



Investment Process

Who is Astoria Portfolio Advisors?



Who We Are

Astoria Portfolio Advisors is an investment management firm that specializes in research driven, cross asset, ETF and thematic equity portfolio construction. Our core services include investment management, research and sub-advisory services.



Investment Philosophy & Approach

Astoria brings institutional caliber investment strategies and utilizes ETFs to build wealth management solutions for investors. When formulating our ETF portfolios, we utilize a risk based, quantitative investment approach.



Astoria's Solutions

Astoria's strategies are strategically constructed to their respective benchmarks and then actively managed through research driven factor tilts and the use of alternatives to dampen portfolio volatility and drive excess returns.



What We Can Deliver

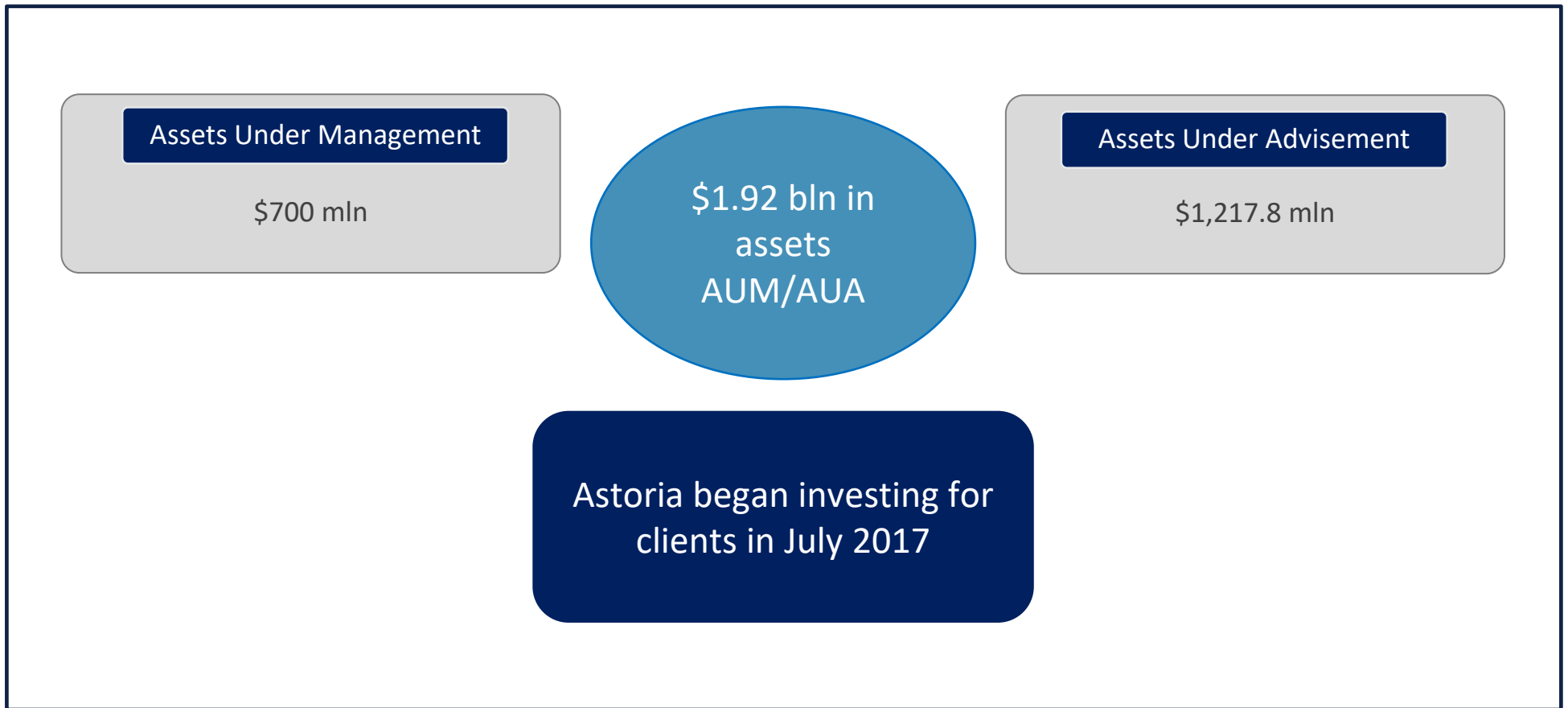
Astoria delivers passive strategies with a dynamic overlay in a liquid, transparent and tax efficient manner.

