

# **FUNDAMENTALLY DRIVEN.** Macroeconomics-Based Asset Allocation

2017-32



# Firm Overview: General Investment Principles

- Equity prices tend to appreciate over longer periods
- Fundamental macroeconomic trends have an impact on medium term market movements
- Equity markets typically experience drawdowns during periods later identified as recessions





# **Astor Portfolio Management Team**





John Eckstein CIO

**Bryan Novak** 

Sr. Managing

Director

**Rob Stein** 

CEO. Founder

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Deepika Sharma Managing Director

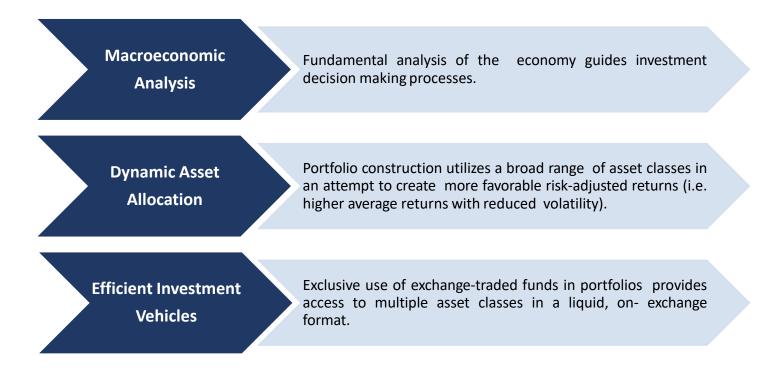
- Federal Reserve: Project Analyst under chairmanship of Paul Volcker
- Senior trading or portfolio management positions with Bank of American New York/Chicago, Harris Bank Chicago
  - Managing Director of Proprietary Trading for Barclay's Bank PLC New York
  - B.S. University of Michigan, Ann Arbor
  - Author: Inside Greenspan's Briefcase (McGraw Hill) and The Bull Inside the Bear (John Wiley and Sons)
  - Vice Chairman of the Investment Committee
  - Founder, Cornerstone Quantitative Investment Group, global macro hedge fund with peak assets of \$600 million.
  - Researcher, Luck Trading Company, a commodity trading adviser
  - B.S. from Brown University. Masters in Public Administration (International Economic Policy) from Columbia University
  - Co-Author: Commodity Investing (John Wiley & Sons)
  - Joined Astor in 2002
- Worked on Astor's Mutual Fund launch
- Former equity options trader for Second City Trading, LLC at the CBOE in Chicago
- CAIA charterholder. B.S. From Ohio State University
- Portfolio Manager and Director of Investments
- Analyst on the EMEA Fixed Income desk at Lehman Brothers, later acquired by Nomura,
- Worked in macro-strategy at Roubini Global Economics.
- Recognized by the New York CFA Society (formerly NYSSA) as the "Young Investment Professional 2015." for being an outstanding early career professional who is actively involved in the investment community
- Certified Financial Analyst (CFA) and Master's Degree in International Finance at Columbia University

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# Firm Overview: Approach

Astor's macroeconomic driven approach to dynamic ETF portfolio construction has given Astor the ability to managed risk for client's for over a decade



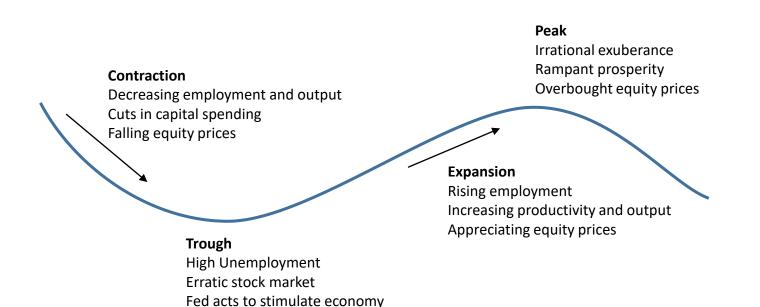
There is no guarantee that investment objectives will be met. There is no assurance that Astor's investment programs will produce profitable returns or that any account with have similar results. You may lose money.

