STIFEL

ARTIFICIAL INTELLIGENCE: RUNWAY FOR GROWTH

November 2022 marked a key inflection point in the history of artificial intelligence, and arguably for the global economy, when OpenAI launched ChatGPT, putting the power of a large language model into everyday users' hands. Since then, the rise of generative AI has redefined corporate priorities and become a dominant driver of market returns.

Companies building this new ecosystem have driven a substantial share of the S&P 500's capital investment, earnings growth, and gains, cementing AI as perhaps the defining theme of the decade. Yet we believe the true power of this transformation extends beyond markets to a technological revolution that will reshape how people work, create, and invest, unlocking a supercycle of productivity with multitrillion-dollar effects on global GDP.

The question is no longer if AI will change our world, but by how much – and how soon?

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AI: A BUBBLE OR A RUNWAY FOR GROWTH?

Major studies are forecasting sizable global GDP gains from AI over the next couple of decades. McKinsey estimates the lift from generative AI could average $2.6 trillion to $4.4 trillion per year through 2040, while PwC projects global GDP could be approximately 14% higher by the early 2030s as adoption accelerates.

These gains are expected to materialize in two ways:

- Boosting productivity as AI automates tasks and augments workers, and
- Catalyzing new consumption and product innovation as personalized offerings reshape demand and open new markets.

Translating that potential into measured outcomes will take time. Thus far, the macro impact has been modest. While enthusiasm and investment have surged, monetization has lagged the headlines. Enterprise adoption remains nascent and uneven, with fewer than one in 10 firms reporting mature implementation. And broad productivity data show limited effects so far. Even so, some estimates suggest U.S. hyperscalers could invest up to approximately $3 trillion cumulatively in AI infrastructure by the end of the decade.

This disconnect between soaring valuations versus still-early deployment raises a critical question: Are we in a bubble or on a runway for growth?

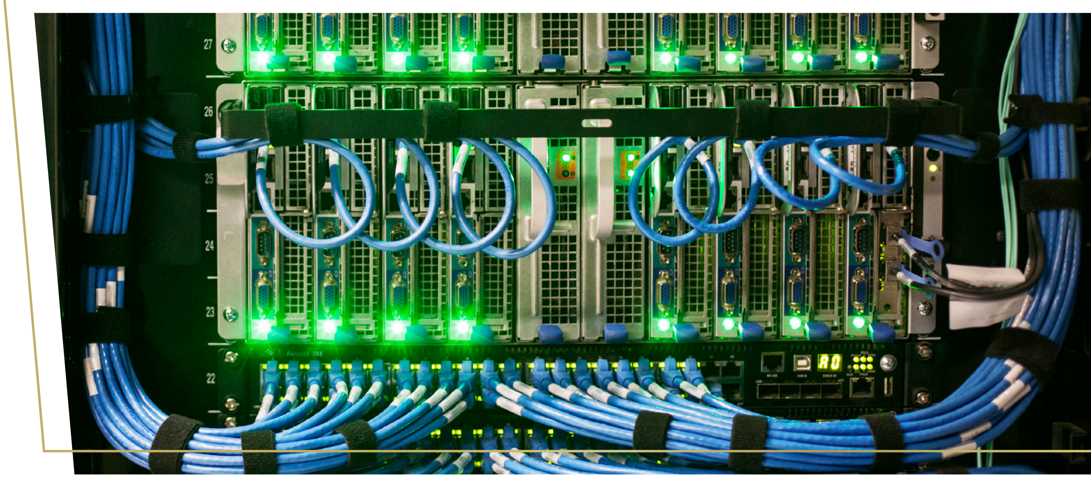
WHY WE SEE A RUNWAY FOR GROWTH

Like the internet and mobile computing before it, AI's emergence is being met with both enthusiasm and skepticism. There will be winners and losers, and not every early investment will succeed. Yet, unlike past innovation cycles, today's leaders generate substantial earnings and free cash flow and are funding investment largely with internally generated cash and strong balance sheets, not speculative debt.

Investments in AI infrastructure – compute (chips and systems), data centers, and power (generation and grid) – are laying the groundwork for innovation and growth over the coming decades.

History shows that even when early expectations overshoot, foundational investments often prove transformative. During the dot-com era, for example, fiber optic networks were vastly overbuilt, but that excess capacity later became the backbone of the internet and enabled cloud computing.

