

MULTI-FACTOR STRATEGIES

SCIENTIFIC BETA MULTI-BETA MULTI-STRATEGY INDEXES

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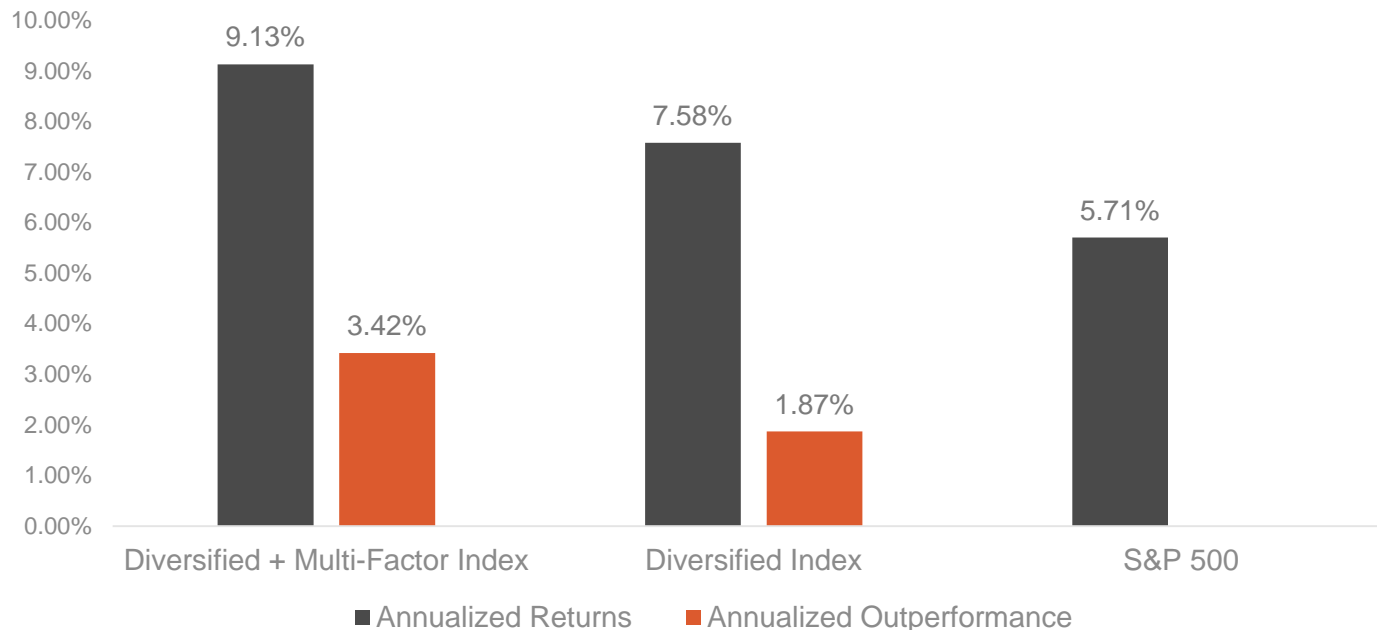
BALANCING FACTORS WITH DIVERSIFICATION

- A potential problem with many existing smart beta strategies is an emphasis of factor exposure over diversification

| | Stock Selection | Weighting Scheme | Combination |
|---------------------|--|---|--|
| Stock Selection | Select stocks that exhibit particular factor | Use all stocks in benchmark index | Select stocks that exhibit particular factor |
| Weighting Scheme | Apply cap weighting scheme | Overweight stocks that exhibit particular factor | Overweight stocks that exhibit particular factor |
| Example | S&P 500 Value | Economic Size Indexes, S&P 500 Equal Weight | Minimum Volatility Indexes |
| Potential Drawbacks | Weighting scheme has heavy concentration | Still exposed to companies that do not exhibit desired factor | Heavy concentration in particular sectors |

DON'T LOSE SIGHT OF DIVERSIFICATION!