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# Macroeconomic Analysis: Astor's goal is to interpret the current economic cycle

- We use broad fundamental indicators such as output and employment as tools to gauge the current phase of the economic cycle
- Economic data of various frequency is gathered using a proprietary method that allows us to generate a singular economic indicator: The Astor Economic Index <sup>®</sup>.



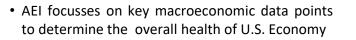
The Astor Economic Index<sup>®</sup> should not be used as the sole determining factor for your investment decisions. There is no guarantee the index will produce the same results in the future. An investment cannot be made in an index

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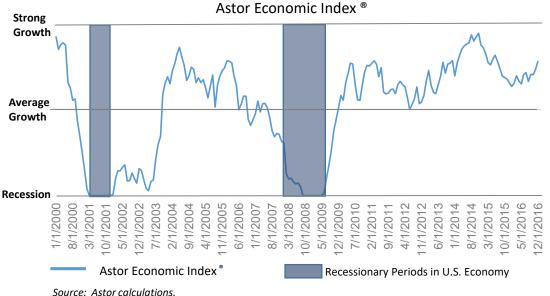


# The Astor Economic Index <sup>®</sup> (AEI) – A real time snapshot of the U.S. Economy

The cornerstone of Astor's investment philosophy is our proprietary, data-driven economic index which allows us to gain a comprehensive view of the relative strength or weakness of the U.S. economy



- Each input of economic data is statistically measured and assigned a value
- Aggregate of the values across all economic data points equals the total AEI Score



The AEI should not be used as the sole determining factor for your investment decision. There is no quarantee that the index will produce the same results in the future. An investment cannot be made in the index

"The Astor Economic Index<sup>®</sup> is a measurement of the strength of the economy. Risk assets, like stocks, tend to appreciate over time and demonstrate a greater probability to appreciate during times of average or greater economic strength. Conversely, when the economic strength of the economy is below average risk assets like equities tend to underperform. At Astor, we measure the economy and increase or decrease risk holdings based on the proprietary measurement of the economy."

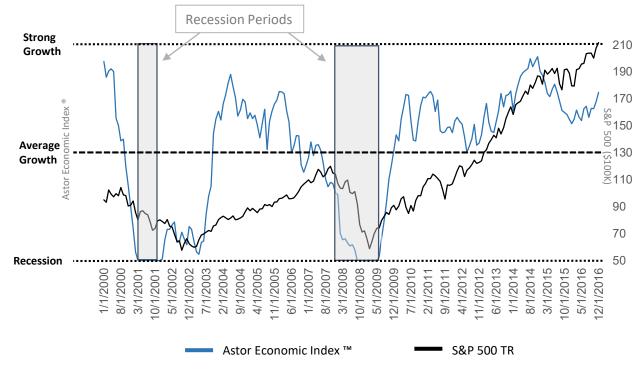
- Rob Stein, CEO and Founder



# Astor Economic Index<sup>®</sup> throughout Cycles in U.S. Equity Markets

• The AEI is designed to suggest a approximate level of risk exposure

- The higher the AEI score, the more favorable view the index has on taking risk.
- The lower the AEI score, the more risk averse the index becomes



Astor Economic Index <sup>®</sup> and S&P 500 Overlay

#### Source: Astor Calculations

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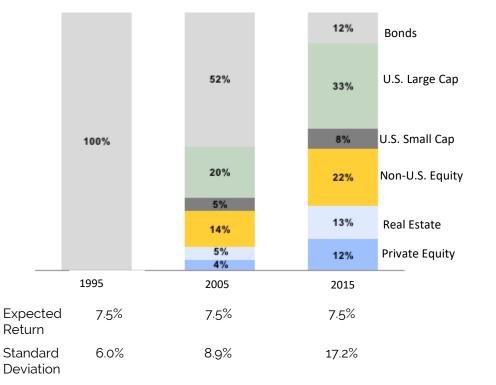


# Why Dynamic Asset Allocation: The Search for Return

Investors grappling with lower interest rates have to take bigger risks if investors want the opportunity to obtain the returns realized two decades ago

- Current financial market conditions have changed the risk and return profile of asset allocation models
- Investors are faced with having to take substantially more risk
- Dynamic allocation strategies can adapt investors' portfolios to current conditions

## Estimates of what investors needed to earn 7.5%



Likely amounts by which returns can vary.

