

Exploit Performance Divergence Across Styles

11th Northfield Annual Summer Seminar, Newport, RI
June 2004

Linda Zhang

BlackRock

For use at the seminar only. This material is not considered advertising or sales literature and does not relate to any particular investment or mutual fund.

Opportunity: Style Performance - Divergent and Dynamic

Best

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	Large Cap Value	Large Cap Growth	Large Cap Value	Large Cap Growth	Mid Cap Growth	Small Cap Value	Small Cap Value	Foreign Bond	Small Cap Growth	Mid-Cap Value
	Large Cap Growth	Large Cap Value	Mid Cap Value	Foreign Stock	Small Cap Growth	Mid Cap Value	U.S. Bond	U.S. Bond	Small Cap Value	Small Cap Value
	Mid Cap Value	Small Cap Value	Small Cap Value	Mid Cap Growth	Large Cap Growth	U.S. Bond	Mid Cap Value	Mid Cap Value	Mid Cap Growth	Foreign Stock
	Mid Cap Growth	Mid Cap Value	Large Cap Growth	Foreign Bond	Foreign Stock	Large Cap Value	Foreign Bond	Small Cap Value	Foreign Stock	Large Cap Value
	Small Cap Growth	Mid Cap Growth	Mid Cap Growth	Large Cap Value	Large Cap Value	Foreign Bond	Large Cap Value	Large Cap Value	Mid Cap Value	Mid Cap Growth
	Small Cap Value	Small Cap Growth	Small Cap Growth	U.S. Bond	Mid Cap Value	Mid Cap Growth	Small Cap Growth	Foreign Stock	Large Cap Value	Small Cap Growth
	Foreign Bond	Foreign Stock	U.S. Bond	Mid Cap Value	U.S. Bond	Foreign Stock	Mid Cap Growth	Mid Cap Growth	Large Cap Growth	Foreign Bond
	U.S. Bond	Foreign Bond	Foreign Stock	Small Cap Growth	Small Cap Value	Small Cap Growth	Large Cap Growth	Large Cap Growth	Foreign Bond	Large Cap Growth
	Foreign Stock	U.S. Bond	Foreign Bond	Small Cap Value	Foreign Bond	Large Cap Growth	Foreign Stock	Small Cap Growth	U.S. Bond	U.S. Bond

