

# THE VALUE OF VALUE INVESTING

Fordham University  
Gabelli Center for Global Security Analysis  
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Stephen Horan, Ph.D., CFA, CIPM  
Managing Director and Co-Lead, Education  
CFA Institute



Thanks – Jim Kelly,

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## TODAY'S AGENDA

- Characterize Value Investing – Potential Benefits (Real and Imagined)
- Compare and Contrast Measures of Value
- Identify Value Index Construction Techniques and Their Implications
- Identify Barriers to Value Investing
- Develop Techniques for Overcoming Barriers
- Conclude

## CHARACTERISTICS OF VALUE INVESTING

What does it mean to be “strategic” with value investing?

What is the value investing opportunity on a risk and return basis?

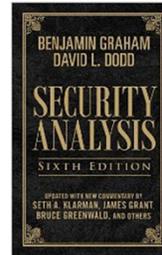
# THE ROLE OF VALUE INVESTING

## Investing versus Speculation

- “An investment operation is one in which, upon thorough analysis, promises safety of principal and a satisfactory return. Operations not meeting these requirements are speculative.”
  - Security Analysis, Graham and Dodd, 1934

## Grounded in Fundamental Analysis

- “Intrinsic Value” – Benjamin Graham
- Warren Buffet popularized Ben Graham’s legacy
- Seth Klarman popularized margin of safety



## Empirical Challenges to Market Efficiency

- Long-term price reversals (e.g., DeBondt and Thaler (1985), Foerster (2011))
- Short-term and medium-term momentum (Jegadeesh and Titman (1993))

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## Long-term versus short-term Fundamental versus technical analysis

DeBondt and Thaler showed that if an investor were to purchase the 35 stocks that dropped the most in price over the previous three years of all the stocks on the New York Stock Exchange from 1933 to 1980, they would've outperformed the market by about 20% over a subsequent three-year period. If that same investor were to have purchased the 35 best performing stocks over the previous three years, they would've underperformed the market by 5% over the subsequent three-year period for total difference between the winner and loser portfolio of about 25%. That's quite a difference. They also document similar results for different time horizons. It is worth noting, however, that the price reversal is still very much a long-term phenomenon. The returns between the portfolio of winners and losers as much as 12 months after they had been chosen are virtually indistinguishable. Positive results were achieved for its three-year holding period.

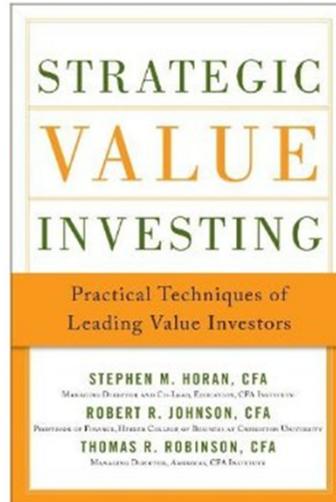
### Foerster Results on Doubling

- Just over half have doubled in the screening period; average out-performance of 10.1%
  - Only one-quarter double in the subsequent 4-year test period; average underperformance of 3.6%
  - Stocks that did not double in the screening period are more likely to double in the test period
  - Future stock returns are predictable: negatively related to past returns as well as the speed of past price increases
- 28% cumulative return differential between doublers and non-doublers over four years.  
Speed of doubling matters → Doubling in less than 12 months → 53% underperformance relative to non-doublers over four years

Over shorter time horizons, stocks tend to exhibit momentum rather than contrarian tendencies, which can further test the result of the strategic value investor. Narasimhan Jegadeesh and Sheridan Titman (1993) demonstrated that individual stocks that perform the best over the previous 3 to 12 months outperformed stocks that had performed the worst. The forward-looking period of out performance is about another 3 to 12 months, and the general results of been confirmed in subsequent studies. The most pronounced effect is buying (selling) 12 month winners (losers) and holding (shorting) then for another three months which produces a return over 1% per month. This short-term relative strength (i.e. momentum) strategy is less pronounced than long-term price reversals, but they too demonstrated markets may not be efficient.

Although capitalizing on price reversals is one variety of value investing, we should not be misled into believing that value investing is predicated on this kind of technical analysis or contrarian sentiment. To the contrary, strategic value investing is about selecting the most promising stocks with value characteristics. This strategic component of value investing is predicated on fundamental rather than technical analysis.

## EASY TO FOLLOW VALUE INVESTING ADVICE



- “Strategic” Value Investing
  - Treating investments as if you were buying the whole business
  - Combining objective and subjective analysis
- Objective Analysis
  - Absolute and relative pricing models
  - Screens
- Subjective (Fundamental) Analysis
  - Macroeconomic analysis
  - Industry analysis
  - Company analysis
  - Based on expectations rather than hope

## HISTORICAL ANNUAL RETURN CHARACTERISTICS, 1926-2012

	Overall	Large			Small			T-Bills
	Market	Growth	Mid	Value	Growth	Mid	Value	
<b>Arithmetic Avg.</b>	11.8%	11.2%	12.1%	14.7%	13.9%	16.6%	18.8%	3.6%
<b>Geometric Avg.</b>	9.8%	9.2%	9.9%	11.2%	9.3%	12.9%	14.2%	3.5%
<b>Median</b>	14.9%	13.3%	13.2%	18.7%	12.5%	18.3%	20.4%	3.1%
<b>Std. Deviation</b>	20.3%	20.4%	21.2%	27.5%	32.9%	29.0%	32.4%	3.1%
<b>Skewness</b>	-0.434	-0.316	-0.045	0.258	0.944	0.433	0.232	0.984
<b>Kurtosis</b>	-0.031	-0.384	2.52	1.977	3.494	1.506	0.394	0.986
<b>Sharpe Ratio</b>	0.404	0.372	0.403	0.405	0.314	0.448	0.471	0.000

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Value investing has historically performed well as an investment strategy.

For our purposes here, we will focus on the style metrics based on work by Eugene Fama and Kenneth French. Theirs is not the only framework, however. Morningstar, for example, has similar style boxes that are defined somewhat differently but get to the same idea.

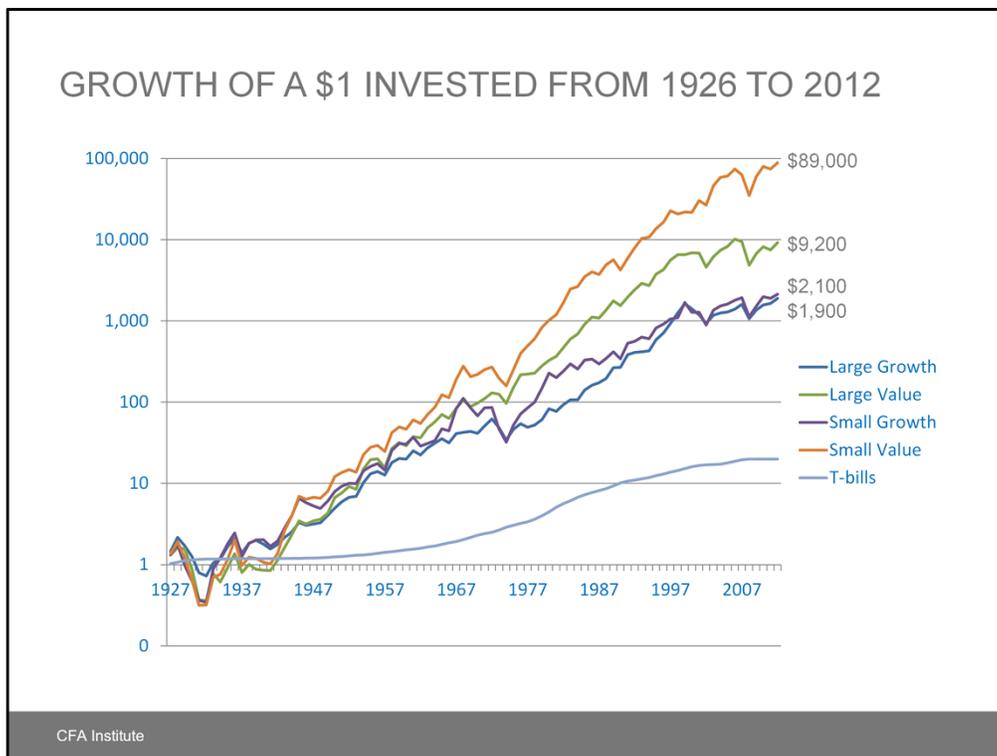
The average return on the overall stock market from 1926 to 2012 has been 11.8% per year. By comparison, three-month Treasury bills returned 3.6%, on average. The return in stocks is obviously not generated consistently one year after the next. The overall stock market is a well-diversified equity portfolio by definition. But it is still an equity portfolio and, as such, is subject to significant risk as we have seen over the past decade. But this is nothing new. During this time, the market has dropped by as much as 44% in any single calendar year and gone up by as much as 56%. That is a range of 100%.

Value stocks tend to outperform the overall market. Large capitalization value stocks had an average return of 14.9% over this period compared to 11.8% for the overall market. That's a difference of 3.1%, which is extraordinarily large and can have an incredible impact on capital accumulation over long periods of time. Value stocks have even more of a performance edge over growth stocks – 14.7% versus 11.2% for a 3.5% differential.

We see in even greater performance differential among small capitalization stocks. Small value stocks exhibited a 18.8% return from 1926 to 2012 compared to 13.9% for small growth stocks. That's a 4.9% differential and is not to be taken lightly.

the standard deviation on large capitalization value stocks was 27.5% compared to 20.3% for the overall market and 20.4% for growth stocks. That is a differential of over 7%. Small capitalization stocks generally have higher standard deviations than large capitalization stocks regardless of whether they are considered to be value or growth. Interestingly, however, small capitalization value stocks actually have a slightly lower standard deviation than small-cap growth stocks (32.4% compared to 32.9%, respectively).

The Sharpe ratio for the overall stock market was about 0.404 from 1926 2012. Although large capitalization value stocks were more volatile during this period, their higher average return more than compensated for the extra risk. Their Sharpe ratio was 0.405. By contrast, the Sharpe ratio for large capitalization growth stocks was only 0.372. On this basis, it seems as if the reward from value investing more than compensates for the added risk.



It bears emphasizing that because this "average" return is not consistent. All else equal, most of us would prefer to get a consistent return rather than a variable one. The measure of "average" that we had been using thus far is the simple arithmetic average with which we are all familiar. The problem with this measure is that it overestimates the amount of capital we will accumulate over time. Specifically, although the stock market has an overall return of 11.8% per year, we cannot simply compound this return over a specified number of years to estimate how much money we are likely to have in the future.

For example, if we can earn 11.8% consistently each year for 10 years, we will triple our money. That is, \$1,000 will grow to just over \$3,000. If this return is not consistent, however, we will accumulate less. The more volatile the returns are over this time period, the less we will accumulate. This phenomenon is called the volatility drag, which is determined in large part by the standard deviation. The higher the standard deviation, the higher the volatility drag. In our example, if the standard deviation is 20.5%, then we are more likely to double our money rather than triple it. Half the time, we will be likely to just over double our money. The other half of the time, we are likely to fall short of doubling our money.

