

# Growth & Income

March 31, 2025

## Green Alpha<sup>®</sup>

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## Investment Philosophy

The driving forces behind economic growth are:

- companies accelerating productivity, and
- businesses tackling urgent global challenges.

High-performing enterprises can revolutionize efficiency while also developing solutions for critical issues like climate change, resource depletion, social inequality, and public health crises. By doing so, they can create economic expansion and actualize a more sustainable and equitable future. These innovative companies offer the most promising investment opportunities, providing security and growth potential for our clients' capital.

Our strategy is clear: we focus on identifying and investing in businesses that are developing brilliant, scalable, adaptable, and economically viable solutions to global challenges.



## Why Invest in Growth & Income?

- Active research, stock selection, and portfolio mgmt
- Access above-market dividend income alongside long-term capital preservation and growth
- 25-45 global, market-leading companies developing solutions to core economic and environmental risks

**Inception Date:** December 31, 2012

**Vehicle:** Separately Managed Accounts

## Research

We select companies for our portfolios based on:

- *Impact:* Businesses offering innovative solutions to critical economic, environmental, and other global challenges.
- *Innovation Leadership:* Companies investing heavily in R&D, intellectual property, and capital expenditures.
- *Strong Management:* Diverse, effective teams aligned with shareholders, demonstrating revenue growth, expanding profit margins, and potential dividend increases.
- *Financial Health:* Businesses with robust balance sheets and smart capital allocation strategies.
- *Value:* Companies whose stock prices offer attractive value relative to proven performance and growth prospects.

These and other factors help us construct portfolios that aim for strong returns and build a more sustainable economy. We concentrate on long-term success in an evolving landscape.

## Portfolio Construction

Our Growth & Income portfolio has two key objectives: capital growth and current income. We carefully select holdings for:

1. Current dividend yield
2. Potential for dividend growth
3. Share price appreciation potential

This strategy is constructed to offer above-average dividend yield in a relatively low short-term volatility portfolio.

By combining growth potential with income generation, this portfolio aims to provide a stable and rewarding investment.

# Largest Positions

How the Growth & Income portfolio is driving progress toward the Next Economy

## **Horizon Technology Finance** (Sector: Financials, Industry: Specialty Finances)

- Horizon Technology Finance has established itself as a premier venture debt provider to innovation-driven companies at precisely the stage where traditional banks won't lend and founders want to minimize equity dilution—creating a powerful niche where its specialized risk assessment capabilities generate consistent double-digit portfolio yields across technology, life sciences, and sustainability sectors.
- The company's strategic partnership with Horizon Technology Finance Management has created a formidable ecosystem where proprietary deal flow, institutional relationships, and sector expertise enable superior investment selection—as evidenced by their track record of successful exits and ability to structure deals with meaningful warrant coverage that provides equity upside potential without the full risk of venture capital.
- Horizon offers investors rare public market access to the \$25+ billion venture debt asset class typically reserved for institutional investors—delivering both substantial current income (dividend yield of ~10%) and growth potential through an actively managed portfolio of over 45 innovative companies spanning biotech, enterprise software, cleantech and other high-growth sectors.
- The firm's disciplined underwriting and secured lending approach, with average loan-to-value ratios below 25%, provides significant downside protection while maintaining exposure to breakthrough innovation—creating a compelling risk-reward profile that has enabled Horizon to deliver consistent returns through multiple economic cycles including the post-2022 venture capital slowdown.

## **Taiwan Semiconductor Manufacturing** (Sector: Technology, Industry: Semiconductors)

- TSMC stands as the world's only manufacturer capable of producing the most advanced semiconductor chips at scale, commanding 90%+ market share in leading-edge nodes (3nm and below)—creating a near-monopoly on the critical technology underpinning everything from AI acceleration to next-generation smartphones.
- The company's insurmountable technological lead is protected by a virtuous cycle where each new process node (currently advancing to 2nm) requires \$20+ billion investments that competitors cannot match without TSMC's massive economies of scale and decades of accumulated engineering expertise—creating one of the widest economic moats in any global industry.
- TSMC's importance has transcended commerce to become geopolitical, with governments worldwide now treating access to its manufacturing capacity as a national security imperative—the U.S. alone has committed \$52 billion through the CHIPS Act largely to reduce dependency on this company, underscoring its irreplaceable position in the economy.
- While traditionally operating as a "silent partner" to tech giants, TSMC has become the indispensable enabler of the AI revolution, with its advanced packaging technologies and process nodes being the limiting factor for NVIDIA, AMD, and other chipmakers racing to build next-generation AI accelerators—positioning TSMC to capture significant value from the estimated \$1 trillion in AI infrastructure spending this decade.

