QuartzPartners
INVESTMENT MANAGEMENT

DYNAMIC. FLEXIBLE. REPEATABLE.

INVESTMENT PROCESS

Our complementary suites of portfolio solutions, the ***Astra*** *and* ***Dynamic*** *series, are engineered for flexibility in all market environments. They may be used individually as a stand-alone solution or as components of a diversfiied multi-strategy portfolio to meet the objectives and risk tolerance of most investors. Portfolio construction is managed through the deployment of multiple proprietary models that collectively focus on dynamic datasets in real-time to identify and quantify both risks and opportunities.*

Quartz Astra Series

Stock Selection Strategies

Employ a concept referred to as "Economic Margin" to identify value-creating firms through identifying and understanding the key drivers of corporate performance and market valuations. Economic Margin measures the true return a company earns relative to its actual cost of capital.

- ✓ Bottom-Up Equity Research
- ✓ Focused Stock Portfolios
- ✓ Model Based Stock Ranking
- ✓ Focus: High Economic Margin

Quartz Astra Core Equity

Quartz Astra Growth Equity

Quartz Astra Dividend Equity

Quartz Astra Natural Resources

Quartz Dynamic Series

Risk-Managed Portfolios

Advanced research into economic, fundamental, technical, and market psychology factors. As these market conditions change, asset allocation is dynamically changed in an effort to capture upside market movements and avoid protracted downturns.

- ✓ Top-Down Global Macro
- ✓ Unconstrained Portfolios
- ✓ Dynamic Asset Allocation
- ✓ Focus: Tactical Risk Management

Quartz Dynamic Global Equity

Quartz Dynamic All-Asset

Quartz Dynamic Yield Plus

Investment Process: Astra Series

Quartz Partners' Astra models employ a concept we refer to as "Economic Margin" to identify value-creating firms through identifying and understanding the key drivers of corporate performance and market valuations.
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HOW WE RANK VALUE-CREATION

$$\text{ECONOMIC MARGIN} = \frac{\text{Operating Cash Flow - Capital Charge}}{\text{Invested Capital}}$$

OPERATING CASH FLOW

Net Income + Depreciation & Amortization + After Tax Interest Expense + Rental Expense Net Int. Adj. + R&D Expense +/- Non-Recurring Items

CAPITAL CHARGE

Return ON and Return OF Capital that captures company-specific economic circumstances

INVESTED CAPITAL

Total Assets + Accumulated Depreciation + Gross Plant Inflation Adjustment + Capitalized Operating Rentals + Capitalized R&D + Non-Debt Current Liabilities

WHY ECONOMIC MARGIN

Companies with positive Economic Margin create investor wealth by generating cash flow greater than their cost of their capital. Through connecting cash generation to the assets used to produce cash flow, Economic Margin links the balance sheet to the income statement. Accounting measures such as income or earnings fail to make this connection and therefore offer only incomplete data on corporate performance.

COMMON FUNDAMENTAL ANALYSIS LIMITATIONS

Corporate earnings generally represent only about half of a company's cash flow, and earnings do not reflect risk. *Accounting ratios* mix and generally confuse different value drivers. Return on assets and return on equity don't reflect wealth creation or destruction. In addition, different asset lifespans, asset mix, asset age, and capital structures distort various accounting ratios across firms.

MANAGEMENT QUALITY

A company can have a great product and poor management and run an unprofitable business. Management quality is assessed according to a company's ability to appropriately grow or shrink the enterprise according to its economic margin. Companies with positive economic margin should grow the business while companies with negative economic margin should increase profitability. Firms creating wealth and profitably adding assets earn our highest management score.

ECONOMIC MARGIN APPLICATION

We use a four-factor regression on historic economic margin levels, consisting of profitability, variability, trend, and invested capital. Companies with high historical economic margins attract competition resulting in more rapidly decaying economic margins. Companies with volatile historical economic margin levels usually lose their competitive advantage faster. If a company's economic margin trends upward, the competitive advantage period is extended while companies trending downward are assigned shorter periods.

DETERMINING TARGET PRICE

A discounted cash flow analysis is applied to a firm's projected economic margin to create an estimated enterprise value from which total debt is subtracted to arrive at total equity value. Once the target price is determined, we calculate the percent-to target based on the difference between the current price and our calculated target price.

BUY AND SELL DISCIPLINE

Through our comprehensive process, potential stock purchases are identified through screening for high company grade, high investment grade, high intrinsic value grade, passing management quality, good earnings quality, and attractive momentum criteria. All holdings are reviewed weekly. Any firm whose company grade or investment grade falls below an "A", or whose target price appreciation percentage declines into single digits is reviewed for replacement. Targeted portfolio turnover is less than 40%.