According to Table 2.1, the stock market exhibits negative skewness. That is, some negative outcomes are more extreme than the positive outcomes. As a result, it makes it more difficult to accumulate capital over time when a few really bad years dissolve the capital base on which to earn future returns. So, skewness can really hurt (or help) our ability to accumulate capital even when average returns and standard deviations are the same.

Another way in which returns may not be "normal" is if returns further away from the center are more or less frequent than the bell curve would suggest. We can measure the frequency of extreme occurrences with something called kurtosis. When extremely positive or negative returns are more common than the bell curve would suggest, those returns are said to exhibit excess kurtosis. As a result, the returns are more risky than a limited examination of only standard deviation would suggest. In other words, there is hidden risk that our traditional measure of volatility does not capture. So, we want to be aware of it. Return distributions such as these are said to exhibit "fat tails".

every dollar invested in small-cap value strategy in 1926 grew to almost \$89,000 in 2012 compared to only \$2,100 for a small-cap growth strategy. For large capitalization stocks the differential for each dollar invested in 1926 in either a value or growth strategy was \$9,200 compared to \$1,900.

## WHY DOES VALUE RETURN MORE THAN GROWTH?

$$\frac{P}{E} = \frac{1}{r - g}$$

$$\frac{P}{B} = \frac{ROE}{r - g}$$

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The answer is almost always higher risk. But risk of what?

Value based on low P/E results from a low spread between  $r$  and  $g$  (i.e., high growth relative to risk) – Buffet and Graham style value

- A given P/E could be the result of high  $r$  and high  $g$  or low  $r$  and low  $g$ . Don't know which. We just know the spread.

Value based on low P/B, however, is driven by risky growth.

- For a given  $r-g$  spread, low P/B must be the result of ROE
- Low ROE is associated with high future growth. Why?
  - Accounting principle of conservatism → deferring earnings recognition → low current E → high future E → high  $g$  → high current B
  - Extreme example of expensing R&D
- If  $g$  is high, the  $r$  must also be high (i.e., can't have low  $r$  and low  $g$  scenario).
- Therefore, low P/B is risky growth

In fact, low P/E is empirically associated with lower future growth but low P/B is empirically associated with higher future growth.

The future growth of the low P/B stocks is empirically shown to be riskier (e.g., more volatile earnings, more volatile growth rates)

## BETA OF VALUE AND GROWTH STRATEGIES, ANNUAL DATA FROM 1926 TO 2012

	Large Capitalization	Small Capitalization
<b>Growth</b>	0.97	1.40
<b>Blend/Core</b>	0.98	1.27
<b>Value</b>	1.23	1.36

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We can also measure risk by incorporating our security or portfolio moves with the overall market. If a portfolio tends to exacerbate overall market movements, it would be considered relatively more risky. If it increased and decreased in value in a more muted manner than the overall market, it would be considered less risky. The measure we use to capture this phenomenon is called beta.

A security or portfolio with a beta of one is about as risky as the overall market assuming it is part of an otherwise well-diversified portfolio. Table 2.5 shows the data of value and growth strategies based on annual returns from 1926 to 2010. There are at least two important observations to make. First, small capitalization stocks have significantly higher betas than large capitalization stocks. This means that they are likely to increase risk when added to a well-diversified portfolio.

Second, value stocks tend to have more market risk than growth stocks although this is less true for small capitalization stocks. As we have seen before, this risk tends to be more than compensated in the market place. But it bears repeating that value investing is not for the faint of heart.

Value growth here is defined by P/B. A cut on P/E would not show such a difference.

## HISTORICAL ANNUAL CORRELATION COEFFICIENTS, 1926-2012

	Large			Small		
	Growth	Mid	Value	Growth	Mid	Value
<b>Large Growth</b>	1					
<b>Large Mid</b>	0.85	1				
<b>Large Value</b>	0.80	0.94	1			
<b>Small Growth</b>	0.81	0.83	0.81	1		
<b>Small Mid</b>	0.80	0.89	0.89	0.94	1	
<b>Small Value</b>	0.74	0.86	0.90	0.87	0.96	1

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In building a portfolio, we are not only concerned about how a security or group of securities behaves on their own. We are also concerned with how they behave in relation to other securities in the portfolios. Securities that tend to behave differently over time can smooth out our ride without necessarily decreasing our average return. The decrease in volatility can improve our capital accumulation, and our mood, even if the average return is not improved. Table 2-3 displays correlation coefficients for various combinations of value-growth and large versus small capitalizations. A correlation coefficient measures how two securities move together. A value of positive one means that the two securities always move in the same direction, even if the magnitude of those movements is different. A value of negative one means that the two securities always move in opposite directions. The value of zero means they may or may not move in the same direction and that knowing the direction in which one moves does not help us predict the direction in which the other one moves. A correlation coefficient between zero and one implies that the two securities tend to move in the same direction, but not always. A value between negative one and zero implies that the two securities tend to move in opposite directions, but not always.

As we can see, value stocks and growth stocks tend to move in the same direction, but not always. For example, large capitalization value and growth stocks tend to move together approximately 80% of the time. Small capitalization value and growth stocks tend to move together approximately 87% of the time. These are relatively high correlation coefficients, which suggests that we are not likely to diversify our portfolio by combining value and growth strategies.

## VALUE AND GROWTH PERFORMANCE, 1981 TO 2010

	Large		Small			Large		Small	
	Growth	Value	Growth	Value		Growth	Value	Growth	Value
1981	-7.13	12.8	-11.53	17.68	1997	31.61	31.88	15.29	37.29
1982	21.48	27.67	19.72	39.86	1998	34.64	16.23	3.04	-8.63
1983	14.67	26.92	22.12	47.58	1999	29.43	-0.22	54.75	5.59
1984	-0.72	16.17	-12.84	7.52	2000	-13.63	5.8	-24.15	-0.8
1985	32.64	31.75	28.91	32.12	2001	-15.59	-1.18	0.16	40.24
1986	14.38	21.82	1.95	14.5	2002	-21.5	-32.53	-30.87	-12.41
1987	7.43	-2.76	-12.24	-7.12	2003	26.29	35.07	53.2	74.69
1988	12.53	25.96	16.63	30.76	2004	6.53	18.91	12.54	26.59
1989	36.11	29.7	20.58	15.7	2005	2.82	12.17	5.45	3.53
1990	1.06	-12.75	-17.74	-25.13	2006	8.88	22.61	11.67	21.76
1991	43.33	27.35	54.73	40.56	2007	14.08	-6.45	7.36	-15.21
1992	6.41	23.57	5.82	34.76	2008	-33.71	-49.03	-41.56	-44.39
1993	2.38	19.51	12.64	29.41	2009	27.91	39.15	34.45	70.54
1994	1.95	-5.78	-4.36	3.21	2010	15.87	21.61	30.66	33.54
1995	37.16	37.68	35.13	27.69	2011	4.14	-9.04	-4.32	-7.04
1996	21.25	13.35	12.36	20.71	2012	15.41	22.99	12.22	20.07

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That said, value growth strategies can produce vastly different results in any given year. For example, in the year 2000 small-cap growth stock *fell* by 24.15 percent while large-cap value stocks *increased* by 5.8 percent using the Fama-French definitions. The following year small-cap value outperformed small-cap growth by a 40% margin. Interestingly, there is a similar difference among small-cap value in growth stocks in that year using definitions proposed by Ibbotson Associates. But the numbers are quite different. This highlights the fact that our definition of value and growth can produce very different results. We see big differences in 2007, as well – another crisis year.

Challenges the critique that correlations go to one in crisis. They do increase, but correlations only measure direction of co-movements. Covariance capture the magnitude or degree of that co-movement, as well.

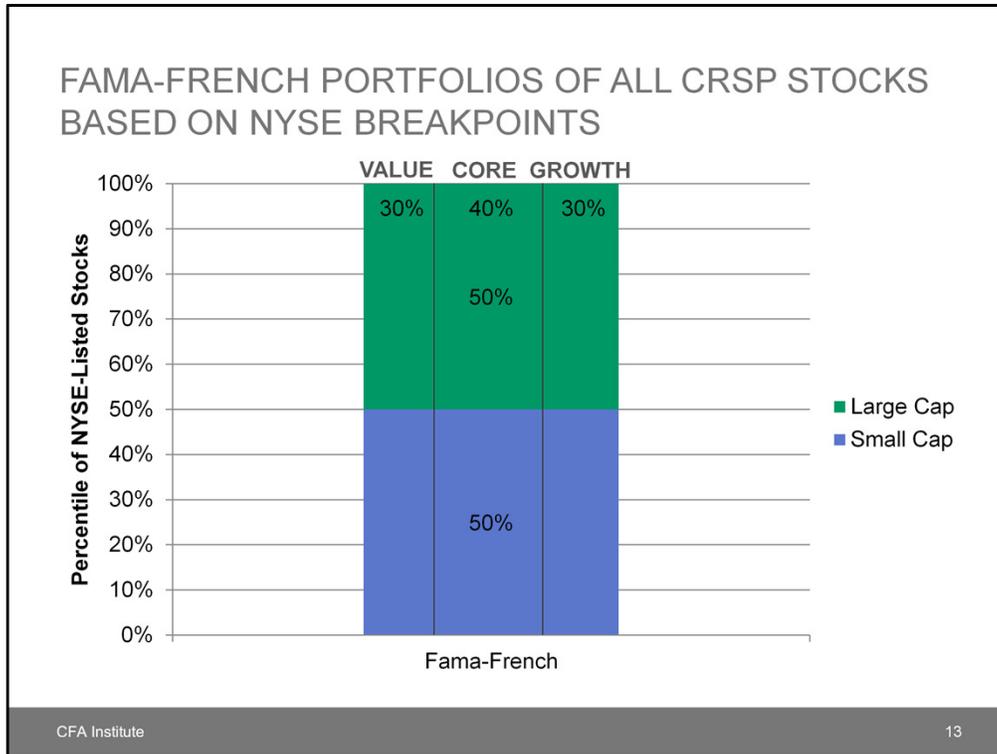
Value and growth tend to come in and out of fashion whereby value tends to exhibit strength over a period of time followed by growth experiencing relatively good performance.

Therefore, although the correlations between value and growth strategies tend to be high, do not be fooled into believing that one is a substitute for the other. They can produce radically different results in any given year. Picking the best strategy in advance is difficult to say the least, if not impossible, which highlights the danger for a long-term investor who loses their long-term focus and switches styles at precisely the wrong time.