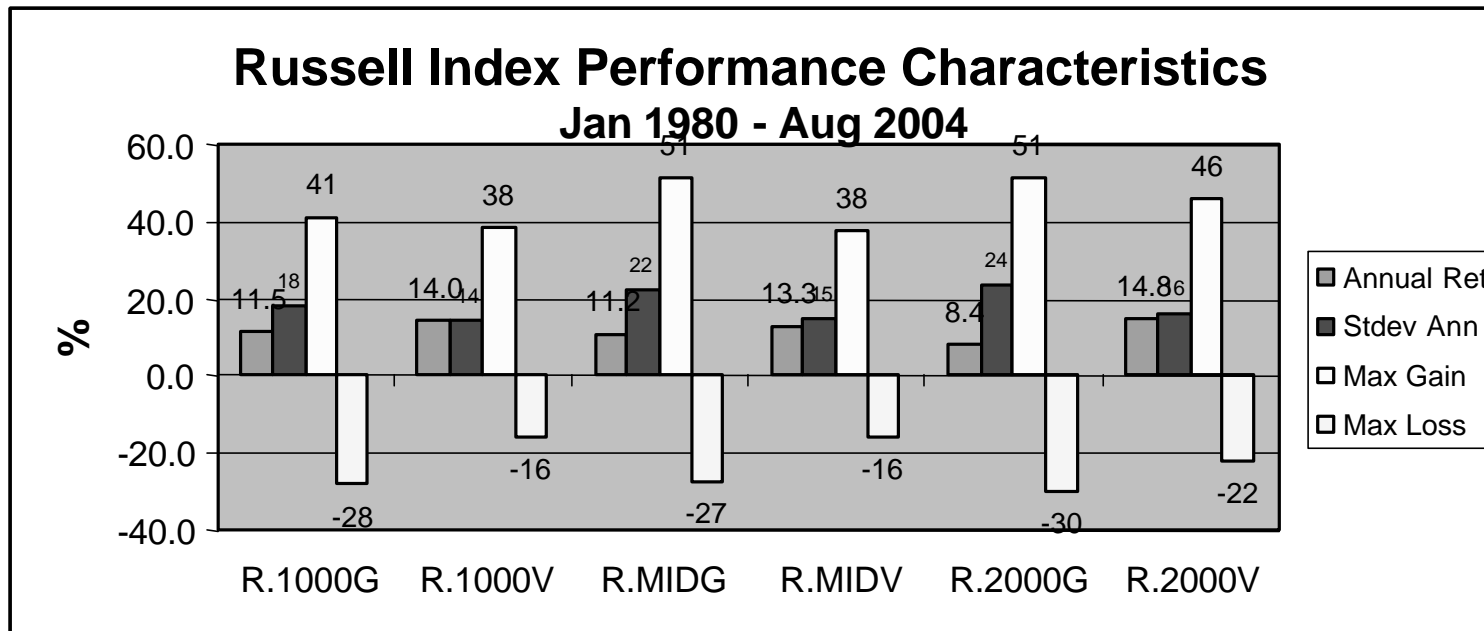
No style leads all the time

Worst

Dynamic style performance provides ample opportunities for active asset allocation through style selection

Note: Russell large, small cap indices started Dec. 1979; While Mid cap started March 1986.

