



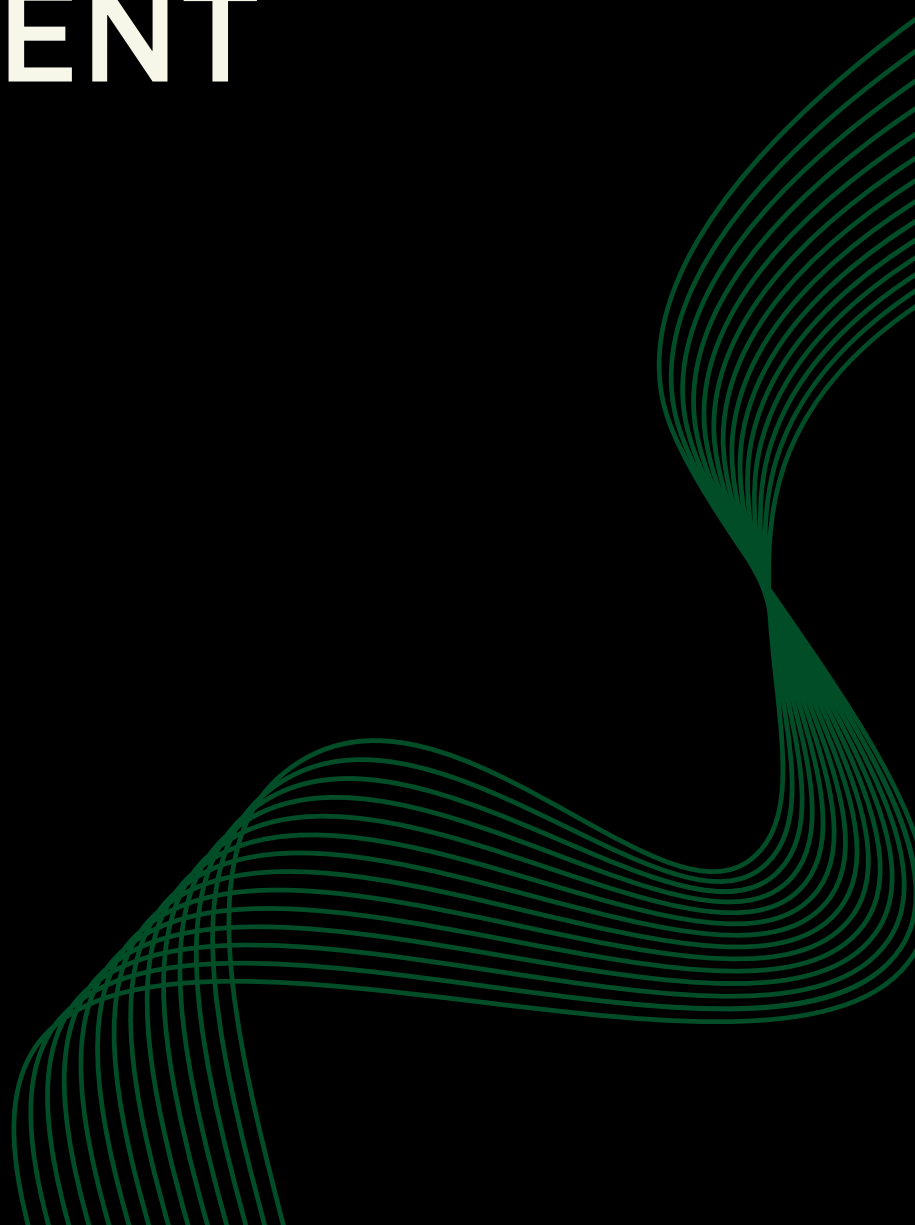
AWACS INVESTMENT  
SOCIETY

# INVESTMENT THESIS AND STRATEGY DOCUMENT

September 2023

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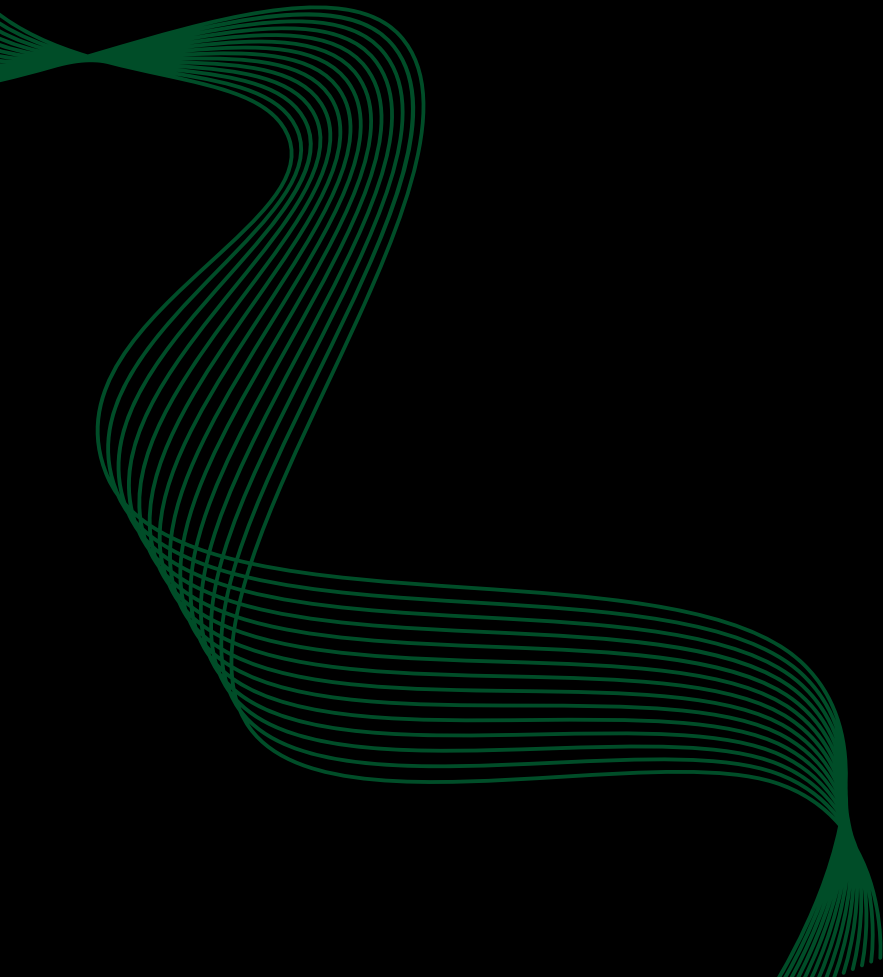
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# ABOUT AWACS



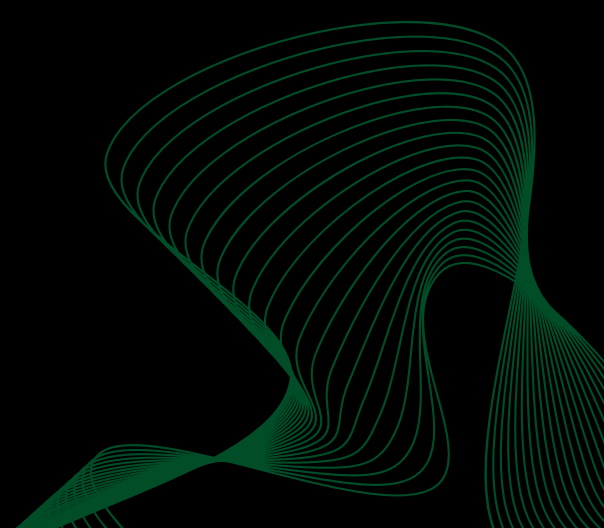
At AWACS, we believe that diversity of thought, dedication, and a passion for capital markets can transform the way we approach investing. AWACS was founded by a dynamic team of graduates who recognized that the traditional boundaries separating finance, economics, engineering, and other fields often limit the depth of analysis, failing to leverage the sheer power of multidisciplinary knowledge. We were eager to bridge these gaps, capitalizing on our diverse academic backgrounds and a shared enthusiasm for the financial domain.

