



A P O L L O N

Asset Class Summaries

2023





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Treasury Inflation Protected Securities (TIPS)

TIPS are inflation-indexed securities issued by the U.S. Treasury in 5-year, 10-year and 20-year maturities. The principal value of the securities increase (or decrease) with the CPI (or the Consumer Price Index). The coupon rates are issued with fixed percentage rates, but the securities generate varying levels of income when the rates are multiplied by the inflation-adjusted principal.

10-Year Forecasts



Historical Returns as of 09/30/23

Bloomberg US Treasury US TIPS TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	1.2%	-2.0%	2.1%	1.7%	2.9%
Annualized Standard Deviation	5.2%	6.9%	6.1%	5.0%	5.9%

Pros:

- *Inflation Protection:* Provides a stated return above inflation (if security is held to maturity). Protects against unanticipated inflation.
- *High Quality:* Issued and backed by U.S. Treasury.
- *Diversification Benefits:* Near zero historical correlation to equity markets and (relatively) low correlation to other fixed income asset classes.
- *Deflation floor:* At maturity, TIPS will be redeemed by U.S. Treasury at the greater of the inflation-adjusted principal or par amount at issuance.

Cons:

- *Interest Rate Risk:* Subject to (real) interest rate risk. Real interest rates rise (fall) when nominal interest rates rise (fall) more than implied inflation expectations.
- *Limited History:* First introduced to the U.S. markets in 1997.
- *Liquidity:* Less supply and more thinly traded than the nominal U.S. Treasury counterpart.
- *Volatility:* Due to longer maturity and duration, the TIPS index has a higher volatility than U.S. nominal bond index (Barclays Aggregate U.S. Bond Index).

Highest Correlation:

U.S. Bonds
Global Bonds
Municipal Bonds

Lowest Correlation:

U.S. Small Cap
U.S. Large Cap
U.S. All Cap



Municipal Bonds

Municipal bonds are issued by state or local governments, government related entities and nonprofit organizations (public hospitals, schools, etc.).

10-Year Forecasts

Annual
Return

3.7%

Annual
Risk

4.8%

Historical Returns as of 09/30/23

Bloomberg Municipal 5 Yr 4-6 TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	2.2%	-1.7%	1.0%	1.4%	2.6%
Annualized Standard Deviation	5.1%	4.4%	4.1%	3.3%	3.3%

Pros:

- *Tax Advantaged Investments:* Interest income from municipal bonds is generally exempt from federal income taxes. May be exempt from state and local income taxes as well. Leads to high demand amongst highest tax bracket investors.
- *High Quality:* Investment grade with high credit ratings. Lower default risk and history of bankruptcy filings.
- *Insured:* Some municipal bonds are insured by commercial insurance companies.

Cons:

- *Interest Rate Risk:* Bond prices fall in a rising interest rate (and/or inflationary) environment.
- *Call Risk:* Carry provisions that allow the issuer to call or redeem the bond prior to the actual maturity date.
- *Revenue sources risk:* With revenue bonds, the interest and principal are dependent on the revenues from taxes, facility users, and economic health of issuer or region.

**Highest
Correlation:**

U.S. Bonds
TIPS
Foreign Bonds

**Lowest
Correlation:**

U.S. Small Cap
EM Equity
International Equity



High Yield Municipal Bonds

High Yield Municipal bonds are issued by state or local governments, government related entities and nonprofit organizations (public hospitals, schools, etc.) and are rated below investment grade (BB and below). A majority of the asset class comprises revenue-backed obligations.

10-Year Forecasts



Historical Returns as of 09/30/23

Bloomberg HY Muni TR USD					
	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	3.5%	-0.7%	1.7%	4.0%	4.9%
Annualized Standard Deviation	9.7%	8.6%	9.2%	7.4%	8.4%

Pros:

- **Tax Advantaged Investments:** Interest income from municipal bonds is generally exempt from federal income taxes. May be exempt from state and local income taxes as well. Leads to high demand amongst highest tax bracket investors.
- **Less Default Risk:** High yield municipal issuers have exhibited about a quarter of the default risk relative to high yield corporate issuers.
- **After-Tax Yield:** The asset class maintains a comparable after-tax yield advantage relative to the corporate market.