John Davi has been one of the Industry's Thought Leaders in Cross Asset & Quantitative ETF Research and Portfolio Construction

| Analyst – ML Equity Derivatives / Index Research | Coverage of ETFs and Research on Quant/Equity Derivatives | Head of ML's Delta 1 Research | ML and MS Equity Derivatives & ETF Solutions | MS ETF Product Group | Begin to Manage Money Using Cross Asset, Quant Driven ETF Portfolios | Head of Institutional ETF Strategy at MS | Astoria Portfolio Advisors |
|---|---|---|--|---|---|--|--|
| 2000 | 2001 | 2002-2007 | 2007-2009 | 2010 | 2010 | 2012 | 2017 |
| Astoria's founder begins his career as an analyst in Merrill's Highly Ranked Quantitative Equity Derivatives Research Group | Begin constructing Quantitatively Driven ETF portfolio solutions. Executed and raised several billion in transactions | Continued research and advisory work for hedge funds, asset managers, pension funds, and endowments | Structured Equity Derivatives solutions for institutional investors. | Produced Macro & Quantitative ETF Strategy reports and advised institutional investors on ETF portfolio solutions | Our founder begins to manage his family office money using Cross Asset & Quantitatively driven ETF portfolios | Our founder pioneers Cross Asset ETF Content where over 10,000 institutional investors globally follow his content. Extensive world travel | Our founder creates an LLC, engineers cross asset & factor based, ETF investment solutions for RIAs, family offices, and pensions & endowments |

Source: Astoria Portfolio Advisors LLC

Assets Under Management/Advisement



AUM and AUA as of December 31, 2024.

Astoria's ETF Investment Management Process

A Differentiated, Value-Added Process



Dynamic, quantitatively driven portfolios with a purpose

- Purposefully designed to help reduce portfolio risk during periods of higher volatility and to participate in capital appreciation when markets are more conducive.



Markets evolve, your allocations should adapt

- Astoria's Investment Committee utilizes a Cross Asset & Quantitative Research Process to make overlay decisions in response to changing macro-economic conditions and fundamentals.



Improve your ETF portfolio with multi-asset class exposure

- Using rigorous selection criteria, Astoria actively manages a broad universe of ETFs within Equity, Fixed Income and other asset classes such as Commodities, Liquid Alternatives and Cash.