## **IBM** (Sector: Technology, Industry: Software & Tech Services)

- Following its strategic Kyndryl divestiture, IBM has transformed into a hybrid cloud and AI powerhouse—led by CEO Arvind Krishna who has decisively repositioned the company at the intersection of today's most critical technology growth markets, delivering seven consecutive quarters of revenue growth.

**IBM, SL Green Realty, and Hannon Armstrong's** Next Economy attributes are described on the following page.

Company Name	Ticker	Weight
Horizon Tech. Finance	HRZN	7.41%
Taiwan Semiconductor Manufacturing	TSM	6.65%
IBM	IBM	5.93%
SL Green Realty	SLG	4.38%
Hannon Armstrong Sustainable Infrastructure	HASI	4.14%
<b>% of Portfolio</b>		<b>28.51%</b>

# Largest Positions *continued*

## **IBM** *continued*

- IBM's Red Hat acquisition has become the cornerstone of its hybrid cloud strategy, providing the essential platform that enables Fortune 500 enterprises to seamlessly operate across public clouds, private clouds, and on-premises environments—creating a competitive advantage in a multi-cloud world where vendor lock-in concerns drive adoption.
- The company's early investments in AI are now paying dividends through watsonx, its enterprise-grade AI platform that delivers business-ready AI solutions with significant advantages over general-purpose models—including governance controls, data privacy, and industry-specific training that addresses the practical AI needs of regulated enterprises.
- IBM's quantum computing leadership (127-qubit processors today with a 1,000+ qubit roadmap) positions it to potentially capture enormous value from what could become a \$850 billion market by 2040, while its \$60 billion consulting backlog provides remarkable revenue visibility during the AI transformation wave sweeping enterprise IT.
- IBM is led by strong, diverse teams, including four female Executives and three female Board members. Diversity at the top is a strategic imperative that drives better decision-making, fosters innovation, enhances financial performance, strengthens talent management, and improves overall organizational success in an increasingly diverse and complex world. Organizations that intentionally build diverse and inclusive leadership teams are more likely to thrive and outperform their competitors.

## **SL Green Realty** (Sector: Real Estate, Industry: REIT)

- SL Green is a fully integrated real estate investment trust (REIT) specializing in the acquisition, management, and development of commercial properties, in New York City's Manhattan borough. SL Green owns and operates an impressive portfolio of iconic and high-quality office buildings in prime locations.
- Adaptive Strategies: SL Green has shown adaptability in responding to market changes, including the shift in office use patterns following the COVID-19 pandemic.
- SL Green is committed to sustainability and has implemented numerous green initiatives across its portfolio:
  - Science-Based Targets: SLG has committed to emissions reduction targets aligned with the Science Based Targets initiative (SBTi), demonstrating their ambition in combating climate change.
  - Renewable Energy: SLG actively pursues renewable energy sources, both through on-site installations and by purchasing renewable energy credits.
  - Energy Efficiency Upgrades: SLG extensively invests in energy-efficient retrofits of their buildings. This includes lighting upgrades, HVAC optimization, and building envelope improvements.
  - Conservation: They implement water-saving measures in their properties, reducing their environmental footprint.

## **Hannon Armstrong** (Sector: Financials, Industry: Asset Management)

- Hannon Armstrong has pioneered a unique investment model that capitalizes on the \$100+ trillion climate transition opportunity without technology risk—financing mission-critical projects that generate predictable cash flows from highly rated counterparties like utilities, corporations, and federal/state governments.
- The company's diverse portfolio spans renewable energy, energy efficiency, and climate resilience assets with weighted average investment grade of "A" and contractual durations averaging 18+ years—creating remarkable revenue visibility and stability despite market turbulence in the broader renewable sector.
- They have developed proprietary carbon counting metrics that quantify the precise environmental impact of each investment, avoiding "greenwashing" while generating superior risk-adjusted returns—their portfolio eliminates over 6 million metric tons of carbon emissions annually while delivering consistent double-digit yields on invested capital.
- Hannon Armstrong has demonstrated resilience by maintaining dividend growth throughout market volatility while building a \$4+ billion diversified climate investment portfolio.

