

The Next Generation of Indexes

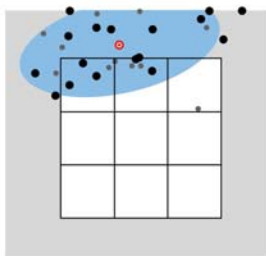
- ▶ **Sanjay Arya, Director, Morningstar Indexes**
Paul Kaplan, Director of Research

Chicago QWAFEFW, April 24, 2003

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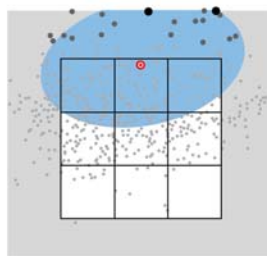
First Generation: Simple Market Monitoring Tools

Most indexes were designed for purposes other than portfolio construction



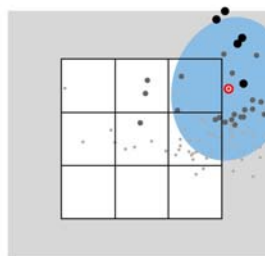
DJIA

To track market
Introduced 1896



S&P 500

To track market
Introduced 1957



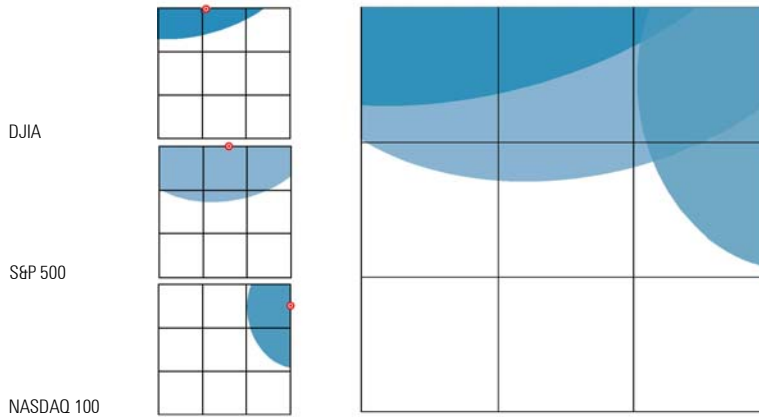
NASDAQ 100

To promote exchange
Introduced 1985

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Market Monitoring Problems

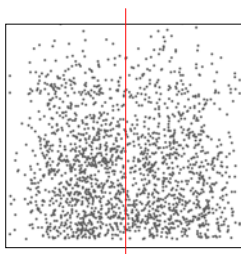
Lots of overlap, lots of gaps



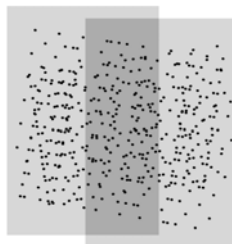
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Second Generation

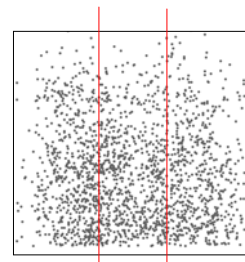
Emergence of Style Indexes created with the primary goal to replicate behavior of active managers.



S&P/Barra



Russell or SSB



Dow Jones

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Second Generation: An Improvement, But Issues Emerged

- ▶ Improvements
 - ▶ Broader market coverage
 - ▶ Designed to be used together
 - ▶ Incorporated style
- ▶ Issues
 - ▶ Style Assignments - S&P Barra:
 - Value: JDS Uniphase
 - Growth: Campbell Soup
 - ▶ Overlaps – Russell:
 - 1000 Value: IBM
 - 1000 Growth: IBM
 - ▶ Gaps – Dow Jones
 - Colgate-Palmolive



Goals For Next Generation Of Indexes

- ▶ Design indexes to help overall investment process, not just to create products
- ▶ Integrate index construction into framework that unifies stock and fund classification with market monitoring
- ▶ Address issues with earlier indexes
 - ▶ Style assignment
 - ▶ Overlap
 - ▶ Gaps
- ▶ Design indexes to help investors better understand market trends