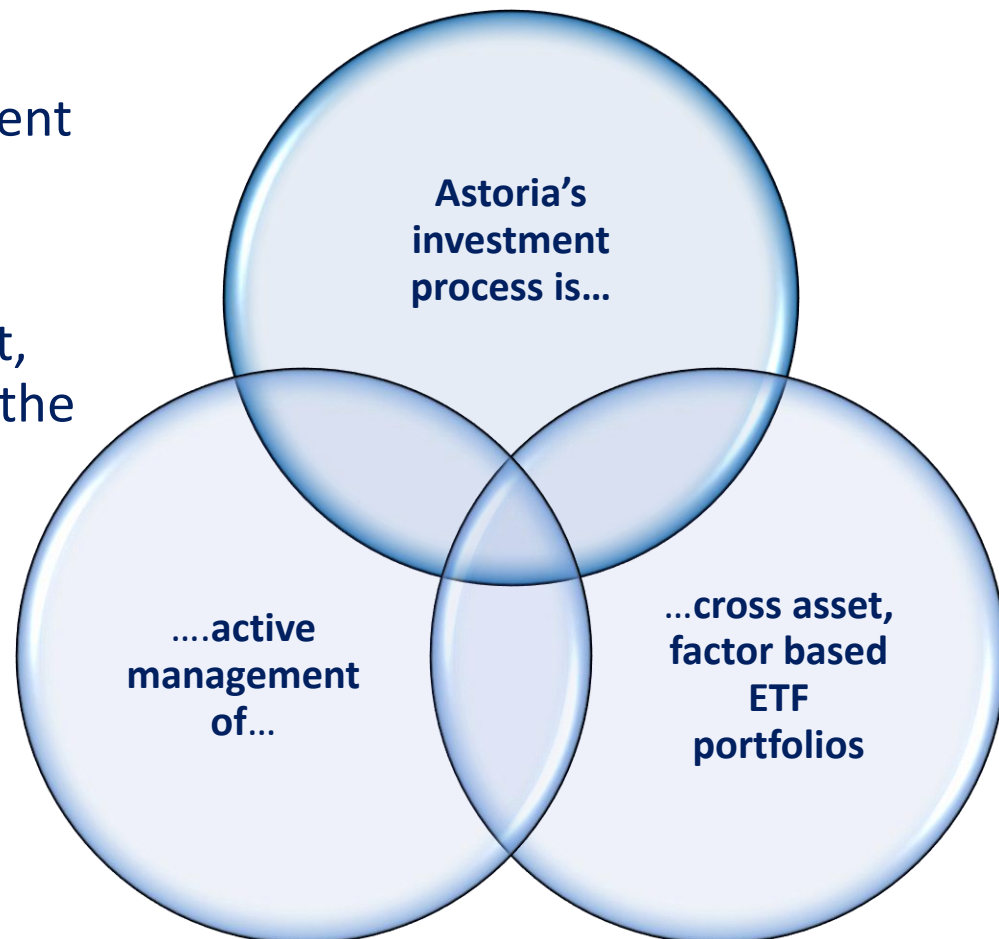


Open-architecture Process

- Intense focus on picking the right ETFs which match the desired outcome from the investment process. Astoria employs an open architect process amongst all ETF issuers.

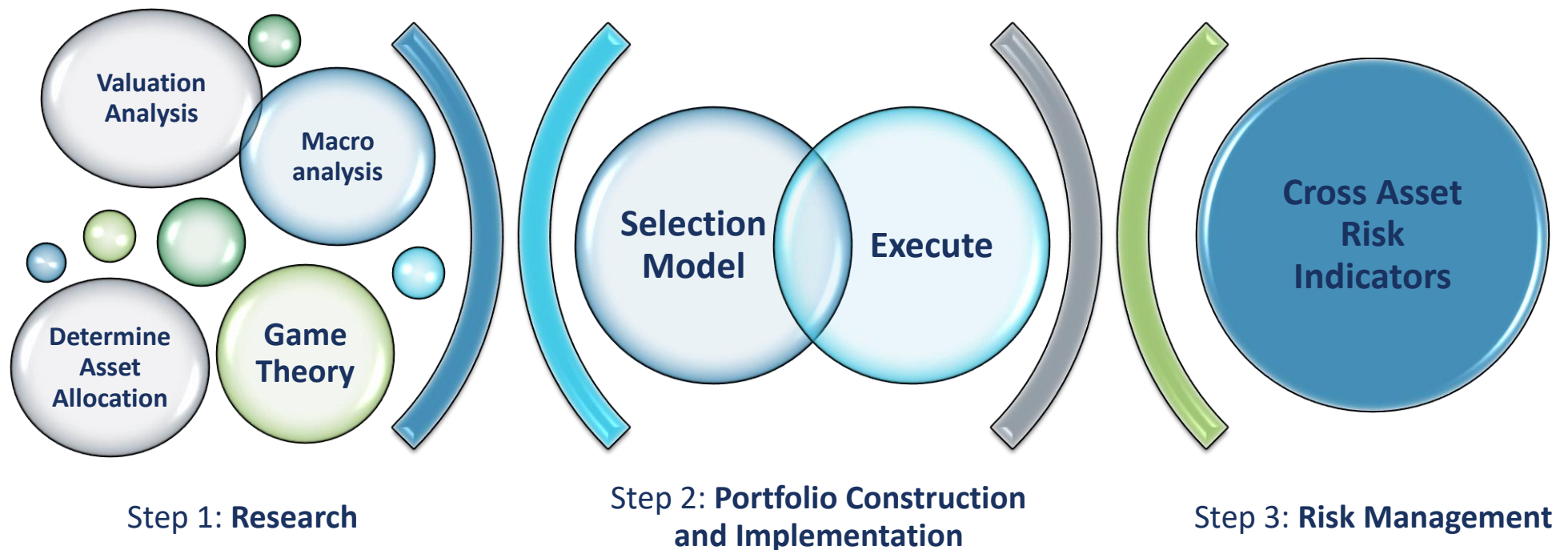
Philosophy: Astoria Extracts Risk Premia via Factor Analysis. We Believe Blending *Active* and *Passive* is the True Sweet Spot for Active Management

- We believe this is an **ideal environment** for active management
- **Active management** of cross asset, factor based ETFs offers investors the best of both worlds



Source: Astoria Portfolio Advisors LLC

Process: Astoria Runs a Disciplined Cross Asset, Risk Premia Based Investment Management Process



Continuous Feedback Loop Between Research, Portfolio Management and Risk Management

Source: Astoria Portfolio Advisors LLC

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Process: Astoria Utilizes Various Risk Models & Factor Tools in order to Stress Test our Portfolios & Understand our Risk Premia Exposures



In-depth Overview of our Macroeconomic Models and Cross Asset Risk Indicators is Available Upon Request.