Opportunity: Volatility adds to opportunity



Wide ranges and volatility present opportunity

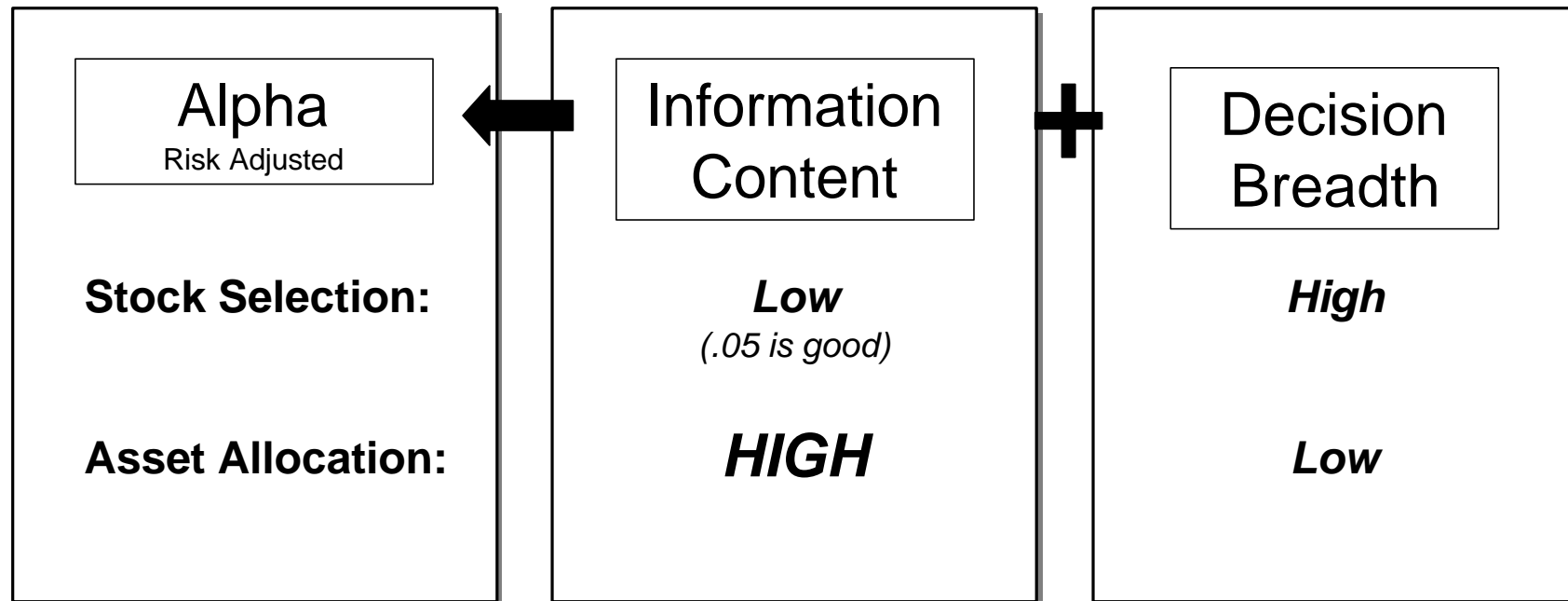
Alpha Generation: From Asset Allocation

Three Reasons that Style Allocation Can Work

- **Law of large numbers – less noise in tracing group behavior**
- **Central Limit Theorem – group return normal distribution**
- **Higher information content – each punch is heavier**

Alpha Generation: Stock Selection vs. Style Selection

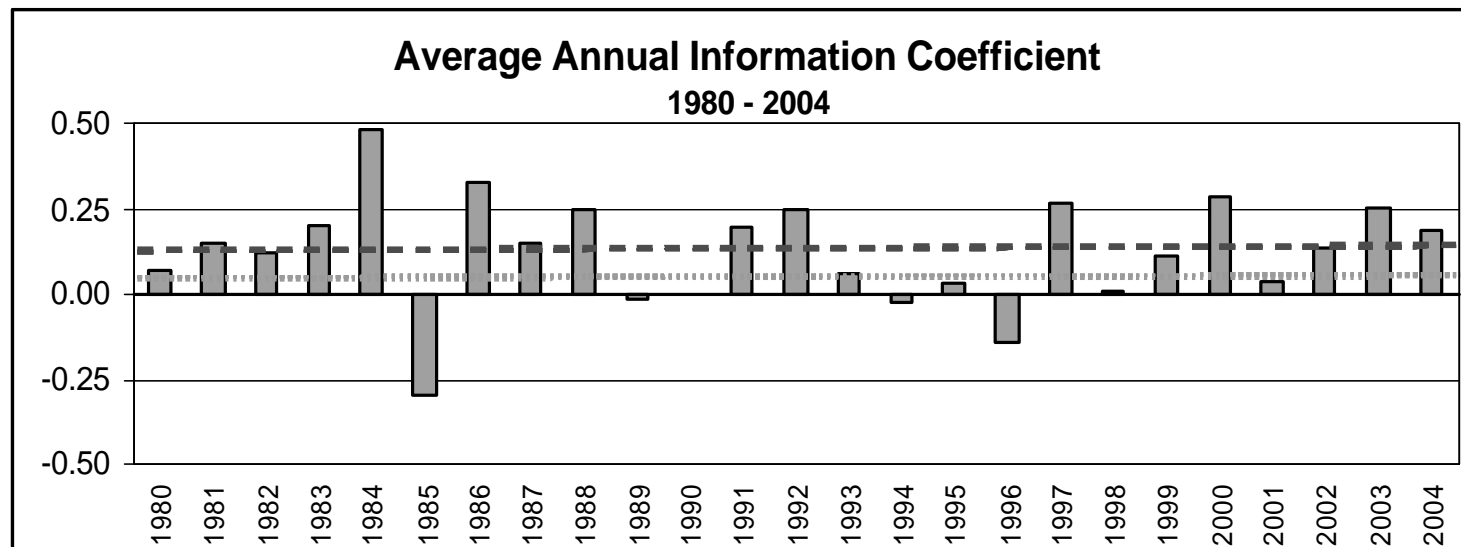
Fundamental Law of Active Management (Grinold & Kahn)