Please see the final page of this document for important disclosures about portfolio, benchmark, and characteristic information.

# Macroeconomic Commentary



Welcome to 2025, where change isn't just constant—it's accelerating. For investors, success means surfing these transformative waves, not merely weathering them.

## Climate: From Concern to Crisis

2024 broke all temperature records (again), making it the hottest year in 125,000 years. Yet humanity responded by... burning more fossil fuels. It's like drinking more coffee to cure insomnia. And yet, the picture is not monolithic, 2025 and beyond will remain dynamic to say the least.

### What's coming:

- Significant acceleration of climate adaptation spending
- Policy divergence between regions. While Europe and parts of Asia step on the green accelerator, others are pumping the brakes. Invest accordingly.
- Insurance industry is fundamentally reassessing risk. After record disaster payouts, they're rethinking how they assess risk. This will ripple through real estate, municipal bonds, corporate planning, and more.



## China's Green Domination: The Dragon Goes Electric

Energy isn't just a commodity anymore—it's technology. And technology gets cheaper and better over time. China has spotted this trend and is running with it like an Olympic sprinter.

### The scorecard:

- China's renewable energy dominance: 80% of global solar panels, 70% of battery production, and a rapidly growing EV industry. It's less of a race and more of a "everyone else is hoping for silver."
- Solar expansion unstoppable: Global capacity could double by 2027, with China at the center despite trade tensions.
- Battery breakthroughs incoming: Costs dropping below \$70/kWh by 2027, with innovations beyond lithium-ion hitting the market.
- Grid modernization is desperately needed: A multi-trillion-dollar opportunity as our electrical systems struggle to keep up with renewables.

## Global Trade: Tensions Boiling

Trump's return has intensified trade conflicts. China's stimulus response makes the New Deal investments and reforms to exit the Great Depression look modest.

### Watch for:

- Economic restructuring beyond short-term tariff reactions
- Market volatility amid continued technological progress
- Selective decoupling in critical sectors
- Capital flows shifting toward Asian innovation centers

# Macroeconomic Commentary *continued*

## **Fiscal Reality: Creative Debt Management**

U.S. Federal government debt has reached the level where interest payments are now the largest single budget line item yet plans to address this are unclear.

### **The new normal:**

- Germany's €1.2T spending shift signals European policy transformation
- Innovation in debt management, rather than reduction
- Healthcare demands are intensifying with aging populations
- Potential productivity boost from AI, renewables, and automation

## **Tech Revolution: AI Enters Physical World**

AI is moving beyond chatbots to transform systems and supercharge human capabilities.

### **Coming attractions:**

- Innovation is flowing across borders despite politics
- AI integration into robotics and infrastructure
- Economic transformation through convergence of renewables, automation, and AI
- Job market evolution is creating new categories of work

## **Biotech: Biology Becomes Technology**

Biotechnology's "iPhone moment" is creating cross-sector disruption.

### **The biological revolution:**

- Personalized medicine is becoming standard
- Bio-based manufacturing processes are disrupting traditional industries
- Novel biological materials are creating new markets

## **Investment Playbook**

Smart investors will focus on signals, not noise.

### **Action plan:**

- Look beyond borders to diverse innovation centers
- Focus on fundamental technological transformations
- Bet on climate adaptation infrastructure
- Follow bioeconomy leaders
- Embrace supply chain innovation

