

# Astoria Real Assets ETF (PPI) Portfolio Construction



*Effective March 12, 2025, the Fund changed its name from Astoria Real Assets ETF to Astoria Real Assets ETF.  
Effective October 15, 2024, the Fund name changed its name from AXS Astoria Inflation Sensitive ETF to the Astoria Real Assets ETF and transferred its stock exchange listing to Nasdaq from the New York Stock Exchange.*

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# Astoria Real Assets ETF (Ticker: PPI) Portfolio Manager: John Davi



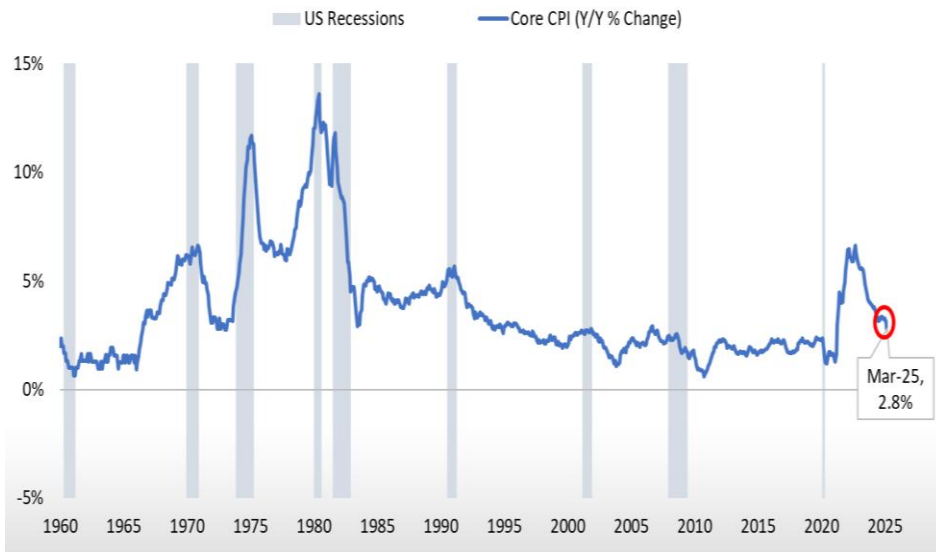
John Davi  
Founder, CEO and CIO  
Astoria Portfolio Advisors

- Award-winning authority on ETF investing
- 25+ years of portfolio construction experience for institutions and advisors
- Industry thought leader in multi-asset class & quantitative ETF research
- Frequent go-to contributor for financial media



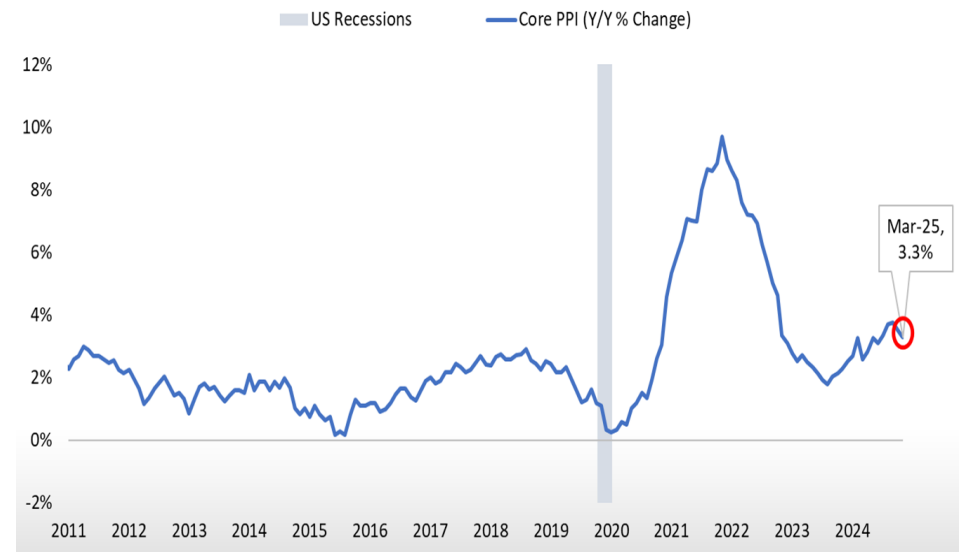
# Inflation via Core CPI (Consumer Price Index) Y/Y has eased but remains elevated. Meanwhile, Core PPI (Producer Price Index) Y/Y has reaccelerated in recent months

## Core Consumer Price Index



Source: FactSet, U.S. Department of Labor, Astoria Portfolio Advisors. Core CPI (Consumer Price Index) excludes the prices of food and energy. Data as of April 10, 2025. Past performance is not a guarantee of future results.