Formally, Information Ratio = Information Coefficient x Square Root of (BR)

Asset Allocation is about throwing heavier punches

Alpha Generation: Empirical Evidence on IC

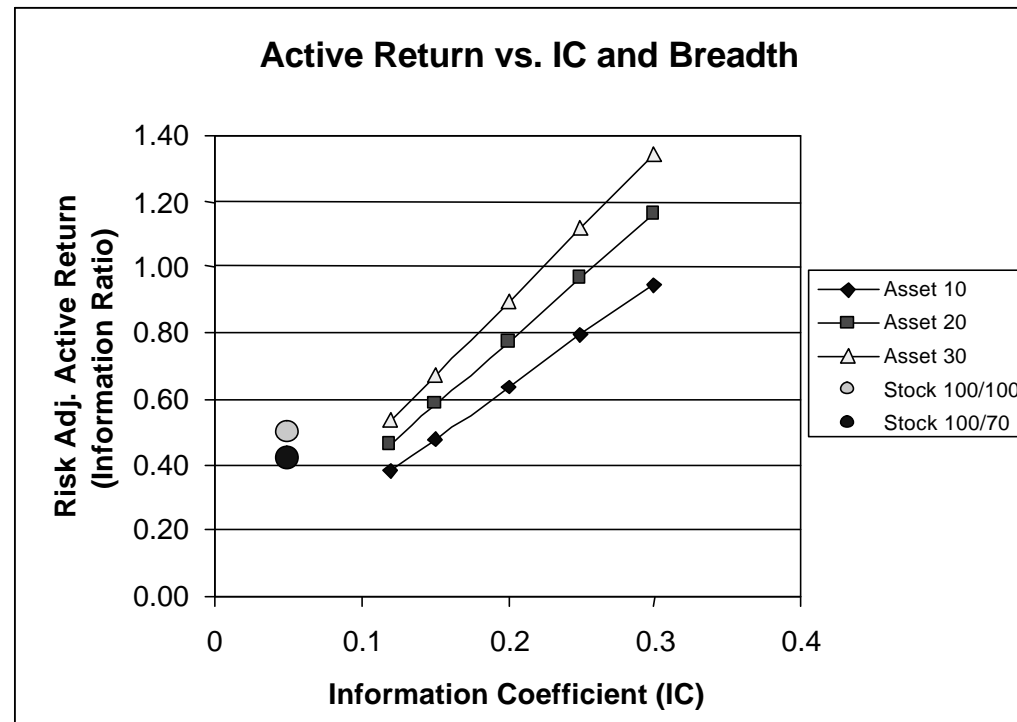


Average IC from
Style Teller: 0.12

Rule of thumb: 0.05
Great for stock
selection

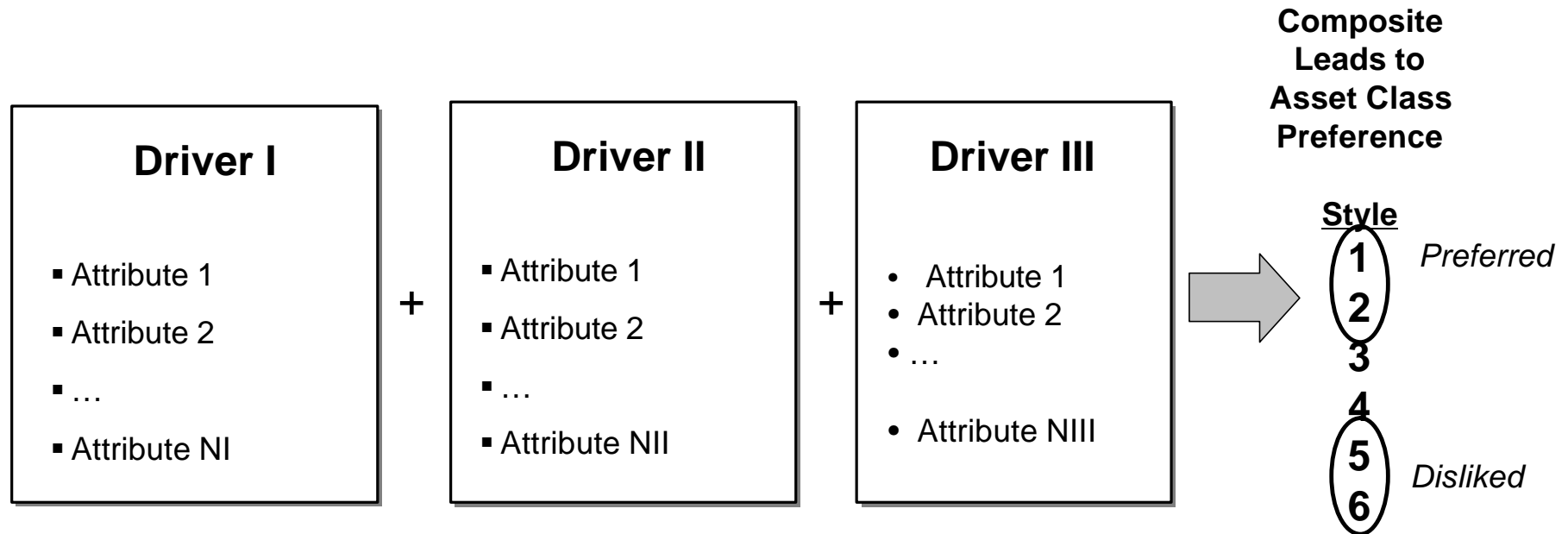
