


The Dangers of Averages & Indexes, and the Power of Goodhart's Law

Bob Kricheff


Portfolio Manager and Strategist

Shenkman Capital

Types of Averages

- ▶ Mean, Mode, Median
 - ▶ Weighted Average
 - ▶ Geometric Average
 - ▶ Moving Average
 - ▶ Weighted Moving Average
 - ▶ Exponential Moving Average
- 

Some Problems with Averages

- ▶ Assumption of Normal Distribution
 - ▶ Assumption that Averages are Typical
 - ▶ Changing Constituents
 - ▶ Exogenous Factors and Impacts
 - ▶ Outliers
- 

An Example of Changing Constituents

- ▶ High Yield Bonds –
Spread to Treasury is Often Viewed as Measure of
Value and Risk

ICE BoAML High Yield Index

	12/31/09	12/31/18	Average
Spread -to-Worst	635	535	517

So was the market rich or cheap?
First see what has changed.

% of Index in BBs	34%	41%
-------------------	-----	-----

Technology Weakens Time Series

- ▶ Everything moves faster with technology:
 - An Italian factory highlighted that car assembly now takes 16 hours versus 60 hours 25 years ago
 - Fracking allows an oil well to go on line in 2-3 days versus a month or a year for traditional wells.
 - Shopping with the internet is approximately 7x faster than with the phone.

Mean Reversion or Not

- ▶ Short-term it often works



Mean Reversion or Not


- ▶ Longer Term....
- ▶ Long-term yields on the 5 Year US Treasury



Goodhart's Law

- ▶ The Law: “Any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes.”
- ▶ Translation: “When a good measurement becomes a target, it ceases to be a good measure.”
- ▶ Examples: Nail Factory, Fourth Grade Reading and Waze

Investment Performance vs. an Index:

- ▶ Beta
 - ▶ Alpha
 - ▶ Upside and Downside Capture
 - ▶ Volatility
 - ▶ Downside Volatility
 - ▶ Tracking Error
- 

S&P 500 2007 & 2017

▶ Largest Companies in the Index

2007	2017
Exxon Mobile	Google
General Electric	Amazon
Microsoft	Nefflix
AT&T	Facebook

S&P 500 P/E Multiples 2007 vs. 2017

- ▶ Average P/E Multiple for the Index


2007 YE	2017 YE
17.5x	21.7x

Cash Flow Margins 2007 vs. 2017

- ▶ Illustrative CFFO/Revenue for Largest Companies

2007 YE	2017 YE
9%	23%

Indexes as Benchmarks

- ▶ Constituents Change
 - ▶ Inclusion Rules Change
 - ▶ No Transaction Costs
- 

Indexes and Conflict Potential

- ▶ “If we do a rule change, we have to consult the institutions. The power is with them. We only make changes with their support. They do have the ability to choose between us and MSCI.”

A Good Mantra About Data

- ▶ “To believe is very dull. To doubt is intensely engrossing.” - Oscar Wilde