## INDEX CONSTRUCTION

Different methods lead to different results

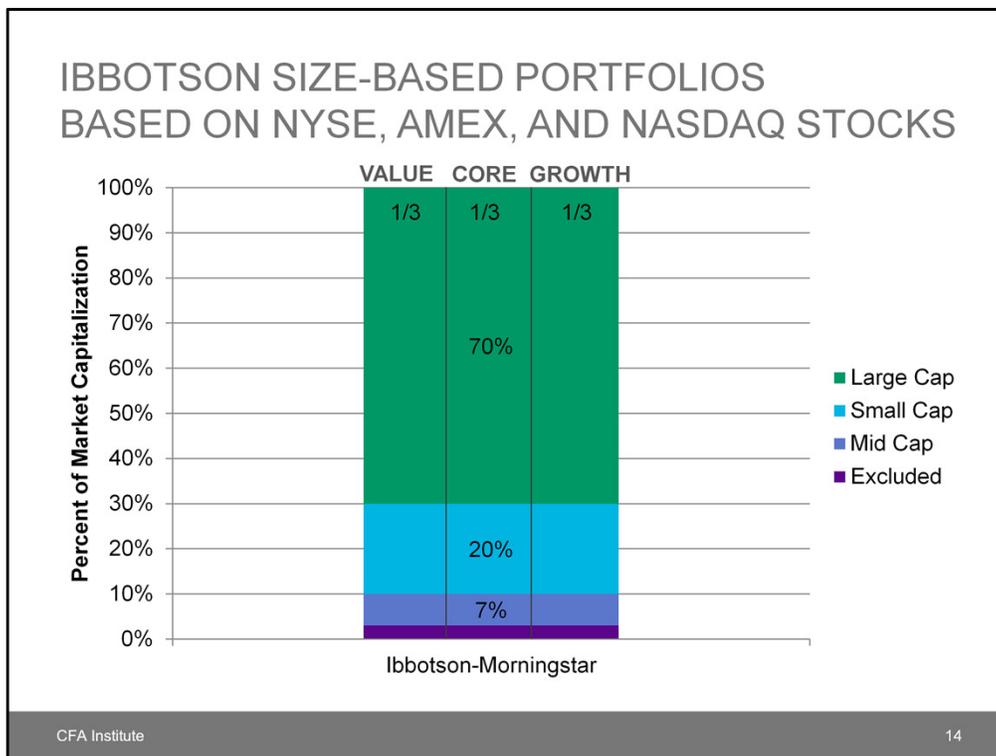
Construction methods underestimate the value of “strategic” value investing



The Fama/French benchmark portfolios are rebalanced quarterly using two independent sorts, on size (market equity, ME) and book-to-market (the ratio of book equity to market equity, BE/ME). The size breakpoint (which determines the buy range for the Small and Big portfolios) is the median NYSE market equity. The BE/ME breakpoints (which determine the buy range for the Growth, Neutral, and Value portfolios) are the 30th and 70th NYSE percentiles. Although Fama and French would classify all stocks according to these breakpoints regardless of where they trade, the breakpoints themselves are determined only by NYSE-listed stocks in an effort to eliminate distortions from smaller, illiquid stocks that tend to trade off the NYSE.

Professors Eugene Fama and Kenneth French define value stocks as those in the lower 30 percent of P/B ratios (that is, below the 30<sup>th</sup> percentile). Growth stocks have P/B ratios in the upper 30 percent of P/B ratios (that is, above the 70<sup>th</sup> percentile). Blended, or medium, stocks fall in between these two breakpoints.

F-F have only six categories rather than nine as in the Ibbotson framework.



Ibbotson/Morningstar measures value a bit differently. Rather than classifying all stocks according to breakpoints determined by NYSE-listed stocks, Ibbotson/Morningstar calculates a liquidity score for all stocks (NYSE, AMEX, NASDAQ) and eliminates those that fall into the bottom quartile (25%) from the analysis.

16 portfolios are then performed based on size and style. The top 70% market cap are defined as large-cap stocks, the next 20% are MidCap, and the next 7% represents small cap stock. The bottom 3% of stocks is excluded from the index. Historically, the large cap, mid cap, and small-cap indexes comprised around 200, 600, and 1000 companies, respectively. Each of these portfolios is then divided into style classifications based on attend factor model consisting of five value factors five growth factors. Half of each score is based on a forward-looking factor, and the other half is based on historical factors.

They then use the remaining liquid stocks to develop “size” and “value” or “growth” classifications based on ten factors, half of which are based on historical factors (e.g., TTM earnings growth) and half of which are based on forward-looking factors (e.g., one year forward earnings). In addition to the P/E ratio, they incorporate other factors such and price-to-book value, price-to-cash flow, and the dividend yield, which we discuss in more detail below. For example, half of the “value” score is based on the one year forward price-to-earnings ratio. The other four factors, which are historical and equal weighted, are price-to-book, price to sales, price to cash flow, and dividend yield.

The “growth” score is based on the long-term earnings growth rate. The other four growth factors also historically an equally weighted, our book value growth, sales growth, cash flow growth, and trailing earnings growth.

The threshold levels for the value, core, and growth styles are set so that over time the average of each style represents roughly 1/3 of the investable universe with in the capitalization band. The result is nine size/style boxes and seven less refined styles. Portfolios are rebalanced semiannually on the third Friday of June in the third Friday of December. Each stock is weighted according to its free float.

## ALL "VALUE" IS NOT CREATED EQUAL: ANNUAL RETURNS FROM THE YEAR 2000

	Large		Small	
	Growth	Value	Growth	Value
Fama-French	-13.63	5.80	-24.15	-0.80
Ibbotson Associates	-22.01	-3.00	-22.60	22.69

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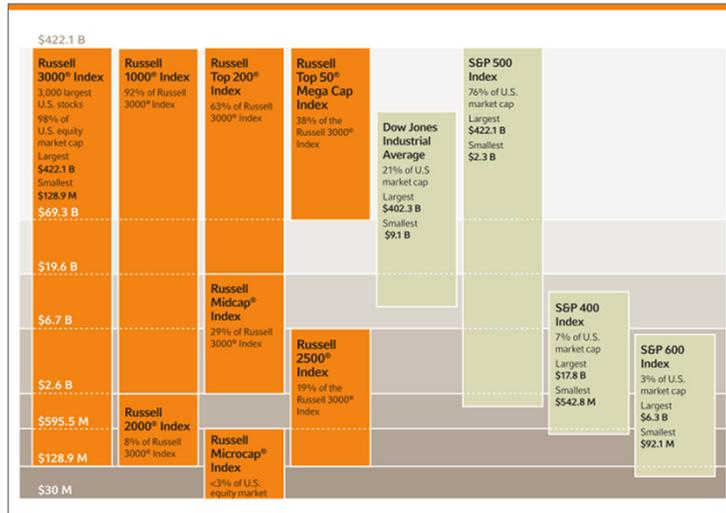
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These different index construction methodologies most often yield very similar results. At times, however, they can lead to dramatically different indexes that can behave very differently from each other.

In the year 2000, for example, which saw a collapse in the stock market, the Fama-French large-cap growth index fell by 13 percent, but the comparable Ibbotson Associates index fell by 22 percent - an enormous nine percent difference. Similarly, the Fama-French large-cap value index increased almost six percent, while the Ibbotson Associates index declined by three percent - another nine percent difference. The small-cap value index had an even greater differential of over 23 percent! The main point here (and the main theme for this chapter) is that there is no single, uniform way to measure value. The value investor should be aware of the differences and make the necessary adjustments. Judgments should be based on a variety of factors rather than relying on a single factor.

Average P/E ratios and other measures of relative value vary from one industry to another. For example, stocks in the computer software industry generally have much higher P/E ratios than utility stocks because their growth prospects are generally more promising. Therefore, most analysts look at P/E ratio and other measures of relative value in relation to other stocks in the same industry rather than simply the market as a whole. The idea is that direct competitors and other stocks in the same industry are more comparable. So, the P/E takes on meaning and significance when we understand how it compares to that of other stocks (especially comparable firms that might be in the same industry) and how it has varied through time.

# INDICES



These style classifications are much more like Ibbotson than Fama-French. But just as there is standard universal measure of “value”, there is no standard universal measure of “size”.

## VALUE INDICES

Index	Description
Russell 1000 Value Index	Russell 1000 (large cap) companies with lower price to book ratios and lower forecasted growth rates
Russell 2000 Value Index	Russell 2000 (small cap) companies with lower price to book ratios and lower forecasted growth rates
S&P 500 Value	Lowest 1/3 of S&P 500 based on lower growth factors (EPS, Sales and Price) and higher value (lower P/B, P/E and P/S)
RAFI 1000	Fundamental Index based on Sales, Cash Flow, Book Value and Dividends

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Russell uses three variables in the determination of growth and value. On the value side, book-to-price is used, while on the growth side, the I/B/E/S long-term growth variable was replaced by two variables- I/B/E/S forecast medium-term growth (2 yr) and sales per share historical growth (5 yr).

The term “probability” is used to indicate the degree of certainty that a stock is value or growth, based on its relative book-to-price (B/P) ratio, I/B/E/S forecast medium-term growth (2 yr), and sales per share historical growth (5 yr). This method allows stocks to be represented as having both growth and value characteristics, while preserving the additive nature of the indexes. The process for assigning growth and value weights is applied separately to the stocks in the Russell 1000 and Russell 2000 and to the smallest 1,000 stocks in the Russell Microcap Indexes. Research indicates that on average, valuations of small stocks differ from those of large stocks. Treating the Russell 1000, Russell 2000 and smallest Russell Microcap stocks separately prevents the possible distortion to relative valuations that may occur if the Russell 3000E is used as the base index.

Rank the stocks by their CVS and apply a non-linear probability algorithm to the distribution to determine style membership weights. Roughly 70% are classified as all value or all growth and 30% are weighted proportionately to both value & growth.

Value indices understate the value of value investing (they are primarily based on low multiples and low growth versus how a value investor would select value stocks). They ignore the “strategic” part of strategic value investing. That is, they ignore the fundamental analysis that helps the value investor pick the more promising value stocks from the set of investable value stocks.

These indexes couple low valuations with low growth rates. That’s not strategic value investing. Ideally, we’d want to combine low valuation with high growth rates. Rather than selecting low multiple, low growth stocks the way an index does, the strategic value investor would choose low multiple, high growth stocks (assuming any increase in risk does not offset the growth benefit).