***Asset Allocation decisions carry more weight;
Limited draw-down***

Alpha Generation: Simulation on Enhancement



Asset allocation process is capable of generating high risk adjusted return

Build a Discipline: Multi-Driver Approach



Multi-driver approach leads to asset preferences.

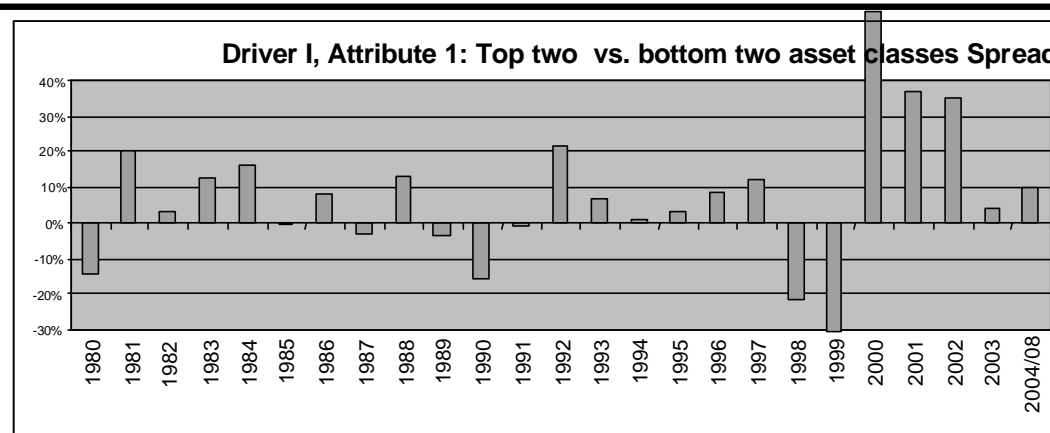
Build a Discipline: Driver Effectiveness

Driver I, attr 1:

Annual Spread: 5.7%

Success Ratio: 68%

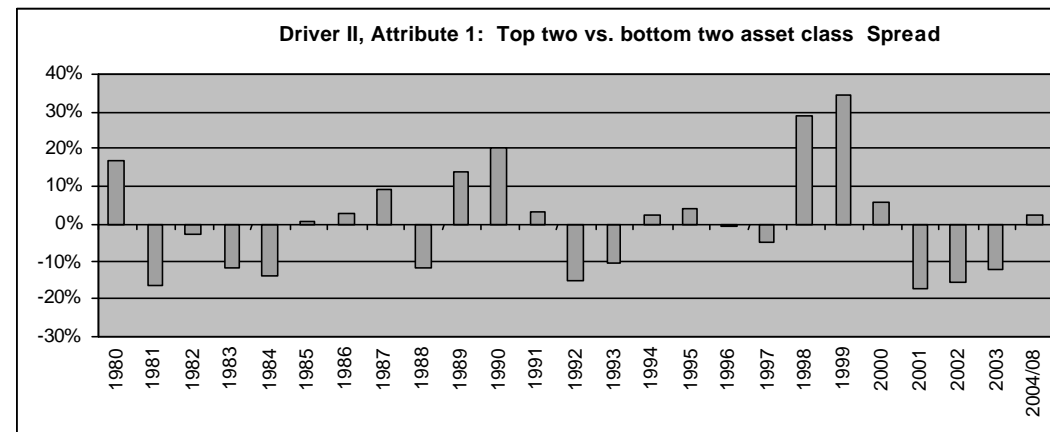
Spread = top 2 ranked over bottom 2 ranked Russell style indices.



Driver II, attr 1:

Annual Spread: -0.5%

Success Ratio: 52%



***Driver I attr 1 consistent overall, but failed miserably in certain years;
Driver II attr 1 ineffective alone, but greatly helped to mitigate the damage.***

Build a Product: Long-Short Style Based

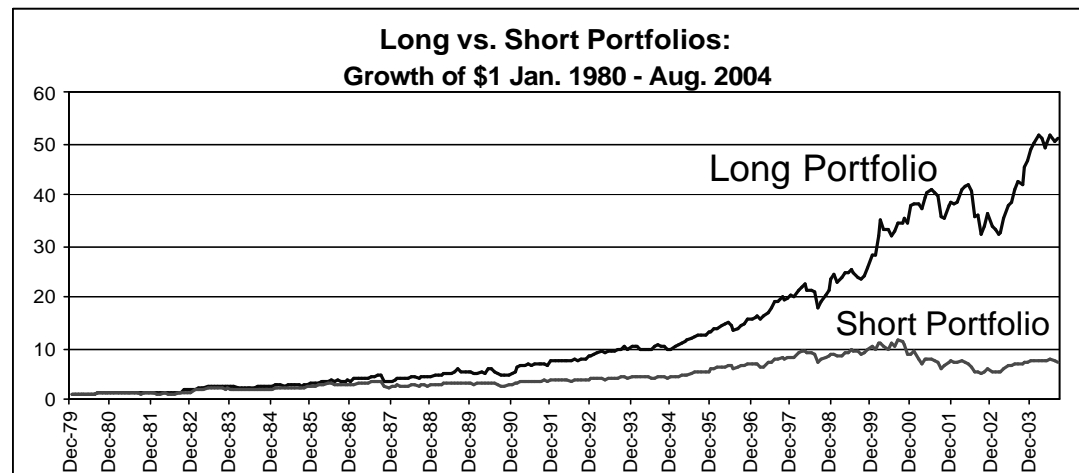
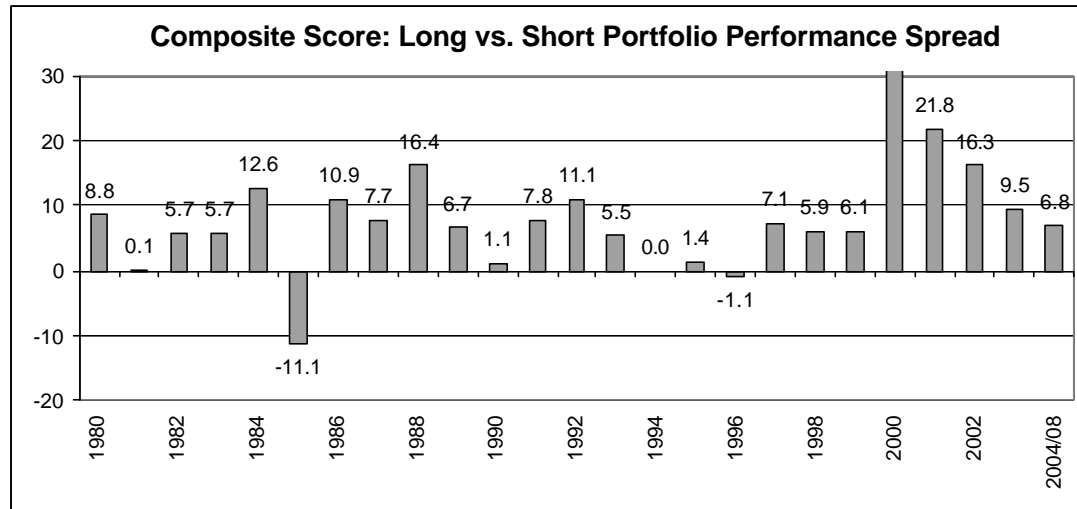
Composite Score Rank:

