

# How Will Indexes For Future ETFs Be Developed?



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# Why Are Equity Indexes Created?

- To provide a measure or benchmark of market and/or market segment performance.  
{The DJIA and S&P 500 were originally created as barometers of the US stock market, but that has changed.}
- To provide relevant inputs for asset allocation studies or valid comparisons to other rates of change.
- To provide the basis for passively managed or derivative investment products.



# What Do Users of Indexes Want?

1. Benchmarkers, economists, writers, asset allocators, etc.
  - a. As broad and representative as possible
  - b. As much valid history as possible
  - c. Generally prefer less volatility.
2. Derivative traders
  - a. as narrow and liquid as possible
  - b. as much volatility as possible
3. Direct investors
  - a. performance is the bottom line
  - b. absolute returns vs. tracking errors
  - c. controls on downside risk & turnover

# Why Has Demand To Develop Indexes Increased Throughout The Years?



For many years, the Dow Averages were good enough. Then with the advent of ERISA and the development of Index Funds by Wells Fargo Investment Advisors (now BGI), the S&P 500 became popular in sophisticated institutional circles. Advent of index futures entrenched the S&P 500 and increased interest in index products to capture different market segments. Other index-linked investment/trading products soon followed: {Options, Certificates, Structured Products, etc.} The need for global index families (MSCI, FTAWI) arose as consultants advocated international diversification. Index funds exhibited superior performance through the 1980s.

# From 1990 – present, demand has continued to increase



In the 1990's, performance attribution became a hot button.

Indexes were needed to capture each market segment & style. Methodology challenges to subjectivity of standard-bearers led to the development of new families.

Index tools accepted for hedging risk and managing cash flow.

Index liquidity and transparency issues spawned new indexes.

The success of SPDR and MDY attracted interest for other indexes.

Global tools were the early index battleground.

**But the biggest reason today is the explosive interest in Exchange-Traded Funds.**

# Why Are ETFs Increasing So Rapidly In Popularity?



1. Win-win-win situation for all market participants.
2. Improved market access, utility, and empowerment for investors.
3. Improved tax efficiency and net returns.
4. Arbitrage and stock-lending opportunities for specialists and market-makers.
5. The structure eliminates forced taxable events, rushed trading decisions, cash drag and liquidity management dilemmas for providers. Operational costs are lower.

# Structural Benefits of ETFs



- 1) Immediate in/out access with instant price determination
- 2) Transparency of information
- 3) Implied liquidity of US ETFs virtually infinite
- 4) All fund trading results from investment decisions, not investor cash flows
- 5) Less trading costs incurred by fund
- 6) Significantly reduced capital gains distributions
- 7) Ability to go short or buy on margin
- 8) Operationally less complex than futures

# The Broadest Benchmark As A Starting Point

Q: Why does the broadest investible index make sense as most US investors' core portfolio?

A: You have market-equivalent exposures to every area of the stock market. QEDI believes that this should be the starting point for virtually any long-term US equity investor.



# Mathematically, How Should Active Oversight Be Used In Conjunction With A Broad Passive Index?

- Tactical overlays
- Realizing trading efficiencies
- What about the short side?
- Ancillary benefits





# What Are the Best Weighting Schemes for Indexes?

- Cap-weighting dominates available choices, but is that scheme always the best?
- Does price-weighting have any redeeming aspects for investors?
- Are equal-weighted indexes viable for passive management?

Adjusted market-cap weighting and optimal weighting – are these schemes the future?

# Pros & Cons of Market Cap Weighting for Asset Managers



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- Best at capturing capital structure of target
- Minimizes incidence of required rebalancing
- Usually, highest weights are on most liquid positions

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- Can cause undesired concentrations of assets
- Weighting not reflective of, and sometimes, contrary to overall investment strategy
- Tends to maximize correlation with overall market

# QEDI Hypothesis: Best Scheme Depends Upon Desired Use



- Cap-weighting (and/or float weighting) is superior for non-enhanced core investment purposes.
- Cap-weighting causes diversification problems and is inconsistent with the objectives of indexes tactically deployed to capture the performance of industries and sectors.
- Cap-weighting makes little intuitive sense for indexes designed to capture or reflect an investment strategy.