- Diversification has been as important as factor selection in delivering outperformance



Source: ERI Scientific Beta, 2015. Data from Dec 19, 2013 to Sept 23, 2015. "Diversified Index is SciBeta United States Multi-Strategy Index. Diversified + Multi-Factor Index is SciBeta Multi-Beta Multi-Strategy Index

TAKING THE “RIGHT” RISKS

- Scientific Beta Multi-Beta Multi-Strategy Indexes seek to provide exposure to well rewarded risks while avoiding or diversifying away unrewarded risks

Rewarded Risks

- Value
- High Momentum
- Low Volatility
- Small Size (mid caps)

Unrewarded Risks

- Growth
- Low Momentum
- High Volatility
- Large Size (large caps)

- Company-Specific Risk
- Weighting Scheme-Specific Risks

Solution

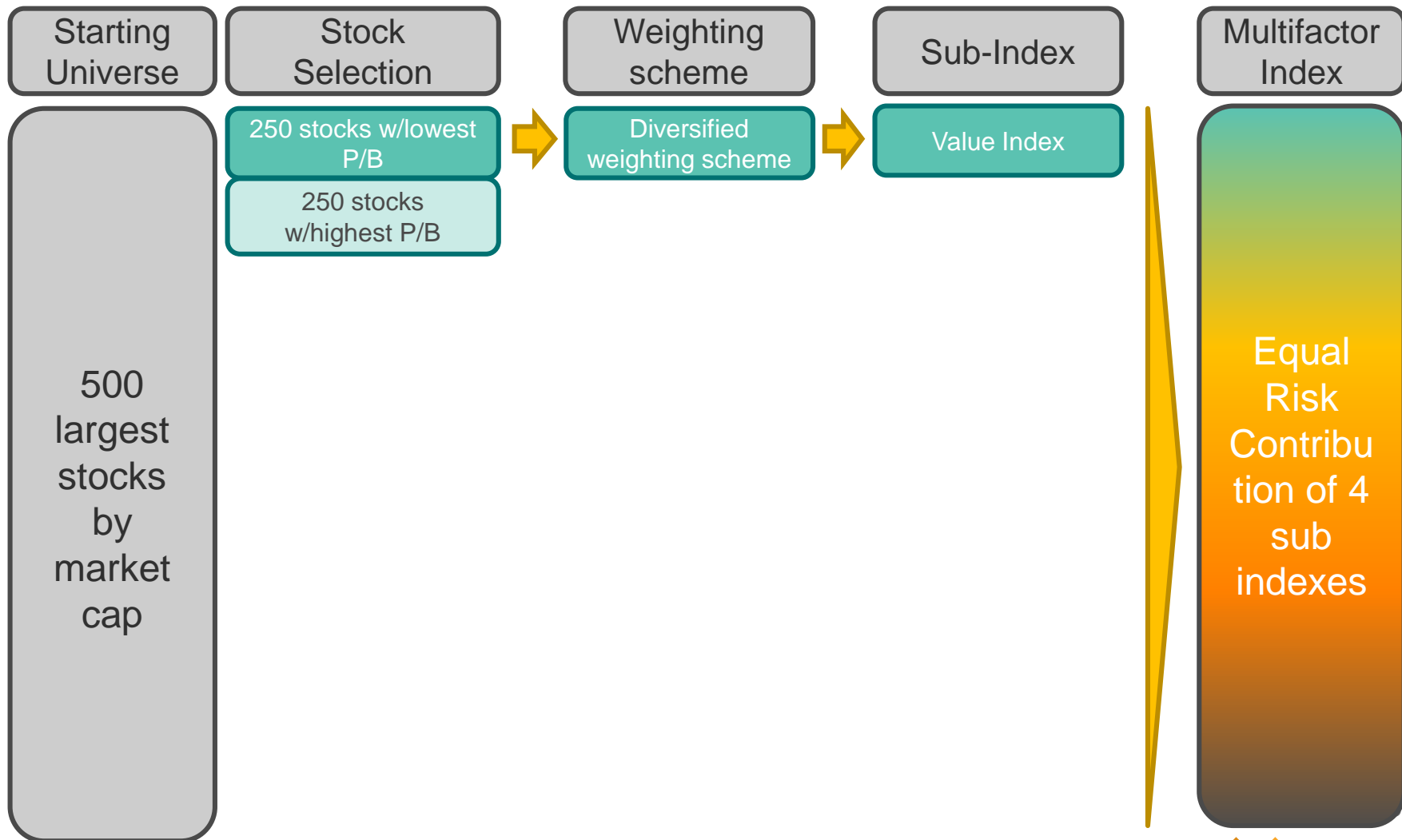
Stock selection to tilt exposures towards rewarded risks

Diversified weighting scheme to reduce concentration on individual stocks and weighting schemes