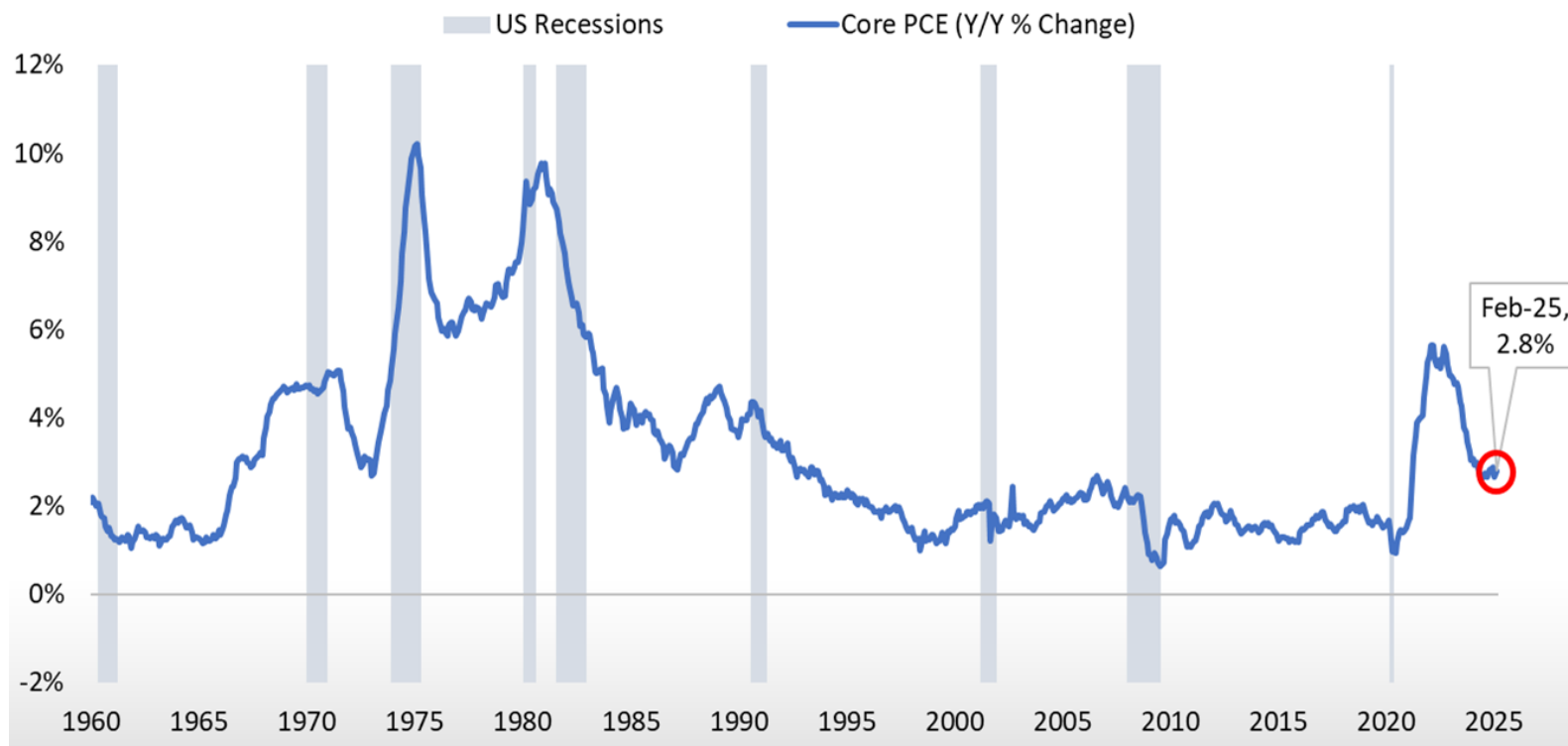
## Core Producer Price Index



Source: FactSet, U.S. Department of Labor, Astoria Portfolio Advisors. Core PPI (Producer Price Index) excludes the prices of food and energy. Data as of April 11, 2025. Past performance is not a guarantee of future results.