This investment fund uses the Interactive Brokers (IBKR) Trader Workstation (TWS) platform to manage a CAD\$ 1,000,000 paper trading account with the goal of delivering returns in excess of the broader market. The fund goes beyond buying and selling of shares, incorporating a wider variety of available investment vehicles listed below:

- Stocks (some being shortable)
- Fixed-Income instruments & Structured Products
- Mutual funds
- ETFs
- Options
- Single Stock Futures (SSF)
- Futures
- Futures Options
- Warrants
- FX

Having several investment vehicles at our disposal allows the fund to engage in more intricate investment and risk management strategies. AWACS focuses on intermediate and longer time horizons, giving the intrinsic valuations of proposed investments time to materialize. High-frequency trades capturing short-term market moves do not align with the investment strategies outlined in this document and will not be used.

We understand that the true strength of any team lies in its people. As a result, our sector analysts are not selected based on traditional criteria. We go beyond conventional methods and headhunt individuals who possess a unique blend of valuable qualities. They are selected not only for their financial acumen but also for their profound knowledge of sector value drivers, industry experience, and hard skills. Using the designated investment, risk management, and analysis processes outlined in this strategy document, we combine this multidisciplinary knowledge with a scrutinous, data-driven investment approach to capitalize on investment opportunities.

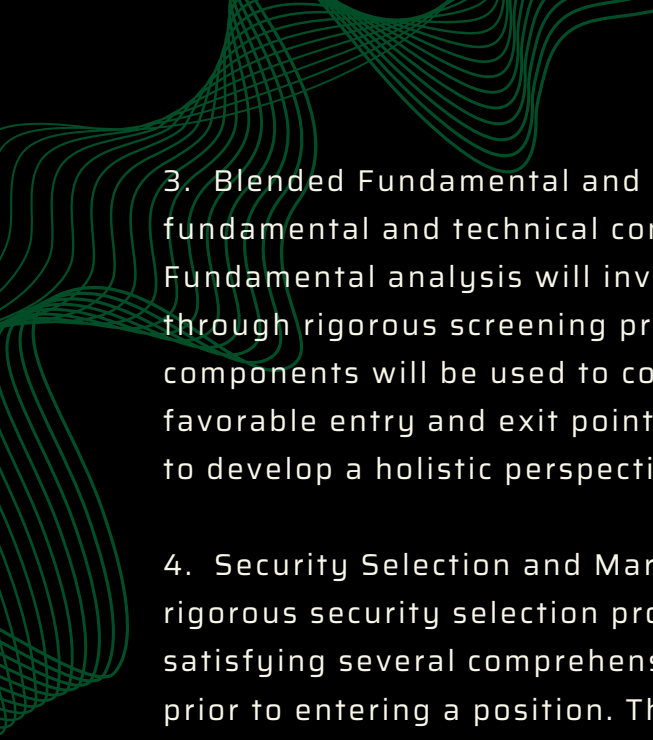


# OBJECTIVES & STRATEGIC IMPLEMENTATION

Our primary objective is to outperform and deliver superior returns in excess of the portfolio's benchmark (S&P/TSX Composite index) while maintaining suitable risk levels. We aim to achieve these goals through conscious, calculated, and disciplined investment strategies that leverage fundamental analysis, risk consciousness, and diversification of the portfolio's holdings. Our team covers a wide range of industries and subsectors, meticulously analyzing market developments to identify promising investment opportunities. Our objectives are centered around long-term investment horizons blended with active management of strategic positions in our portfolio to capitalize on emerging trends. By wielding prudent, calculated investment approaches, we aim to generate risk-adjusted returns in excess of our benchmark index. AWACS leverages an extensive set of strategies to deliver excess returns on a risk-adjusted basis. Both quantitative and qualitative strategies will be integrated to optimize portfolio performance.

1. **Adjusting Portfolio Weights and Asset Allocation:** Our risk and data analysts review the aggregate portfolio's performance and composition on a continuous basis, adjust asset weights, and make allocation decisions based on prevailing market conditions and the fund's long-term objectives. Continuous portfolio monitoring and performance data allow our risk analysts to quickly identify upside potential and minimize downside risks arising from unprecedented and aggressive shifts in market momentum and direction.

2. **Portfolio Rebalancing and Sector Rotation:** To maintain a dynamic and well-diversified portfolio aligned with our strategic investment goals, the fund periodically rebalances its holdings and modifies existing portfolio allocations. This involves unwinding positions in certain assets and reallocating the proceeds to prevent drift and realign asset class weightings to their original targets. AWACS invests based on a sector rotation strategy for its equity investments. This gives the portfolio's equity holdings the ability to be adaptable by employing flexible industry weightings based on developments in economic indicators, industry trends, and market momentum.



3. **Blended Fundamental and Technical Analysis:** The fund combines both fundamental and technical components in its decision-making process. Fundamental analysis will involve the shortlisting of promising investments through rigorous screening processes covering several categories. Technical components will be used to complement fundamental analytics in identifying favorable entry and exit points. Combining these approaches allows the fund to develop a holistic perspective on potential investments.

4. **Security Selection and Market Timing:** The fund adopts an adaptable but rigorous security selection process when choosing investments. This involves satisfying several comprehensive fundamental and technical screening criteria prior to entering a position. The valuations of prospective investments will be compared to broader market indices, industry peers, and their previous financial performance to gauge upside potential. Additionally, the fund may use market timing strategies to capitalize on medium to short-term price movements in specific industries or sub-sectors if deemed strategic. This will involve making tactical adjustments and allocating a portion of the portfolio's capital to cash to capture short-term shifts in momentum.

5. **Top-Down and Bottom-Up Analysis:** AWACS employs a variable blend of top-down and bottom-up analysis that is dependent on market conditions and data releases. Shifts in market sentiment or economic conditions may cause AWACS to re-position holdings and tailor due diligence processes to suit these developments. Top-down analysis at a high level will involve evaluating macroeconomic data, such as interest rates, inflation, and productivity data, to identify broader market trends and highlight prospective investments. Bottom-up analysis will involve analyzing individual companies and their financial statements, growth prospects, and competitive advantages before considering their macroeconomic environment.

6. **Hedging Open Positions:** To maximize risk-adjusted returns and protect against potential downside associated with certain investments, the fund uses hedging strategies involving derivative instruments. Hedging open positions with options, futures, and other contracts serves as an offset to potential losses in the portfolio. This approach allows the fund to maintain exposure to its core investment ideas while managing downside risk.



# PORTFOLIO COMPOSITION

The Portfolio Composition section will provide brief descriptions of asset classes that may be included in the portfolio's holdings, their potential benefits, roles in achieving desired returns, risks, and how we mitigate those risks. Their weightings and relative proportions will be expanded on further in the 'Portfolio Construction by Risk Appetite' section of this document.

## **1.1 FIXED-INCOME**

Fixed-income components play a crucial role in achieving the fund's risk and return objectives. In this section, we will outline how AWACS invests in fixed-income instruments, the associated risks, and risk mitigation strategies.

### **I. USES OF FIXED-INCOME INSTRUMENTS**

1. **Income Generation:** fixed-income instruments, such as government and corporate bonds, provide regular coupon payments. Due to investability limitations regarding bond issues, AWACS will not be able to hold individual or several bond issues in its portfolio. AWACS will, however, include fixed-income exposure through investments in bond funds that distribute income on a periodic basis. This will also allow the fund's fixed-income component to have ample liquidity compared to holding individual bonds.

2. **Risk Diversification:** Bonds have historically exhibited less volatility than equities. By including fixed-income securities in the portfolio, the fund can reduce overall portfolio risk, aiding stability during equity market downturns.

3. **Capital Preservation:** Some fixed-income funds, like Treasury bond funds, are widely considered to have safe, liquid holdings. Fixed-income funds with government bond holdings are seen as places of investor refuge in times of deteriorating municipal and corporate credit conditions.

### **II. RISKS ASSOCIATED WITH INVESTING IN FIXED-INCOME SECURITIES**

1. **Interest Rate Risk:** Changes in interest rates can affect the value of fixed-income instruments if the instruments are being bought and sold for capital gains.



During interest rate hiking cycles, the market values of existing bond issues fall due to higher coupons being available in newer issues.

2. **Credit Risk:** Corporate bonds are subject to credit risk, where the issuer may default on interest payments or fail to repay the principal amount. This risk is higher for lower-rated bonds.