METHODOLOGY

- Value
- Low volatility
- Momentum
- Size

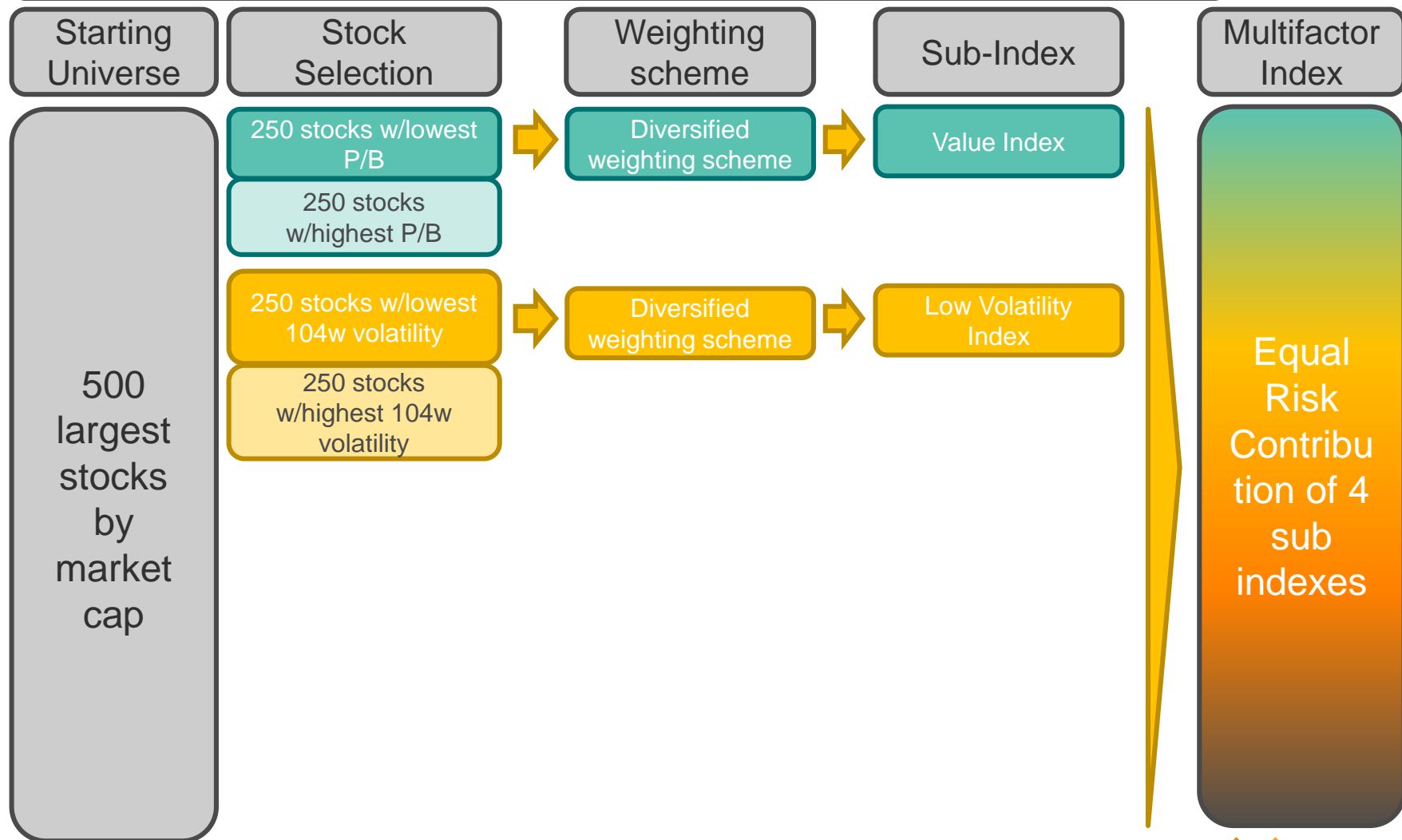
Gain factor exposure through simple selection methodology (don't over-fit), and apply diversified weighting scheme