# Core PCE (Personal Consumption Expenditure) Y/Y has been stubborn and remains above the Fed's 2% target

## Core Personal Consumption Expenditures Index



Source: FactSet, U.S. Bureau of Economic Analysis, Astoria Portfolio Advisors. Core PCE (Personal Consumption Expenditure) excludes the prices of food and energy. Data as of March 28, 2025. Past performance is not a guarantee of future results.

# Overview/Summary of Strategy

## Asset Allocation

US & Non-US Equities  
(stocks)

Commodity ETFs

Fixed Income ETFs  
(TIPS)

## Stock Screening

### Constraints

- Minimum Free Float Share Percentage
- Minimum Market Value
- Minimum Volume over the Past 6 Months

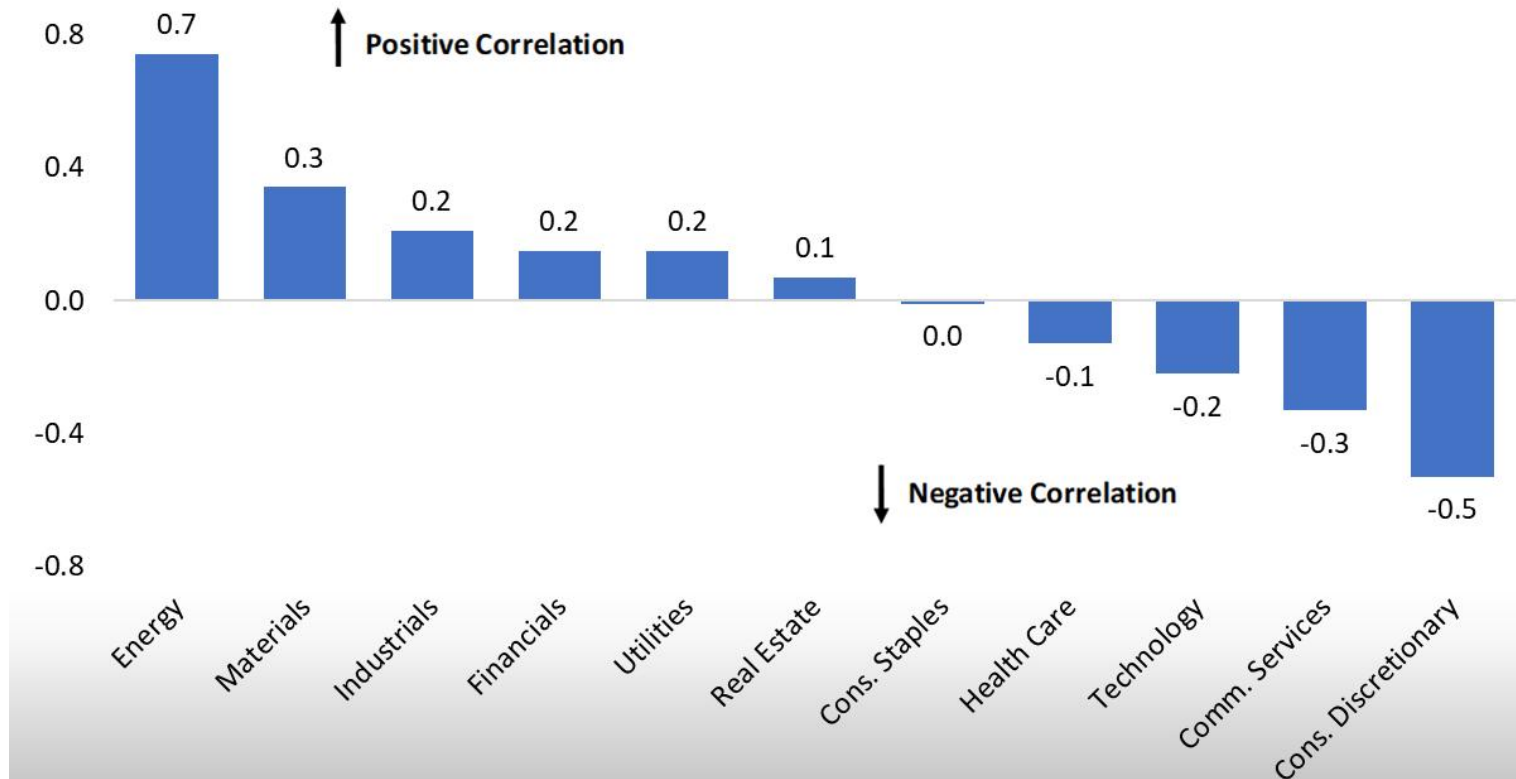
### 5-Factor Model

- i. Valuation
- ii. Momentum
- iii. Growth
- iv. Quality
- v. Sensitivity to CPI

- **Sector relative screen**, using **metrics** that **best define the factors** for the **respective sector**, historically
  - *Inflation-Sensitive Sectors: Energy, Materials, Industrials, Financials, Utilities, and Real Estate*
  - *Other Real Asset Themes: Power/Data Infrastructure, Data Centers, Uranium/Nuclear Energy, Crypto Mining*
- Metrics are adjusted to country
  - Median for each metric is calculated by country and subtracted from original metric
- The adjusted metrics are ranked in deciles
- The **best US stocks** and **best non-US stocks** are chosen within each sector= **50-60 high conviction stocks**

Among equity sectors, energy, materials, industrials, financials, utilities, and real estate have historically demonstrated positive sensitivity to inflation movements

US Sector Correlations to Inflation Movements Relative to S&P 500



Source: MarketDesk Quant Pack. Calculations based on relative year over year returns versus the S&P 500 over the last 20 years.

# During inflationary periods, many commodities have historically produced both real returns and high hit rates

## Commodities in Inflationary Regimes

	Specific Inflation Regimes								Combined Regimes				