3. **Inflation Risk:** Fixed-income securities with fixed coupon rates may be susceptible to inflation risk. If inflation outpaces the yield on bonds, real bond yields can become negative and significantly erode the purchasing power of interest income. Market yields will adjust to reflect inflation expectations, potentially at the cost of portfolio holdings.

### **III. RISK MITIGATION STRATEGIES**

1. **Diversification:** The investment fund will diversify its fixed-income holdings across different issuers, maturities, and credit ratings. This reduces concentration risk and mitigates any impact associated with defaults on individual issues.

2. **Duration Management:** To address interest rate risk, the fund will actively engage in duration management. This will involve the shortening or lengthening of the duration of fixed-income holdings as part of the risk management process to dampen portfolio impacts arising from interest rate fluctuations.

3. **Credit Analysis:** The fund's investment team will rely on external sources for credit evaluations to assess the creditworthiness of bond issuers. Investing in funds holding government or investment-grade issues can reduce credit risk exposure and enhance the liquidity of the portfolio's fixed-income allocation.

4. **Inflation-Indexed Bonds:** To counter inflation risk, the fund may choose to invest in inflation-indexed bond funds that distribute interest payments and principal adjusted for inflation. Uncertain macroeconomic conditions can make certain characteristics of inflation-indexed bonds attractive investments for the fund's return objectives.

## **1.2 EQUITY INVESTMENTS**

Equity investments form the basis of the AWACS fund's sector rotation strategy. As a key component of any diversified portfolio, equity securities offer the potential for capital appreciation, dividend income, and long-term growth. In this section, we outline how equity investments will be used in the portfolio, their risks, the use of derivative instruments in risk mitigation, and their overall role. Equity asset class weights in the fund's portfolio will be discussed in more detail in a later section.

### **I. USES OF EQUITY INVESTMENTS**

1. **Capital Appreciation:** Equity investments have historically provided consistently higher, compounded returns compared to fixed-income instruments over time. The investment fund will allocate a variable portion of its equity holdings to growth equity in order to capitalize on the growth potential of carefully selected investments.

2. **Dividend Income:** Although AWACS prioritizes the achievement of return objectives primarily through capital appreciation, companies with attractive dividend yields could serve as strategic holdings depending on market conditions and the performance of other sectors as a whole. Returns are measured on a total-return basis to include any dividend income generated from portfolio positions.

3. **Long-Term Growth:** A portion of our equity holdings will be allocated to stocks or industries showing substantial promise. These positions will have longer time frames with the intention of capturing the upside resulting from long-term growth through capital appreciation. The fund's rigorous screening, valuation, and risk management controls will determine if the proposed equity investments meet AWACS criteria given their long tenure.

### **II. RISKS ASSOCIATED WITH INVESTING IN EQUITY SECURITIES**

1. **Market Risk:** Equity investments are frequently traded and reflect the opinions of several large and small market participants worldwide. As a result, changes in investor expectations subject markets to fluctuations and volatility. Although this can be viewed as an opportunity to take advantage of attractive valuations, fluctuations and broad market sell-offs are likely to impact the fund's holdings.

2. **Company-Specific Risk:** Investing in individual stocks exposes the fund to idiosyncratic risk factors such as poor financial performance, litigation, antitrust probes, and other adverse events impacting a specific company.

3. **Liquidity Risk:** As a result of certain stocks having lower trading volumes, some orders may have difficulty filling. Liquidity discounts have the potential to impact a position's return depending on the type of order, the security, and trading volumes. AWACS is unlikely to enter illiquid positions unless the desired investment exceedingly satisfies all screening, valuation, and risk management controls.

### **III. MITIGATION OF RISKS ASSOCIATED WITH EQUITY INVESTMENTS**

1. **Options for Hedging:** Options, futures, and other derivative instruments will be used to hedge against adverse market conditions. Derivatives in the AWACS portfolio will serve purely as risk management tools designed to reduce downside risk in particularly volatile positions. Unnecessary leverage may adversely impact portfolio returns and does not align with our strategic values. Specific investment strategies involving derivatives will be later outlined in greater detail.

2. **Broad-Based Indices:** By allocating varying portions of the fund's equity exposure to broad-based index funds, idiosyncratic risks can be reduced through diversification. The weightings that index funds will have in the equity component of the portfolio will closely align with market conditions, investor expectations, and macroeconomic developments. Exposure to indices representing the market portfolio can be beneficial when security-specific risks are elevated.

3. **Order Automation:** Execution and validity instructions are important risk management considerations. Order automation allows AWACS to reduce costs associated with market orders, reduce order entry time, and base entry points on combinations of fundamental and technical indicators. All orders for positions in the AWACS portfolio will be automated based on outputs from risk management and security selection controls.

### **1.3 ALTERNATIVE INVESTMENTS**

Alternative investments, such as housing, commodities, commercial properties, and cryptocurrency, play an increasingly significant role in modern investment strategies. The advent of securities backed by alternative assets has allowed investors worldwide to participate in this increasingly popular asset class. AWACS seeks to harness the potential of these alternative assets to achieve return objectives but will primarily use them to diversify portfolio risk. In this section, we outline the role alternative investments play in the portfolio, their associated risks, and risk mitigation strategies.

#### **I. USES OF ALTERNATIVE ASSETS**

1. **Diversification:** Alternative asset returns have historically been uncorrelated with the market portfolio and other financial investments. This quality makes them attractive holdings for portfolios with concentrated or even broad holdings.
2. **Potential for Outperformance:** There is potential for specific alternative investments to produce greater returns on a percentage basis when compared to financial investments.

#### **II. RISKS ASSOCIATED WITH INVESTING IN ALTERNATIVE INVESTMENTS**

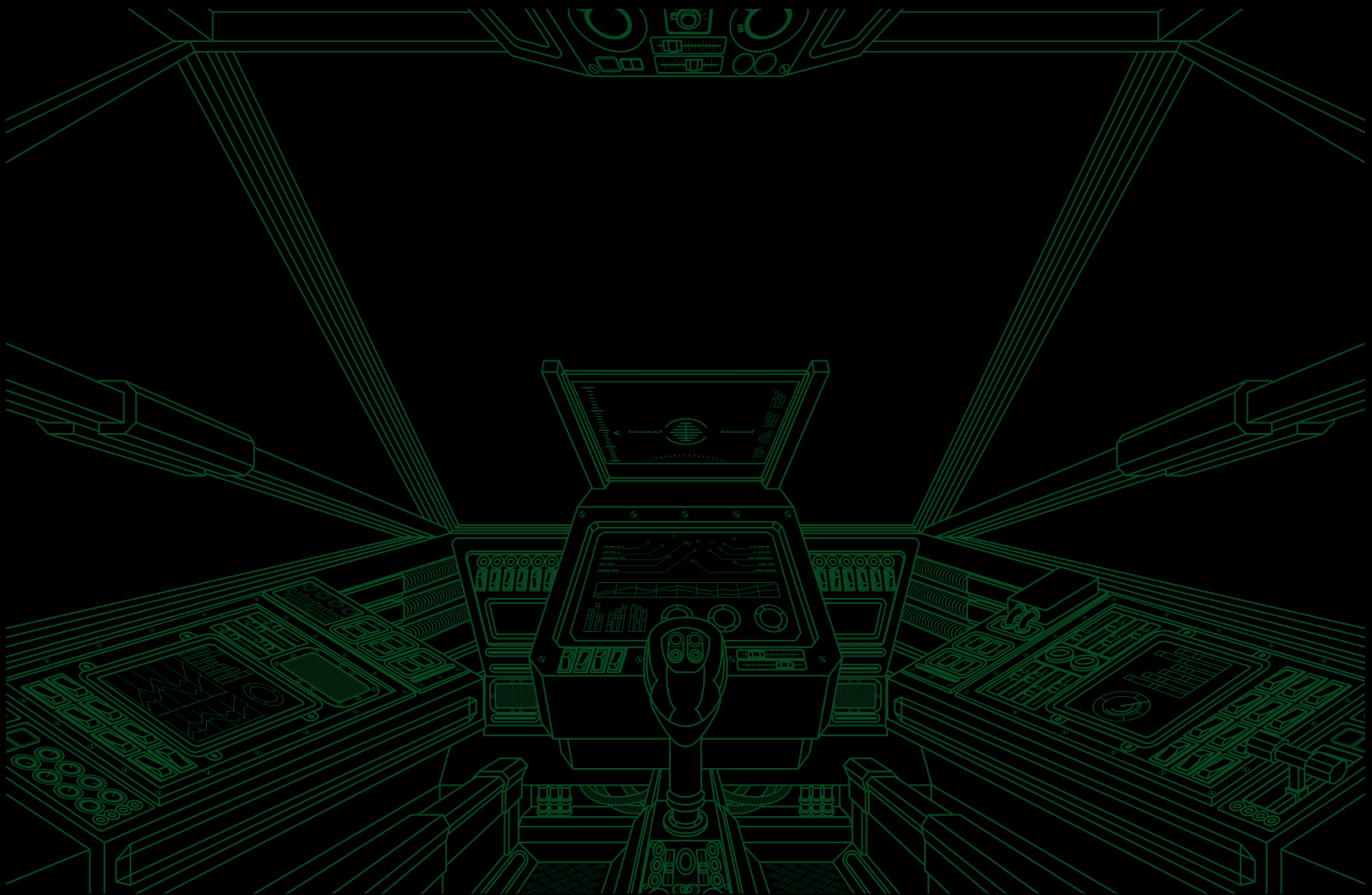
1. **Liquidity Risk:** Investing in thinly traded alternative assets such as select cryptocurrencies may expose affected positions to potential liquidity discounts and may exacerbate losses.
2. **Market Risk and Volatility:** Some alternative investments are subject to substantial volatility, which may adversely impact the portfolio's return as a whole.
3. **Regulatory Risks:** Some alternative investments operate in evolving regulatory environments, and changes in regulations could impact their value and viability as investments.
4. **Valuation Risks:** Alternatives like cryptocurrency move due to momentum, supply, and demand dynamics. There is no fundamental valuation method that can determine the tangible value of a cryptocurrency.