Data Source: Callan AssociatesIllustration: Astor Investment ManagementDisclosure: The illustration does not depict the allocation or returns Astor investment strategies seek to achieve.

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# Astor Dynamic Allocation Strategy

## **Objective**:

The Strategy seeks to adjust a portfolio allocation of multiple asset classes throughout economic cycles by utilizing macroeconomic analysis to determine portfolio risk targets. The Astor Economic Index<sup>®</sup> is the primary driver in determining strategy's allocations between stocks, bonds, cash and other major asset classes.

## Strategy Highlights

- Macro Trends are relevant and valuable input to making risk exposure adjustment.
- "Risk Dial" concept, using Astor Economic Index <sup>®</sup> determines when to increase and decrease market exposure.
- Ability to reduce market correlation and beta to 0 during periods of dramatic economic weakness and recessions that typically correspond to substantial portfolio losses.

## Portfolio Construction

The Strategy seeks to adjust allocations of multiple asset classes throughout economic cycles by utilizing macroeconomic analysis to determine portfolio risk targets.



The Astor Economic Index<sup>®</sup> is a proprietary index created by Astor Investment Management. The Index should not be used as the sole determining factor for your investment decisions. There is no guarantee the index will produce the same results in the future. An investment cannot be made in the index

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# Portfolio Construction: Calculating the Astor Economic Index <sup>®</sup> & Establishing Beta Target for Strategy

- The Astor Economic Index <sup>™</sup> is calculated on a monthly basis
- The AEI Score translates to a Beta Target (relative to S&P 500) for the Astor Dynamic Allocation Strategy
- Generally speaking, the healthier the U.S. Economy, the higher the beta target.
- Inverse Equity: During periods of extreme economic duress, the beta target can reach a point that indicates taking inverse equity exposure up to 20% (net).

Beta of 1 to S&P 500 Strong Beta of Astor Dynamic Allocation to S&P 500 Growth 0.8 Index U 0.5 Om Average Growth 0.4 0.3 Astor 0.2 0.1 Beta of 0 to S&P 500 Recession -0.1 Jan-02 Jul-02 Jul-03 Jul-04 Jan-05 Jan-05 Jul-06 Jan-06 Jan-07 Jul-06 Jan-07 Jul-07 Jul-08 Jan-09 Jul-09 Jul-16 Jan-17 Jul-00 Jul-00 Jul-14 an-01 Jul-01 Jan-10 Jul-10 Jan-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jan-15 Jul-15 Jan-16 Jul-11

— Astor Economic Index ™

Example: Historical AEI score and Beta Targets for Dynamic Asset Allocation Strategy:

Date	U.S. Ecomomy Health (According to AEI)	Strategy Beta: Actual	
• 12/31/2005	Above Average	.90	
9/30/2007	Below Average	.51	Current Strategy Beta Target:
9/30/2008	Recession	002	0.74
9/30/2009	Average	.20	(as of 12/31/16)
• 9/30/2013	Above Average	.55	
<mark>-</mark> 12/31/2015	Strong Growth	.76	
●12/31/2016	Above Average	.74	

Astor Economic Index (TM) Charted against Astor Dynamic Balanced Beta to S&P 500 TR

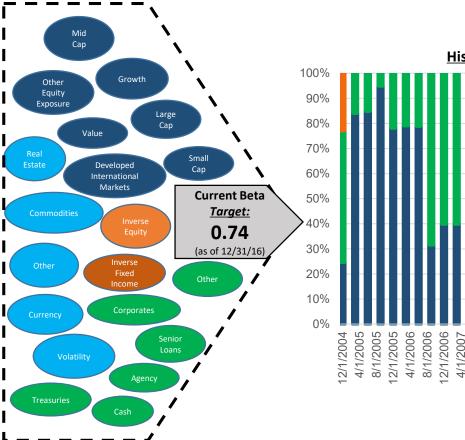
Inverse Positions: An investment in an exchange-traded fund which seeks to replicate 100% of the daily inverse performance of an underlying index or security. Inverse ETFs have potential for significant loss and may not be suitable for all investors.