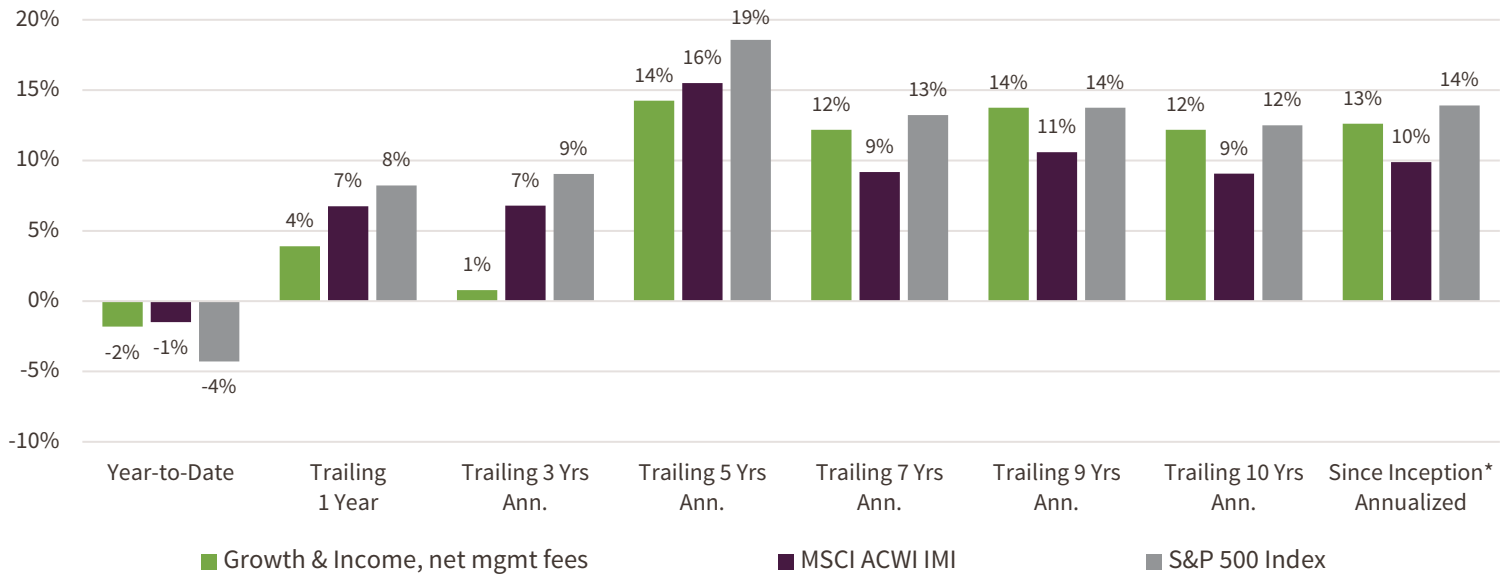
## **Conclusion**

We're at an economic inflection point. Headlines trumpet geopolitical drama, but the real story is deeper transformation. China's technology leadership and Europe's fiscal awakening suggest a multipolar future. Climate challenges are driving unprecedented innovation, while technological convergence creates immense opportunities.

Success depends on identifying emerging leaders regardless of nationality and focusing on long-term value creation. The waves of change are big, but rideable—with the right investment framework.



# Portfolio Performance & Attribution



For the first three months of 2025, Green Alpha's Growth & Income strategy returned -1.80% net of management fees, versus its benchmark, the MSCI All Country World Investable Market Index (MSCI ACWI IMI), which returned -1.50%.

The sectors detracting the most from the strategy's returns were Real Estate and Energy.

- In the Real Estate sector, the primary detractors were Office REITs, Specialty REITs and Data Center REITs industries. These were partially offset by exposure to Infrastructure and Industrial REITs. This sector-specific underperformance reflects the insurance industry's fundamental reassessment of climate-related risks, as highlighted in our macroeconomic commentary, which is creating ripple effects through real estate valuations.
- In Energy, to which the portfolio has limited exposure, the modest loss of -0.69% was entirely from the world's leading solar PV manufacturer, and partially offset by modest gains from the global leader in wind turbine manufacturing and service. This mixed performance reflects the dynamic landscape of renewable energy deployment amid China's continued dominance in solar manufacturing and intensifying trade tensions.

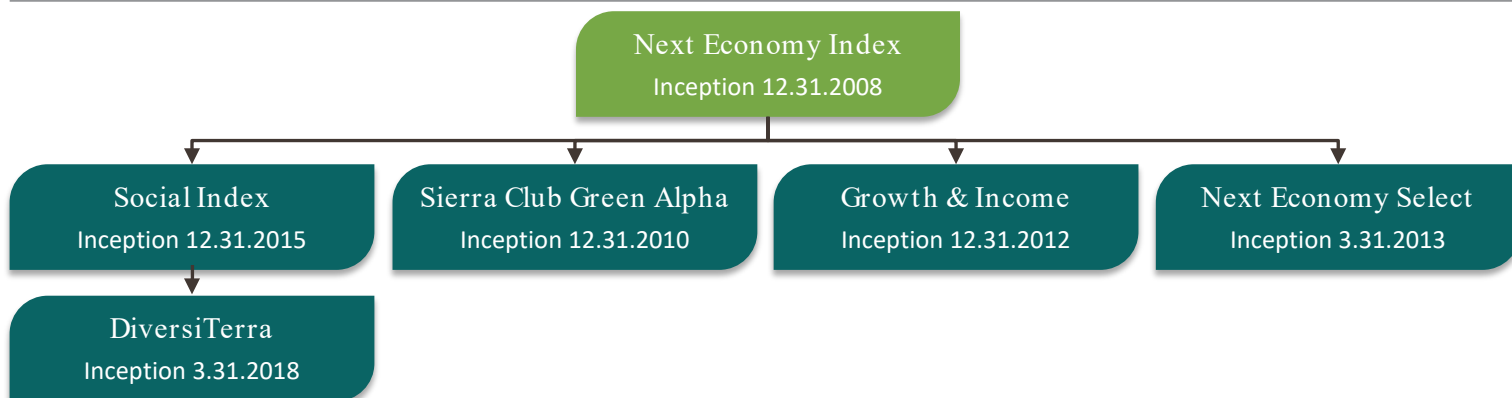
The strategy's best performing sectors were Industrials and Financials.