	US Enters WW2	End of WW2	Korean War	Ending of Bretton Woods	OPEC Oil Embargo	Iranian Revolution	Reagan's Boom	China Demand Boom	Inflation (19%)	Other (81%)	All (100%)	Hit Rate	t-stat
Start Month	April 1941	Mar 1946	Aug 1950	Feb 1966	Jul 1972	Feb 1977	Feb 1987	Sep 2007					
End Month	May 1942	Mar 1947	Feb 1951	Jan 1970	Dec 1974	Mar 1980	Nov 1990	Jul 2008					
Total Price Level Change	15%	21%	7%	19%	24%	37%	20%	6%					
<u>Strategy</u>	<u>Real Return (Total)</u>								<u>Real Return (Annualized)</u>				
Industrials				115%	38%	-6%	306%	3%	19%	4%	7%	80%	1.7
Precious				28%	29%	185%	-27%	33%	11%	-2%	1%	80%	1.7
Agris		12%	6%	-23%	197%	-21%	6%	33%	7%	-3%	0%	71%	1.8
Softs				-41%	243%	15%	11%	15%	8%	-3%	-1%	80%	1.6
Livestock				69%	-21%	35%	97%	-23%	7%	1%	2%	60%	1.1
Energies	-3%	2%	-6%	-16%	264%	57%	201%	68%	41%	-1%	3%	100%	1.7
Gold					166%	154%	-18%	27%	13%	-1%	1%	67%	1.6
Silver				9%	99%	210%	-41%	36%	12%	-5%	0%	80%	1.8
Commodities Aggregate		12%	6%	26%	85%	38%	84%	21%	14%	1%	4%	100%	3.1 *

Source: Neville, Henry and Draaisma, Teun and Funnell, Ben and Harvey, Campbell R. and van Hemert, Otto, The Best Strategies for Inflationary Times (May 25, 2021). Total returns to six baskets of commodity futures, as well as gold and silver individually, and an equal-weighted, monthly rebalanced basket of all commodities, during the eight US inflation regimes already defined, as well as the annualized return during inflationary, non-inflationary, and all periods. Returns in grey italics are spot returns prior to the existence of a liquid futures contract. These are not included in the aggregate calculations. All other returns are funded. In the final columns, presented is the hit rate (proportion of inflationary periods with positive returns) and the heteroskedasticity-consistent t statistic, which tests whether the returns in inflationary and non-inflationary times are different.