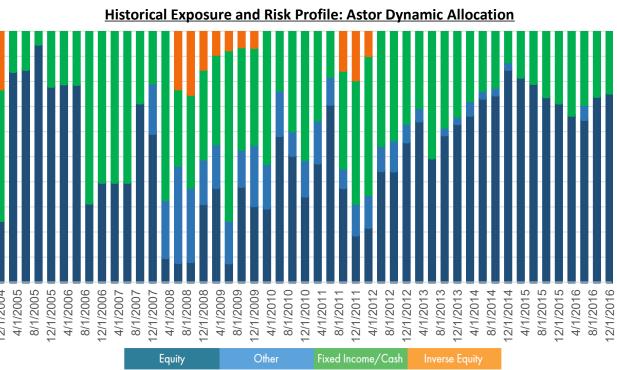
The Astor Economic Index<sup>®</sup> should not be used as the sole determining factor for your investment decisions. There is no guarantee the index will produce the same results in the future. An investment cannot be made in the index

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# **Portfolio Construction: Achieving Beta Target**





Source: Astor Investment Management

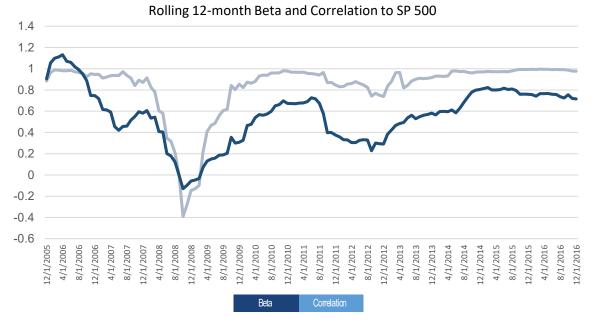
All information presented is calculated based on the asset allocations of each calendar quarter ending date only and do not account for the asset allocations during the quarter. Asset allocations are no indication of portfolio performance See accompanying disclosures for asset class definitions For the historical allocation presented, from the third quarter 2010 going forward, the composite allocation is shown. Prior to this period, holdings from representative accounts that were invested in the model were used to calculate the allocations shown.

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## Historical Correlation and Beta: Astor Dynamic Asset Allocation Strategy

- Correlation to the S&P 500 has historically dropped into negative values during recessionary periods
- The beta of the strategy fluctuates based on the overall health of the U.S. Economy – as suggested by the AEI



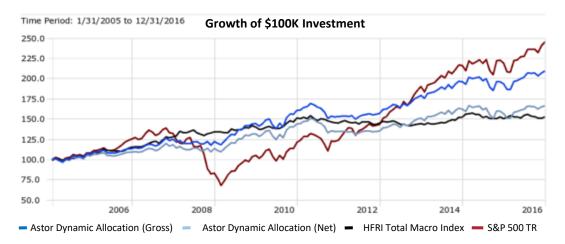
Full Performance and Risk Statistics on the following two slides

Source: MorningstarDirect, Astor, Bloomberg. The performance data shown is 2005 through 12/31/16 and represents past performance for the composites(s) defined on the following page. Current performance may be lower or higher. Net of fee performance assumes the reinvestment of dividends. Gross of fee returns are shown as supplemental information only and represent "pure gross" returns. Pure gross returns are calculated before the deduction of all fees. Please refer to the accompanying disclosures for additional information concerning these results.

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## **Performance: Astor Dynamic Allocation Strategy** (formerly "LSB" - Long/Short Balanced)



Source: MorningstarDirect. The chart is calculated on a monthly basis using net-of –fees composite returns with an inception value of \$100,000 and assumes the reinvestment of dividends. Past performance is not an indication of future results. Please refer to the accompanying disclosures for additional information concerning these result