New Style Methodology - Robust 10 Factor Model

Horizontal Axis: Style	Value Score Components and Weights		Growth Score Components and Weights	
	Forward-looking measures	50.0%	Forward-looking measures	50.0%
	▶ Price-to-projected earnings		▶ Projected earnings growth	
	Historical-based measures	50.0%	Historical-based measures	50.0%
	▶ Price-to-book	12.5%	▶ Book value growth	12.5%
	▶ Price-to-sales	12.5%	▶ Sales growth	12.5%
	▶ Price-to-cash flow	12.5%	▶ Cash flow growth	12.5%
	▶ Dividend yield	12.5%	▶ Trailing earnings growth	12.5%
Vertical Axis:	Top 70% of the market: Large Cap			
Market	Next 20%: Mid Cap			
Capitalization	Next 10%: Small and Micro Cap			



Stock Style Example: Marsh & McLennan Companies

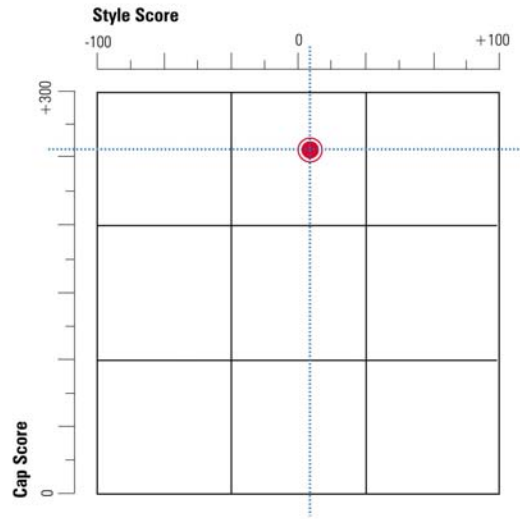
Value measures		Growth measures	
▶ Price-to-projected earnings	39.9	▶ Projected earnings growth	13.0%
▶ Price-to-book	5.3	▶ Book value growth	6.7%
▶ Price-to-sales	2.8	▶ Sales growth	4.7%
▶ Price-to-cash flow	19.6	▶ Cash flow growth	7.4%
▶ Dividend yield	2.3 %	▶ Trailing earnings growth	14.5%
Value Score (0-100)	42.2	Growth Score (0-100)	51.0

Style score : Growth score (51.0) – Value score (42.2) = 8.8

Market Cap: \$27.7 billion



Stock Style Box: Marsh & McLennan Companies



Fund Style Example: Brandywine Fund

Value measures

▶ Price-to-projected earnings	19.0
▶ Price-to-book	2.0
▶ Price-to-sales	0.8
▶ Price-to-cash flow	5.9
▶ Dividend yield	0.4 %

Growth measures

▶ Projected earnings growth	17.3%
▶ Book value growth	22.2%
▶ Sales growth	15.9%
▶ Cash flow growth	29.1%
▶ Trailing earnings growth	16.6%