Cons:

- **Interest Rate Risk:** Bond prices fall in a rising interest rate (and/or inflationary) environment.
- **Revenue sources risk:** With revenue bonds, the interest and principal are dependent on the revenues from taxes, facility users, and economic health of issuer or region.
- **Market Fragmentation:** Because the market is smaller and less efficient, bond prices may be more susceptible to adverse market movements and investor flows.

Highest Correlation:

HY Bonds
Municipal Bonds
TIPS

Lowest Correlation:

Foreign Bonds
EM Bonds
U.S. Small Cap



U.S. Investment Grade Bonds

Represented by the Barclays U.S. Aggregate Bond Index, the category represents investment grade bonds traded in United States. The index includes Treasury securities, Government agency bonds, Mortgage-backed bonds, Corporate bonds and a small amount of foreign bonds traded in the US. Municipal bonds and TIPS are excluded from the index.

10-Year Forecasts

Annual
Return

5.0%

Annual
Risk

7.2%

Historical Returns as of 09/30/23

Bloomberg US Agg Bond TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	0.6%	-5.2%	0.1%	1.1%	2.5%
Annualized Standard Deviation	7.1%	6.2%	5.6%	4.4%	4.2%

**Highest
Correlation:**

TIPS
Municipal Bonds
Global Bonds

**Lowest
Correlation:**

EM Equity
U.S. Small Cap
Global Equity

Pros:

- *Intermediate Duration:* Relatively modest average duration (typically between 5 - 7 years) leads to moderate volatility.
- *High Quality:* Heavy exposure to the highest quality (AAA) U.S. fixed income segments. No high yield (BB or lower) exposure.
- *Deflation/Disinflation Protection:* Declining interest rates lead to short-term price gains.
- *Portfolio Ballast:* Typically provides favorable correlation benefits relative to risk assets in times of economic and/or financial turmoil.

Cons:

- *Modest Return Potential:* High quality nature moderates return potential relative to riskier segments of the portfolio.
- *Credit Risk:* Subject to some relatively modest credit risk.
- *Interest Rate Risk:* Bond prices fall in a rising interest rate (and/or inflationary) environment.

Any forecast represent median expectations and actual returns, volatilities and correlations will differ from forecasts. Please see Apollon's most recent 10-Year Capital Market Forecasts white paper for additional information.



Dynamic Bonds

Bonds issued in the United States & foreign developed countries including but not limited to, Japan, United Kingdom, France, Germany, Italy, Spain, Canada, Netherlands, Belgium, Australia, Denmark, Sweden and emerging economies. Issues include government securities, corporate credit, structured securities and derivatives. Derivative allocations include futures, swaps and forwards, which may be utilized to hedge exposures or create synthetic exposures.

10-Year Forecasts



Historical Returns as of 09/30/23

**Custom Blend of Indices*

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	5.7%	0.0%	1.8%	2.5%	3.7%
Annualized Standard Deviation	3.3%	4.1%	4.2%	3.2%	3.8%

** Dynamic bonds are a blend of 33% Cash, 33% Corp HY, and 34% Global Bonds.*

Pros:

- **Large Opportunity Set:** There are many fixed income opportunities other than traditional U.S. Government and investment grade corporate bonds. Many of the world's bonds are issued outside of the U.S.
- **Limited Interest Rate Exposure:** Strategies exhibit lower interest rate exposures through the utilization of active duration management, hedging strategies, relative value trades, cash, or derivatives.
- **Diversification Benefits:** Historically, offered low correlation to other fixed income asset classes and global equities.