Investment Process: Dynamic Series

An Adaptive Approach to a Complex Market

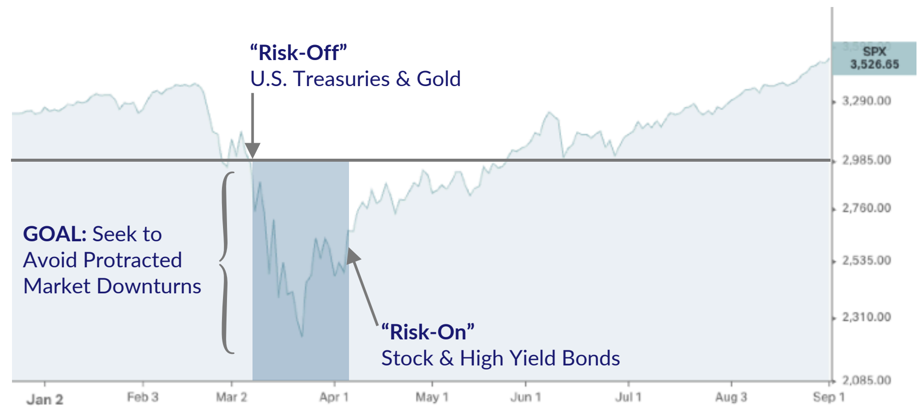
We challenge the status quo that a traditional "buy and hold" portfolio with a rigid mix of investments provides optimal outcomes. We also reject the idea that an investment strategy needs to choose between fundamental or technical analysis. Dynamic Series investment strategies are built using both fundamental and technical analysis. ***Our model allows portfolios to adapt and dynamically capitalize on investment opportunities as they arise.***

Embrace volatility, Avoid protracted downturns

Market volatility is to be expected as part of the risk/return tradeoff. In fact these swings often present opportunities. However, there also exist market periods in which losses can exceed tolerable levels and can create "Permanent Loss of Capital", losses that may permanently decrease the probability of reaching your investing goals. These are the periods where our PRICE matrix seeks to preserve capital when there is a high probability that major indexes will fall more than 10%.

The Goal of Tactical Rotation:
Downside Protection During Protracted Downturns

S&P 500 Index 1/1/2020 to 9/1/2020



**The illustration above is hypothetical. You cannot invest directly in an index.*

PRICE Analysis Matrix

Through rigorous academic research, we have developed a research framework comprised, in our view, of the most relevant economic and market data in determining the direction of the economic landscape and relative attractiveness of investments. Our PRICE analysis matrix provides a repeatable process that is flexible and allows our investment strategies to quickly adapt to changes in the economic and market landscape. The PRICE analysis matrix is comprised of five data sets and over 70 data points ranging from fundamental to technical data. Data points that when combined, historically exhibit a high probability of predicting economic cycles, investment opportunities and protracted market downturns.

POLICY	Analyzes monetary and fiscal policy from the US Federal Reserve and US Government, as well as those from foreign central banks and sovereign governments. Policy decisions drive market liquidity and sentiment and can impact investor appetite for investment risk.
RISK	Analyzes market volatility and the opportunity cost of investing. Momentum data from various asset classes and cross asset class relative strength contributes to both our defensive allocation and overall positioning amongst asset classes, sectors, styles, and factors.
INFLATION & INTEREST RATES	Analyzes bond and lending rates, consumer, manufacturing and commodity prices. This provides real-time information as to whether inflation is providing a tailwind or headwind for economic growth and investing.
CREDIT	Analyzes bond spreads, systemic financial stress data pertaining to credit and liquidity across the economic spectrum. Cheap and accessible financing is the lifeblood for both corporations and the stock market.
EARNINGS & ECONOMY	Analyzes information and the rate of change pertaining to housing, manufacturing consumer spending, and the general economic and corporate backdrop. This data set can help forecast long-term shifts in the business cycle and identify economic contractions.

STRATEGIES SEEK TO GROW + MITIGATE RISK

Our strategies are easily accessible with a $10,000 minimum account size. Each strategy can be used as a standalone strategy or to complement a client's existing investment portfolio. We also can create turnkey portfolios that utilize multiple strategies in a single account to fine tune the client's investments based on their unique objectives and risk profile score.

STRATEGY	STYLE	ASSET CLASS	KEY FEATURE
Astra Core Equity	Focused Stock Picking	US Growth/Value Stocks	Focused stock portfolio utilizing our economic margin ranking model that will dynamically shift weighting to value and growth.
Astra Growth Equity	Focused Stock Picking	US Growth Stocks	Focused growth stock portfolio utilizing our economic margin ranking model to identify the top 20-25 stocks in the universe.
Astra Dividend Equity	Focused Stock Picking	US Value Stocks	Focused value stock portfolio utilizing our economic margin ranking model to identify the top 20-25 stocks in the universe.
Astra Natural Resources	Focused Stock Picking	US Commodity Stocks	Focused stock portfolio utilizing our economic margin ranking model to identify the top 20-25 stocks deriving revenue from commodities.
Dynamic Global Equity	Tactical Global Macro	Unconstrained Global Stocks	Mitigate risk through preservation of capital, generate alpha through unconstrained dynamic allocations through relative strength analysis.
Dynamic All-Asset	Tactical Global Macro	Unconstrained Global Stocks/Fixed Income	Mitigate risk through preservation of capital, generate alpha through unconstrained dynamic allocations through relative strength analysis.
Dynamic Yield Plus	Tactical Global Macro	Unconstrained Global Fixed Income	Mitigate risk through preservation of capital, generate alpha through unconstrained dynamic allocations through relative strength analysis.

Multi-Strategy Portfolios for Enhanced Outcomes: *enhance alpha & lower beta in a single account*

Aggressive | Moderately Aggressive | Moderate | Moderately Conservative | Conservative

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