Astoria Offers a Range of ETF Strategic Solutions. We will hold a variety of asset classes including stocks, bonds, and a modest amount of alternatives.

We list the target equity ranges below. The balance is allocated towards bonds and a modest amount towards alternatives.

Focus on long term returns

All of our strategies are based on macroeconomic & quantitative research. We utilize several risk modeling tools.

Focus on risk adjusted returns

We believe the heavy emphasis on capturing short term alpha is providing a unique opportunity in generating long term returns.

Multi-Asset Risk Allocation Strategy (MARS)*

45 – 55% equity

Benchmark: 50% MSCI All Country World Index

50% Bloomberg Barclays Global Aggregate Bond Index

Dynamic 70/30 Model

70 – 80% equity

Benchmark: 70% MSCI All Country World Index

30% Bloomberg Barclays Global Aggregate Bond Index

Dynamic 60/40 Model

60 – 70% equity

Benchmark: 60% MSCI All Country World Index

40% Bloomberg Barclays Global Aggregate Bond Index

Dynamic 50/50 Model

45 – 55% equity

Benchmark: 50% MSCI All Country World Index

50% Bloomberg Barclays Global Aggregate Bond Index

Dynamic 30/70 Model

25 – 35% equity

Benchmark: 30% MSCI All Country World Index

70% Bloomberg Barclays Global Aggregate Bond Index

Dynamic 15/85 Model

10 – 20% equity

Benchmark: 15% MSCI All Country World Index

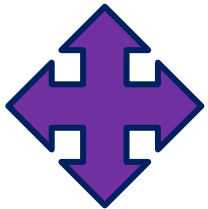
85% Bloomberg Barclays Global Aggregate Bond Index

ETF Portfolio Construction

| | |
|------------------------------|--|
| Concentration | 10-15 ETFs. Largest weight typically 15-17% ; lowest weight typically 2-3%. Portfolio allocation: equities 40%-60%, bonds 15-20%, alternatives 15-20%. Cash is used opportunistically |
| Exposure | Developed and emerging market equities & FX, non traditional interest rate and credit spread products (i.e. emerging market debt, variable preferred, municipals), energy/oil, agriculture, industrial metals, gold, liquid alternatives. 100% of the exposures are ETFs |
| Time Horizon | 1-2 years |
| Sector Focus | Multi Sector Focused |
| Market Capitalization | Vast majority of our equity exposures are large caps ETFs Small/Midcap ETFs are used opportunistically |
| Liquidity | Strategy is able to scale up significantly as we are using very liquid ETFs with considerable primary & secondary market liquidity Ability to liquidate fund within 1 day |

Astoria's ETF Portfolio Construction Process

Five Pillars to Astoria's Investment Process



1. Make investment decisions based on **empirical evidence** and focus on **after-tax, after-inflation, and risk-adjusted returns**



2. Diversify across **global equities, across asset class, and use alternatives to soften portfolio volatility**



3. Diversify across factors: The research shows historically you have been able to get higher up on the efficient frontier when harvesting a basket of factors over long periods of time



4. Utilize portfolio construction tools and risk models to ensure the tracking error is within appropriate bands (+/- 100/200bps vs. a traditional style box)

5. Harvest losses via a **systematic tax loss harvesting program**

Astoria also Offers Thematic Strategy Solutions. These portfolios are managed around a specific outcome, factor tilt, sector tilt, or macroeconomic theme.

We list the target equity ranges below. Each portfolio is focused on a unique theme which vary its security types and risk.

Focus on long term returns

Our strategies are quantitative and systematic in nature.

Focus on secular investment trends

We believe quantitatively driven, concentrated, equally weighted portfolios offer a unique client experience and potential outcome.

Renaissance Risk Managed Rotation ETF Portfolio

85 – 95% equity

Benchmark: 100% Russell 1000 Index

Inflation Sensitive ETF Portfolio

70 – 85% equity

Benchmark: 70% MSCI All Country World Index, 10% Bloomberg US TIPS (1-3 Y) Index, and 20% Bloomberg Commodity Index

Astoria's stock portfolios are rules based, quantitatively driven, and systematic in nature.