For AI, the challenge may be the opposite, as current infrastructure likely falls short of future demand. ChatGPT serves hundreds of millions of weekly users, with usage on a path to reach billions over time, and surveys show a large majority of employers expect AI to reshape their businesses by 2030. While some valuations may prove inflated, the broader AI ecosystem is anchored in a once-in-a-generation technological shift.



BUILDING THE BACKBONE

As we look ahead, leading model families (OpenAI's ChatGPT, Google's Gemini, Anthropic's Claude, Microsoft's Phi, Mistral AI, xAI's Grok, and Meta's Llama) are shaping the next phase of innovation. Building, training, and operating these systems requires extraordinary computing power, driving record demand for chips, data centers, and power.

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Delivering AI at scale is a massive physical buildout:

- Training frontier models takes weeks to months, processing trillions of tokens across tens of thousands of high-performance processors.
- Once deployed, serving real-time requests for millions of users compounds the compute and power needs.
- A single AI query can consume ten times more power than a traditional web search.
- A single hyperscale data center can draw hundreds of megawatts – comparable to the power needs of a small city.

Power is the binding constraint in several markets. Without a foundational buildout of compute, data centers, and power capacity, the productivity and economic gains AI promises cannot be realized at scale.

2026: THE ACCELERATION PHASE BEGINS

Looking ahead to 2026, capital spending on infrastructure is poised to accelerate as companies race to secure the computing power required for increasingly advanced models.

However, with valuations of the mega cap tech leaders (the “Magnificent Seven”) near cycle highs, the risk of some disappointment is rising. Elevated expectations and concentrated investor positioning in certain areas can create vulnerabilities. Execution risks – such as earnings misses, deployment delays, slower enterprise adoption, or power constraints – may potentially trigger a market correction. We would view such a pullback as a healthy reset and an opportunity to add exposure to durable AI enablers.

AI ADOPTION: EARLY WINS, LONG RUNWAY

The near-term impact of AI will show up as productivity gains and cost efficiencies as organizations adopt a fast-improving generative AI toolset.

Early gains are emerging in software development, customer service, marketing, design, and back-office workflows, as AI automates repetitive work and augments human creativity.

For many, it’s still difficult to imagine AI’s full potential beyond chatbots and image generators. But AI’s impact will expand to touch every major sector, transforming how industries operate, compete, and create value. Below is a glimpse of how AI is set to reshape business models and give rise to new products and services.

Healthcare

- **Drug Discovery:** AI analyzes molecular data, predicts drug efficacy, and optimizes clinical trials, opening new frontiers in drug research.
- **Personalized Medicine:** AI analyzes massive genomic and health data sets to predict disease risk and recommend individualized treatments.
- **Robotic Surgery:** AI enhances precision in the operating room by analyzing real-time data to guide instruments and optimize movements.

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Financials

- **Credit Scoring:** AI models evaluate vast and unconventional data to enable more accurate risk scoring.
- **Fraud Detection:** AI analyzes transaction patterns to spot irregularities, minimizing false positives and preventing losses.
- **Portfolio Optimization:** AI provides portfolio guidance in response to market conditions, optimizing allocations, managing risk, and potentially enhancing long-term returns.

Real Estate

- **Listing Descriptions:** AI creates optimized property listings by analyzing data, trends, and buyer preferences to attract the right audience.
- **Tenant Screening:** AI integrates credit, rental, and behavioral data to assess tenant reliability and risk with greater accuracy and consistency.
- **Virtual Staging:** AI design tools create lifelike renderings and virtual environments, helping buyers and investors experience spaces digitally and reduce staging costs.

Consumer Discretionary

- **Forecasting:** AI models synthesize vast, real-time data to forecast demand more accurately, helping optimize inventory, pricing, and supply chain decisions.
- **Hyper-Personalized Commerce:** AI-driven insights where every shopper sees customized pricing, products, and experiences.
- **Customer Service:** AI-powered chatbots resolve issues, recommend products, and improve satisfaction while reducing service costs.

Industrials

- **Quality Control:** AI-driven computer vision systems detect manufacturing defects faster and with higher accuracy than manual inspection.
- **Robot-Assisted Assembly:** AI-guided robots perform complex assembly tasks, improving precision, speed, and safety across factory floors.
- **Predictive Maintenance:** AI models analyze sensor data to forecast potential failures, minimizing costly downtime and extending asset lifespans.