## MEASURES OF VALUE

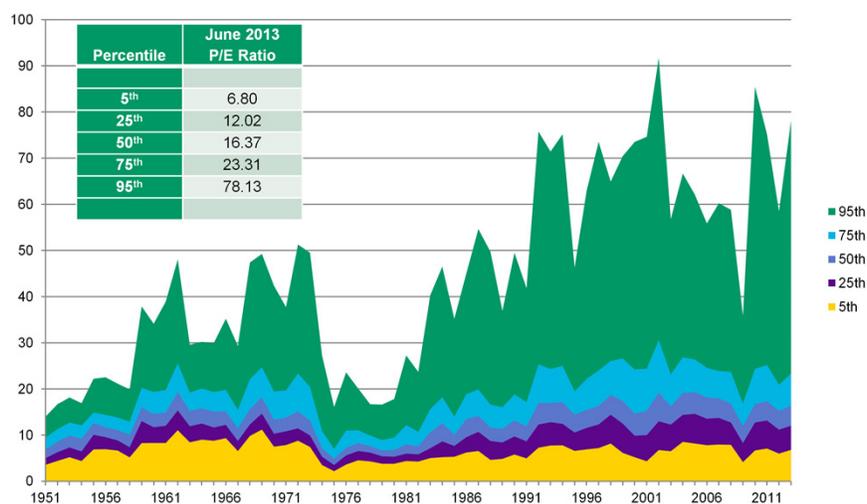
The danger of averages

Plenty of opportunity to compare apples to oranges

Benchmarks vary over time – some more than others

Most of the benchmark variation is with growth stocks

## PRICE-EARNINGS RATIOS OF NYSE-LISTED STOCKS, 1951-2013



Source: Eugene Fama and Kenneth French Data Library

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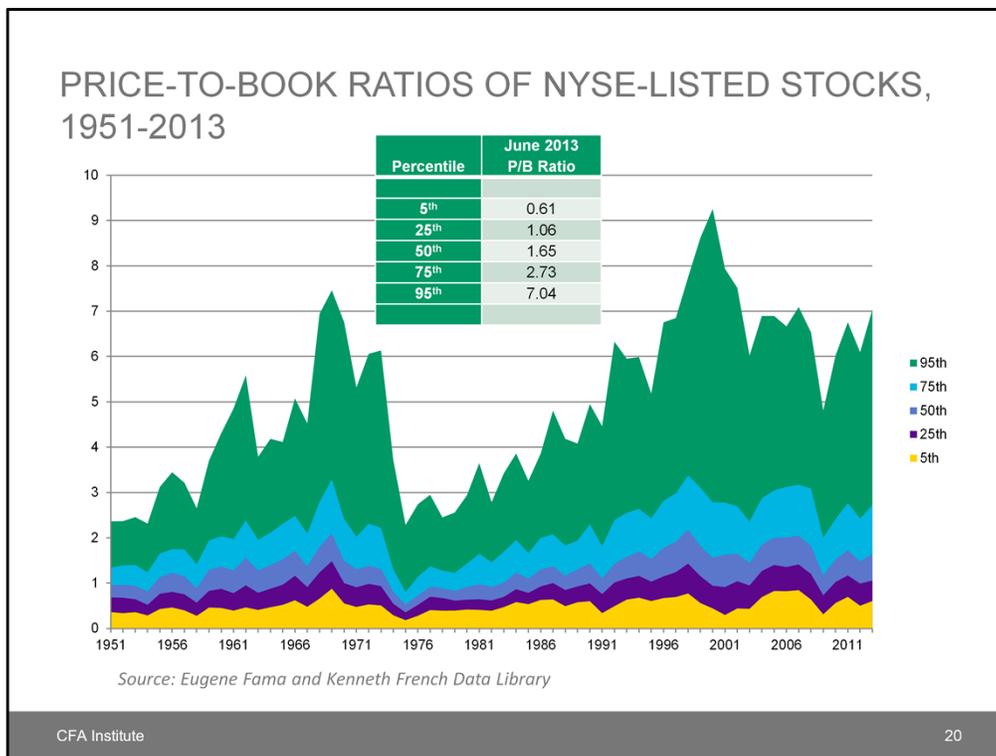
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When the commentators on CNBC talk about P/E, it is important to understand precisely what they mean. The numerator is typically straightforward enough. It is the market price per share of the stock. However, the denominator, earnings, can take several forms. Most frequently, the P/E ratio is based on earnings over the trailing 12 months (TTM) in which case it is referred to as a *trailing P/E*. Alternatively, the P/E ratio may be calculated based on earnings projected over the next 12 months, in which case it is referred to as *forward P/E*. Forward-looking earnings are, of course, far more subjective and debatable than historical earnings. So, a note of caution is in order in the case of forward-looking earnings. Because earnings may fluctuate dramatically from one quarter and one year to the next, analysts often calculate a *normalized P/E* ratio, which uses the average earnings over the most recent full business cycle in the denominator in an attempt to smooth cyclical fluctuations. As if that were not enough variations on a theme, some analysts adjust earnings for extraordinary items. The most important point is that when you read about the P/E ratio, you understand how it is calculated. Moreover, when pundits compare it to the market or other stocks in the industry, it is important that they are comparing apples to apples and that the benchmark ratios used as a point of reference are calculated in an identical fashion. For example, comparing the forward P/E for Monsanto with the trailing P/E of the market or industry would not be meaningful and would likely make Monsanto look more attractive than it would on a more contemporaneous and comparable basis.

The strategic value investor also needs to have a sense of what constitutes a high versus a low P/E ratio. The median TTM P/E ratio as of June 2013 was 16.37 for NYSE-listed stocks. Relatively less expensive stocks in the 25<sup>th</sup> percentile traded at 12.02 times earnings. Deep value stocks in the 5<sup>th</sup> percentile traded at almost half that level. By contrast, P/E ratios for growth stocks can be very high. Stocks in the 75<sup>th</sup> percentile traded at over 25 times earnings. Highflying growth stocks in the 95<sup>th</sup> percentile traded at 75 times earnings and higher, which is far greater than the median.

Other things to note:

1. Large range
2. Distribution highly skewed → median less influenced by extremes → big difference b/w mean and media → mean will vary more over time
3. Most variation over time is in upper quartile → mean will vary more than median over time



Consider a P/B on a money market fund. It should equal 1. Why is P/B generally > 1? Answer Historical Costs Accounting. Market capitalizes future earnings not reflected in book value prices.

Book value is equal to the sum of the accounting book value of stockholders equity, preferred stock, deferred taxes, and any investment tax credits reported on the balance sheet. The P/B ratio expresses market price of a share in relation to the accounting value per share in the balance sheet. Book value is generally much more stable over time than earnings. So, P/B is less vulnerable to statistical noise than P/E. In addition, book value is far less likely to be negative than earnings. For example, 202 of the 1,242 stocks listed on the New York Stock Exchange (NYSE) reported negative earnings as of December 2011. In 2009, over a third of NYSE-listed stocks reported negative earnings. A negative figure in the denominator distorts the interpretation of the ratio rendering it useless. Therefore, P/B has some advantages over P/E.

Although book value is more stable and more likely to be positive than earnings, it is a very crude measure value. The median P/B ratio as of June 2013 is 1.65, meaning that investors are willing to pay \$1.65 for every dollar of book value. Value stocks can trade at a fraction of book value, whereas growth stocks can trade at several multiples above book value. Like the P/E ratio, P/B ratio can get fairly high relative to the median, which can skew the calculation of the average. So, analysts often focus on the median value.

Like P/E ratios, P/B ratios have generally increased since the 1950s, spiking in the early 1970s and late 1990s. Fama and French classify stocks in the lower 30 percent of P/B ratios (that is, below the 30<sup>th</sup> percentile) as value, and stocks in the upper 30 percent of P/B ratios (that is, above the 70<sup>th</sup> percentile) as growth. So, classifying a stock as value or growth based on P/B requires knowing where other stocks are trading.

We mentioned earlier that Fama and French might use a variety of measures to classify stocks as either value or growth. It is important to emphasize, however, that the P/B is the measure that they would emphasize most because they believe it does a better job of predicting future return than any of the other measures. Ibbotson/Morningstar, on the other hand, weight forward P/E much more heavily. Although we believe having understanding of a variety of valuation measures is helpful for analysts to develop a complete picture of the stock's investment opportunity, we place heavy weight on the price-to-book ratio because of its stronger predictive properties.

Other things to note:

1. More narrow range than P/E
2. Distribution highly skewed → median less influenced by extremes → big difference b/w mean and media → mean will vary more over time
3. Most variation over time is in upper quartile → mean will vary more than median over time
4. Same secular trend as P/E but less YOY variation

## CHALLENGES TO VALUE INVESTING

Value investing requires discipline and fortitude

Some obstacles are external. Some are within us (e.g., cognitive and behavior biases)

Techniques to overcome the obstacles

## CHALLENGES TO VALUE INVESTING

### Behavioral Obstacles

- Social Pressure
- Representativeness
- Loss Aversion
- Home Bias
- Attribution Bias
- Media Bias

### Market Obstacles (Limits to Arbitrage)

- Transaction Costs
- Horizon Risk
- Funding Risk
- Other People's Money

### Investment Constraint Obstacles

- Liquidity Constraints
- Time Horizon
- Taxes
- Legal

### Limits to Arbitrage

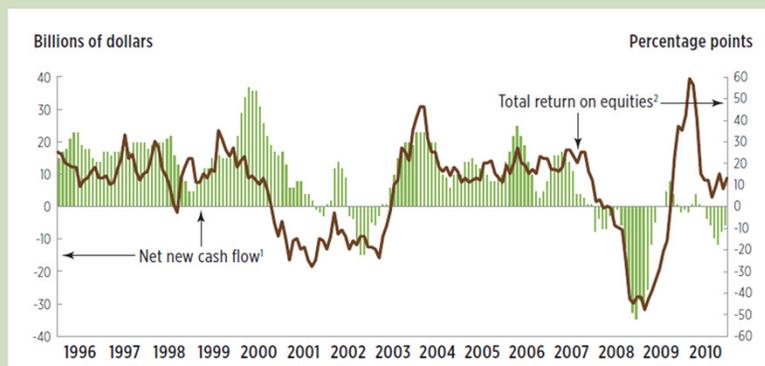
1. *Transaction costs.* All investors are subject to transaction costs, which include commissions, bid ask spreads, price impact, and the opportunity costs of not being fully invested 100% of the time. All these costs make it difficult for arbitrageurs and strategic value investors to capitalize on situations when market prices deviate from fundamental value.
2. *Horizon Risk.* Even in the most clean arbitrage opportunities, it is unclear how long it will take for the pricing discrepancy to resolve itself. In the 82 parent-subsidiary mispricings cited in the study above, it takes 236 days on average for the mispricing to resolve. The minimum is one day, and the maximum is 2,796 days. If the resolution takes long enough, an arbitrageur can conceivably earn less than the risk-free rate. And so it is for the strategic value investor. Many value investors believed that the dot-coms were overvalued in the late 1990s, but it took years for the results of that insight to be realized. Similarly, investors who believed that real estate was overvalued in 2005 had to wait years for that market to correct.
3. *Funding Risk.* Not only can it take a long time for the market to correct, price discrepancies can get much worse before they get better. In the Creative Computer/uBid example, the initial price discrepancy got much worse before it got better (see Figure 2). As a result, an arbitrageur attempting to profit from the discrepancy would have received a series of margin calls, which are requests from a brokerage house for an investor to put up more money when trades move against the investor so that the broker has collateral if the investor decides to renege on his obligations. If the investor refuses, the broker liquidates a portion of the position

## WHY DO WE DO THIS?

FIGURE 2.4

### Net Flows to Equity Funds Related to Global Stock Price Performance

1996-2010



<sup>1</sup> Net new cash flow to equity funds is plotted as a six-month moving average.

<sup>2</sup> The total return on equities is measured as the year-over-year change in the MSCI All Country World Daily Total Return Index.

Sources: Investment Company Institute and Morgan Stanley Capital International

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In the late 1990s, you can see that the stock market performed consistently well and investors responded by consistently pouring more money into equity mutual funds. In 1997, the global stock market had a selloff of the US stock market performed quite well. How did investors respond? They invested less money in equity mutual funds over the following six months. But markets rebounded nicely in 1990 and investors would have been better off if they had maintained their relatively high inflows into equity mutual funds.

Fool me once, shame on you; fool me twice, shame on me. Not to have the wool pulled over their eyes again, investors more than made up for the missed opportunity by doubling the rate at which they committed capital to equity funds through the end of 1999 and the beginning of 2000. In fact, we have not seen that rate of capital commitment since then. Of course, this all happened after the market had already rebounded. We all know what happened after that. The tech bubble burst, and we entered a multiyear bear market. Not only did investors reduce their rate of investment in equity mutual funds during this period when the S&P 500 lost half of its value, they actually started pulling money out, especially in 2002 right before the market strongly rebounded.