Annualized	Q4-16	YTD (as of 12/31/16)	1-YR	3-YR	5-YR	7-YR	10-YR	Since Inception	Standard Deviation	Sortino Ratio	Max Drawdown
Astor Dynamic Allocation (Gross)	1.22%	8.23%	8.23%	5.35%	6.45%	5.45%	6.32%	6.37%	7.85%	1.11	-11.43%
Astor Dynamic Allocation (Net)	0.72%	6.13%	6.13%	3.26%	4.34%	3.38%	4.29%	4.35%	7.87%	0.66	-13.23%
HFRI Total Macro Index	-0.19%	1.49%	1.49%	1.90%	1.03%	1.24%	2.85%	3.61%	4.69%	0.91	-8.02%
S&P 500 TR Index	3.82%	11.96%	11.96%	8.87%	14.66%	12.83%	6.95%	7.48%	14.23%	0.73	-50.95%

Calendar Year Returns	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Astor Dynamic Allocation (Gross)	7.05%	6.20%	10.28%	-2.25%	18.07%	11.27%	-4.66%	2.50%	14.06%	9.47%	-1.32%	8.23%
Astor Dynamic Allocation (Net)	4.85%	4.39%	8.33%	-3.91%	15.90%	9.23%	-6.59%	0.48%	11.81%	7.29%	-3.32%	6.13%
HFRI Total Macro Index	6.79%	8.15%	11.11%	4.83%	4.34%	8.06%	-4.16%	-0.06%	-0.44%	5.58%	-1.26%	1.49%
S&P 500 TR Index	4.91%	15.79%	5.49%	-37.00%	26.46%	15.06%	2.11%	16.00%	32.39%	13.69%	1.38%	11.96%

Source: Bloomberg, Astor, MorningstarDirect. The performance data shown is through 12/31/16 and represents past performance for the composites(s) defined on the following page. Current performance may be lower or higher. Net of fee performance assumes the reinvestment of dividends. Gross of fee returns are shown as supplemental information only and represent "pure gross" returns. Pure gross returns are calculated before the deduction of all fees. Please refer to the accompanying disclosures for additional information concerning these results

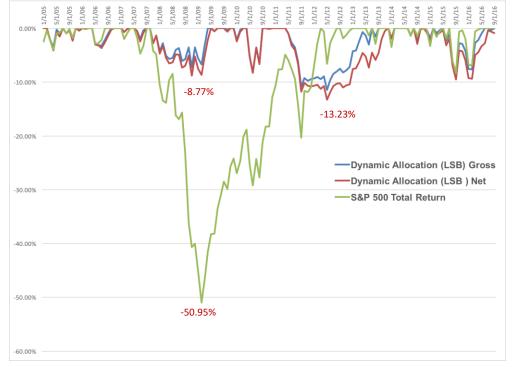
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# Max Drawdown and Risk Metrics: Astor Dynamic Asset Allocation Strategy

	S&P 500 TR	Astor Dynamic Allocation (Net)
Maximum Drawdown	-50.95%	-13.23%
Months to Recover	37	18
Required Return to Breakeven	103.87%	15.01%

Source: Zephyr StyleADVISOR, Astor. The performance data shown is 2005 through 9/30/16 and represents past performance for the composites(s) defined on the following page. Current performance may be lower or higher. Net of fee performance assumes the reinvestment of dividends. Gross of fee returns are shown as supplemental information only and represent "pure gross" returns. Pure gross returns are calculated before the deduction of all fees. Please refer to the accompanying disclosures for additional information concerning these results.



Data: Bloomberg Illustration: Astor

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Disclosures:

Astor Investment Management ("Astor") is defined for GIPS purposes as a registered investment adviser with the U.S. Securities and Exchange Commission. Valuations are computed and performance is reported in U.S. dollars.