- The portfolio's Industrial sector performed well in Q1. Industries leading the way were Commercial Support Services (recycled steel), and Transportation & Logistics. Gains in the sector were partially offset by the Electrical Equipment Manufacturing (electrical infrastructure and automation) industry. The steel producer in the portfolio is U.S.-based and therefore no doubt boosted by announcements of tariffs on foreign steel.
- Within Financials, the portfolio's exposure to two unique asset management companies provided positive contributions. These companies are well-positioned to capitalize on the "creative debt management" trends highlighted in our macroeconomic outlook.

While Q1 2025 presented challenges, short-term performance must be viewed through the lens of the "Great Transformation" outlined in our macroeconomic commentary. We are experiencing an economic inflection point characterized by climate adaptation demands, technological convergence, and geopolitical realignments.

The short-term market volatility reflects uncertainty around these transformative trends, particularly as trade tensions intensify and policy responses diverge globally. However, our positioning across renewable energy infrastructure, biotechnology innovation, and next-generation technologies remains aligned with long-term trends firmly in place.

*\*Portfolio Inception: December 31, 2012. All returns presented above that are greater than 1 year in length have been annualized. Performance data quoted represents past performance. Past performance does not guarantee future results and current performance may be lower or higher than the data quoted. Please see the final page of this document for additional important disclosures.*



- **High Income** – a compelling combination of growth and dividend income that is higher than the broad equity market
- **Fundamentals-driven:** the underlying quality of companies and the price paid for their shares are key drivers of LT returns
  - ✓ **High growth:** indicated by Sales Growth, and a decrease from Current P/E to Forward P/E as revenue and earnings grow
  - ✓ **Compelling valuation:** demonstrated by Price/Sales and Price/Book metrics relative to growth expectations
  - ✓ **Strong balance sheet and management execution:** conveyed by capital stewardship, LT Debt/Equity, Current Ratio
- **Diversified** – we seek solutions wherever we can find them: across the globe, in companies of all sizes, and every industry
- **Public equities, long-only:** most investors' largest asset class, so their largest opportunity for impact
- **Fossil fuel free since inception:** we never invest in companies that prospect, extract, refine, or transport fossil fuels, nor in fossil-fired utilities or internal combustion engine manufacturers