As if working from a script, investors repeated this behavior during the most recent bear market and subsequent recovery, removing money from equity mutual funds after the market had dropped in 2007 and missing the market recovery in 2009 and 2010. Interestingly, investors have not returned to their previous levels of committing new capital to the stock market since then. In 2010, withdrawals from all equity funds amounted to \$37 billion for the year, more than the \$9 billion investors withdrew, on net, the previous year.

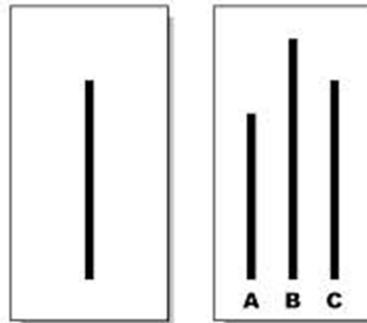
The tendency for investors to react to bull and bear markets by putting money into and taking money out of mutual funds is a widely documented, persistent phenomenon that has occurred over a long period of time (e.g., Remolona, Kleiman, and Grunstein (1997) and Boyer and Zheng (2008)). In fact, some people think that past stock market performance is the most important element in explaining equity mutual fund flows (e.g., Kim (2007)). And as you might infer from examining Figure 3.1, the impact of stock market declines on fund out flows is particularly pronounced during severe market declines, like the ones we saw in 2000 and 2008.

We see the same relationship **between mutual fund flows** and past performance in individual mutual fund flows, as well. Investors tend to buy funds with more positive recent returns, especially if they are inattentive to macroeconomic news or vulnerable to the cognitive and emotional biases we discuss below. Professional investors (as well those who have well-diversified and well-performing individual stock portfolios) tend to be less vulnerable to this return-chasing phenomenon.

The same general pattern holds true for **individual stock investments**, as well. Odean (1999), for example, shows that stock sold by individual investors perform 2.8% better than the stocks they sold over the 12 months following their transactions.

Individual investors ought not feel alone. **Institutional investors** chase returns, as well. Professional investors chase past investment performance in the pension fund industry, among hedge funds, among private equity funds, between venture capital funds, and among arbitrage strategies.

## CONFORMITY – INFLUENCE OF PEERS EVERYBODY ELSE IS DOING IT...



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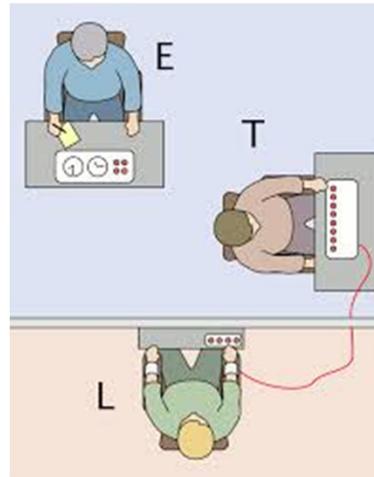
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Some of the most notorious examples of the power of peer pressure are illustrated through experiments led by Solomon Asch of Swarthmore College. In one experiment, Asch asked students to participate in a “vision test” in which they were asked to match two lines having the same length. One of the students was singled out as the subject, while all the other students were told to be conspiratorial and consistently and purposefully give obviously wrong answers to the vision test. When the conspirators gave the wrong answer, so did the subject, even when it was obviously wrong. And this result was independent of the level of education of the subject, which Asch thought might overcome the tendency to conform. Training is helpful, but it is not bulletproof.

Having a partner decreases conformity → hang out with other value investors.  
The smaller the opposing group, the less conformity.

Written (rather than public) responses decrease conformity → keep your strategy to yourself (unless you are with other value investors).

## CONFORMITY – INFLUENCE OF AUTHORITY YES, SIR!



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Stanley Milgram also performed experiments to test people's willingness to conform. He tested a subject's willingness to inflict pain on another person at the direction of an authority figure. Subjects thought that they were participating in an experiment to determine how much electric current a person can tolerate. An experimenter asked them to apply increasing amounts of electrical shock to a person in an adjoining room. As the voltage they were asked to apply increased, so did the excruciating screams. In reality, there was no electricity and the pleas for relief from the person in the next room were feigned. But the subject who was being asked to apply the voltage did not know that. Sixty-five percent of subjects obeyed authority figures that instructed them to perform acts that conflicted with their personal conscience. Whether influence comes from peers or authority, the pressure to conform is powerful.

How much easier it is to follow the crowd when there is so much less at stake.

WD-40 Story. Imagine yourself at a cocktail party in the year 2000. After a couple of drinks, people's lips start to get loose as the conversation turns toward money and investment portfolios, and a sense of bravado combined with the selective nature of our memories (both of which are likely enhanced by the cocktails) takes over. A successful doctor from down the street begins bragging about his recent purchases of medical device companies and Internet stocks. A few lawyers huddled around the cheese dip join in the chorus like boys around a campground fire. Everyone seems to be making money with ease. Out of modesty, you refrain from participating in this particular discussion topic, but not surprisingly the attention eventually turns to you. "What are you buying these days?" Dr. Frank Kelly asks.

You respond, "I am loading up on shares of WD-40 Company." An uncomfortable silence ensues, broken only by soft snickers from the successful doctor and the attorneys.

Miles Stanford, the attorney, asks "Wasn't that company trading over \$30 per share in 1997?"

"It was," you respond.

"What's it trading at now?"

"Under \$18 per share."

"Well, what do they do?" asks Frank.

"They manufacture the spray lubricant many of us buy at the hardware store."

"That doesn't sound very interesting. What else do they do?"

"Nothing. That is their only product," you admit.

"Well, my medical device company is using the latest technology to develop a treatment that could save tens of thousands of lives every year."

And the conversation moves on to a more interesting topic.

This is the kind of embarrassing situation that strategic value investors sometimes face. It is not terribly pleasant being the butt of jokes from your peers who are boasting about the high-profile investments they have recently made. If you are patient, however, you may be able to have the last laugh. Three years later, by the end of 2002, after the tech bubble burst, the doctors and lawyers at the cocktail party are commiserating about how much longer they will need to work before they can retire as their portfolios laden with medical device and technology stocks are decimated, with the Nasdaq 100 index down nearly 85 percent from its heyday. You, on the other hand, are deciding whether it is time to sell your shares of WD-40 Company stock because it is once again approaching \$30 per share for a positive 65 percent return. Your portfolio of other value stocks, while not completely insulated from the three years of market malaise, has held up pretty nicely, as well.

## WHAT'S ON YOUR MIND?



Mary is quiet, studious, and concerned with social issues. While an undergraduate at Berkeley, she majored in English literature and minored in environmental studies.

Which is most probable?

- a) Mary is a librarian.
- b) Mary is a librarian and a member of the Sierra Club.
- c) Mary works in the banking industry.

Is the letter *k* more likely to be the first or third letter in a word in the English language? As you consider this question, you are likely thinking of words like *kite*, *king*, and *kick*, leading you to think that it is more common for the letter *k* to be the first letter of the word. Actually, the letter *k* is three times more likely to be the third letter than the first. Why do we focus on the first letter rather than third letter, on average? It is because the first letter is more prominent in our minds than the third.

Another manifestation is our tendency to emphasize anecdotes over statistics. Not only do we tend to draw on recent experience, we are much more likely to remember events with which we have a strong emotional association. Stories and personal experiences are much more alive, poignant, and present in our minds than boring tables or statistics based on the experiences of a lot of nameless and faceless investors. It is very difficult for us to identify with statistics. We are much more likely to remember our neighbor telling us about how profitable his recent investment in a medical device company is. The challenge for us is to look past these anecdotes and focus on more objective statistical data, which provides a clearer sense of probable outcomes.

**MARY** - Did you choose answer B? Most people do. After all, the anecdotes provided about Mary are most consistent with the stereotypes we have about librarians and members of the Sierra Club. Interestingly, however, answer B must be less likely than answer A because answer B is a subset of and more restrictive than answer A.

Moreover, according to the Bureau of Labor Statistics Occupational Outlook Handbook, there were almost 160,000 librarians in the United States in 2008. By contrast, there were 600,000 bank tellers and more than 327,000 loan officers, not to mention the variety of different occupations in the banking industry. It is much more likely Mary works in the banking industry. So, answer C is much more likely than answer A.

I REALLY HATE TO LOSE MONEY

**DOUBLE  
♦ ♠ OR ♥ ♣  
NOTHING**

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Imagine you are sitting in a room with dozens of people listening to a boring lecture. The lecture was free, and you ended up getting what you paid for. Suddenly, the doors to the auditorium shut and you hear the locks engage. An announcement over the loudspeaker indicates that you can leave under only two circumstances.

- A. You pay the lecturer \$1,000 in cash.
- B. You go double or nothing on the flip of a coin. If it comes up heads, you are free to go without paying anything. If it comes up tails, the exit fee is no longer \$1,000. It is \$2,000.

Think about which option you would choose. 85% choose B. contradicts one of the most fundamental principles of assumed rational economic behavior. Both choices have the same expected value. On average, you will be less wealthy by \$1,000 regardless of which you choose. Option B, however, is more risky. If the expected returns are the same, fundamental principles of economics says that we, as risk-averse investors, should choose the less risky proposition. Why do people tend to choose risky option B? Losing money is almost physically painful. In addition to being risk averse, investors are also loss averse. We dislike experiencing losses so much that we are willing to accept a risky proposition on the chance that we can avoid suffering the consequences of the loss.

The disposition effect tends to encourage poor tax management strategy, as well. Selling losers and holding on to winners, all else equal, tends to accelerate our tax credits and defer our tax bills, which over time can do quite a bit to minimize our tax drag. Imagine you purchased a stock last month for \$20 per share, but that it is trading now for \$15. You've suffered a \$5 loss per share. Suppose that over the next month it will be either \$10 per share or \$20 per share with equal probabilities. What would you do?

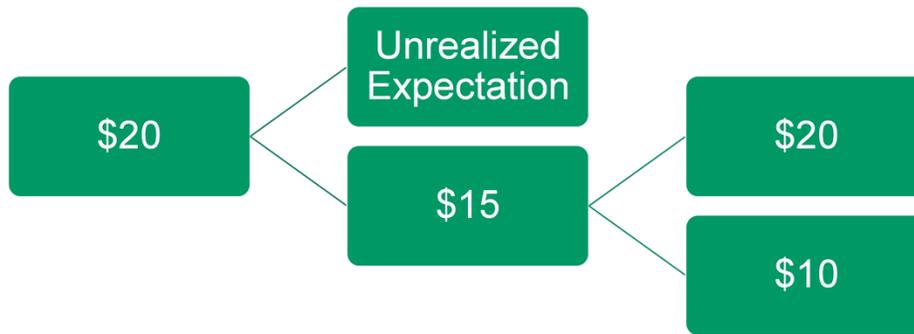
- a. Sell the shares now and realize your \$5 loss, or
- b. Hold for one more month.

Investors tend to choose option B and hold on for one more month. Next, imagine the stock you purchased for \$20 per share is trading now for \$25. Over the next month it will either drop back down to \$20 per share or increase in value to \$30 per share with equal probabilities. What would you do?

- a. Sell the shares now and realize your \$5 gain, or
- b. Hold for one more month.

Most folks tend to choose option A and realize their gain.

WHAT WOULD YOU DO IF THE PRICE DROPPED FROM \$20 TO \$15?