METHODOLOGY

Value
Low volatility
Momentum
Size

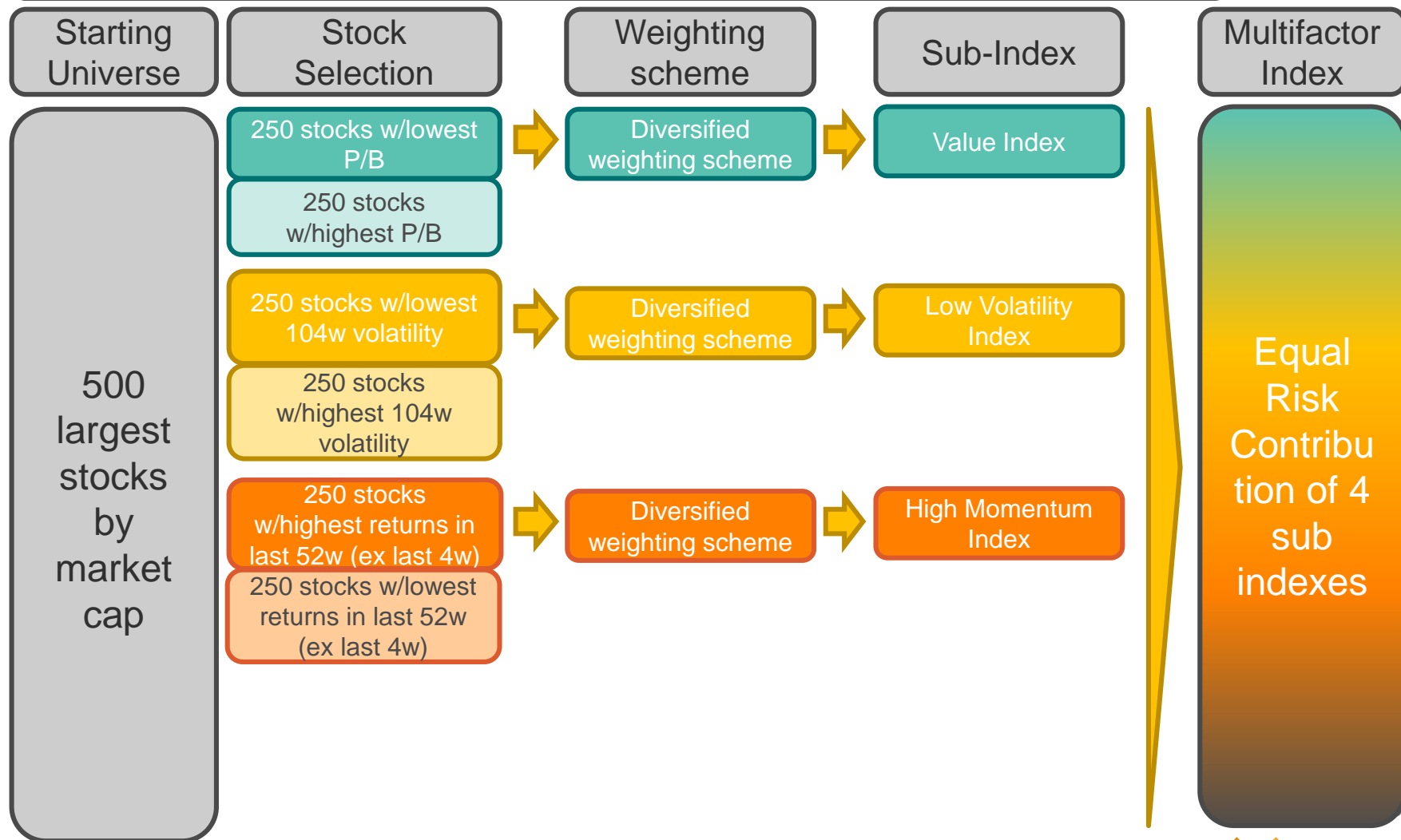
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METHODOLOGY