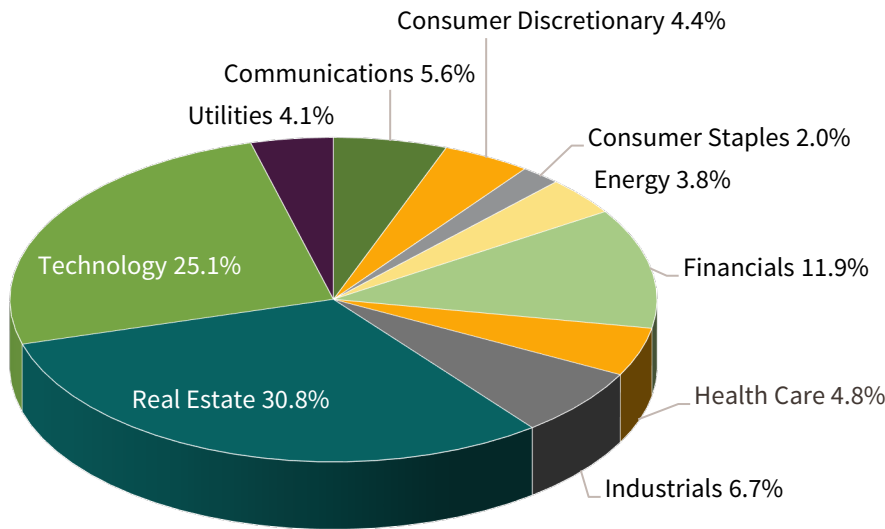
Characteristics	Growth & Income	Benchmark: MSCI ACWI IMI (SPGM)	Next Economy Index	Social Index	Next Economy Select	Sierra Club Green Alpha	DiversiTerra
# of Securities	36	2,807	150	113	58	49	53
Active Share vs MSCI ACWI IMI	97%	-	93%	94%	98%	98%	96%
Active Share vs Next Economy Index	72%	-	-	35%	68%	69%	64%
Sales Growth, Trailing 3-Yr	7%	14%	17%	17%	13%	15%	10%
P/E, Current	26.9	20.0	26.9	25.9	27.8	28.7	27.5
P/E, 1-Year Forward	14.6	17.2	21.0	21.0	19.5	15.0	18.4
Price/Sales	1.1	1.9	1.9	2.1	1.5	0.8	1.9
Price/Book	1.4	2.8	2.2	2.1	2.2	1.5	1.8
LT Debt/Equity	172%	77%	110%	132%	164%	116%	107%
Current Ratio	3.4	2.3	3.2	3.2	4.3	3.8	3.9
Dividend Yield	4.41%	1.96%	1.17%	1.21%	2.12%	2.50%	1.75%
Market Cap, Wtd Avg (\$B)	\$114.18	\$546.23	\$121.59	\$95.02	\$121.53	\$91.90	\$91.50
Market Cap, Median (\$B)	\$14.89	\$2.74	\$7.23	\$10.63	\$5.63	\$6.10	\$10.44
Turnover, Trailing 2-Yr Avg	12%	Not Available	24%	35%	11%	15%	23%
Beta, Trailing 3-Yrs	1.33	1.00	1.41	1.52	1.51	1.45	1.45
U.S.-Domiciled Companies	69%	61%	77%	88%	68%	69%	83%
% Revenue Derived in U.S.	53%	45%	51%	63%	52%	53%	62%

Characteristics are sourced from FactSet, based on a representative account and include cash. Please see additional disclosures on last page.

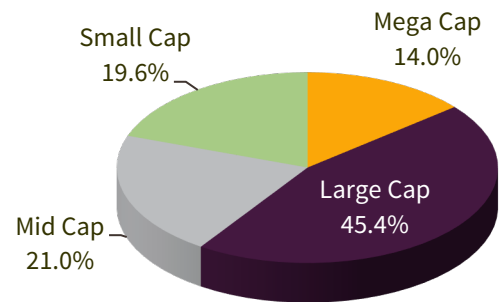
# Portfolio Allocations

Our search for Next Economy companies is unconstrained. For the Growth & Income portfolio, we seek solutions to systemic risks wherever they exist – across sectors, market caps, and geographies.

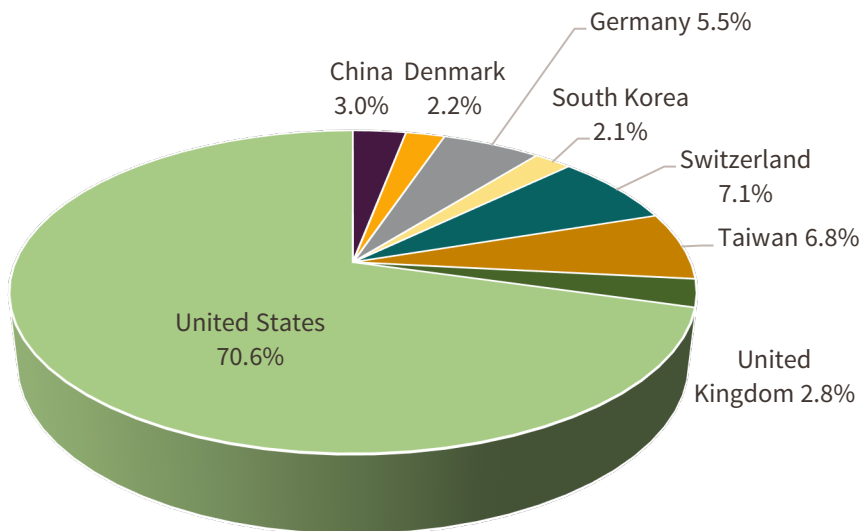
## Sectors



## Market Capitalizations



## Companies' Main Headquarters



Allocation data is sourced from FactSet and is based on a representative account. The exception is the sector chart, which utilizes the Bloomberg Industry Classification Standard from Bloomberg, and is based on a model portfolio. All charts on this page are shown as percent of equity. Please see the final page of this document for additional important disclosures.