### III. MITIGATION OF RISKS

1. Diversification: The investment fund will diversify its exposure across alternative asset subclasses to reduce concentration risk and enhance the potential for returns on a risk-adjusted basis.

2. Position Sizing: The fund will carefully allocate a variable share of the portfolio to alternative investments, considering their risk profile and lack of correlation with other asset classes. This careful allocation is especially important due to the lack of due diligence that can be done on certain alternative investments.

3. Use of Index Funds: AWACS will use index funds that give exposure to alternative assets instead of investing in them directly. This will allow positions to be considerably more liquid than they would be in their respective markets, which can allow for fluid exit opportunities if necessary.

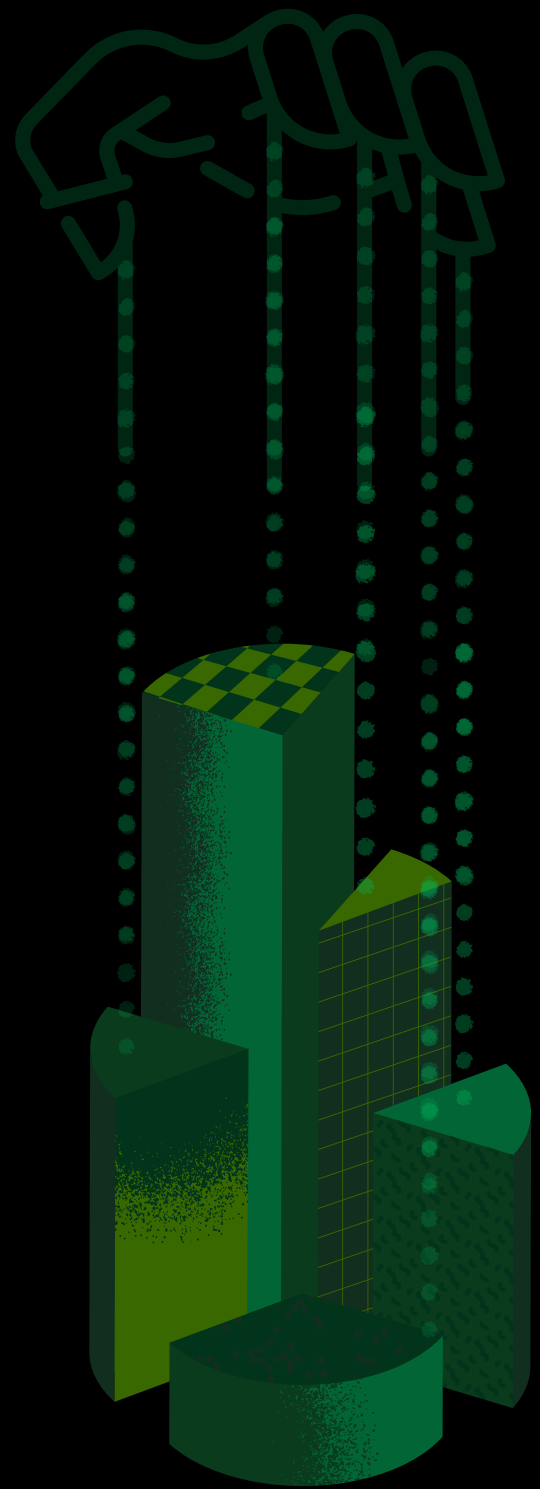


# PORTFOLIO CONSTRUCTION

The Portfolio Construction section will explain the portfolio's capital allocation in the aforementioned asset classes. Allocations are subject to change depending on market conditions, risk premiums, and other macroeconomic factors. In this section, we detail the tools, processes, and controls that AWACS will use to monitor and change portfolio composition.

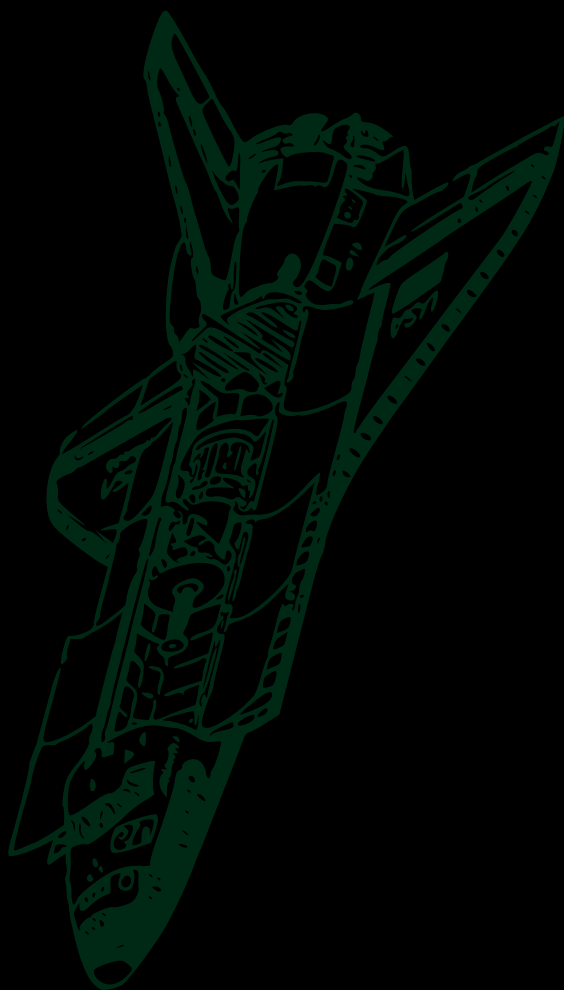
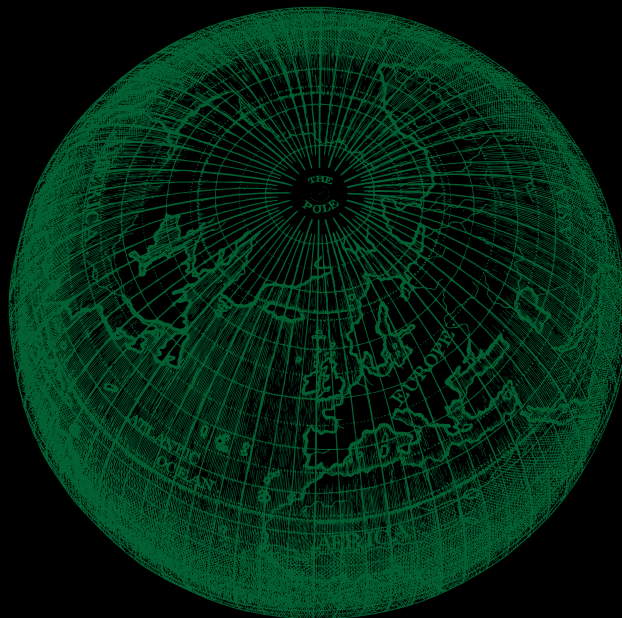
## **PORTFOLIO CONSTRUCTION BY RISK APPETITE:**