Information Technology

- **AI Agents:** AI accountants, lawyers, doctors, educators, and travel agents.
- **Software Development:** Generative AI writes and debugs code, accelerating release cycles and innovation.
- **Cybersecurity:** AI-powered security systems detect, predict, and neutralize threats in real time.

AI is becoming the foundation of a new economic era. The buildout of compute, data centers, and power is enabling breakthroughs across every sector, from healthcare and finance to real estate and industrials. As AI integrates deeper into the global economy, its impact will extend far beyond productivity, fueling innovation, accelerating scientific discovery, and transforming how businesses create value. Over the next decade, the focus will shift from merely enhancing efficiency to harnessing AI’s transformative potential, unlocking new frontiers of growth, reshaping industries, and pushing the boundaries of human potential. ■

INDEX DESCRIPTIONS

The **Standard & Poor's 500 Index** is a capitalization-weighted index that is generally considered representative of the U.S. large capitalization market.

The **Dow Jones Industrial Average (DJIA)** is a price-weighted average of 30 significant stocks traded on the New York Stock Exchange (NYSE) and the Nasdaq.

The **Bloomberg U.S. 1000 Total Return Index** is a float market-cap-weighted benchmark of the 1,000 most highly capitalized U.S. companies.

The **Bloomberg U.S. 1000 Growth Total Return Index** is a float market cap-weighted benchmark comprised of those companies in the Bloomberg U.S. 1000 Total Return Index with superior growth factor scores based on their earnings yield, valuation, dividend yield, and growth.

The **Bloomberg U.S. 2000 Total Return Index** is a float market cap-weighted benchmark of the lower 2,000 in capitalization of the Bloomberg U.S. 3000 Index.

The **Bloomberg U.S. 2500 Total Return Index** is a float market cap-weighted benchmark of the lower 2,500 in capitalization of the Bloomberg U.S. 3000 Index.

The **Bloomberg U.S. Micro Cap Total Return Index** is a float market-cap-weighted benchmark of those securities in the U.S. Aggregate Equity Index with a market capitalization ranking of lower than 2,500.

The **Dow Jones U.S. Select Dividend Index** aims to represent the U.S.'s leading stocks by dividend yield.

The **S&P 500 Dividend Aristocrats®** measures the performance of S&P 500 companies that have increased dividends every year for the last 25 consecutive years. The Index treats each constituent as a distinct investment opportunity without regard to its size by equally weighting each company.

The **S&P 500 Health Care Index** comprises those companies included in the S&P 500 that are classified as members of the GICS® health care sector.

The **Euro STOXX 50® Index** represents the performance of the 50 largest companies among the 19 supersectors in terms of free-float market capitalization in 11 Eurozone countries.

The **Nikkei 225 Index** is a price-weighted index of the 225 top Japanese companies listed in the Tokyo Stock Exchange.

The **MSCI EAFE Index** (Europe, Australasia, and the Far East) is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the U.S. and Canada.

The **MSCI EM (Emerging Markets) Europe, Middle East, and Africa Index** is a free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of the emerging market countries of Europe, the Middle East, and Africa.

The **MSCI China Index** captures large and mid-cap representation across China A, H, and shares, Red chips, P chips, and foreign listings (e.g. ADRs). With 741 constituents, the index covers about 85% of this China equity universe.

The **MSCI Europe Index** is a free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of the developed markets in Europe.

The **MSCI World Index** is a free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of developed markets.

The **MSCI ACWI ex USA Index** captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries (excluding the U.S.) and 25 Emerging Markets (EM) countries.

The **Bloomberg U.S. Treasury Bills Index** includes U.S. Treasury Bills that have a remaining maturity from one month up to (but not including) 12 months. It excludes zero coupon strips.

The **Bloomberg Global Aggregate Index** is market value-weighted inclusive of accrued interest and covers the most liquid portion of the global investment- grade fixed-rate bond market, including government, credit, and collateralized securities.

The Bloomberg U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related, and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS, and CMBS (agency and nonagency). Provided the necessary inclusion rules are met, U.S. Aggregate-eligible securities also contribute to the multicurrency Global Aggregate Index and the U.S. Universal Index, which includes high yield and emerging markets debt.