# Important Disclosures

- Green Alpha Advisors, LLC is a registered investment advisor. Registration as an investment advisor does not imply any certain level of skill or training.
- Green Alpha Investments is a trade name of Green Alpha Advisors, LLC. Green Alpha is a registered trademark of Green Alpha Advisors, LLC. Green Alpha Advisors also owns the trademarks to “Next Economy,” “Next Economics,” “Next Economy Portfolio Theory,” “Investing in the Next Economy,” and “Investing for the Next Economy.”
- Performance quoted throughout this document represent past performance. Past performance does not guarantee future results, and current performance may be lower or higher than the data quoted. Investment returns and principal will fluctuate with market and economic conditions, and investors may have a gain or loss when shares are sold.
- Beginning July 31, 2021, the Growth & Income performance results are a composite of discretionary client accounts invested in the Growth & Income strategy on specific custodial platforms. Green Alpha’s discretionary client accounts that are not included in the composite are those custodied at Folio Institutional due to operational limitations of Folio’s data feeds to Green Alpha’s portfolio accounting system Advent APX. Beginning May 31, 2023, composite membership also includes a minimum account size of \$25,000. The Growth & Income composite performance results reflect actual performance for a composite of discretionary client accounts meeting custodian and minimum account size requirements. Net-of-fee returns reflect the deduction of actual management fees and transaction costs. Some assets managed in the Growth & Income strategy within the composite receive a reduced fee from the standard management fee schedule. Actual client returns experienced will vary from the returns presented based on a variety of factors, and we encourage you to ask about specific factors. Accounts are included in the composite for full-month periods under management with Green Alpha Investments. Growth & Income composite performance results do not reflect the reinvestment of dividends and interest.
- Prior to July 31, 2021, the performance results represent a single account managed to the strategy. The performance results shown are not materially higher than if all related accounts were included prior to August 2021. Please contact Green Alpha for information about the representative account selection process.
- Actual advisory fees may vary among clients with the same investment strategy. Green Alpha’s standard fee schedules are available within Form ADV Part 2. For those details and additional legal information, please see information and files here: <http://greenalphaadvisors.com/about-us/legal-disclaimers/>.
- The Growth & Income strategy contains equity stocks that are managed with a view towards capital appreciation and current income. Extreme periods of underperformance or outperformance are due to the concentrated nature of the strategy and the impact of specific security selection. Such results may not be repeatable.
- Green Alpha portfolios may invest in companies with small and medium market capitalizations, which may have more limited product lines, markets, and financial resources than larger companies. In addition, their securities may trade less frequently and in more limited volume than those of larger companies. Small or mid-cap stocks may be more volatile than those of larger companies and, where trading volume is thin, the ability to dispose of such securities may be more limited. Green Alpha portfolios may also invest in foreign domiciled companies. Investing in foreign securities may involve additional risks, including exchange-rate fluctuations, limited liquidity, high levels of volatility, social and political instability, and reduced regulation. Emerging markets are often more volatile than developed markets and investing in emerging markets involves greater risks. International investing may not be suitable for everyone. An investment in Green Alpha portfolios should be considered a long-term investment.
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- The MSCI All Country World Investable Market Index (ACWI IMI) is a free float-adjusted market capitalization-weighted index that is designed to measure the combined equity market performance of developed and emerging markets. The Index covers approximately 99% of the global equity investment opportunity set. The MSCI ACWI IMI figures do not reflect any fees, expenses, or taxes. Investors cannot invest directly in this index.
- The SPDR MSCI Global Stock Market ETF (ticker: SPGM) seeks to provide investment results that, before expenses, correspond generally to the price and yield performance of the MSCI ACWI IMI. Investors can invest directly in SPGM.
- The S&P 500 Index is an unmanaged index of 500 common stocks chosen for market size, liquidity, and industry group representation. It is market-value weighted. The S&P 500 Index figures do not reflect any fees, expenses, or taxes. Investors cannot invest directly in this index.
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