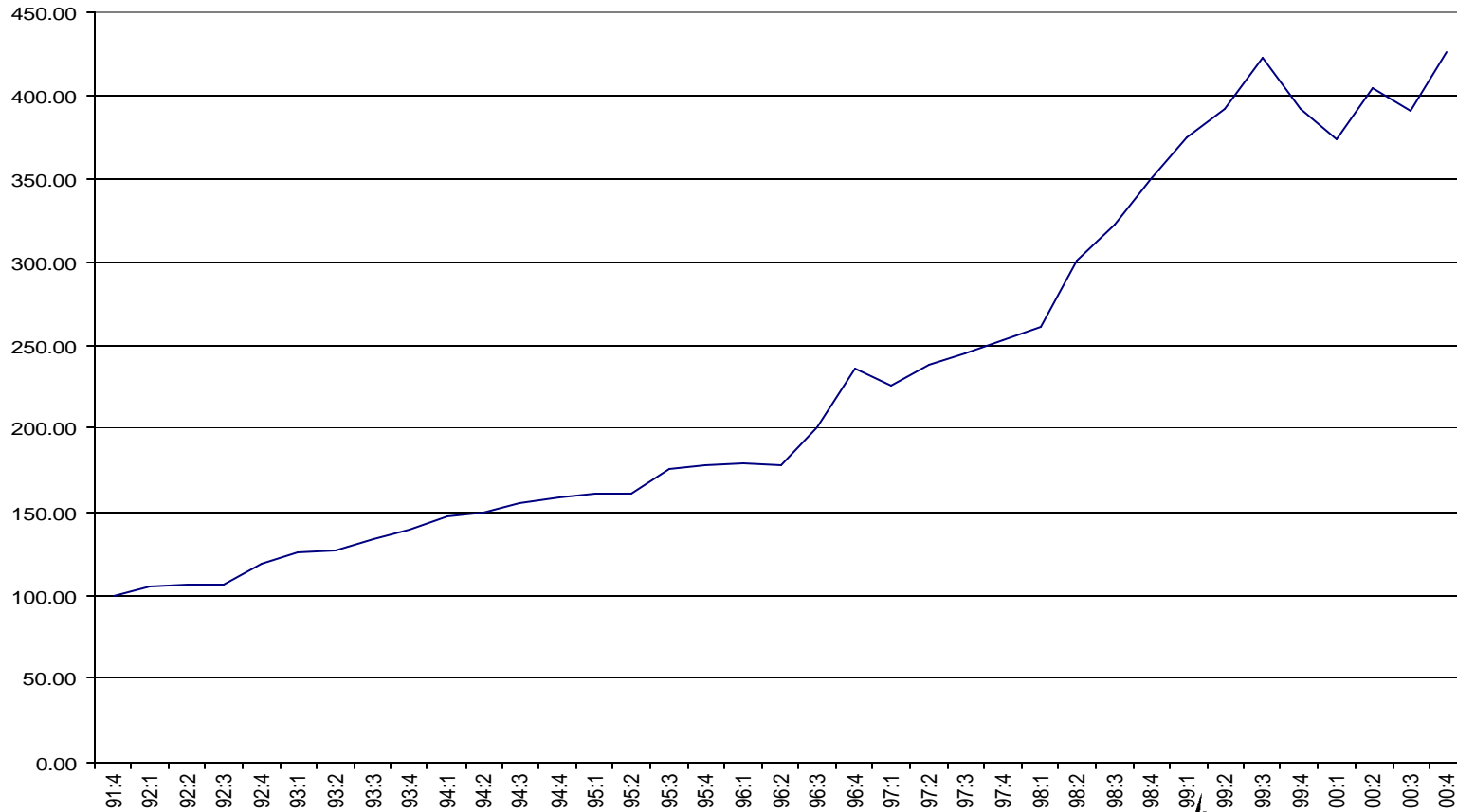
- Independent variables additive to quant models
- Identify potential for manipulation



What is to be Done?

- Total Net Accruals is a very promising factor

Net Accruals Factor: Top Decile vs. Bottom Decile



STATE STREET RESEARCH



What is to be Done?

- Call your Congressman (or FASB)
 - Mandatory comment period for all new “FAS” standards
 - Typically one-sided commentary skews FASBs positions.
 - Have your voice heard!



STATE STREET RESEARCH

SSGA

27