



Investment Implementation

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Overview

Goal

- Add value over the long term

Business-like environment

Process

- Focus on long-term value
- Internal management of most assets
- Risk measurement for severe environments

People

- Recruited as interns from area universities and trained internally
- Research coverage redundancy to promote internal discussion and continuity
- Compensation linked to added value

Goal

Goal is to add value over long term versus index returns

- Difficult for most to outperform market index benchmarks
- Accomplishment provides most resources to meet needs
- Everyone must agree on goal to have chance to succeed

Daily efforts focus on drivers of success over the long term

- Common sense long-term contrarian culture
- Willingness to endure short-term underperformance
- Valuation competencies

Business-like environment

Focus on maximum risk-adjusted return

- Prohibition against social investing considerations (exception for sanctioned countries)

Long-term business plan

- Established under direction of Legislature in 1988 to create stable environment for internal management and alleviate turnover problems

Investment Council funded from assets under management

- Funding shifted from general fund to managed assets in 1988
- Emphasis on unit cost

Process

Focus on long-term value

- Only reliable way to add value long term is to buy when cheap, sell when expensive
- Many investors would rather focus on short-term market movements
- Need long-term value measures, patience, confidence, continuous preparation

Internal management

- Cost of internal management is lower than external active management cost
- Returns benefit from influence over internal staff to focus on long term
- Increased conviction comes from doing your own research
- Internal management is a lot more work than hiring outside managers

Risk management

- Risk measurement focused on equity-like and bond-like risk
- Conventional statistical risk measures are adjusted to reflect higher real-world frequency and magnitude of adverse outlier events
- Risk managed by broad diversification and avoiding expensive assets
- Strong financial condition important to help weather difficult periods

Long-term value measures

Believe long-term value is the present value of future cash flows

- Simple notion: Invest cash today → Get more back later

Research focus is on estimation of probability weighted cash flows

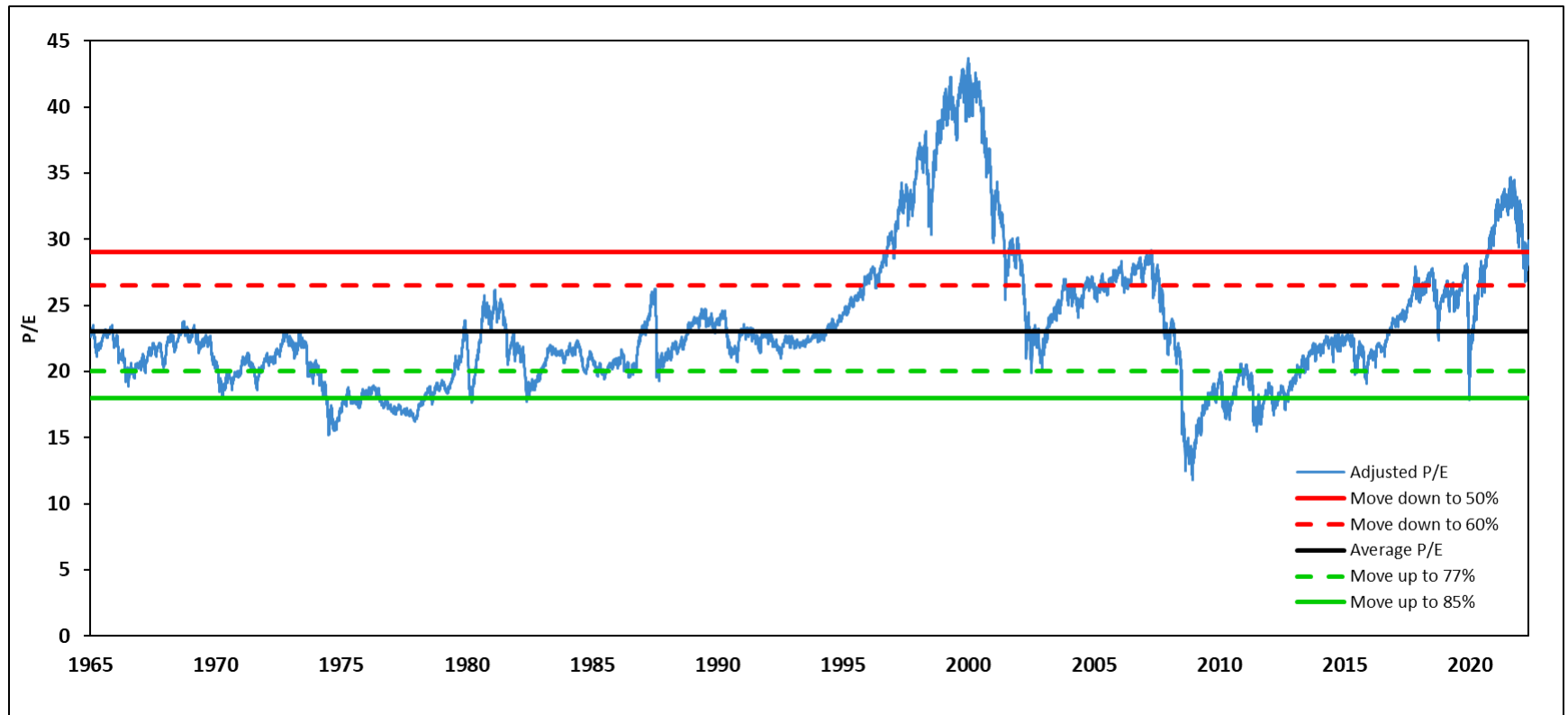
- Stocks: normal earnings, return on invested capital, normal growth rate
- Debt: probability of bankruptcy from cash flow volatility modeling process
- Inputs must reflect underlying economic reality

Risk assessment drives rate used to discount cash flows to present value

- Focus on risk in severe adverse markets

Simple P/E contrarian allocation example

P/E using smoothed earnings and adjusted for interest rates



People

Recruitment

- Intern program for top students from area universities
- Gauge aptitude for contrarian philosophy and cash flow modeling

Training

- Understand long-term contrarian philosophy
- Develop cash flow modeling capability

Research coverage redundancy

- Double coverage promotes internal discussion and continuity
- Analysts manage individual portfolios to heighten focus and accountability

Compensation

- Based on private sector comparable positions with targeted discount
- Linked to added value through incentive compensation component

Compensation linked to added value

Encourage retention of successful staff

- Team is most attractive to other organizations when winning
- Shifts compensation higher when people more sought after and down when losing

Incentives encourage performance

- Multiyear timeframes encourage investing for the long term
- Counters underperformance risk that can discourage efforts to add value

Incentives paid only for added value

Important to encourage added value in all markets

- Encourages adding value by reducing risk when markets expensive
- Added value in down markets more important than in up markets