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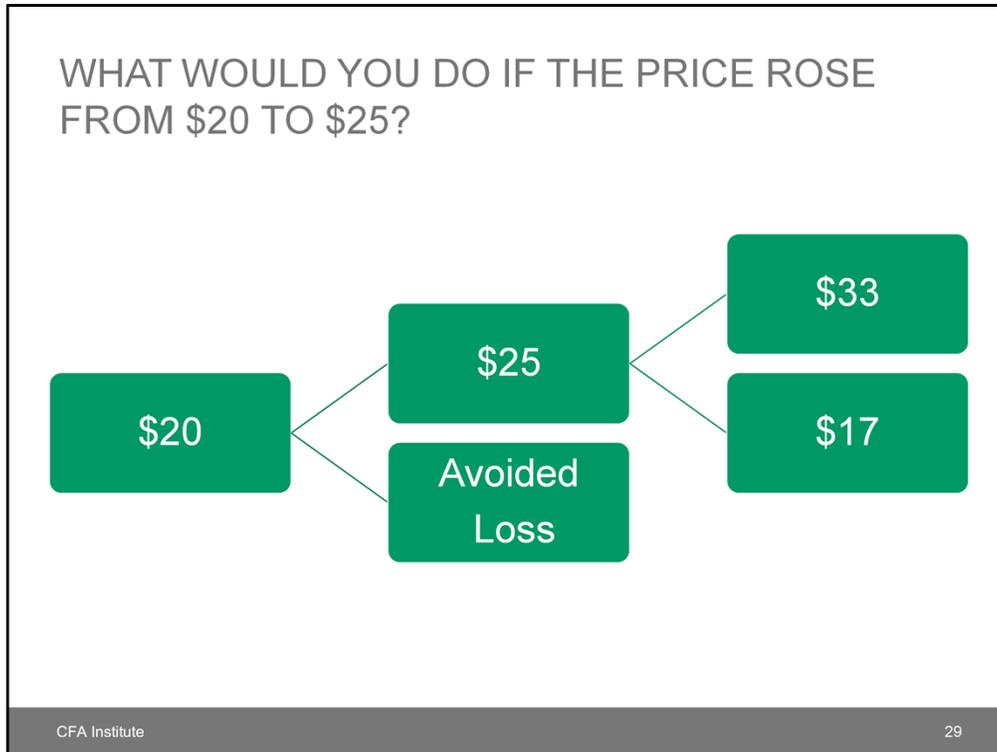
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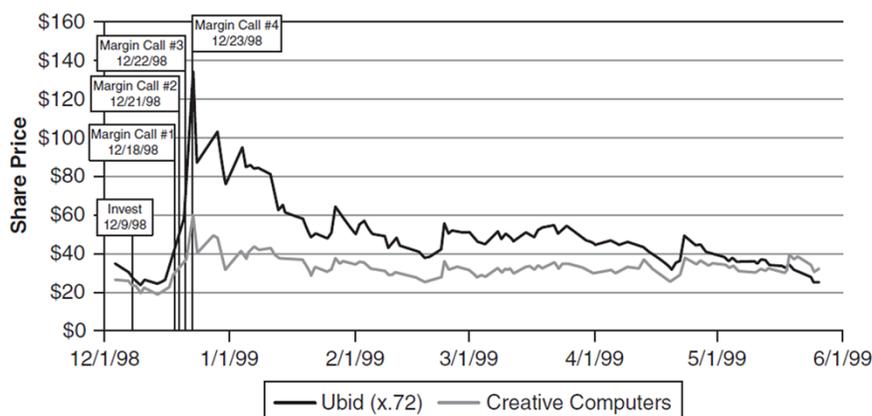
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Most folks tend to choose option A and realize their gain.

## EVEN THE SIMPLE ONES CAN TAKE A WHILE TO CONVERGE

Stock prices for Creative Computers and uBid.



Source: Mitchell, Pulvino, and Stafford (2002)

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On December 4, 1998 Creative Computers issued 20 percent of the shares of its online auction subsidiary, uBid, to the public. Creative Computer shareholders were to receive about .72 shares of uBid for each Creative Computer share. After the first day of trading, Creative Computer's stake in uBid was worth \$351.2 million according to uBid's share price. Creative Computer's total equity market value was only about \$275 million, implying the value of all of Creative Computer's other assets was a negative \$76 million! An arbitrageur would buy shares of Creative Computer and sell shares of uBid until the implied negative valuation disappeared. Ideally, proceeds from the short sale of uBid can be used to fund the purchase of Creative Computer so that no capital is required. Moreover, because the relative prices of the securities are determined by a mathematical relationship, it is somewhat "riskless".

It's a sure thing! What could go wrong? We will see "shortly". The initial price discrepancy got much worse before it got better. As a result, an arbitrageur attempting to profit from the discrepancy would have received a series of margin calls, which are requests from a brokerage house for an investor to put up more money when trades move against the investor so that the broker has collateral if the investor decides to renege on his obligations. If the investor refuses, the broker liquidates a portion of the position.

The Creative Computer/uBid price discrepancy resolved after six months, but the investor would have received a series of margin calls that would have depleted nearly all of his capital if he didn't put up more capital. Theoretically, an investor could have avoided all that by putting up nearly five times more capital than his long position, but that would significantly reduce his return on investment.

### Limits of Arbitrage

Pristine arbitrage opportunities are extremely difficult to come by. That said, it is not uncommon for the market value of the parent company to be less than the value of one of its subsidiaries. As implausible as it seems, Mitchell, Pulvino, and Stafford examined 82 such situations from 1985 to 2000. They show that there are many risks associated with capitalizing on this pricing even when the mispricing is obvious. It is all the more difficult for the strategic value investor who is relying on his or her analytical and economic intuition to determine this pricing.

1. **Transaction costs.** All investors are subject to transaction costs, which include commissions, bid ask spreads, price impact, and the opportunity costs of not being fully invested 100% of the time. All these costs make it difficult for arbitrageurs and strategic value investors to capitalize on situations when market prices deviate from fundamental value.
2. **Horizon Risk.** Even in the most clean arbitrage opportunities, it is unclear how long it will take for the pricing discrepancy to resolve itself. In the 82 parent-subsidiary mispricings cited in the study above, it takes 236 days on average for the mispricing to resolve. The minimum is one day, and the maximum is 2,796 days. If the resolution takes long enough, an arbitrageur can conceivably earn less than the risk-free rate. And so it is for the strategic value investor. Many value investors believed that the dot-coms were overvalued in the late 1990s, but it took years for the results of that insight to be realized. Similarly, investors who believed that real estate was overvalued in 2005 had to wait years for that market to correct.
3. **Funding Risk.** Not only can it take a long time for the market to correct, price discrepancies can get much worse before they get better. In the Creative Computer/uBid example, the initial price discrepancy got much worse before it got better (see Figure 2). As a result, an arbitrageur attempting to profit from the discrepancy would have received a series of margin calls, which are requests from a brokerage house for an investor to put up more money when trades move against the investor so that the broker has collateral if the investor decides to renege on his obligations. If the investor refuses, the broker liquidates a portion of the position.

## OVERCOMING OBSTACLES: IPS AND INVESTMENT DIARIES



To help overcome investment challenges, Joachim Klement (2009) also suggests keeping a financial diary for each investment decision and comparing it to the outcome of the decision. The diary would document three things for each buy or sell investment decision, including:

1. *The investment action.* Was the intended action a buy or sell decision, and what price do you recommend? The price could be the current market price, or it could be a price limit price (e.g., a buy recommendation at a price below the current price) for a trade that may or may not occur in the future, depending on whether the price limit is reached.
2. *The investment thesis* (i.e., motivation). In a sentence, briefly articulate the reason for the trade. For a buy decision, it might be something like:
  - “The breakup value of the assets exceeds the current market price.”
  - “The firm is a takeover candidate.”
  - “Worst case sales growth exceeds market expectations and produces an intrinsic value in excess of the current market price.”
  - “Profit margins will unexpectedly expand beyond current levels.”
3. *Possible risks.* Obviously, our forecasts will sometimes be flawed. Articulate some possible scenarios that could invalidate your investment thesis. It might be something like:
  - “A developing competing product could be more of a threat than currently envisioned.”
  - “The company could lose a large, key customer.”
  - “Deregulation could impair margin expansion.”

The diary need not be verbose. Three simple statements are all that is required. For it to be effective, however, it is important to review this periodically. We warn you, this practice is not for those with low self-esteem because it reveals the naked truth about investment performance and attribution. For example, we have a tendency to overlook our failures and focus on our successes. Or, one of our buy recommendations may have appreciated in value, but for entirely different reasons than we had envisioned. The diary removes our hindsight bias for things that have gone wrong and our attribution bias for things that have gone right.

## OVERCOMING OBSTACLES: SUNK COSTS, TRADING, AND LEVERAGE



Educate yourself about the notion that sunk costs are irrelevant. Past gains or losses should be discounted. What is important is what the future looks like. There is no such thing as a hold decision, only buy and sell decisions. Each day you choose to hold onto your investment, you are in effect choosing to buy it. Ask yourself whether you would buy your investment if you did not already own it. Your decision to own it should always be based on your future expectations. This awareness will help you overcome the tendency to hold on to losers when you have apparently made a mistake. To be effective, it requires putting it into practice in your daily life, even outside the investment arena, so that you can draw on it when it is most needed. There are many examples, including ignoring how long you've been standing in a grocery store line when deciding whether to switch to another line. Ignoring sunk costs involves simply making a judgment about which line is likely to move more quickly from this point forward.

Avoid excessive leverage and excessive trading. We mentioned earlier that the stocks that investors sell tend to perform better than the stocks investors buy. It stands to reason that the more they buy and sell, the worse their investment results. Brad Barber and Terrance Odean coined the phrase "trading is hazardous to an investor's wealth."<sup>18</sup> They examined the investment performance and trading behavior of over 13,000 households. Households that traded the least from 1991 to 1996 earned an average of 7 percent more per year than those households that traded the most. We mentioned earlier that discrepancies between fundamental value and market value can get worse before they get better. Remember Creative Computer and uBid? If you try to magnify your returns by using leverage, you may not have the financial wherewithal to withstand the interim volatility before the wisdom of your decisions pan out. This was the case with many investors who realized that real estate was overvalued in the run-up to the financial crisis of 2008. Some investors established positions and were correct in their analyses, but didn't have the capital, or the stomach, to maintain positions until the market corrected. So, be careful with the use of leverage.

## CONCLUSIONS

Value investing is a time tested investment strategy

The return differentials are substantial. They are partially offset by risk and implementation challenges...but not entirely.

Measuring value is not a science, but an art, and the definitions matter.

Value indexes under estimate the “strategic” value investing opportunity

Any value investing approach requires large doses of intellectual and emotional discipline. Structured implementation helps.



## CFA Institute

Global association of investment professionals dedicated to promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society.

...a big part of what we hope to accomplish at CFA Institute is to rebuild trust in the investment industry. The GFC revealed how inextricably linked financial markets are to the welfare of society. A lack of ethics and a dearth of competence has eroded the public's trust in the financial industry and as a result destroyed jobs, damaged social safety nets, and depleted savings. We want to earn that trust back by promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society because we see ourselves as stewards of the investment profession with a responsibility to society.