\*Denotes significance. The starting point for the data varies from 1946 (agris) to 1979 (energies) and runs through to 2020 at monthly periodicity.

# When comparing the historical performance of various fixed income securities during inflationary periods, TIPS have generated the only positive real return, as well as the largest hit rate

## Fixed Income in Inflationary Regimes

	Specific Inflation Regimes								Combined Regimes				
	US Enters WW2	End of WW2	Korean War	Ending of Bretton Woods	OPEC Oil Embargo	Iranian Revolution	Reagan's Boom	China Demand Boom	Inflation (19%)	Other (81%)	All (100%)	Hit Rate	t-stat
Start Month	April 1941	Mar 1946	Aug 1950	Feb 1966	Jul 1972	Feb 1977	Feb 1987	Sep 2007					
End Month	May 1942	Mar 1947	Feb 1951	Jan 1970	Dec 1974	Mar 1980	Nov 1990	Jul 2008					
Total Price Level Change	15%	21%	7%	19%	24%	37%	20%	6%					
Strategy	Real Return (Total)								Real Return (Annualized)			Hit Rate	t-stat
US Treasury 30 Year	-17%	-17%	-6%	-20%	-28%	-41%	13%	2%	-8%	5%	3%	25%	-5.0 *
US Treasury 10 Year	-11%	-17%	-6%	-13%	-12%	-31%	8%	5%	-5%	4%	2%	25%	-5.1 *
US Treasury 2 Year	-13%	-17%	-6%	-1%	-7%	-17%	11%	0%	-3%	2%	1%	13%	-5.8 *
USD Investment Grade Credit	-7%	-12%	-3%	-23%	-20%	-43%	-5%	1%	-7%	6%	3%	13%	-8.1 *
USD High Yield Credit	-4%	-11%	0%	-18%	-21%	-38%	-10%	-8%	-7%	6%	4%	13%	-7.8 *
TIPS				-3%	13%	-2%	11%	6%	2%	3%	3%	60%	-0.6

Source: Neville, Henry and Draaisma, Teun and Funnell, Ben and Harvey, Campbell R. and van Hemert, Otto, The Best Strategies for Inflationary Times (May 25, 2021). Total returns to 30-year, 10-year, and 2-year US Treasuries, and investment-grade and high-yield credit and 10-year TIPS, during eight US inflationary regimes as well as the annualized return during inflationary, non-inflationary, and all periods. In the final columns, presented is the hit rate (proportion of inflationary periods with positive returns), and the heteroskedasticity-consistent t-statistic, which tests whether the returns in inflationary and non-inflationary times are different. \*Denotes significance. The data are from 1926 to 2020 for all assets other than TIPS, which are from 1959. The US Treasury only started to issue TIPS in 1997. However, data from a synthetic TIPS is available back to 1959 (Marshall 2020). The historical TIPS index is constructed by Goldman Sachs (Marshall, 2020). To transform into TIPS TR index, 10-year nominal yields are used to calculate Macaulay duration, assuming a par rate, and then the estimated real yield to calculate modified duration. To calculate the inflation accrual, the historic CPI is lagged by three months.