Through a dynamic portfolio management strategy, we adjust composition to align with risk appetite and tolerance. Portfolio compositions will range between aggressive, moderate, and passive allocations. The choice of portfolio composition will be data-driven and dependent on a predefined, multifactorial set of control systems (described in later sections) designed to maximize expected returns on a risk-adjusted basis. In this subsection, we start by outlining the tools, indicators, and data that AWACS uses on both a perpetual and periodic basis to evaluate market conditions, followed by brief descriptions of each proposed portfolio by risk appetite. This combined use of comprehensive analytical tools forms the foundation of the portfolio's rebalancing strategy to efficiently rebalance holdings to suit strategic objectives and prevailing market conditions.



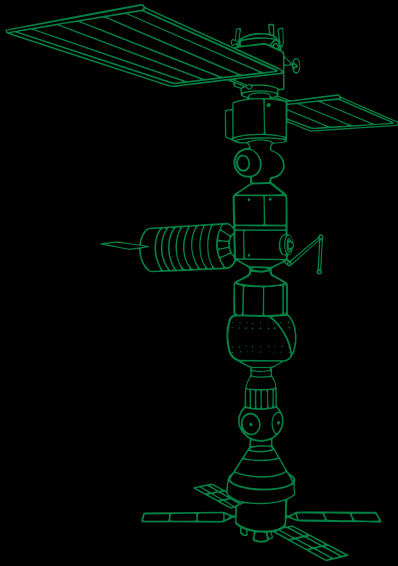
## IMPORTANT ECONOMIC INDICATORS:

- Leading indicators: yield curves and term structures of interest rates, stock market returns, money supply, purchasing manager's index (PMI), delinquency rates, M&A activity, housing starts, etc.
- Coincident indicators: GDP, nonfarm payrolls, real sales, industrial production, personal income, etc.
- Lagging indicators: CPI, corporate profits, unemployment rates, etc.



## IMPORTANT DATA POINTS:

- Equity Risk Premiums (ERP): AWACS uses equity risk premiums to gauge the incremental returns demanded by equity investors in world markets. This identifies trends in the price of taking risks.
- Credit Conditions: Serve as an essential data point for forecasting the cost of capital in future periods when conducting fundamental analysis of equity investments. This data is used to identify industries that stand to gain or lose the most from changes in the credit cycle.
- Government Budgets: Budget information will supplement our analysis of other macroeconomic variables and is not a core focus. Crowding out of public sector funds however will likely be important in our macroeconomic evaluations due to the fund's exposure to industries that may be directly impacted by government borrowing.



- **Sector Valuations:** Panel data on industry valuation multiples is a critical input to the AWACS sector rotation strategy. Identifying sectors that are attractively priced based on historical valuation data adds a margin of safety and enhances potential upside capture.
- **Economic Growth and Productivity Metrics:** Government spending and productivity trends can be indicative of economic growth in future periods and serve as core data points.

### **SECURITY AND PERFORMANCE EVALUATION TOOLS:**

- **Portfolio Visualization Tools:** AWACS uses visual modeling software to identify, calculate, and optimize the potential for excess returns. These visualization tools will provide risk-return tradeoff data based on historical or forecasted returns of a proposed portfolio input into the model. Visual modeling tools allow AWACS to target desired Sharpe, Treynor, and Sortino ratios, which serve as foundational, risk-adjusted return metrics used in evaluating our portfolio's performance.
- **Statistical Analytics Tools:** Given the fund's data and analytics-oriented approach to investment selection, statistical tools will play vital roles in security selection and portfolio composition. Statistical forecasting tools combining both stochastic and deterministic components will be extensively used to conduct probabilistic analyses of proposed investments.
- **Programming Tools and Models:** Financial APIs are used to scrape key financial data to be used as inputs in our valuation models. AWACS has developed an in-house program that serves as a preliminary screening tool in our comprehensive valuation process. Our programming tools allow for immediate output of intrinsic, income-based valuations that have the potential to quickly identify enticing investment opportunities.

**We now outline scenarios factoring into the portfolio composition decision and brief descriptions of compositions the portfolio may assume.**





## I. AGGRESSIVE PORTFOLIO COMPOSITION

### 1. Scenario Description:

- **Expansionary** monetary policy stance with low interest rates or a rate-cutting environment
- A **healthy rate of inflation** that is not adversely impacting real return on investments
- **Positive consumer sentiment**, increasing real wages driven by productivity, and strong household balance sheets
- **Low unemployment rate** and sustainable increases in labor force participation

2. Allocation Description: Increased allocation to growth assets aiming to capture capital appreciation. This would involve allocating greater weights to the equity component of the portfolio, investing in higher-yielding fixed-income instruments, and making greater allocations to more speculative alternative assets.

MARKET SENTIMENT



PORTFOLIO RISK



GDP GROWTH



UNEMPLOYMENT



## III. MODERATE PORTFOLIO COMPOSITION

### 1. Scenario Description:

- **Increasingly restrictive monetary policy** stance with uncertainty regarding increasing interest rates or a potential rate hiking cycle
- **Stable but accelerating rate of inflation**
- **Increasingly cautious consumer sentiment** coupled with cautious consumer spending. More consumers start to look for value while reducing discretionary spending.
- **Stable but inflecting unemployment rate**

2. Allocation Description: careful allocation to growth assets with a balanced focus on capturing capital appreciation and income generation through dividends. Although the generation of dividend income is not a primary focus of the portfolio, it will serve an increasingly important role when market participants begin shifting their equity holdings to seek solid dividend yields and value stocks. The portfolio will reduce exposure to higher-yielding fixed-income instruments to pursue more stable and highly rated issues with lower credit and liquidity risks. Exposure to speculative alternative investments will be reduced in this scenario to avoid overexposure.

MARKET SENTIMENT



PORTFOLIO RISK



GDP GROWTH



UNEMPLOYMENT



### III. PASSIVE PORTFOLIO COMPOSITION

#### 1. Scenario Description:

- **Contractionary monetary policy stance** with rising or elevated interest rates
- **High rate of inflation** adversely impacting real return on investments
- **Cautious consumer sentiment**, with many consumers flocking to seek value amidst the inflationary environment.
- **Credit delinquencies are increasing** or historically high
- **High unemployment rate** and low or reducing labor force participation
- **Rising or high commodity prices**

MARKET SENTIMENT



PORTFOLIO RISK



GDP GROWTH



UNEMPLOYMENT

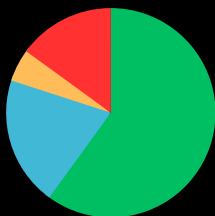


TREASURY YIELDS



2. Allocation Description: Extensive allocation to safe assets, primarily focusing on income generation and capital preservation. This would involve allocating less weight to equity components of the portfolio, investing primarily in the highest-rated fixed-income instruments, and making minimal allocations to alternative assets. The equity component of the portfolio under this scenario will closely resemble the market portfolio.

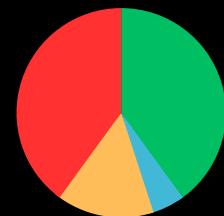
AGGRESSIVE



MODERATE



PASSIVE



CASH

EQUITIES

FIXED-INCOME

ALTERNATIVES

*\*Graphs above show simplified allocations*

## **SECTOR ALLOCATION AND DIVERSIFICATION:**

AWACS aims to achieve its return objectives through a rotating sector allocation strategy aimed at identifying sectors that outperform at different stages of economic cycles. Cycling exposure to equities based on developments in economic conditions gives AWACS the opportunity to capitalize on normalizing valuations in undervalued sectors. The cyclical nature of valuations in some sectors presents opportunities for a fund focusing on a rotational strategy and allows for well-timed, strategic allocation decisions. How we identify undervalued sectors will be significantly expanded on in the subsequent section.