Valuations are computed and performance is reported in U.S. dollars. Performance results assume the reinvestment of dividends. Certain client accounts may take dividends as distributions. Gross-of-fee returns are shown as supplemental information only and represent "pure gross" returns. "Pure gross" returns are calculated before the deduction of all fees, including trading, advisory, and administrative fees. A small number of client accounts may pay for trading costs as individual expenses and the gross-of-fee returns for these accounts would be net of trading expenses. Net-of-fee returns for the period January 1, 2005 to September 30, 2010 are calculated by deducting all actual fees paid. For the period July 1, 2010 to September 30, 2016, net-of-fees include items such as advisory, administrative, and custodial fees. In addition to these expenses, Astor primarily purchases securities which contain embedded expenses. These costs result in a layering of fees. Please note performance results include accounts which pay trading costs separately and accounts which pay a bundled fee inclusive of advisory and trading costs. No performance-based fees are assessed. Valuations are computed and performance is reported in U.S. dollars. Performance results assume the reinvestment of dividends. Certain client accounts may take dividends as distributions. The annual fee paid by clients will typically range from 1.00% – 3.00% of the clients' assets under management. Astor receives a portion of this total fee as compensation for provided advisory services. Astor's annual management fee varies based upon custodial arrangements, account size, and other factors. The composite includes accounts which were direct advisory clients of Astor and accounts which receive Astor's services as part of a wrap fee or sub-advisory program. For the period July 1, 2010 to December 31, 2016; a 2.00% annual model fee is used. The model fee is representative of the actual fees charged to client accounts which cover trading, advisory, and other costs

The performance shown is of the Astor Dynamic Allocation (prior to December 1, 2016 was known as Long/Short Balanced Composite) Composite. The Astor Dynamic Allocation Composite is a multi-asset, tactical allocation strategy that exclusively uses exchange-traded funds (ETFs). The Composite will invest in a mix of asset classes, including equity, fixed income, commodities and currencies depending on the economic and market environment. During economic contractions, the Composite seeks to reduce risk by utilizing defensive positioning such as inverse equity and fixed income. The strategy may employ the use of unleveraged inverse exchange-traded funds, designed to track a single multiple of the daily inverse performance of a given index. For purposes of defining the composite of accounts, a minimum account size of \$50,000 is imposed monthly. The benchmark is the HFRI Macro (Total) Index. The HFRI Macro (Total) Index is an unmanaged, equal-weighted composite of funds listed in the HFRI Database having either \$50 million or greater in assets or a 12-month track record. HFRI is a registered trademark of Hedge Fund Research, Inc. Prior to 12/31/12, the benchmark was a 60%/40% blend of the S&P 500 Index and the Barclay's Capital U.S. Aggregate Bond Index, respectively, rebalanced monthly. The benchmark was changed to help clients better assess how Astor's performance matches against other managers using similar portfolio management tactics. The performance of the S&P 500 is a registered trademark of McGraw-Hill, Inc.

From December 31, 2004 to September 30, 2010, the Portfolio Managers were affiliated with a prior firm. During this time the Portfolio Managers were the only individuals responsible for selecting the securities to buy and sell. Such performance should not be interpreted as the actual historical performance of Astor Investment Management. From October 1, 2010 to July 31, 2013, the firm was a wholly-owned, indirect subsidiary of Knight Capital Group, Inc. For the period from December 31, 2004 to September 30, 2010, the presented performance is based upon a composite of accounts under management, which was defined to include all accounts in which the model allocations could be fully implemented, and excludes any accounts in which clients have chosen to implement reasonable restrictions or those accounts that could not receive timely and accurate electronic data from the account custodian. Astor previously presented performance for the time period December 31, 1999 to December 31, 2004. Astor no longer includes the performance as the presentation of it does not conform to GIPS