The **Bloomberg U.S. Government/Credit Index** is a broad-based flagship benchmark that measures the non-securitized component of the U.S. Aggregate Index. It includes investment-grade, U.S. dollar-denominated, fixed-rate Treasuries, government-related, and corporate securities.

The **Bloomberg Mortgage-Backed Securities Index** is a measurement of the movement of the 15- and 30-year fixed rate securities backed by mortgage pools of the Government National Mortgage Association (GNMA), the Federal Home Loan Mortgage Corporation (FHLMC), and the Federal National Mortgage Association (FNMA). All returns are market value-weighted inclusive of accrued interest.

The **Bloomberg U.S. Corporate High-Yield Bond Index** covers the U.S. dollar-denominated, non-investment-grade, fixed rate, taxable corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below. The index excludes emerging markets debt. The U.S. Corporate High-Yield Bond Index is part of the U.S. Universal and Global High-Yield Indices.

The **Bloomberg U.S. Municipal Bond Index** covers the U.S. dollar-denominated long-term, tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

The **Credit Suisse Leveraged Loan Index** tracks the investable market of the U.S. dollar-denominated leveraged loan market. It consists of issues rated "5B" or lower, meaning that the highest rated issues included in this index are Moody's/S&P ratings of Baa1/BB+ or Ba1/BBB+. All loans are funded term loans with a tenor of at least one year and are made by issuers domiciled in developed countries.

The **Dow Jones U.S. Select REIT Index** intends to measure the performance of publicly traded REITs and REIT-like securities. The index is a subset of the Dow Jones U.S. Select Real Estate Securities Index (RESI), which represents equity real estate investment trusts (REITs) and real estate operating companies (REOCs) traded in the U.S. The indices are designed to serve as proxies for direct real estate investment, in part by excluding companies whose performance may be driven by factors other than the value of real estate.

The **BofA Merrill Lynch Adjustable Rate Preferred Securities Index** tracks the performance of U.S. dollar-denominated investment-grade floating rate preferred securities publicly issued in the U.S. domestic market. Qualifying securities must have an investment-grade rating (based on an average of Moody's, S&P, and Fitch) and must have an investment-grade-rated country of risk (based on an average of Moody's, S&P, and Fitch foreign currency long-term sovereign debt ratings).

The **BofA Merrill Lynch Core Plus Fixed Rate Preferred Securities Index** tracks the performance of fixed rate U.S. dollar-denominated preferred securities issued in the U.S. domestic market. Qualifying securities must be rated at least B3 (based on an average of Moody's, S&P, and Fitch) and must have an investment grade-rated country of risk (based on an average of Moody's, S&P, and Fitch foreign currency long-term sovereign debt ratings).

The **Zillow Observed Rent Index (ZORI)** is a smoothed measure of the typical observed market rate rent across a given region. ZORI is a repeat-rent index that is weighted to the rental housing stock to ensure representativeness across the entire market, not just those homes currently listed for-rent. The index is dollar-denominated by computing the mean of listed rents that fall into the 40th to 60th percentile range for all homes and apartments in a given region, which is once again weighted to reflect the rental housing stock. Details available in ZORI methodology.

The **BofA Merrill Lynch U.S. High Yield Master II Index** is a market value-weighted index of all domestic and Yankee (bonds denominated in U.S. dollars and issued in the U.S. by foreign entities) high-yield bonds, including deferred interest bonds and payment-in-kind securities.

The **Bloomberg Commodity Index** ("BCOM" or the "Index") is designed to be a highly liquid and diversified benchmark for commodity investments.

The **HFRI Fund Weighted Composite Index** is an equal-weighted index utilized by numerous hedge fund managers as a benchmark for their own hedge funds. All single-manager HFRI Index constituents are included in the HFRI Fund Weighted Composite Index, which accounts for over 2,200 funds listed on the HFR database. Funds included in the index must report monthly returns, report net of all fees returns, report assets in U.S. dollars, and have at least $50 million under management or have been actively trading for at least 12 months.

Cash & Cash Equivalents is represented by the Bloomberg U.S. Treasury 3-6 Months Bill Index, comprised of treasury bills issued by the U.S. government with less than one year to maturity.

U.S. Gov't Bonds is represented by the Bloomberg U.S. Government Bond Index, comprised of the U.S. Treasury and U.S. Agency indexes.