Concentration can greatly negatively impact the portfolio's value if market conditions turn out to be adverse. As a result, the equity component of the portfolio's holdings is broken down into multiple sector-specific and index subcomponents to prevent overexposure. The components are listed below and are subject to varying weights based on the prevailing market conditions outlined in the previous section.

### **EQUITY ASSET CLASS SUB-COMPONENTS:**

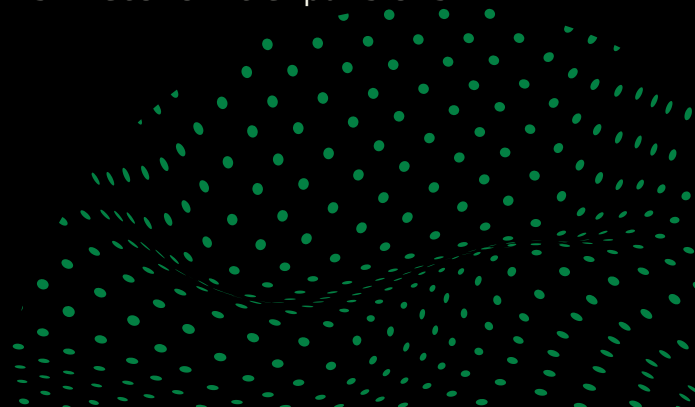
- Index: A component of the portfolio's equity holdings will be invested in broad-based, equity index funds, creating exposure to domestic and world markets. Exposure to indexes as a proportion of total equity holdings is likely to increase in adverse economic conditions but is unlikely to decrease beyond a threshold for diversification purposes. The rationale for this decision is that adverse economic conditions will entice market participants to shift equity holdings into more diversified baskets of stocks, whereas favorable economic conditions give the index component the ability to participate in upside movements regardless while still providing diversification benefits.



- Growth: Growth stocks will be the most variable component of the portfolio's equity investments due to their returns being more correlated to economic cycles. This component comprises more speculative equities that offer higher return potentials should the economic conditions be favorable.
- Value: Value stocks are defined by AWACS as companies that we would feel comfortable holding perpetually. This may be as a result of growth prospects, competitive positioning, pricing power, and other strategic advantages. As the portfolio's exposure to growth stocks reduces in contractions, proceeds will be allocated into the index or value components to assume a more conservative stance.



It is important to note that the equity component of the portfolio will be the most dynamic. Investor expectations are continuously changing based on new data releases and corporate earnings. This is why diversification across sectors and across the aforementioned components serves as an essential part of the portfolio's risk management strategy. Their inclusion reduces the volatility of portfolio returns by including holdings across sectors that are less correlated with one another. Reduction of portfolio volatility through low or negative sector correlations will always have a base level of importance in the fund's objectives. It ensures that AWACS can minimize concentration risk and be sufficiently diversified across its holdings. However, negative correlations can erode gains and weigh down potential returns in economic expansions.



## **SECURITY ANALYSIS AND SELECTION FRAMEWORK:**

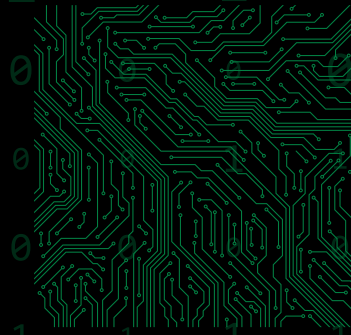
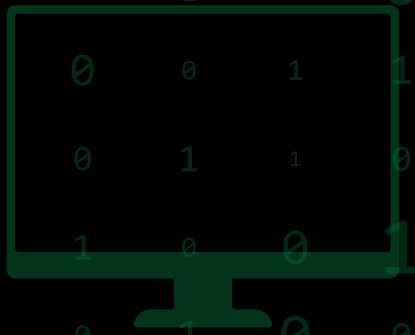
In this subsection, we outline screening methods and tools, valuation methods, and process models used in the fund's allocation decisions. The combination of components outlined in this section forms a comprehensive process model based on the fund's risk management and security selection controls.

### **1. SCREENING:**

Our screening process starts with preliminary screenings. These screens are conducted using software designed to retrieve tickers based on user-defined inputs. Screening criteria are adaptable and vary depending on industry-specific, and macroeconomic conditions outlined in previous sections. This list of screening methods is not exhaustive, giving analysts covering different sectors flexibility to scan for and propose promising investments.

- TWS: AWACS uses the Interactive Brokers (IBKR) Trader Workstation (TWS) platform to manage the fund's holdings and conduct due diligence. The Advanced Market Scanner available on the platform indexes equity investments based on user-defined arguments from a list of 150 available parameters. The scanner is also capable of indexing fixed-income investments and futures from Asian, European, and American markets. We use this scanner to identify underpriced securities warranting further investigation.

- **Data Visualization Tools:** Charting software gives AWACS the ability to chart panel and time series data. Visualizing aggregated sector earnings and valuation multiples across key sectors over time gives us visual representations of industries exhibiting cyclical patterns. Economic time series data can be overlaid with sector data to identify trends and how industry-specific value drivers are impacted. With this method, we look for industries with depressed earnings multiples relative to the market and their historical performance to identify target investments.
- **Programming Tools:** AWACS has developed in-house computer programs that conduct income-based valuations instantly by data scraping. Financial APIs allow data from company financial statements to be fed into our computer program, producing an intrinsic output. Throughout this step in the screening process, we look for stocks that are suffering from depressed valuations on an industry-wide level. We then focus our search on specific stocks once our screening tools highlight sectors of interest.
- **Fundamentals Explorer:** In-depth industry research is then conducted on selected sectors to identify key players, market shares, and competitive dynamics. The Fundamentals Explorer tool on the TWS platform provides extensive coverage of fundamental data for selected stocks. A benefit of using this tool is that data can be directly exported into MS Excel for financial modeling purposes and that forward estimates for several accounting and return-based metrics are readily available. We use this and other data to then conduct our own valuations, analyze the dispersion of analyst forecasts, and see where our valuations lie.



## **2. VALUATION METHODS:**

Once target stocks have been identified, our analysts conduct valuations of strategic targets. Valuation methods vary by industry and by best practices within those industries. Other valuation methods (if applicable) will be used as cross-checks for the valuation method initially chosen.

- **Asset-Based Approaches:** Focuses on Net Asset Value (NAV), finding fair market values of assets and liabilities, and extracting a book value. This valuation method is common in sectors like real estate that have a greater base of tangible assets. Challenges with this valuation method include the availability of market data used in estimating the fair value of model inputs.
- **Earnings-based Approaches:** Determine value through Discounted Cash Flow (DCF), Dividend Discount Models (DDM), and the capitalization of earnings method. All methods under this approach involve forecasting income into future periods and finding the present value of those cash flows.
- **Market Based Approaches:** Comparing the target to similar companies based on current market multiples or previous transaction multiples. This will serve as an important cross check supplementing other valuation methods.

Once valuation models on proposed investments are complete, the analyst will see where their implied equity values lie among analyst estimates. We integrate Monte Carlo simulations into intrinsic valuations to see where valuation model outputs are positioned in a distribution. Any of these methods can be used, and model choice is at the sector analysts discretion.

## **3. RISK MANAGEMENT:**

After a stock has been deemed a promising investment, risk analysts at AWACS conduct their own analyses of the proposed security, including the impacts of its addition on the portfolio's risk-return profile and Value at Risk metrics (VaR and CVaR), to determine a suitable position size with respect to the portfolio as a whole. Position sizing is a key risk management strategy used by risk analysts at AWACS to limit the portfolio's exposure to any single position. Specific frameworks and strategies pertaining to this matter are outlined in great detail in the Risk Management section.

## **GEOGRAPHIC EXPOSURES:**

Given the tools that AWACS has at its disposal, the fund is not restricted to trading assets in any specific region. IBKR's TWS software enables the fund to invest in assets traded in Asian, European, and American markets. The allocation of holdings across different geographic areas is a crucial consideration in the investment portfolio, providing notable diversification benefits. It also enhances the overall risk-return profile of the portfolio.