- Monthly rebalancing
- Long top two styles
- Short bottom two styles

Returns are based on Russell style indices.

Persistent Effectiveness

Annual Spread: 8.3%
Success rate: 88% (22 of 25)



Long-short portfolio based on Multi-driver approach has potential to produce persistent and superior results.

Build a Product: Value Bias, Cap Bias?

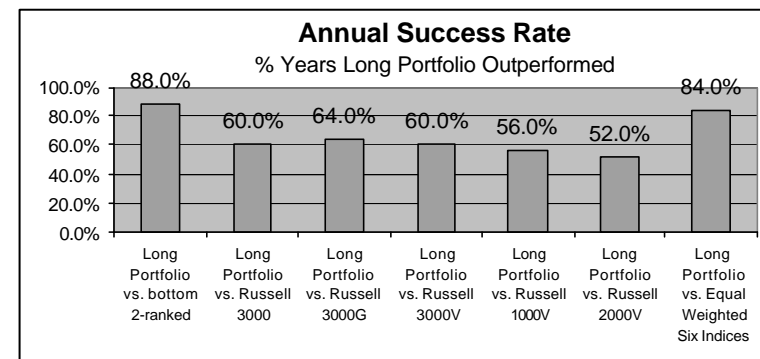
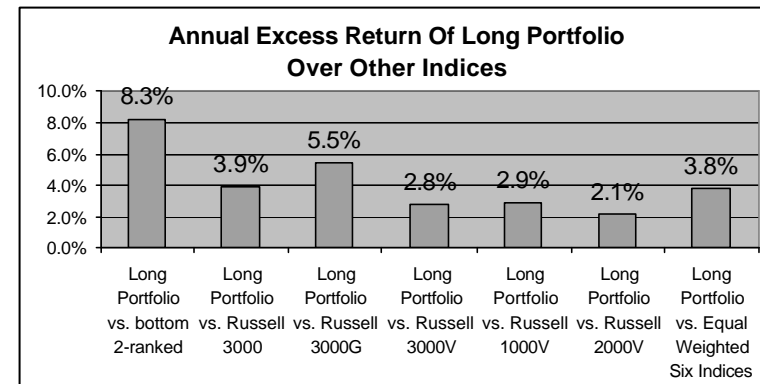
Historical Probability A Style Falls into A Particular Rank

	R1G	R1V	RMCG	RMCV	R2G	R2V
1	15.8%	21.9%	9.0%	30.2%	10.8%	22.2%
2	18.2%	23.9%	10.8%	33.8%	7.4%	17.2%
3	20.5%	20.9%	16.7%	14.4%	13.1%	22.2%
4	18.9%	14.1%	25.7%	9.9%	26.9%	13.5%
5	11.8%	11.1%	29.7%	7.7%	9.8%	14.1%
6	14.8%	8.1%	8.1%	4.1%	32.0%	10.8%

***While a single driver may produce systematic bias,
multi-driver presents no server persistent bias.***

Build a Product: Value Bias, Cap Bias?