Value Orientation: Expensive

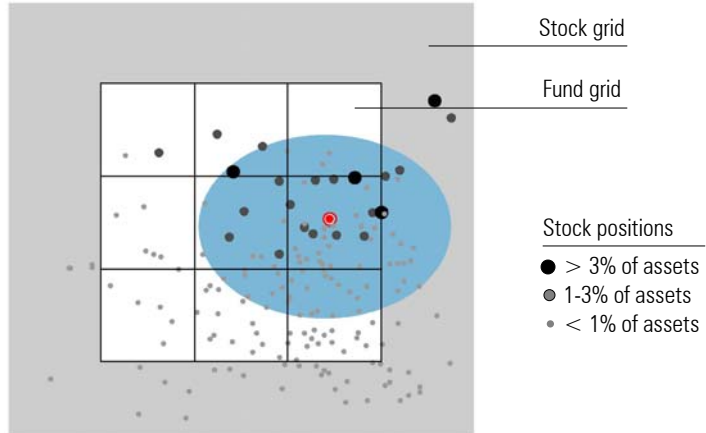
Growth Orientation: Fast Growth

Style: Core Growth

Market Cap: \$3.5 billion, Mid Cap



Ownership Zones: Brandywine



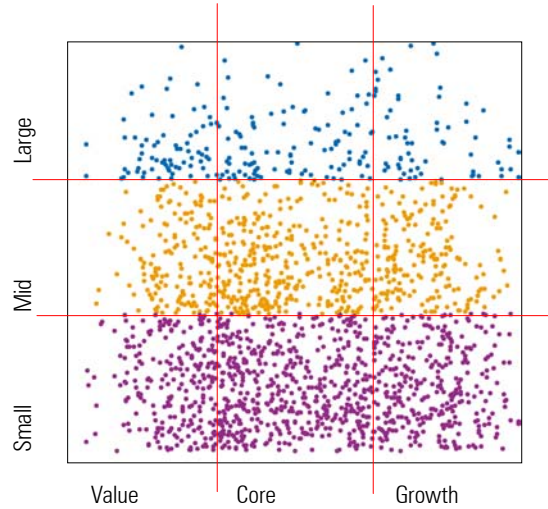
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Morningstar Index Family

U.S. Market Index	U.S. Value Index	U.S. Core Index	U.S. Growth Index
Large Cap Index	Large Value Index	Large Core Index	Large Growth Index
Mid Cap Index	Mid Value Index	Mid Core Index	Mid Growth Index
Small Cap Index	Small Value Index	Small Core Index	Small Growth Index

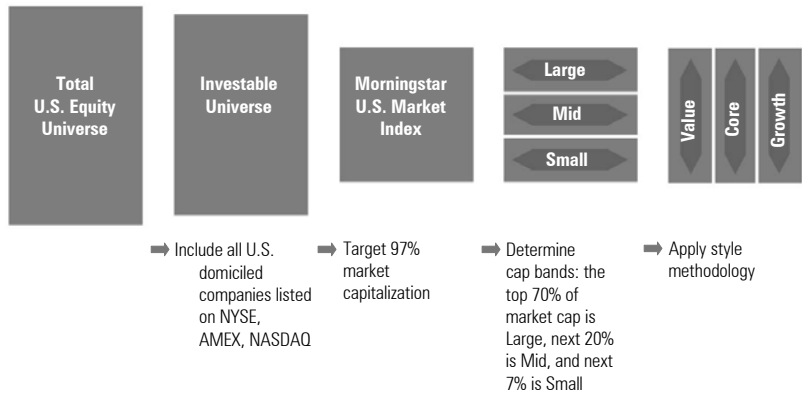
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Style Classifications



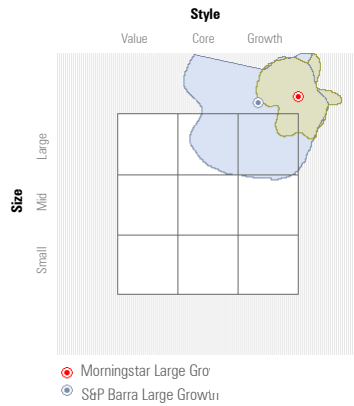
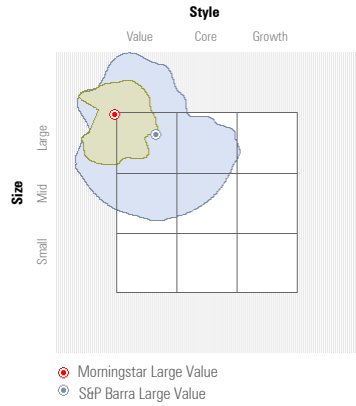
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Morningstar Index Construction Process