# Industry and Sector Index Funds

1. Tactical, not core, by their nature
2. What perceived market inefficiencies do you wish to exploit?
3. What economic exposures do you want the indexes to capture?
4. The double-edged sword of diversity



# Case Study I: Petroleum Producers Industry, 1990 – 2000\*

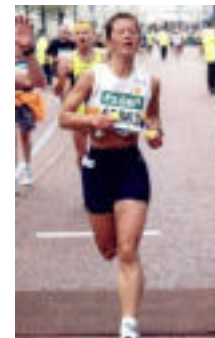


- Cap-Weighted index from Value Line Industry Review outperformed S & P 500 in 1990, 1993, 1994, and 2000
- In each of the 4 years, equal-weighted Value Line Investment Survey industry index had higher price gain than cap-weighted index
- In six of the remaining seven years, cap-weighted index had higher return

\* sources: VL Investment Survey and VL Industry Review

# Traditional Strategy Index Funds

1. Value vs. Growth: an example of the conflicting goals of institutional benchmarking and passive investing
2. Small-cap and Mid-cap index funds: should they ever be core holdings?
3. If investor seeks to exploit perceived market inefficiencies, why weight by market cap instead of strategic emphasis?



# Case Study II: Russell 2000 vs. Equally Weighted Small Cap Bogey (1986-2000)\*



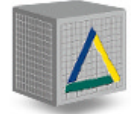
- Russell 2000 outperformed S&P 500 in 6 of 15 years
- Equally weighted small cap bogey outperformed in 5 of those 6 years
- Equally weighted bogey underperformed in 8 of remaining 9 years
- If one is investing in small cap because they believe an above average opportunity exists in the segment, does cap weighting make sense?
- For market exposure, why use a separate small cap index fund?

# The New Breeds of Strategic Indexes --- Focused on Security Selection For Outperformance



- A. Optimizing a broad-based index toward a perceived “all-weather” market inefficiency
- B. Emulating a combination of “active management” strategies algorithmically
- C. Creating an “index” that reflects active stock selection overlaid onto an index
- D. Macro strategies for adding alpha

# Example A: Eco-Efficiency-Enhanced S&P 500 Index



- Innovest Strategic Value Advisors claimed its eco-efficiency scores represented an all-weather anomaly to the Efficient Market Hypothesis
- **QEDI** designed a study to test whether an optimized eco-efficiency index fund could outperform an S&P 500 Index fund\*
- During the four-year period, the enhanced index fund would have outperformed an S&P 500 index fund by 420 basis points per year with 53 basis points lower Standard deviation.\*

\* Source: QEDI working paper, “The Eco-Efficiency Anomaly” by Herbert D. blank and C. Michael Carty, available upon request.

# Will Optimized and Enhanced Index Funds Work As ETFs?



## *Factors that will determine success:*

1. Will the alpha-generator work?
2. Will turnover be so frequent as to defeat the potential cost and tax efficiencies of the ETF structure?
3. Will the optimizer correctly calculate and implement the trade-offs between potential turnover and potential incremental return?

# Example B: GARP Index – built as a result of screens to emulate tenets for active stock-picking success

Hypothetical Example of an algorithm for such an index:

- Begin with a total market Index.
- Eliminate stocks with P/B ratios  $> 1.5 \times$  Ind. Avg.
- Eliminate stocks where P/E ratio  $> 1.5 \times$  Ind. Avg.
- Eliminate stocks where projected EPS  $\leq$  last year's EPS.
- Eliminate stock if projected 5-year EPS growth  $< 15\%$

Rebalancing rules, weighting schemes, etc.

# Instant Replay: ETFs On Algorithmically Based Performance- Oriented Indexes



## *Factors that will determine success:*

1. Will the alpha-generator work?
2. Will turnover be so frequent as to defeat the potential cost and tax efficiencies of the ETF structure?
3. Will the rebalancing rules successfully navigate the trade-offs between potential turnover and potential incremental return?

# ETF Structure Overlaying Active Stock Selection Over Total Index Structure

## *Advantages:*

- No diversification constraints – can concentrate on their five to ten favorite stocks.
- Weights can be adjusted to reflect intensity of enthusiasm.
- Structurally on an “even playing field” with index funds.
- Cash management and trading become minimal functions.
- Trading and transparency issues can be handled efficiently.



# What Should an ETF Fund Sponsor Look For In an Optimizer?



1. Are the sensitivity factors correctly specified, dynamic, and independent?
2. How closely will predicted tracking error reflect actual tracking error?
3. Does the optimizer utilize the paradigm of the resampled efficient frontier\* to mitigate potentially extreme misspecification errors?

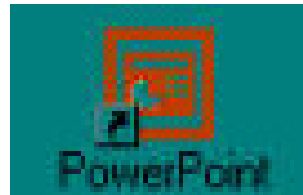
\* Resampled efficient frontier is a service marked term used here courtesy of New Frontier Advisors, LLC



# Summary

1. Traditional institutional benchmarks do not always make the best investment vehicles.
2. Consider the purpose of the index fund before deciding whether its weighting scheme is consistent with investor objectives.
3. Tactical indexes should maximize exposure to perceived opportunities
4. Strategic “indexes” combine index fund architecture with alpha-oriented stock selection to benefit from ETF structural advantages.
5. All optimizers are not necessarily optimal.

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