### **I. BENEFITS:**

1. **Diversification:** Geographic diversification reduces the risk of overconcentration in a single region or country. The geopolitical, economic, and regulatory climates have a significant impact on investment value as investor expectations change. Systematic risk factors can be endemic to a specific country or have more global implications. Diversifying across markets can reduce portfolio volatility by providing exposure to several different systematic risk factors that are endemic to different countries, significantly reducing exposure to any one economy.
2. **Outperformance:** Access to emerging markets with high growth potential can result in outsized returns. These markets often offer unique investment opportunities that may not be available in more mature, stagnating economies.

### **II. RISKS:**

1. **Liquidity:** Some investments available on the TWS may be traded on exchanges with low trading volumes. Risk management strategies such as order automation may fall short in certain scenarios. Losing positions may be hard to exit, forcing the position to sell at even steeper liquidity discounts, greatly impacting returns. A lack of market participants may cause pending orders to take time to fill.
2. **Regulatory Risks:** Some markets have less stringent securities regulations to protect investors holding financial assets. If the target security is traded in the form of a Depository Receipt (DR) on a more prominent and dependable exchange with more volume, this would be preferable.
3. **Currency Risk:** Depreciation of the position's price currency can erode returns in foreign positions.



# RISK MANAGEMENT

The Risk Management section details the important role that risk consciousness and aversion play in how the fund achieves its goals. In the following subsections, we define the main types of risk, our risk tolerance and how it is measured, notable systematic risk factors, and risk mitigation strategies at the portfolio level. Risk management is applied on a continuous basis to monitor dynamic portions of the portfolio and overall performance.

## **DEFINING RISK:**

**Risk:** As defined in this strategy document, refers to the uncertainty and potential for adverse outcomes associated with investing in financial markets. Members of the fund recognize that all investments carry inherent risks, which can impact the value of the portfolio holdings. All types of risk can be broadly defined into one of two high-level categories:

1. **Systematic Risk:** Refers to the broad, non-diversifiable risk of investing in financial markets. It encompasses risk factors affecting the entire market that cannot be eliminated through diversification. Systematic risk (market risk) can and is likely to impact the value of the portfolio as a whole. Systematic risk is influenced by factors beyond the control of individual investors or portfolio managers. Examples include, but are not limited to:

- Economic Conditions
- Market Sentiment
- Geopolitics
- Regulatory Changes
- Natural Disasters
- Global Economic Factors

2. **Non-Systematic Risk:** Refers to the risk that is specific to individual securities or sectors. It is also known as idiosyncratic risk. This type of risk can be reduced through a diversification strategy based on asset correlations within the portfolio. Adding different securities across asset classes, geography, and sectors ensures that positions within the portfolio are sufficiently uncorrelated to provide diversification benefits. Examples include, but are not limited to:

- Company Financial Condition
- Credit Risk
- Liquidity & Solvency Risks
- Legal & Regulatory Risks
- Event Risk
- Currency Risk

Common Statistics Used to Define Risk: Risk management is a field built on the foundational statistical concepts of centrality and dispersion of data. It is grounded in probability distributions and their use in modeling the likelihood of specific outcomes. The following list includes important definitions from Modern Portfolio Theory (MPT). These definitions may be useful for understanding risk management metrics and strategies used at the fund.

- **Beta Coefficient:** A common gauge of an individual stock's or portfolio's volatility with respect to the market as a whole. The portfolio or index representing the broad market has a beta of 1. More speculative stocks that move more aggressively relative to a benchmark index will have higher beta values, whereas defensive stocks that are less volatile will have lower betas. It is calculated by dividing the covariance of returns (between the market and portfolio) by the variance of market returns.
- **Capital Asset Pricing Model:** Calculates expected portfolio or asset returns based on risks assumed by the investor and is linearly related to its beta coefficient.
- **Alpha:** Measures the excess return of a portfolio over a benchmark. Higher Alphas indicate outperformance resulting from active management.

- **Standard Deviation:** Measures the dispersion of data from an expected value serving as the mean. In the financial domain, expected values in forecasted periods are treated as the mean value and are based on historical performance. Standard deviation measures dispersion around expected returns and is occasionally used interchangeably with the term volatility.
- **R2 Coefficient:** Represents the correlation between two variables. This is typically used to represent the percentage of a portfolio's or security's returns that can be explained by returns in a benchmark index.
- **Sharpe Ratio:** Measures the excess expected return over the risk-free rate divided by the standard deviation of that asset. These are commonly used to determine excess returns per unit of risk incurred.
- **Value at Risk (VaR):** A measure of the probability of potential portfolio losses within a degree of confidence for a period. VaR and similar measurements become particularly important when conducting conditional scenario analysis and stress testing portfolio holdings.
- **Markowitz Efficient Frontier:** Aims to create more efficient investment choices through mean variance analysis. Identifying this efficient frontier involves plotting the standard deviations and expected returns of the same portfolio of assets but with varying asset weights. This produces a plotted line of optimal portfolio compositions offering the greatest expected returns per unit of risk incurred.



## **RISK TOLERANCE & VAR:**

VaR metrics are able to give insight into potential portfolio losses using a probabilistic approach. Confidence intervals are used to gauge the probabilities of an observation (commonly used intervals are 90%, 95%, 99%). Portfolios may experience substantial losses if tail risk materializes. Despite tail risk's minute probability, these scenarios require action plans for either hedging affected positions or cutting losses and closing positions. Our risk tolerance at AWACS will be determined by data points pertaining to systematic risk factors only. Given the diversified and relatively risk averse nature of the investment portfolio, non-systematic risk factors are incredibly unlikely to push portfolio losses outside of tolerable levels defined by our VaR models.

Risk tolerance in the portfolio is likely to change based on prevailing market conditions. It is for this reason that Conditional Value at Risk (CVaR) models factoring in conditional probabilities and scenario analysis will play important roles in how we position the fund's holdings. Using portfolio visualization tools outlined in the Portfolio Construction section, historical return data can be exported directly into Python and Microsoft Excel to produce customizable CVaR models used in our decision-making.

Based on model outputs from scenario analysis, AWACS leverages portfolio optimization tools with goal-seeking capabilities to target optimal allocations based on user-defined optimization goals (maximizing Sharpe ratio, minimizing CVaR, minimizing tracking error, etc.). These optimization tools are also capable of robust optimization using the Monte Carlo simulation method for resampling efficient frontier inputs over the configuration period.

Our data-driven risk management approach is an integral part of our allocation strategy. We leverage tools, statistics, and risk modeling to maximize returns on a risk-adjusted basis. Achieving excess returns is central to the fund's strategy; however, we aim to achieve these targets by being risk-conscious.

### **NOTABLE SYSTEMATIC RISK FACTORS:**

MPT states that investors and market participants will not be compensated for risks that can otherwise be diversified away. Therefore, it is incredibly important to understand why investors are only compensated for the systematic risks they incur. In this subsection, systematic risk factors and their impacts are expanded on more thoroughly. The impacts of these risks will be examined in the context in which they affect portfolio holdings. We believe that any single systematic risk factor can be classified into one of two very broad categories.

1. Macroeconomic & Geopolitical Risks: Sustained inflationary trends erode real returns after adjusting for purchasing power. Healthy competitive dynamics are necessary to spur sustainable levels of inflation in any economy. Predictable inflationary trends allow businesses to budget for future periods based on inflation assumptions. Unpredictable inflation impacts consumer spending habits, delays capital expenditures for businesses, and impacts the value of financial investments. Unsustainable inflationary conditions warrant action by centralized monetary authorities to reduce business and consumer spending in attempts to curb inflation.

Whether inflation is supply-driven or demand-driven, interventions by monetary authorities increase the cost of capital for businesses, delay ambitious corporate projects, and reduce economic activity. This can adversely impact stock prices by forcing analysts covering certain sectors to revise their growth forecasts and re-evaluate previous expectations of the markets outlook. Interest rate increases are particularly detrimental to fixed-income instruments offering fixed coupon structures. The degree of effect is dependent on the term structure of the portfolio's fixed-income holdings. Modified duration will be considerably greater for bonds with longer times to maturity, which are thus subject to the greatest price impact. The fund plans to adjust portfolio duration and composition to suit macroeconomic developments.