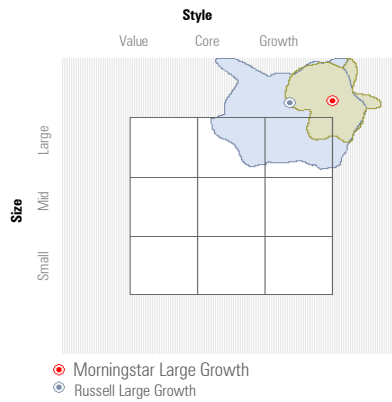
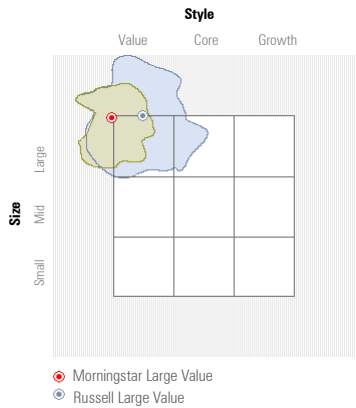


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Morningstar versus S&P (Dec-2002)



Morningstar versus Russell (Dec-2002)



Morningstar Market Barometer: A Better Tool for Market Monitoring

+0.6	+17.8	+42.6
-6.8	+1.9	+52.5
-5.2	+16.7	+46.0

1999

Dow +27.2
S&P +21.0
NASDAQ +85.6

+5.7	+4.2	-33.5
+24.6	+14.8	-11.1
+18.7	+23.2	-12.1

2000

Dow -5.4
S&P -9.1
NASDAQ -39.3

-3.4	-14.4	-29.1
+5.1	+6.1	-21.6
+18.6	+14.6	-12.9

2001

Dow -5.4
S&P -11.9
NASDAQ -21.1

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Morningstar Market Barometer: 2002-03 Results

2002

-15.0	-23.8	-33.2
-10.0	-12.4	-32.5
-8.2	-14.2	-36.9

Dow -22.1
S&P -16.8
NASDAQ -31.5

2003 - 1st Quarter

-7.18	-3.59	1.48
-4.64	-3.40	-0.25
-5.82	-4.54	-2.41

Dow -3.64
S&P -3.15
NASDAQ +.42

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Research Validates Fundamental Style Approach

- ▶ Ranked monthly return patterns of five pairs of value-growth indexes using four measures over the period July 1997 - June 2002:
 - ▶ Return correlation
 - ▶ Cumulative maximum return
 - ▶ Distance between return series
 - ▶ Volatility ratio
- ▶ Results: Morningstar's value and growth style indexes demonstrate more distinctive return patterns than do other value and growth indexes.



Correlation Results

<u>Value Index</u>	<u>Growth Index</u>	<u>Correlation</u>
S&P/Barra Value	S&P/Barra Growth	0.75
Wilshire Large Value	Wilshire Large Growth	0.70
Russell Top 200 Value	Russell Top 200 Growth	0.68
Dow Jones Large Value	Dow Jones Large Growth	0.56
Morningstar Large Value	Morningstar Large Growth	0.49



Cumulative Maximum Return Results

Value Index	Growth Index	Cum. Max. Return
S&P/Barra Value	S&P/Barra Growth	191.9
Wilshire Large Value	Wilshire Large Growth	243.5
Russell Top 200 Value	Russell Top 200 Growth	260.2
Dow Jones Large Value	Dow Jones Large Growth	365.8
Morningstar Large Value	Morningstar Large Growth	554.8



Return Series Distance Results

Value Index	Growth Index	Distance
S&P/Barra Value	S&P/Barra Growth	0.8
Wilshire Large Value	Wilshire Large Growth	37.7
Russell Top 200 Value	Russell Top 200 Growth	38.8
Dow Jones Large Value	Dow Jones Large Growth	49.4
Morningstar Large Value	Morningstar Large Growth	59.3



Volatility Ratio Results

Value Index	Growth Index	Vol. Ratio
S&P/Barra Value	S&P/Barra Growth	1.2
Wilshire Large Value	Wilshire Large Growth	1.4
Russell Top 200 Value	Russell Top 200 Growth	1.4
Dow Jones Large Value	Dow Jones Large Growth	1.7
Morningstar Large Value	Morningstar Large Growth	1.9



Cumulative Return Ratios: Value Vs Growth Indexes