Each portfolio has a unique focus and filter strategy. Some focus on quality, some growth, and some dividend yield.

Focus on long term returns

Our strategies are quantitative and systematic in nature.

High Growth Portfolio

100% equity

Benchmark: 100% Russell 1000 Growth Index

Dividend Growers Portfolio

100% equity

Benchmark: 100% S&P 500 Dividend Aristocrats Index

Focus on risk adjusted returns

We believe quantitatively driven, concentrated, equally weighted portfolios offer a unique client experience and potential outcome.

High Quality Portfolio

100% equity

Benchmark: 100% MSCI USA Sector Neutral Quality Index

High Dividend Yield Portfolio

100% equity

Benchmark: 100% Morningstar Dividend Yield Focus Index

Astoria's Stock Portfolio Construction Process

1) US Stock Selection Universe

Depending on the theme of the portfolio, the universe of stocks is defined by thresholds of the following criteria:

- Market Capitalization
- % of Free Float Shares
- Average Volume over the Past 6 Months
- Sector / Dividend Constraints

2) Sector Specific Metrics

The metrics used for factor within a sector depend on which ones have historically best captured the factor within that sector. For example:

- Valuation within Energy uses:
 - Forward PE Estimate
 - Price / Book Value
- Valuation within Materials uses:
 - Price / Cash Flow
 - EV / EBITDA

3) Sector Adjusted Screening

Using all the companies that pass each screen, the adjustment is calculated on a sector-by-sector basis:

- Calculate and subtract the median of each metric from the original metric
- According to the sector, the adjusted metric will be used for ranking for the relevant factor

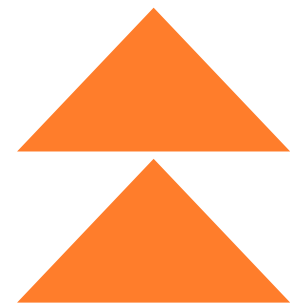
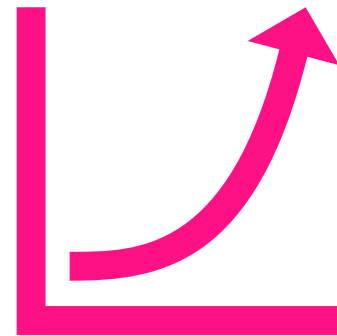
4) Rank Logic

- Securities are ranked on a sector-by-sector basis
- A weighting, which depends on the theme, is assigned to each factor used in the portfolio
- If a factor has two or more underlying components, each will have an equal weighting
- Ranks are calculated in deciles; best values associated with each factor return a "1" and the worst values associated with each factor return a "10"
- A weighted average of the ranks for all factors will be the overall deciding rank
- The 40 best ranked stocks are selected

High Growth US Stock Portfolio: Target 40 stocks that have the potential for above average growth

Screening Criteria and Methodology

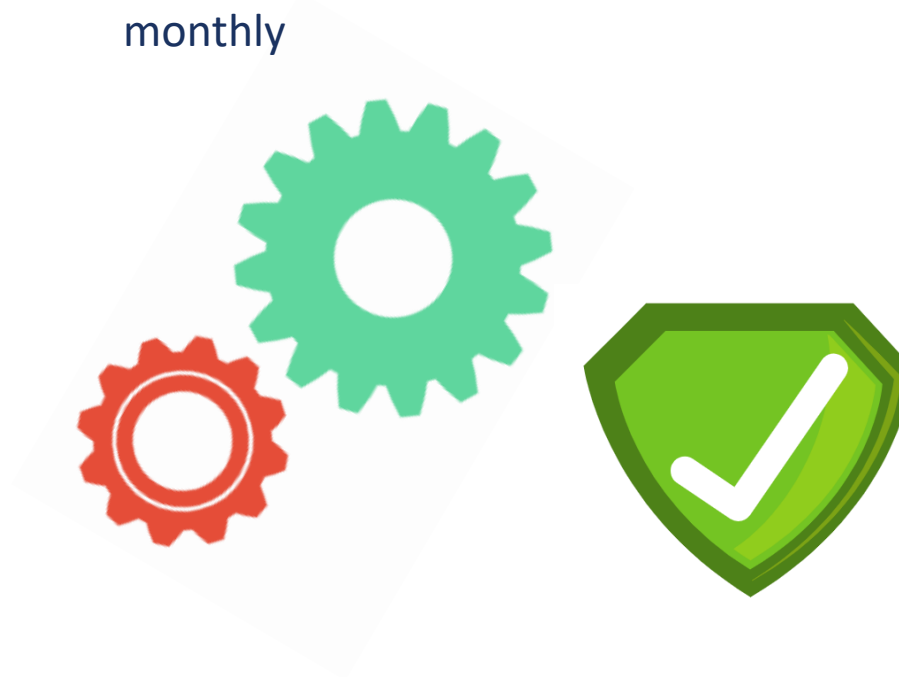
- Universe Constraints:
 - Market Cap \geq 15bln
 - Free Float Shares \geq 25%
 - Average Volume Past 6M \geq 50mln
 - Exclude Real Estate, Utilities, Financials, Consumer Staples sectors
- Factor Weighting Mix:
 - 40% Momentum
 - 50% Growth
 - 10% Quality
- Sector optimized
- The stocks are market cap weighted (5.0% max) by sector target
- Our Benchmark is 100% Russell 1000 Growth Index and is rebalanced monthly