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The Composite seeks to achieve its objectives by investing in in Exchange-Traded Funds ("ETFs"). An ETF is a type of Investment Company which attempts to achieve a return similar to a set benchmark or index. The value of an ETF is dependent on the value of the underlying assets held. ETFs are subject to investment advisory and other expenses which results in a layering of fees for clients. As a result, your cost of investing in the fund will be higher than the cost of investing directly in ETFs and may be higher than other mutual funds with similar investment objectives. ETFs may trade for less than their net asset value. Although ETFs are exchanged traded, a lack of demand can prevent daily pricing and liquidity from being available. Investors should carefully consider the investment objectives, risks, charges, and expenses of the ETFs held within Astor's strategies before investing. This information can be found in each fund's prospectus. The Composite can purchase ETFs with exposure to equities, fixed income, commodities, currencies, developed/emerging international markets, real estate, and specific sectors. The underlying investments of these ETFs will have different risks. Equity prices can fluctuate for a variety of reasons including market sentiment and economic conditions. The prices of small and mid-cap companies tend to be more volatile than those of larger. more established companies. It is important to note that bond prices move inversely with interest rates and fixed income ETFs can experience negative performance in a period of rising interest rates. High yield bonds are subject to higher risk of principal loss due to an increased chance of default. Commodity ETFs generally gain exposure through the use of futures which can have a substantial risk of loss due to leverage. Currencies can fluctuate with changing monetary policies, economic conditions, and other factors. International markets have risks due to currency valuations and political or economic events. Emerging markets typically have more risk than developed markets. Real estate investments can experience losses due to lower property prices, changes in interest rates, economic conditions, and other factors. Investments in specific sectors can experience greater levels of volatility than broad-based investments due to their more narrow focus. The Composite can also purchase unleveraged, inverse fixed income and equity ETFs. Inverse ETFs attempt to profit from the decline of an asset or asset class by seeking to track the opposite performance of the underlying benchmark or index. Inverse products attempt to achieve their stated objectives on a daily basis and can face additional risks due to this fact. The effect of compounding over a long period can cause a large dispersion between the ETF and the underlying benchmark or index. Inverse ETFs may lose money even when the benchmark or index performs as desired. Inverse ETFs have potential for significant loss and may not be suitable for all investors.

All information contained herein is for informational purposes only. This is not a solicitation to offer investment advice or services in any state where to do so would be unlawful. Analysis and research are provided for informational purposes only, not for trading or investing purposes. Astor and its affiliates are not liable for the accuracy, usefulness or availability of any such information or liable for any trading or investing based on such information. There is no assurance that Astor's investment programs will produce profitable returns or that any account with have similar results. You may lose money. Past results are no guarantee of future results and no representation is made that a client will or is likely to achieve results that are similar to those shown. Factors impacting client returns include individual client risk tolerance, restrictions a client may place on the account, investment objectives, choice of broker/dealers or custodians, as well as other factors. Any particular client's account performance may differ from the program results due to, among other things, commission, timing of order entry, or the manner in which the trades are executed. The investment return and principal value of an investment will fluctuate and an investor's equity, when liquidated, may be worth more or less than the original cost. An investment cannot be made directly into an index. Please refer to Astor's Form ADV Part 2A Brochure for additional information regarding fees, risks, and services.



Astor Economic Index<sup>®</sup>: The Astor Economic Index<sup>®</sup> is a proprietary index created by Astor Investment Management LLC. It represents an aggregation of various economic data points: including output and employment indicators. The Astor Economic Index<sup>®</sup> is designed to track the varying levels of growth within the U.S. economy by analyzing current trends against historical data. The Astor Economic Index<sup>®</sup> is not an investable product. When investing, there are multiple factors to consider. The Astor Economic Index<sup>®</sup> should not be used as the sole determining factor for your investment decisions. The Index is based on retroactive data points and may be subject to hindsight bias. There is no guarantee the Index will produce the same results in the future. The Astor Economic Index<sup>®</sup> is a tool created and used by Astor. All conclusions are those of Astor and are subject to change. An investment cannot be made in an index.

Asset Classes: An asset class is a group of securities that exhibits similar characteristics, behaves similarly in the marketplace and is subject to the same laws and regulations. The three main asset classes are equities, or stocks; fixed income, or bonds; and cash equivalents, or money market instruments

Beta: A quantitative measure of the volatility of a given portfolio, relative to the S&P 500 Index, computed using monthly returns. A beta above 1 is more volatile than the index, while a beta below 1 is less volatile..

**Cash**: An investment in highly liquid assets in the form of legal tender and money market investments or an investment in a mutual fund or exchange-traded fund that invests primarily in these types of investments

Correlation: s a statistic that measures the degree to which two securities move in relation to each other

Currency: An investment in an exchange-traded fund whose performance is primarily related to the performance of a financial currency or group of currencies.

**Downside**: he negative movement in the price of a security, sector or market.

Equity: A stock or similar security representing an ownership interest in a company or an exchange-traded fund that invests primarily in such securities.