Cons:

- **Credit risk:** Potential elevated allocations to credit increases default risk and correlations to equity portfolios.
- **Concentration:** Portfolios are structured to be dynamic, tactical, and flexible. Because of this, portfolios may result in concentrated single sector or market exposures depending on prevailing market conditions.
- **Foreign exchange:** Global in nature, these portfolios will oscillate between dollar denominated and non-dollar securities and currency positions. This may result in additional volatility depending on exchange rate movements.

Highest Correlation:

HY Bonds
Broad Real Assets
Global
Infrastructure

Lowest Correlation:

Foreign Bonds
Commodity Futures
Municipal Bonds

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High Yield Bonds

High yield bonds are bonds that are rated below investment grade (BB or lower). These bonds have higher default or other credit event risk, but typically pay higher yields than higher rated bonds to attract investors.

10-Year Forecasts

Annual
Return

7.1%

Annual
Risk

13.7%

Historical Returns as of 09/30/23

Bloomberg US Corporate High Yield TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	10.3%	1.8%	3.0%	4.2%	7.3%
Annualized Standard Deviation	5.6%	8.0%	9.3%	7.4%	9.8%

Pros:

- **High Current Income:** Offers yield spreads above Treasuries and investment grade corporate bonds which can translate to higher returns.
- **Lower Duration:** Typically, shorter maturities and lower interest rate sensitivity. Changes in credit spreads drive volatility (more than changes in interest rates).
- **Diversification Benefits:** Historically, offered relatively low correlation to investment grade fixed income and modest correlations to equities during normal environments.

Cons:

- **Volatility:** More volatile than investment grade bonds.
- **Credit/Spread Risk:** More susceptible to credit stress and rising credit spreads adversely affecting prices (and returns).
- **Default Risk:** Higher probability of defaults (with lower recovery rates) than investment grade bonds.
- **Correlation to Equities:** Higher correlation to equities (particularly in stress environments) than to other fixed income asset classes.

**Highest
Correlation:**

US Bonds –
Dynamic
Broad Real Assets
Global
Infrastructure

**Lowest
Correlation:**

Foreign Bonds
Muni Bonds
US Bonds

Global Bonds



Bonds issued in the United States & foreign developed countries including but not limited to, Japan, United Kingdom, France, Germany, Italy, Spain, Canada, Netherlands, Belgium, Australia, Denmark, Sweden and emerging economies.

10-Year Forecasts

Annual
Return

5.1%

Annual
Risk

9.7%

Historical Returns as of 09/30/23

Bloomberg Global Aggregate TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	2.2%	-6.9%	-1.6%	-0.4%	1.4%
Annualized Standard Deviation	8.7%	7.9%	6.9%	5.8%	6.1%

Pros:

- *Large Opportunity Set:* Majority of the world's bond issues are outside the U.S.
- *Non-U.S. Interest Rate Exposure:* Offers some potential insulation from rising U.S. interest rate environment.
- *Diversification Benefits:* Historically, offered low correlations to other fixed income asset classes and global equities.
- *Foreign Currency Exposure:* Unhedged currency can provide protection against a weakening U.S. Dollar.
- *Flexible Mandates:* Managers can allocate risk more tactically across global sovereign, global credit, and global currencies.

Cons:

- *Interest Rate Volatility:* Global bonds traditionally exhibit more interest rate exposure through longer duration bonds.
- *Volatility:* Non-currency hedged bonds can be volatile given foreign currency fluctuations relative to the dollar.
- *Wider Risk Spectrum:* Subject to foreign financial, economic, and geopolitical risk.
- *Non-U.S. Interest Rate Exposure:* Potential exposure to rising interest rates outside the U.S., resulting in price depreciation.

Highest
Correlation:

Foreign Bonds
US Bonds
TIPS

Lowest
Correlation:

U.S. Small Cap
U.S. Mid Cap
U.S. Large Cap

Any forecast represent median expectations and actual returns, volatilities and correlations will differ from forecasts. Please see Apollon's most recent 10-Year Capital Market Forecasts white paper for additional information.