High Quality US Stock Portfolio: Target 40 stocks with high quality characteristics

Screening Criteria and Methodology

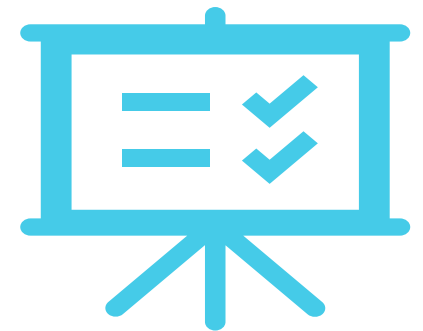
- Universe Constraints:
 - Market Cap \geq 75bln
 - Free Float Shares \geq 25%
 - Average Volume Past 6M \geq 50mln
- Factor Weighting Mix:
 - 35% Valuation
 - 10% Momentum
 - 10% Growth
 - 35% Quality
 - 10% Dividend
- Sector optimized
- The stocks are market cap weighted (5.0% max) by sector target
- Our Benchmark is 100% MSCI USA Sector Neutral Quality Index and is rebalanced monthly



Dividend Growers US Stock Portfolio: Target 40 stocks that have consistently increased their dividend for at least 10 consecutive years

Screening Criteria and Methodology

- Universe Constraints:
 - Market Cap \geq 20bln
 - Free Float Shares \geq 25%
 - Average Volume Past 6M \geq 50mln
 - Consecutive Years of Dividend Growth \geq 10
- Factor Weighting Mix:
 - 25% Valuation
 - 25% Quality
 - 50% Dividend
- Sector optimized
- The stocks are equally weighted and rebalanced annually
- Our Benchmark is 100% S&P 500 Dividend Aristocrats Index and is rebalanced monthly



High Dividend Yield US Stock Portfolio: Target 40 stocks that demonstrate strong dividend-paying potential

Screening Criteria and Methodology

- Universe Constraints:
 - Market Cap \geq 10bln
 - Free Float Shares \geq 25%
 - Average Volume Past 6M \geq 50mln
 - Dividend Yield $>$ 2.5%
- Factor Weighting Mix:
 - 25% Valuation
 - 25% Quality
 - 50% Dividend
- Sector optimized
- The stocks are market cap weighted (5.0% max) by sector target
- Our Benchmark is 100% Morningstar Dividend Yield Focus Index and is rebalanced quarterly



Step 1: What is the goal for the end client?

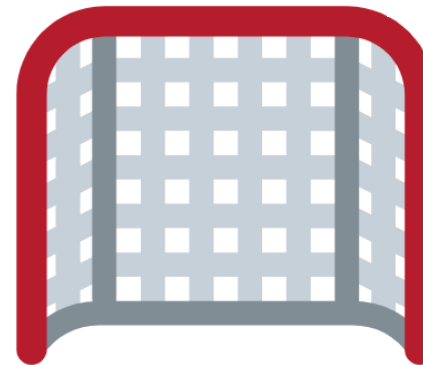
Step 1 tells us how much equity to put into the portfolio.

Growth

Income

Do we need to hedge the upside risk?

?



Step 2: How much risk can the client take?

Step 2 tells us if we need to utilize low cost ETFs or ETFs which have higher active share.