# Stock Selection Universe

All primary listings across 16 countries

- |                |           |
|----------------|-----------|
| United States  | Norway    |
| United Kingdom | Germany   |
| Switzerland    | Australia |
| Japan          | Belgium   |
| Netherlands    | Canada    |
| South Africa   | Italy     |
| France         | Austria   |
| Spain          | Ireland   |

**Energy**

**Industrials**

Sectors that have historically demonstrated positive sensitivity to inflation

**Financials**

**Utilities**

**Real Estate**

**Other Real Asset Themes**

- Power/Data Infrastructure
- Data Centers
- Uranium & Nuclear Energy
- Crypto Mining

**% of Free Float Shares > 25%**

**Current Market Value > \$5 bln**

**Avg. Volume in Past 6 Months > \$50 mln**

# Sector Relative Screening

## 5-Factor Model

Valuation

Momentum

Growth

Quality

Inflation-Sensitivity

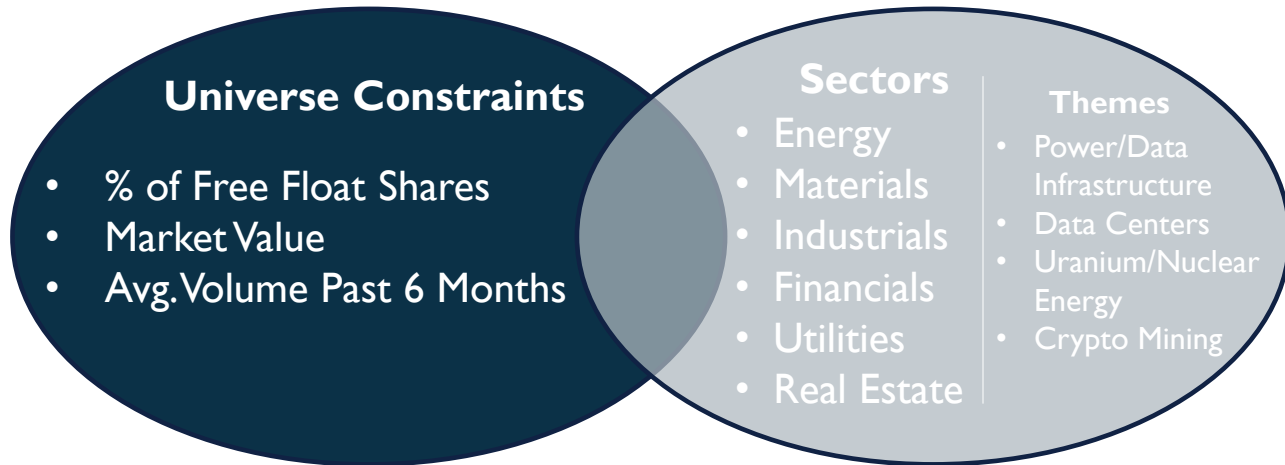
*INFLATION-SENSITIVE SECTORS: Energy, Materials, Industrials, Financials, Utilities, Real Estate*

*OTHER REAL ASSET THEMES: Power/Data Infrastructure, Data Centers, Uranium/Nuclear Energy, Crypto Mining*

**The metrics used for each sector depend on which ones historically best captured the factor for that sector**

# Country Adjusted Metrics

- The screen first pulls companies that satisfy the following:

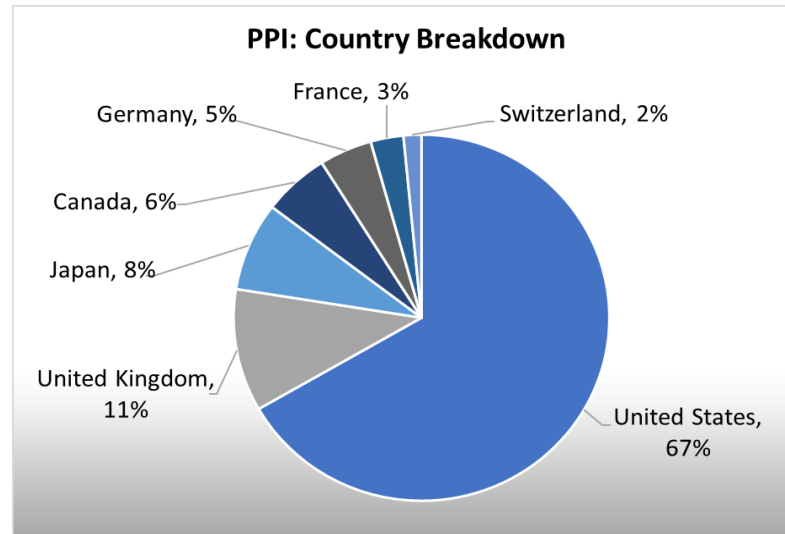
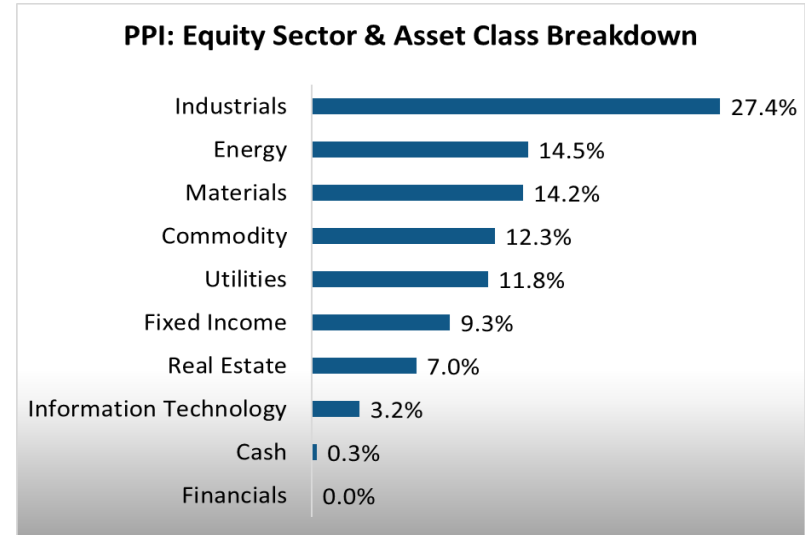
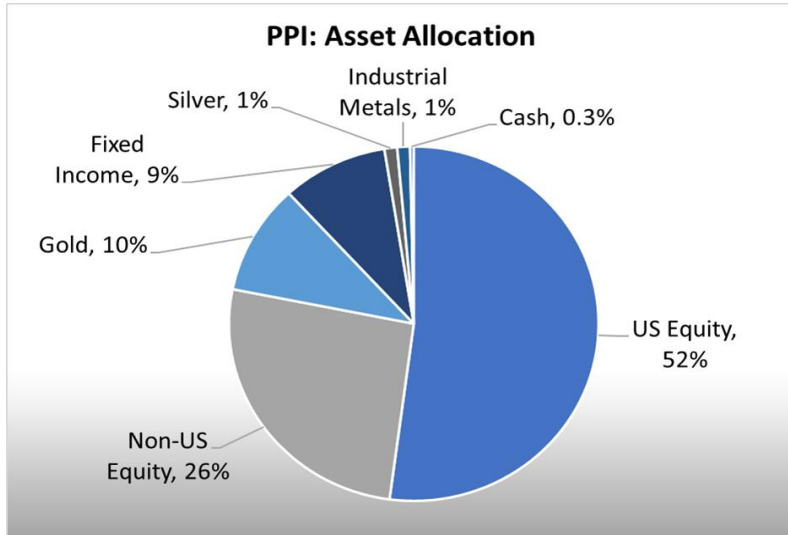


- The appropriate sector relative metrics are calculated for each company
- The adjustment is then calculated on a country of domicile basis:
  - The median value for each metric is calculated for each country based on all companies within the sector
  - The median value according to the stock's country of domicile is then subtracted from the original metric
- The adjusted metric is used in the ranking process

# Rank Logic & Security Selection

- A weighting is assigned to each of the 5 factors
- If a factor has two underlying components, each will have a 50% sub-weight
  - Example: If Growth is made up of Growth Estimates and PEG Estimates, the sub-weighting of each will be 50%. The weighted average of the two will make up the Growth factor, which is used in the overall ranking process
- Ranks are calculated in deciles
- Ranks are applied so that the best values associated with each factor return a “1” and the worst values associated with each factor return a “10”
  - Example: Lowest values associated with Forward P/E and Price / Cash Flow (the Valuation factor) will be ranked 1 while highest values associated with ROIC and 1YR ROE (the Quality Factor) will be ranked 1
- A weighted average of the ranks for all 5 factors will be the overall deciding rank
- For each sector, the highest-ranking us and non-us securities are chosen for the final list

# Portfolio Characteristics



Source: Astoria Portfolio Advisors. All data is as of April 17, 2025.