As a global association of more than 110,000 investment professionals, we go about doing that in a variety of ways. But this morning, I want to talk about two of those ways – the CFA program and CIPM program. Our colleagues in the Indian Association of Investment Professionals will discuss career options, my colleague Tom Robinson will dispell some myths and offer tips for taking the CFA exam, and we will have an opportunity answer your questions at the end.

### Who is CFA Institute?

- ~~Global association of more than 110,000 investment professionals dedicated to leading the investment professional globally by promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society.~~
- ~~In addition to administering the CFA program, we administer the CIPM certification program, and the Claritas Investment Certificate~~
- ~~In addition to developing and promoting a Code of Ethics and various Standards of Practice (SOP, AMC, GIPS), we advocate for investors to promote market integrity and transparency.~~

### Major Points to make:

1. ~~We have a broad mission that goes beyond the CFA Program, which serves as our namesake~~
2. ~~Lifelong learning for members and public benefits of ethical and competent practitioners.~~

# THE FUTURE OF FINANCE

## Putting Investors First

The fiduciary duty to protect investor interests.



## Financial Knowledge

Empowering investors to make better decisions.



## Safeguarding the System

Promoting stability and minimizing systemic risk.



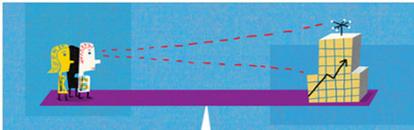
## Regulation & Enforcement

Protecting investors and preserving capital market integrity.



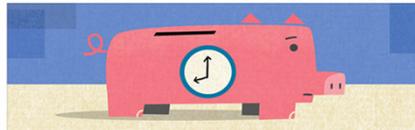
## Transparency & Fairness

Standards to promote an open and honest financial system.



## Retirement Security

Sensible solutions to protect pension systems worldwide.



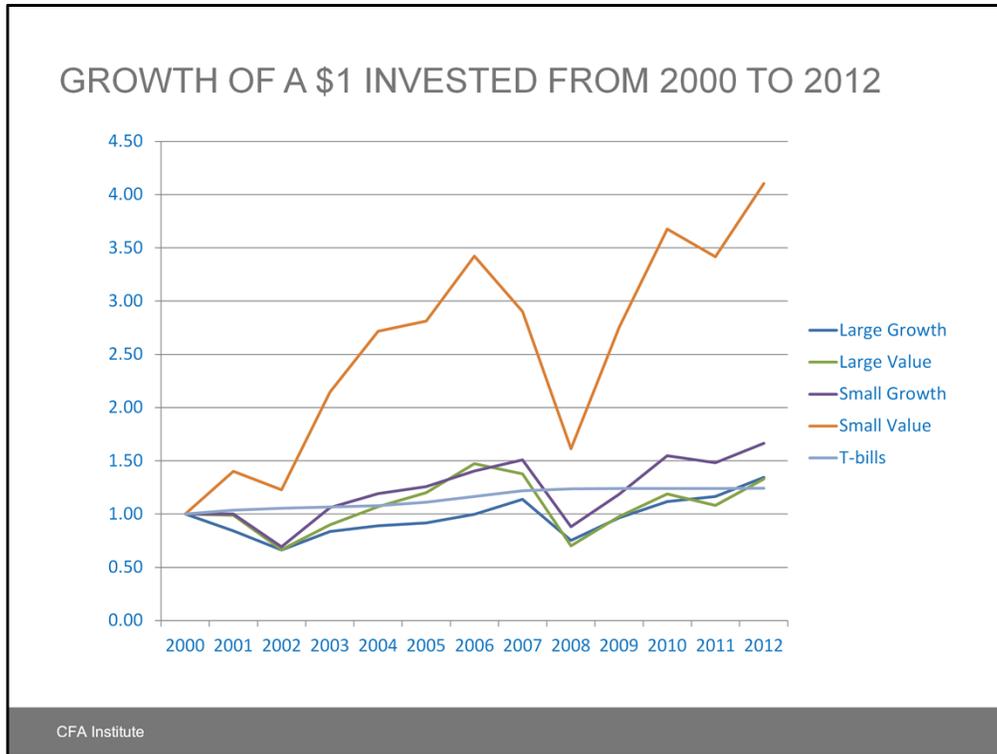
The Future of Finance has multiple elements. It involves research, publications, discussion groups, conferences, engagement with regulators and other methods to help move the financial industry forward. The work to date revolves around six key themes. These key themes start with the notion that we are here to serve the ultimate investor and must make financial markets trustworthy and fair so that investors can meet their long term objectives such as saving for retirement. As a result the first theme is Putting Investors First – investment professionals have a fiduciary duty to protect investor interests. The next theme related to the first is improving Financial Knowledge both of investors so they can make informed decisions and of all participants in the financial industry so they can better serve their clients. The next three themes involve making the markets better for those investors. Safeguarding the System to promote stability and reduce systemic risk; Regulation & Enforcement to protect investors and preserve capital market integrity; Transparency & Fairness to promote an open and honest financial system. The final theme is the need to improve pension systems worldwide so that when investors save and invest, the system contributes to their ability to have a sustainable retirement.

## CFA INSTITUTE PROGRAMS

CFA® Program	CIPM® Program	Claritas® Investment Certificate
Investment decision-makers	Performance analysts and consultants	Allied professionals and para-professionals
~210,000 registrations in 2013	~1,300 registrations in 2013	~ 4,000 registrations in 2013
Four years professional experience	Two years professional experience	No experience required
Three exams ~900 hours of study	Two exams ~250 hours of study	One exam ~100 hours of study
Paper and pencil	Computer-based testing	Computer-based testing

See program details at <http://www.cfainstitute.org/programs>

# APPENDIX



We can also examine how value investing performed during the most recent tumultuous decade in which we experienced at least two severe bear markets. Here, too, value stocks tended to outperform growth stocks. In this very unfriendly decade too long-only investors, large capitalization value stocks earn an 18.8% cumulative return rather than an 11.9% cumulative return for growth stocks. That's not a great cumulative return over a decade, but small capitalization stocks did better. In that sector, a dollar invested in value stocks grew to \$4.10 compared to \$1.66.

## HISTORICAL MONTHLY RETURN CHARACTERISTICS, 1926-2012

	Overall	Large			Small			T-Bills
	Market	Growth	Mid	Value	Growth	Mid	Value	
<b>Arithmetic Avg.</b>	0.93%	0.89%	0.96%	1.15%	1.03%	1.25%	1.44%	0.29%
<b>Geometric Avg.</b>	0.79%	0.74%	0.79%	0.74%	0.74%	1.01%	1.11%	0.29%
<b>Median</b>	1.27%	1.13%	1.24%	1.21%	1.21%	1.58%	1.54%	0.23%
<b>Std. Deviation</b>	5.38%	5.35%	5.78%	7.34%	7.74%	7.07%	8.38%	0.28%
<b>Skewness</b>	0.148	-0.136	1.297	1.543	0.918	1.339	1.955	1.04
<b>Kurtosis</b>	7.29	5.276	17.192	17.802	10.014	14.87	18.878	1.26
<b>Sharpe Ratio</b>	0.119	0.109	0.117	0.117	0.096	0.136	0.137	0.000

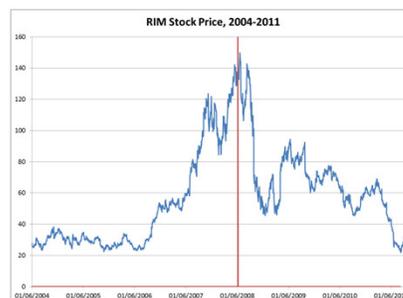
CFA Institute

These same basic trends hold up when we look at monthly returns rather than annual returns. Monthly returns to value stocks are greater than monthly returns to growth stocks whether or not they are large or small.

## EMPIRICAL CHALLENGES TO MARKET EFFICIENCY

### Challenges to Value Investing

- Behavioral Economics Influences
  - Value investing, distressed investing is difficult to implement psychologically
- Short-term and medium-term momentum (Jegadeesh and Titman, 1993)
- Limits to arbitrage
- Markets can stay irrational for longer than you can stay liquid
  - Role of agency



### Contrarian versus Value Investing

- Value investing is fundamental analysis, not technical analysis
- But it's related in a number of ways

CFA Institute

Earning returns like these in the real world is very different than documenting them in a hypothetical study. For one thing, their study ignored bid-asked spreads, commissions, market impact, and other transaction costs. It's also fair to ask whether one is really comparing apples to apples if the risk profile of the user portfolio is different from the risk profile of the winner portfolio.

Even if these kinds of results were achievable in real life moving forward, it would take nerves of steel and titanium backbone to implement such a contrarian strategy. Imagine yourself at a cocktail party in the year 2000.

- Couple of drinks → selective memories loose lips → Lawyers huddled around cheese dip → everyone seems to be making \$ in the market.
- What are YOU buying these days? – WD40 \$30 in 1997 to <\$18 in 2000 – Single product, boring → snickering
- Three years later by the end of 2002 after the tech bubble burst, the doctors and lawyers at the cocktail party are commiserating about how much longer they will need to work before they can retire as their medical device and technology stocks laden portfolios are decimated with the Nasdaq 100 index down nearly 85%. You, on the other hand, are deciding whether it is time to sell your shares of WD-40 Company stock because it is once again approaching \$30 per share for a positive 65% return.

### Barriers to Successful Value Investing

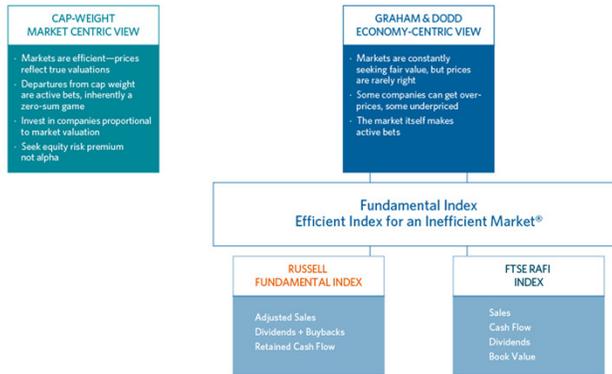
1. Cognitive or Emotional Biases
  1. Social pressure
  2. Availability or Representativeness
  3. Home bias
  4. Overconfidence
  5. Media influence
  6. Loss aversion
2. Market-Related Barriers
  1. Short selling constraints
  2. Limits to arbitrage (Transaction costs, horizon risk, funding risk)
3. Investment Constraints
  1. Liquidity Constraints
  2. Time Horizon
  3. Taxes
  4. Legal Constraints

So, these barriers could explain the persistent potential profits available to disciplined value investors.

# RAFI INDICES

## Cap Weight vs. Economy-Centric Views of the Markets

RAFI® Fundamental Index Equity Focuses on Economy, not Security Prices



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As an alternative to market cap weighted indices, a number of alternative weighted index now exist. For example equal weighted indices that invest equally in each security in the portfolio rather than in proportion to market cap. This is more in line with how an investor would create a portfolio of individual stocks, however it does make rebalancing more difficult. Another alternative is to weight the portfolio proportions based on some fundamental measure such as sales, earnings, book value or cash flow. An example is the RAFI Indices which weights by relative sales, cash flow dividends and book value.