What is our Tracking Error?

- 1% Active risk winds up requiring 50%-70% core low cost ETFs
- 2-3% Active risk allows Astoria to utilize a) high active share ETFs b) modest portfolio construction tilts c) alternatives

Factors or no factors?

- Value vs Growth
- Quality vs Low Volatility
- Momentum? Size?

Include alternatives?

- We are not paid to take views on the Fed, oil, or viruses. We are benchmark investors and the goal is to deliver the returns of the benchmark +/- a spread by
- 1) tilting the portfolio based on empirical evidence,
- 2) systematic tax loss harvesting, and
- 3) utilizing alternatives to minimize downside risk

Step 3: Where are we in economic cycle?

Step 3 tells us which parts of the stock and bond universe we will tilt towards

Is the economy early, mid or late cycle?

Focus on valuations, earnings growth & equity risk premiums

Is there inflation? Are interest rates being suppressed?

Step 4: What factors have historically worked during this stage of the cycle?

Step 4 dictates which factors we want to utilize in the portfolio.

Select factors which are persistent, pervasive, robust, cheap (and implementable)

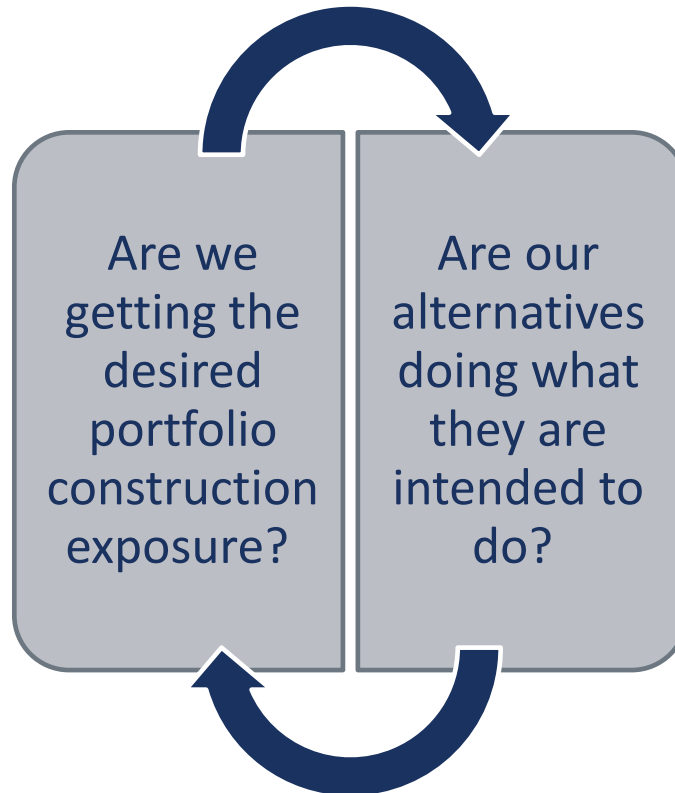
Forget the factor zoo. That's just noise.

Go with factors which have 50-75 years of empirical evidence justifying their risk premiums



Step 5: Load
ETFs into a
portfolio risk
tool. Rinse &
repeat until the
desired
outcome is
reached

Step 5 is truly Astoria's
edge and a key reason
why RIAs utilize
Astoria's services

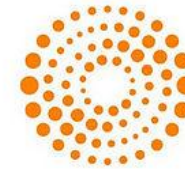


Ongoing
basis:
Monitor
performance,
risk, portfolio
tilts,
attribution.
Report back
to the
advisor.



Astoria produces hundreds of pages of content regarding our investment rationale, investment policy statement, ETF due diligence, trade documentation, performance attribution, factor tilts

Astoria Has Been Highlighted on...



REUTERS



Astoria Portfolio Advisors' strategies can be accessed through multiple Broker Dealers (BDs) and Turnkey Asset Management Programs (TAMPs). Please see below a list of platforms where Astoria's strategies are readily available.



Astoria is a Frequent Contributor to Various Media Outlets



November 2022

“We went into this year defensively positioned. We owned a lot of alternatives, inflation-fighting strategies, short-duration bonds, and most of our exposure was to the quality factor.”

–November 2022

January 2023

“You should always be diversified across factors. That's what we believe in. The research shows that you can get higher up on the efficient frontier when you own factors. Min vol. is one factor; we like dividends, and we like quality..”

–January 2023



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