**Fixed Income**: A debt investment in which a corporate or government entity borrows funds from an investor for a defined period of time at a fixed interest rate or an exchange-traded fund that invests primarily in such securities.

International Equity: A stock or similar security representing an ownership interest in a company domiciled outside of the United States or an exhange-traded fund that invests primarily in such securities.

Inverse Position (Exchange Traded Fund) An inverse exchange-traded fund is an exchange-traded fund (ETF), traded on a public stock market, which is designed to perform as the inverse of whatever index or benchmark it is designed to track. ... An inverse S&P 500 ETF, for example, seeks a daily percentage movement opposite that of the S&P.

Maximum Drawdown: The largest percentage retracement within an investment record calculated from a portfolio value high to a subsequent portfolio value low.

Rolling (36 month) Calculations: refers to a 36-month period that starts at any point in the calendar and runs for 36 months,

**Real Estate**: A security such as a mutual fund or exchange-traded fund whose performance is primarily related to the performance of underlying investments in property consisting of land and buildings on it, either directly or through Real Estate Investment Trusts (REITs), or a group thereof.

**Standard Deviation**: A statistical measure of the historical volatility of a security or portfolio, computed using monthly returns since inception and presented as an annualized figure. **Sortino Ratio**: the statistical tool that measures the performance of the investment relative to the downward deviation. Unlike Sharpe, it doesn't take into account the total volatility in the investment

Sharpe Ratio: The ratio measures the excess return (or risk premium) per unit of deviation in an investment asset or a trading strategy, typically referred to as risk (and is a deviation risk measure),

Please refer to Astor's Form ADV Part 2A Brochure for additional information regarding fees, risks, and services.

Astor Investment Management claims compliance with the Global Investment Performance Standards (GIPS<sup>®</sup>). To receive a list of composite descriptions of Astor Investment Management and/or a presentation that complies with the GIPS standards, contact Astor Investment Management at (800) 899-8230 or write to Astor Investment Management, 111 S. Wacker Drive, Suite 3950, Chicago, Illinois

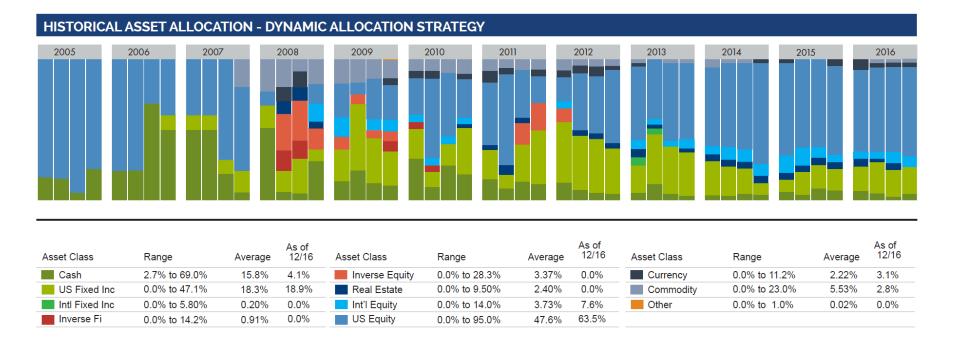
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# APPENDIX



## **Appendix C:** Historical Allocation Broken Down by Sub-Category with Ranges



All ranges and averages presented are calculated based on the asset allocations of each calendar quarter ending date only and do not account for the asset allocations during the quarter. Ranges and Averages are calculated over the time frame from January 1, 2005 to December 31, 2016. Asset allocations are no indication of portfolio performance See accompanying disclosures for asset class definitions For the historical allocation presented, from the third quarter 2010 going forward, the composite allocation is shown. Prior to this period, holdings from representative accounts that were invested in the model were used to calculate the allocations shown

Source: Zephyr StyleADVISOR, Astor. The performance data shown is 2005 through 12/31/16 and represents past performance for the composites(s) defined on the following page. Current performance may be lower or higher. Net of fee performance assumes the reinvestment of dividends. Gross of fee returns are shown as supplemental information only and represent "pure gross" returns. Pure gross returns are calculated before the deduction of all fees. Please refer to the accompanying disclosures for additional information concerning these results.

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