# Value and Growth Measures of PPI and S&P 500 Index

## PPI (Astoria Real Assets ETF)

Value & Growth Measures	Investment	Cat. Average	Index
Price/Earnings	14.85	16.37	17.05
Price/Book	2.14	2.29	2.49
Price/Sales	1.54	1.81	1.88
Price/Cash Flow	6.69	10.06	10.86
Dividend Yield %	2.02	2.71	2.19
Long-Term Earnings %	9.58	9.67	10.13
Historical Earnings %	5.03	5.44	6.81
Sales Growth %	9.02	5.87	-1.20
Cash-Flow Growth %	1.21	2.67	4.72
Book-Value Growth %	14.19	6.54	5.93

Investment as of Apr 17, 2025 | Category: Global Allocation as of Mar 31, 2025 |  
Index: Morningstar Gbl Allocation TR USD as of Mar 31, 2025 | Data is based on  
the long position of the equity holdings.

Source: Morningstar. Data accessed on April 21, 2025.

## S&P 500 Index

Value & Growth Measures	Index
Price/Earnings	20.90
Price/Book	4.10
Price/Sales	2.74
Price/Cash Flow	14.07
Dividend Yield %	1.52
Long-Term Earnings %	10.33
Historical Earnings %	9.28
Sales Growth %	7.90
Cash-Flow Growth %	6.89
Book-Value Growth %	8.64

As of Mar 31, 2025

# Warranties & Disclaimers

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- Important Risk Information
- ETFs involve risk including possible loss of principal. There is no assurance that the Fund will achieve its investment objective.
- There is no guarantee the sectors or asset classes the advisor identifies will benefit from inflation. Fund may invest a larger portion of its assets in one or more sectors than many other funds, and thus will be more susceptible to negative events affecting those sectors.
- Equity Securities Risk: Equity securities may be particularly sensitive to rising interest rates, as the cost of capital rises and borrowing costs increase. Equity securities may decline significantly in price over short or extended periods of time, and such declines may occur in the equity market as a whole, or in only a particular country, company, industry or sector of the market.
- Commodities Risk: Commodity prices can have significant volatility, and exposure to commodities can cause the value of the Fund's shares to decline or fluctuate in a rapid and unpredictable manner. The values of commodities may be affected by changes in overall market movements, real or perceived inflationary trends, commodity index volatility, changes in interest rates or currency exchange rates, population growth and changing demographics, international economic, political and regulatory developments, and factors affecting a particular region, industry or commodity.
- Futures Contracts Risk: The Fund expects that certain of the Underlying ETFs in which it invests will utilize futures contracts for its commodities investments. The risk of a position in a futures contract may be very large compared to the relatively low level of margin the Underlying ETF is required to deposit. In many cases, a relatively small price movement in a futures contract may result in immediate and substantial loss or gain to the investor relative to the size of a required margin deposit. The prices of futures contracts may not correlate perfectly with movements in the securities or index underlying them.
- TIPS Risk: Principal payments for Treasury Inflation-Protection Securities are adjusted according to changes in the Consumer Price Index (CPI). While this may provide a hedge against inflation, the returns may be relatively lower than those of other securities. Similar to other issuers, changes to the financial condition or credit rating of the U.S. government may cause the value of the Fund's exposure to U.S. Treasury obligations to decline.
- Shares of ETFs are bought and sold at market price (not NAV) and are not individually redeemed from the ETF. Brokerage commissions will reduce returns. NAVs are calculated using prices as of 4:00 PM Eastern Time. The closing price is the midpoint between the bid and ask price as of the close of exchange. Closing price returns do not represent the returns you would receive if you traded shares at other times.
- **Investors should carefully consider the investment objectives, risks, charges and expenses of AXS Astoria Real Assets ETF. This and other important information about the Fund is contained in the Prospectus, which can be obtained by visiting [www.axsinvestments.com](http://www.axsinvestments.com). The Prospectus should be read carefully before investing.**
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