U.S. Corp IG Bonds is represented by the Bloomberg U.S. Corporate Bond Index, comprised of the investment grade, fixed-rate, taxable corporate bond market.

High Yield Bonds is represented by the Bloomberg U.S. Corporate High Yield Bond Index, comprised of U.S. dollar-denominated, high yield, fixed-rate corporate bond market securities.

U.S. LC (Large Cap) equities is represented by Russell 1000 Index, comprised of 1,000 of the largest U.S. securities based on a combination of their market cap and current index membership.

U.S. SC (Small Cap) equities is represented by the Russell 2000 Index, comprised of 2,000 of the smallest U.S. securities based on a combination of their market cap and current index membership.

Dev Int'l Equities is represented by the MSCI EAFE Index, comprised of equity securities that belong to markets outside of the U.S. and Canada.

EM Equities is represented by the MSCI EM Index, comprised of equity securities that belong to emerging markets.

Moderate Bench stands for moderate benchmark portfolio return, which is a blended portfolio of stocks (60% weight, represented by MSCI AC World Index) and bonds (40% weight, represented by Bloomberg U.S. Government/Credit Index).

Indices are unmanaged, do not reflect fees and expenses, and you cannot invest directly in an index.

Past performance is no guarantee of future results. Index returns include the reinvestment of dividends but do not include adjustments for brokerage, custodian, and advisory fees.

DISCLOSURES

ASSET CLASS RISKS AND DESCRIPTION OF TERMS

Bonds – Bonds are subject to market, interest rate, and credit risk. Prices on bonds and other interest rate-sensitive securities will decline as interest rates rise. Municipal bonds may be subject to state and alternative minimum taxes, and capital gains taxes may apply. High yield bonds have greater credit risk than higher quality bonds. Bond laddering does not assure a profit or protect against loss in a declining market. Yields and market values will fluctuate, and if sold prior to maturity, bonds may be worth more or less than the original investment.

Cash Equivalents – Portfolios that invest in very short-term securities provide taxable or tax-advantaged current income, pose little risk to principal, and offer the ability to convert the investment into cash quickly. These investments may result in a lower yield than would be available from investments with a lower quality or longer term.

Core Personal Consumption Expenditures (PCE) – The PCE Price Index excluding volatile food and energy prices, revealing underlying inflation trends.

Duration – Duration is a measure of the sensitivity of the price – the value of principal – of a fixed-income investment to a change in interest rates. Duration is expressed as a number of years.

Equities – Portfolios that emphasize stocks may involve price fluctuations as stock market conditions change. Small and mid capitalization stocks are typically more volatile and carry additional risks, since smaller companies generally are not as well established as larger companies.

Generative AI – Generative AI is a type of artificial intelligence that can produce content such as audio, text, code, video, and images.

International/Global Investing/Emerging Markets – There are special considerations associated with international and global investing, including the risk of currency fluctuations and political and economic events. Investing in emerging markets may involve greater risk and volatility than investing in more developed countries.

Alternative Investments or Non-Traditional Assets – Alternative investments involve a high degree of risk, often engage in leveraging and other speculative investment practices that may increase the risk of investment loss, can be highly illiquid, are not required to provide periodic pricing or valuation information to investors, may involve complex tax structures and delays in distributing tax information, are not subject to the same regulatory requirements as more traditional investments, and often charge high fees, which may erode performance. An investment is appropriate only for investors who have the capacity to absorb a loss of some or all of their investment.

Real Estate – When investing in real estate companies, property values can fall due to environmental, economic, or other reasons, and changes in interest rates can negatively impact the performance.

Commodities and Futures – The risk of loss in trading commodities and futures can be substantial. You should therefore carefully consider whether such trading is suitable for you in light of your financial condition. The high degree of leverage that is often obtainable in commodity trading can work against you as well as for you. The use of leverage can lead to large losses as well as gains.

Hedge Funds – Investors should be aware that hedge funds often engage in leverage, short- selling, arbitrage, hedging, derivatives, and other speculative investment practices that may increase investment loss. Hedge funds can be highly illiquid, are not required to provide periodic pricing or valuation information to investors, and often charge high fees that can erode performance. Additionally, they may involve complex tax structures and delays in distributing tax information. While hedge funds may appear similar to mutual funds, they are not necessarily subject to the same regulatory requirements as mutual funds.