2. Liquidity and Market Sentiment: Market pessimism can greatly impact liquidity as supply and demand dynamics shift to find new equilibriums. These events could result from instability, natural disasters, or other unexpected events affecting market balances. Liquidity discounts resulting from aggressive market sell-offs may be necessary to entice buyers to step in. Steep reductions in asset prices have the potential to impact the fund's risk management controls and their effectiveness. Risks are likely to be exacerbated if market returns fall within the tails of return distributions. Order filling may be costly as liquidity discounts worsen, potentially forcing any affected positions to incur even more losses.



### **STRATEGIES:**

**Diversification:** Diversification will always have a base layer of importance in the fund's investment portfolio. However, it is important to note that reducing correlation among portfolio holdings can reduce returns and is considered to be the 'price of safety' at AWACS. Allocating disproportionate weights to outperforming asset classes can enhance returns at the price of being potentially overexposed to any single part of the market. Despite the fund's excess return goals, we aim to achieve these excess return targets on a risk-adjusted basis to avoid substantial impacts resulting from adverse or changing market conditions.

**Hedging:** Our hedging strategies are largely dependent on the open position and the value of total exposure. Other important considerations include the asset class in question, whether the asset belongs to a specific sector, and correlations. Hedging ensures portfolio holdings are more protected by offsetting losses and assuming a more net neutral stance. We understand that using derivatives introduces leverage and will ensure that derivatives are used only to maintain adequate hedge ratios. This subsection briefly outlines strategies and derivatives the fund may use to gain exposure and manage risk.

1. Options strategies: Options contracts allow the option buyer to buy or sell the underlying asset at a predetermined price (strike price) before contract expiration. Selling options contracts (option writing) introduces additional risks and potentially unlimited losses. Combinations of simultaneous positions involving options can be used to replicate a desired return profile. Despite the risks associated with writing options, there are several alluring reasons why market participants would choose to take these risks. In this segment, we outline options strategies the fund may employ to hedge positions:

- Long Call / Put: Paying an upfront premium to reserve the right but not the obligation to buy or sell an underlying asset at a predetermined price anytime before (American options) or at (European options) expiration. Using this strategy reduces losses by allowing the option position to gain when the open position underperforms.
- Covered Call: Collecting an upfront premium by writing a call option (out-of-the-money) and owning the underlying stock. The fund would consider this strategy with 30-45 days to expiration to take advantage of theta as expiration nears. This strategy allows us to collect upfront premiums, which serve as a downside cushion, and own the underlying asset in case of assignment.
- Protective Put: This Involves buying an out-of-the money put option and owning shares of the underlying. This can be used as an alternative to stop orders to ensure control over when the option is exercised. Stop orders may prematurely exit the position and may do so at unfavorable market prices. A protective put ensures the protection of shares owned by the fund in the event of a downturn but limits the losses of the option to the premium paid in the event a move upward. This setup allows for participation in upward moves while having downside protection.
- Options Spreads: Option spreads involve entering simultaneous options positions on the same underlying security aimed at replicating a desired payoff. The key differences are the strike prices and/or expiration dates chosen. Spreads can be vertical, horizontal, or diagonal. The allure of spreads for the fund is that they define risk and potential return prior to position entry. Risk incurred and potential returns vary based on the combination of contracts being bought and sold and their characteristics.

- **Strangles:** A variation of strangle setups involves buying both call and put options on the same underlying asset with different strike prices. Some strangles benefit from increases in implied volatility, which increase the prices of option contracts. Aside from the increases in contract value, the main allure of this strategy is the confinement of downside risk to the premiums paid to purchase those options. If the fund expects aggressive moves in the underlying, this strategy can serve as a protective measure for affected holdings.

**2. Futures Strategies:** Payoffs and risks associated with futures require an understanding of how margin, marking-to-market, and settlements work. Trading futures contracts requires both the buyer and seller of the contract to post an initial amount of capital, called the initial margin, to enter the position. Initial margin can vary depending on the underlying asset, delivery terms, and position size. Throughout the duration of the contract, movements in the underlying asset price result in the transfer of wealth from involved parties; this is called marking-to-market.

On a daily basis, as one party gains, losses from the counterparty's margin account get deposited into the gainer's account. Should the margin account fall below a maintenance level (maintenance margin), a margin call will require the affected counterparty to post more collateral and replenish the margin account balance to keep the position open. Futures positions can be settled by cash or physical delivery.

- **Long & Short Hedge Strategies (generic):** The fund may decide to take long futures positions in certain commodities to hedge existing long positions. A brief example of this would be hedging a long position in airline stocks with a long oil futures position. The fund may use these types of hedges if exposed to companies that are negatively correlated with movements in commodity prices. This strategy may not result in perfect hedges, but it provides some protection. If correlations between the commodity and the long asset are sufficiently negative, exposure in the long position could be covered through gains in the futures contract, assuming that market conditions turn out to be adverse.



# ACTIVE MANAGEMENT

Active management is at the forefront of the AWACS value proposition. It is through the aforementioned tools and risk management practices that we plan to actively adjust portfolio holdings to meet risk and return objectives. This section will outline the fund's rebalancing strategies and criteria pertaining to reinvestment decisions.

## **SCHEDULED REBALANCING:**

Our portfolio rebalancing process will closely align with how the fund perceives expectations of market risk. As mentioned in the section on portfolio construction, risk taking will depend on how market participants view uncertainty in world markets. Equity risk premiums are continuously monitored to gauge equity market expectations and what investors consider to be the market prices of risk. As expectations change, allocations and asset prices are set to change as well.

When AWACS targets a specific allocation blend, it aims to maintain asset class weights to target the desired expected portfolio return. Establishing target allocations enables the fund to monitor portfolio drift and guarantees the portfolio remains aligned with our chosen risk profile and tolerance. Below, we expand upon our rebalancing framework:

1. **Monitoring:** The portfolio's asset allocation is monitored continuously through the TWS platform. As a bonus, using the TWS provides access to news, research, and reports through the news monitor tool, which we find to be comparatively better than other alternatives. We combine news tools with the tools listed in previous sections to monitor holdings and assess any deviations from target allocations.

2. **Threshold Trigger:** When a holding's weight in the portfolio deviates from its target allocation beyond a predetermined threshold, our computer program triggers a rebalancing warning. Fund members will re-group to discuss recent investment proposals, evaluate market trends and conditions, and identify possible reallocations. The threshold trigger is set to ensure that the rebalancing warning is only issued when deviations are meaningful.

3. Review and Analysis: Before initiating any rebalancing action, the portfolio management and risk management teams conduct a joint assessment of the reasons behind the drift and consider whether the deviation is a result of temporary market fluctuations or fundamental changes. This will determine if holdings within the portfolio should be trimmed or if a different portfolio composition is required to suit changes in market dynamics.

4. Rebalancing Strategy: Depending on the nature of the observed drift, we may choose to add to an existing allocation if an asset class is underweighted. Conversely, if it's overweight, we may sell a portion to reduce the allocation. These decisions will be data-driven and dependent on critical market indicators that serve as barometers of systematic risk. AWACS invests with forward-looking factors in mind and reallocates holdings accordingly. Return data will be reviewed and processed to identify abnormalities and highlight reallocation candidates. We then assess the potential impact of rebalancing on portfolio volatility, expected returns, and alignment with the fund's investment objectives.

5. Review: After rebalancing, a post-rebalancing review is conducted by the risk management team to evaluate the effectiveness of the adjustments. This includes assessing whether the portfolio is now in line with its target allocations and whether any unintended consequences have emerged.

# CLOSING REMARKS & DISCLAIMERS

## **DISCLAIMER: THIS IS NOT INVESTMENT ADVICE**

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Investing in financial markets carries inherent risks, and the suitability of any investment strategy depends on individual circumstances, financial goals, and risk tolerance. AWACS employs the aforementioned strategies on a paper trading account (practice account) and does not take investor funds of any kind. It is through the Interactive Brokers Trader Workstation platform that investing in these investment vehicles is made possible. The fund is not affiliated with Interactive Brokers or Memorial University of Newfoundland in any way. AWACS simply uses the Trader Workstation software to paper trade complex investment vehicles because of the platform's wider product offerings. It is essential to conduct thorough due diligence and seek professional advice from qualified financial advisors or other professionals before making any investment decisions.

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