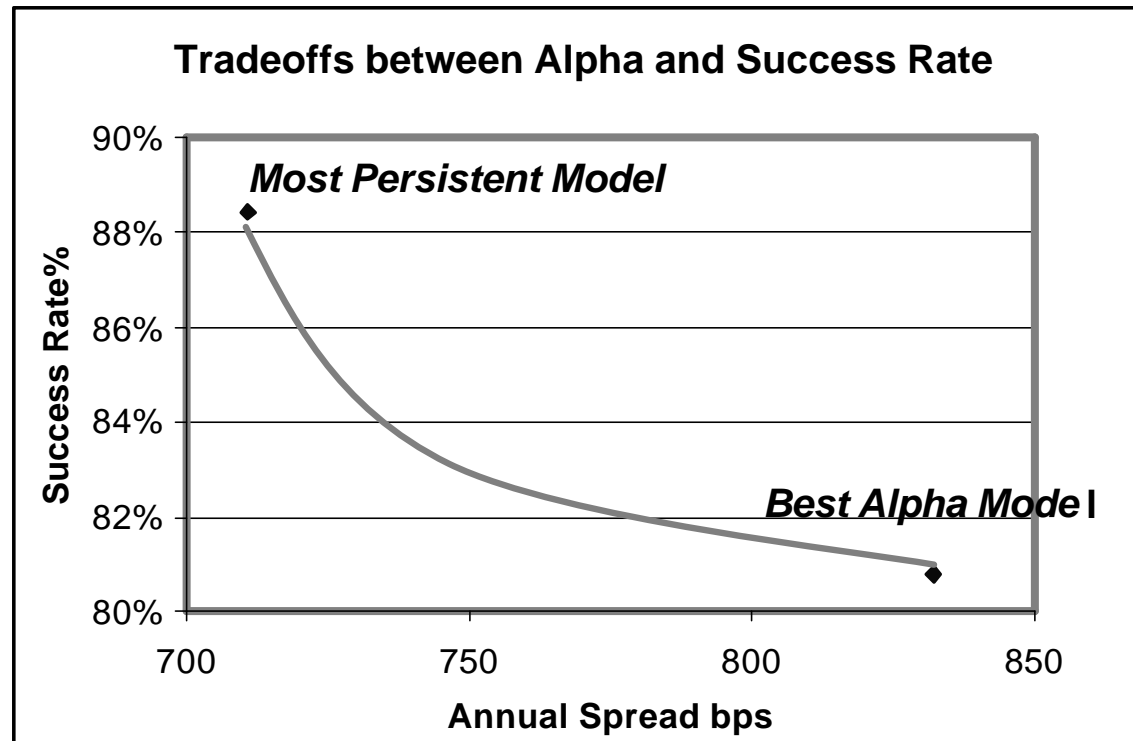
- The multi-driver long portfolio has beaten the entire universe Russell3000...
- and the better performing value styles...
- and with a reasonable historical success rate



Implementation Issues

- Trade off between the success rate and the size of spread
- Trade off between turnover and alpha captured
- Transaction cost impact on model effectiveness
- Choice of style indices: ETF, replicated basket...

Implementation Issues: Alpha vs. Consistency



***Size of alpha comes at the sacrifice of persistency;
The balance depends on a fund's objective and clientele.***

Other Potential Applications

- Enhanced index product: portable style alpha to any index
- Style overlay product: portable style alpha to existing product
- Portfolio construction enhancement: Use the style model as signaling tool to create style tilt during the optimization process. e.g. if model likes large style, increase the tilts on “size” and “valueness” as defined in the Northfield optimizer.