## POWERSHARES ETF FOLLOWING RAFI1000

**Month-End Average Annual Total Returns And Risks** AS OF 02/28/2014

Average	RETURNS				VOLATILITY (VS. MARKET BENCHMARK)				
	NAV Return	Market Return	Benchmark Index (FTSE RAFI US 1000 TR USD)	Market Benchmark (S&P 500 TR USD)	Alpha	R <sup>2</sup>	Beta	Standard Deviation	Sharpe Ratio
1 Year	+25.70%	+25.87%	+26.19%	+25.37%	-0.89	99.13	1.05	10.68	2.21
3 Year	+14.20%	+14.24%	+14.63%	+14.35%	-0.65	98.10	1.04	13.13	1.08
5 Year	+27.62%	+27.60%	+28.14%	+23.00%	0.58	90.42	1.17	17.62	1.48
10 Year	--	--	+8.99%	+7.16%	--	--	--	--	--
Life	+8.35%	+8.40%	--	+10.60%	--	--	--	--	--

Life as of inception date: 12/19/2005

The RAFI weighting has a bias toward investing in more value oriented stocks (with good fundamentals) and may be a better measure of the performance of a value orientation than just a low multiple approach taken in other value indices. Over the past ten years the RAFI index has outperformed the S&P 500 index by almost 200 basis points per year.

# WEITZ VALUE FUND

## Fund Overview

The Value Fund is a large-cap focused, no-load, non-diversified fund designed for the long-term investor. The Fund looks to provide good absolute returns over long periods of time without unnecessary risk.

### Returns

	Quarter	1-year	Annualized							Since Inception (5/9/1986)
			3-year	5-year	10-year	15-year	20-year	25-year		
<b>WVALX</b>	<b>8.78%</b>	<b>31.75%</b>	<b>16.53%</b>	<b>19.35%</b>	<b>5.84%</b>	<b>6.93%</b>	<b>10.41%</b>	<b>11.32%</b>	<b>10.89%</b>	
S&P 500	10.51	32.39	16.18	17.94	7.40	4.68	9.22	10.25	10.19	
Russell 1000	10.23	33.11	16.30	18.59	7.78	5.08	9.38	10.44	10.25	
Russell 1000 Value	10.01	32.53	16.06	16.67	7.58	6.23	9.71	10.55	10.64	

### Ticker Symbol

WVALX

### CUSIP

94904P203

### Investment Minimum

\$2,500

### Fund Inception Date

May 9, 1986

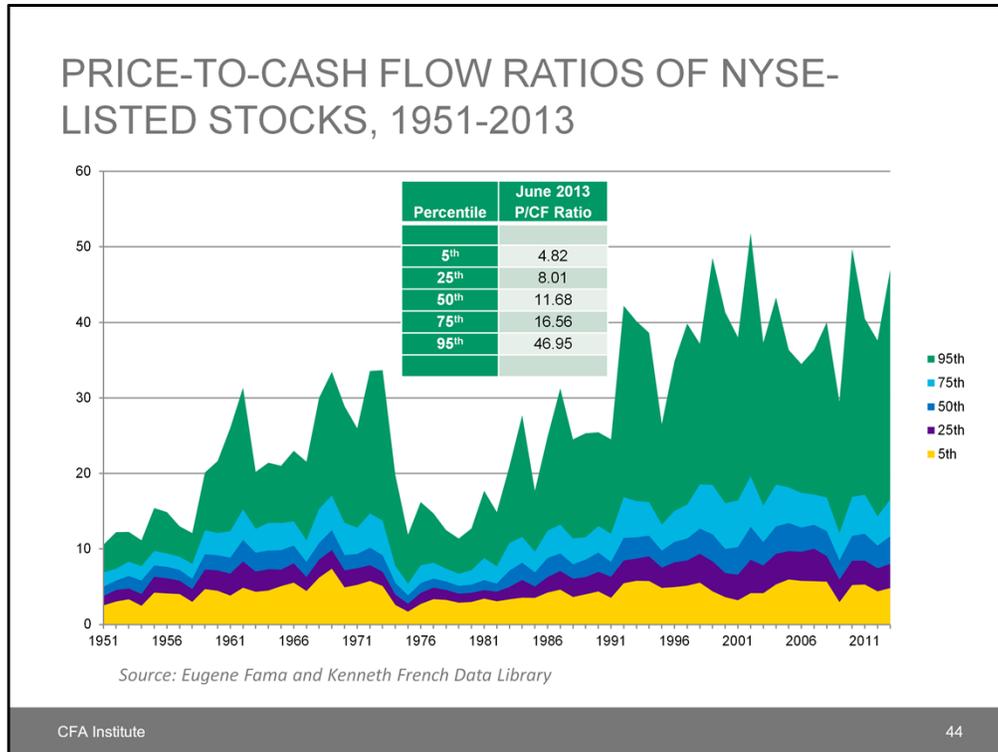
### Investment Adviser

Weitz Investment Management, Inc.

### Net Assets

\$1,118.9 Million

We can also look at specific value funds which show how active selection of value stocks performs. The Weitz value fund for example has outperformed the S&P 500 index by 80 basis points per year (after expenses) since inception in 1986. Of course this is one manager and some would say that statistically some managers will outperform by chance. We would need 100s of years of data to be certain of whether this is skill versus luck but why not invest in value funds that have shown such cumulative outperformance until we know for sure?



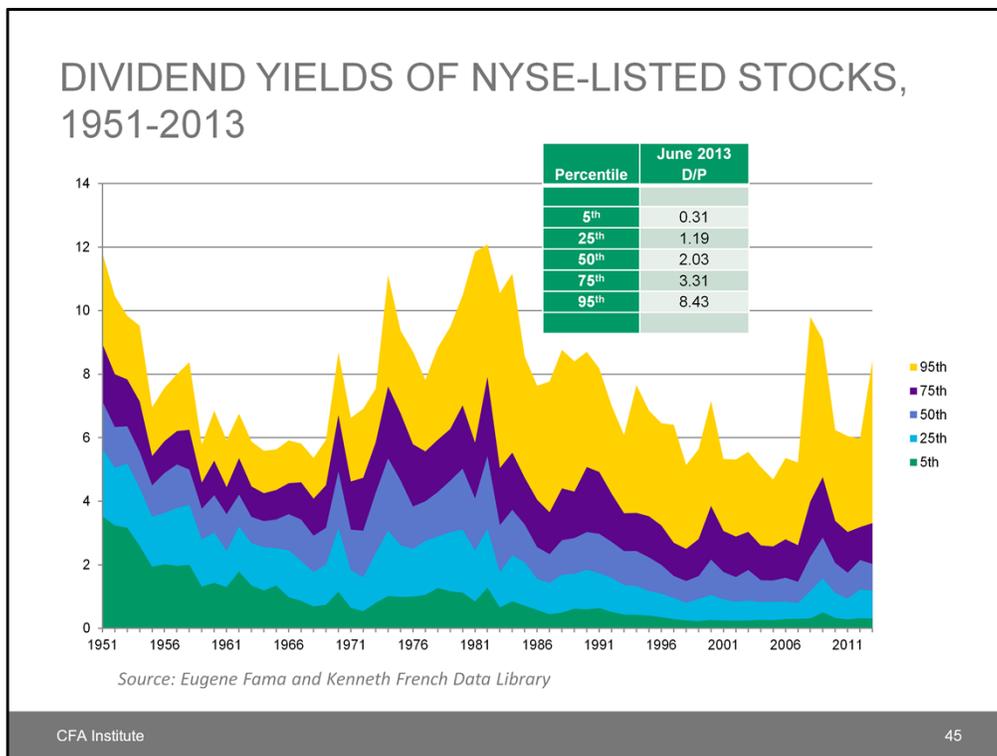
We mentioned earlier that the P/E ratio is a noisy measure of value because earnings can fluctuate substantially over time. Another weakness of the P/E ratio is that earnings are subject to manipulation through different accounting treatments. Ultimately, the investor is interested in the cash flows to which they are entitled as a shareholder. Therefore the price to cash flow ratio is intended to remove distortions that might be caused by alternative accounting conventions and potential earnings manipulation.

Because earnings and cash flows tend to correlate over time, these figures and trends look similar to those for the P/E ratio. The median stock trades at about 12 times cash flow. Deep value stocks in the 5th percentile trade at less than half that at five times cash flow. Highflying growth stocks can trade over 40 times cash flow.

Because some stocks trade so far above the median, the average price-to-cash flow ratio for the market tends to be distorted and biased upward. So, a good measure of the market's price-to-cash flow that is less influenced by these extreme values is the median rather than the average ratio. Like P/E ratios, price-to-cash flow ratios collapsed in the 1970s and have steadily increased since then as interest rates have declined. Again, Fama and French would classify stocks in the bottom 30 percent of price-to-cash flow ratios (that is, below the 30<sup>th</sup> percentile) as value stocks, and stocks in the upper 30 percent of price-to-cash flow ratios (that is, above the 70<sup>th</sup> percentile) as growth stocks.

Other things to note:

1. Lower multiples than P/E
2. Range - More narrow than P/E; wider than P/B
3. Distribution highly skewed → median less influenced by extremes → big difference b/w mean and median → mean will vary more over time
4. Most variation over time is in upper quartile → mean will vary more than median over time
5. Same secular trend as P/E but less YOY variation



Dividends are much more stable than either earnings or cash flow. Most companies that pay dividends want to gradually increase their dividend payments over time. Companies rarely decrease a dividend payment, as that is interpreted by the market as a strong signal that the firm is having financial difficulties. Therefore, many analysts look at the dividend yield as an indication of value because it highlights changes in price and eliminates much of the noise associated with changes in earnings and cash flow. It is, however, a crude measure in part because management, rather than markets, determines dividend policy. That said, it is nonetheless an important tool in the strategic value investor's toolkit. Unlike the measures of relative value that we have discussed thus far, dividend yield places market value in the denominator rather than the numerator. It is calculated as the annual dividend divided by the current market price, which is often expressed as D/P. The median dividend yield in June 2013 was just over 2.0 percent. A few stocks in the 95th percentile had dividend yields above 8 percent. These are considered deep value stocks.

A classic trading strategy, known as *the Dow Theory*, is to buy a few stocks in the Dow Jones Industrial Average that have the highest dividend yield. As the stock price increases and the dividend yield falls, the strategy directs investors to sell those stocks with falling yields and buy those with the next highest dividend yield.

Dividend yields have generally declined over the last 60 years. Rather than paying out earnings to investors, firms have increasingly reinvested those earnings into their businesses. This trend can be either good or bad depending on how the earnings are invested. If management has promising and profitable investment opportunities, then investors will want them to forgo paying dividends and instead invest the earnings into the promising growth opportunities which will translate into future capital gains. If management, however, has exhausted most of the profitable investment opportunities, investors are much better off having earnings distributed as dividends lest they be wasted by management.

Again, if we were to use dividend yield as a barometer for value or growth, Fama and French would consider stocks in the upper 30 percent of dividend yields (above the 70<sup>th</sup> percentile) to be value stocks, and those in the lower 30 percent of dividend yields (below the 30<sup>th</sup> percentile) to be growth stocks.

Some firms, such as Berkshire Hathaway, have never paid a dividend. And, Berkshire shareholders are happy that Buffett has retained the earnings and not made dividend payments.