Venture Capital – Venture capital investments involve substantial risks. The risks associated with investing in companies in the start-up or expansion stages of development are greater than those of companies in later stages, because the companies' business concepts generally are unproven and the companies have little or no track record.

Limited Partnerships – Generally, limited partnership investments are suitable only for a narrow class of relatively sophisticated investors. Limited partnership investments may be speculative in nature and be subject to resale restrictions or illiquidity. An investment is appropriate only for investors who have the capacity to absorb a loss of some or all of their investment.

Private Equity – Private equity funds are not appropriate for all investors. Investors should be aware that private equity funds may contain speculative investment practices that can lead to a loss of the entire investment. Private equity funds may invest in entities in which no secondary market exists and, as such, may be highly illiquid. The funds are not required to provide periodic pricing or valuation information to investors and often charge high fees that can erode performance. Additionally, they may involve complex tax structures and delays in distributing tax information.

Mutual Funds and Exchange Traded Funds – The investment return and principal value of an investment in funds will fluctuate, so that an investor's shares, when redeemed, may be worth more or less than their original cost. ETFs trade like a stock and may trade for less than their net asset value. There will be brokerage commissions associated with buying and selling exchange traded funds unless trading occurs in a fee-based account.

Standard Deviation – Standard deviation is a measure of the dispersion of a set of data from its mean. It is calculated as the square root of variance by determining the variation between each data point relative to the mean. If the data points are further from the mean, there is higher deviation within the data set.

Volatility – Volatility is measured by calculating the standard deviation of the annualized returns over a given period of time.

RISK PROFILES

RP 1 Conservative – A conservative investor values protecting principal over seeking appreciation. This investor is comfortable accepting lower returns in exchange for a higher degree of liquidity and/or stability. Typically, a Conservative investor primarily seeks to minimize risk and loss of principal.

RP 2 Moderately Conservative – A moderately conservative investor values principal preservation, but is comfortable accepting a small degree of risk and volatility to seek some degree of appreciation. This investor desires greater liquidity, is willing to accept lower returns, and is willing to accept minimal losses.

RP 3 Moderate – A moderate investor values reducing risks and enhancing returns equally. This investor is willing to accept modest risks to seek higher long-term returns. A moderate investor may endure a short-term loss of principal and lower degree of liquidity in exchange for long-term appreciation.

RP 4 Moderate Growth – A moderate growth investor values higher long-term returns and is willing to accept considerable risk. This investor is comfortable with short-term fluctuations in exchange for seeking long-term appreciation. The moderate growth investor is willing to endure larger short-term losses of principal in exchange for the potential of higher long-term returns. Liquidity is a secondary concern to a moderate growth investor.

RP 5 Moderately Aggressive – A moderately aggressive investor primarily values higher long-term returns and is willing to accept significant risk. This investor believes higher long-term returns are more important than protecting principal. A moderately aggressive investor may endure large losses in favor of potentially higher long-term returns. Liquidity may not be a concern to a moderately aggressive investor.

RP 6 Aggressive – An aggressive investor values maximizing returns and is willing to accept substantial risk. This investor believes maximizing long-term returns is more important than protecting principal. An aggressive investor may endure extensive volatility and significant losses. Liquidity is generally not a concern to an aggressive investor.

IMPORTANT NOTES AND DISCLOSURES

The recommendations made for your actual portfolio will differ from any asset allocation or strategies outlined in this document. The model portfolios are not available to investors since they represent investment ideas, which are general in nature, and do not include fees. Your asset allocation will be customized to your preferences and risk tolerance, and you will be charged fees. You should ensure that your portfolio is updated or redefined when your investment objectives or personal circumstances change.

Diversification and asset allocation do not ensure a profit or guarantee against losses. Investing involves risk, including the possible loss of principal. Any data on past performance contained herein is no indication as to future performance. The value of any investment may fluctuate as a result of market changes. The information in this document is not intended to predict actual results, and no assurances are given with respect thereto.

Assumptions are estimates based on historic performance and an evaluation of the current market environment. References to future expected returns and performance do not constitute a promise of performance for any asset class or investment strategy, nor should they be relied on as advice or interpreted as a recommendation to engage in the purchase or sale of any security or financial product. The assumptions are subjective estimates based on circumstances and events that may not occur. Further, any valuations given in this document may not accurately reflect the values at which investments may actually be bought or sold, and no allowance has been made for taxation.

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