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 Low volatility
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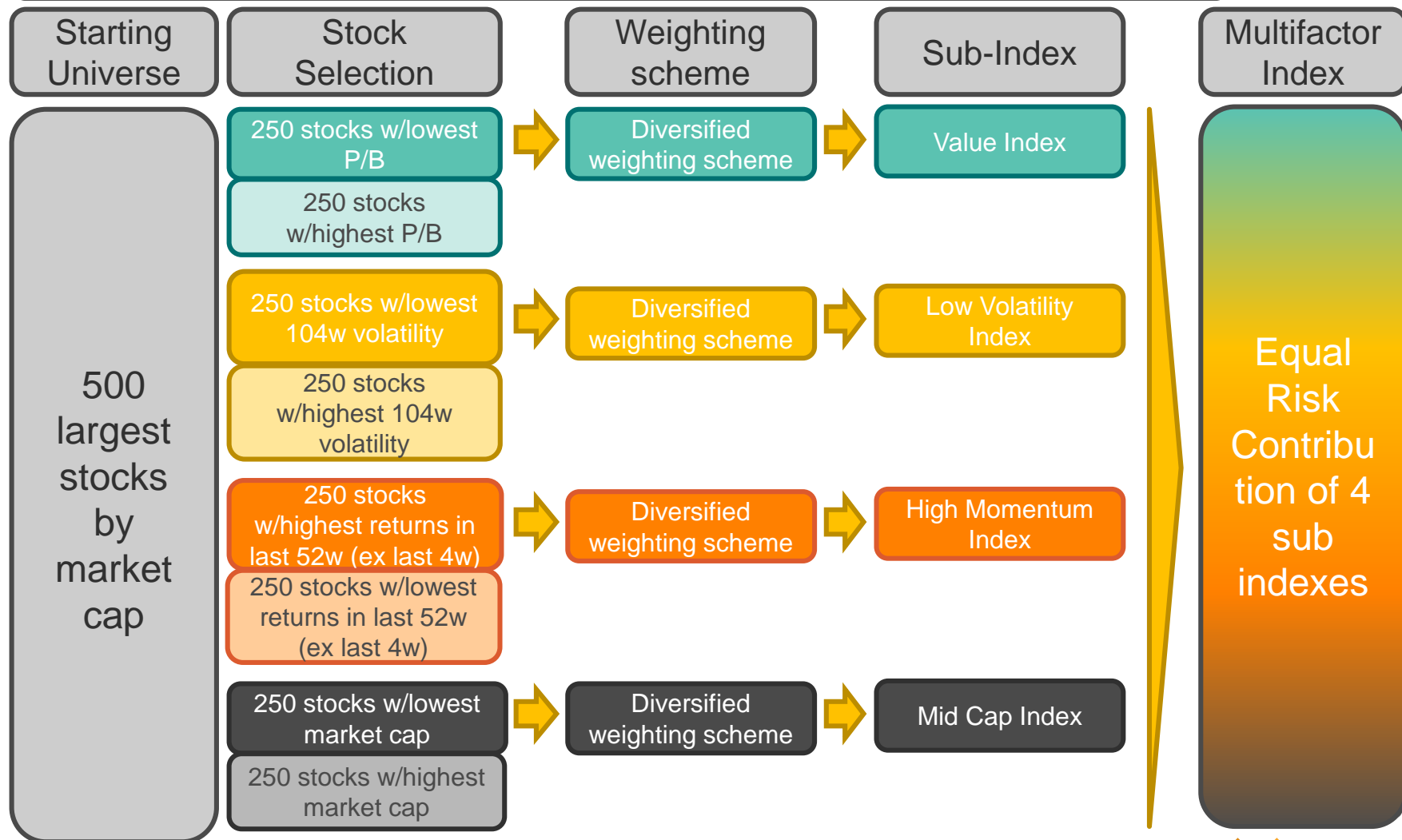
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METHODOLOGY

Value
 Low volatility
 Momentum
 Size

Gain factor exposure through simple selection methodology (don't over-fit), and apply diversified weighting scheme



DIVERSIFIED WEIGHTING SCHEME

- Individual diversified weighting schemes can reduce stock-specific risks, but may introduce model risks in estimates (based on historical numbers) or assumptions.
- Scientific Beta's Multi-Strategy approach incorporates five different diversified weighting schemes to reduce stock specific risk and model-specific risks

Model-specific risks

| Weighting strategy to reduce stock-specific risk | Volatility | Correlation | Returns |
|---|---------------|---------------|---------------|
| Maximum Deconcentration Equal Weight Strategy | Assumed equal | Assumed equal | Assumed equal |
| Diversified Risk Weighted Risk parity approach | Estimated | Assumed equal | Assumed equal |
| Maximum Decorrelation Attempts to reduce correlation-adjusted concentration | Assumed equal | Estimated | Assumed equal |
| Efficient Minimum Volatility Attempts to create minimum variance portfolio | Estimated | Estimated | Assumed equal |
| Efficient Max Sharpe Ratio Attempts to maximize risk adjusted performance | Estimated | Estimated | Estimated |

Combine five weighting schemes to reduce model-specific risks

Diversified Multi-Strategy

CONCLUSION

Scientific Beta Multi-Beta Multi-Strategy Indexes seek to provide diversification on three levels:

- Multi-factor methodology to diversify **factor risks**
- Diversified weighting schemes to reduce **stock-specific risks**
- Combining five diversified weighting schemes to reduce **model-specific risks**