Foreign Bonds



Bonds issued in foreign developed countries including Japan, United Kingdom, France, Germany, Italy, Spain, Canada, Netherlands, Belgium, Australia, Denmark and Sweden.

10-Year Forecasts

Annual
Return

4.0%

Annual
Risk

14.9%

Historical Returns as of 09/30/23

50% CITI WGBI NonUSD Hdg 50% CITI WGBI NonUSD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	1.5%	-7.6%	-2.1%	-0.1%	1.3%
Annualized Standard Deviation	7.6%	7.3%	6.6%	5.6%	5.5%

Pros:

- *Large Opportunity Set:* Majority of the world's bond issues are outside the United States.
- *Non-U.S. Interest Rate Exposure:* Offers some potential insulation from rising U.S. interest rate environment.
- *Diversification Benefits:* Historically, offered low correlation to other fixed income asset classes and global equities.
- *Foreign Currency Exposure:* Unhedged currency can provide for protection against weakening U.S. dollar.

Cons:

- *Volatility:* Non-currency hedged bonds can be volatile given foreign currency fluctuations relative to the dollar.
- *Risk:* Subject to foreign financial, economic and geopolitical risk.
- *Non-U.S. Interest Rate Exposure:* Potential exposure to rising interest rates outside the U.S., resulting in price depreciation.

Highest
Correlation:

Global Bonds
TIPS
US Bonds

Lowest
Correlation:

U.S. Small Cap
U.S. Mid Cap
Alternatives

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Emerging Market Bonds

Bonds from countries located in emerging market countries. Emerging markets countries are nations with social or business activity in the process of rapid growth and industrialization. Countries included in the JPM GBI-EM Global Diversified UH (Bond) Index include Brazil, Mexico, Turkey, South Africa, Poland, Malaysia, Indonesia, Russia, Thailand, Hungary, Colombia, Peru, Philippines and Chile.

10-Year Forecasts

Annual
Return

6.2%

Annual
Risk

16.9%

Historical Returns as of 09/30/23

JPM GBI-EM Global Diversified TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	17.0%	-1.6%	0.7%	-0.5%	2.0%
Annualized Standard Deviation	10.9%	10.8%	11.4%	11.2%	12.6%

JPM GBI-EM Global Diversified UH (2/2003-present) , JPM EMBI-Global Diversified (1/1994-1/2003)

Pros:

- **Diversification:** Extremely low correlation to other investment grade global fixed income asset classes.
- **Differentiated, Higher Return Potential:** Added risk premium to most developed fixed income markets.
- **Currency Appreciation:** Currency can be a significant return driver (>50% historically) of performance.
- **Lower Debt-to-GDP Ratios:** Emerging market countries have lower debt-to-GDP ratios than most developed countries.

Cons:

- **Political, Financial, Currency, and Regulatory Risks:** Emerging countries have greater political, financial, currency and regulatory instability than developed markets.
- **Short History:** Local currency bond index data begins in 2003. U.S. Dollar denominated emerging market bond indexes date back to 1994.

**Highest
Correlation:**

EM Equity
Global
Infrastructure
Global Equity

**Lowest
Correlation:**

Municipal High
Yield Bonds
Municipal Bonds
US Bonds

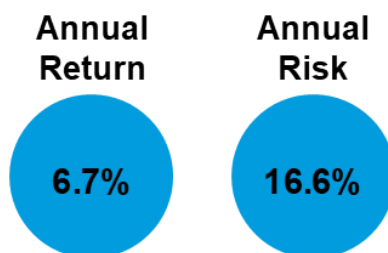
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Large Cap U.S. Stocks



Stocks with market capitalizations greater than \$15 Billion. Large cap stocks represents the vast majority of the total U.S. equity market.

10-Year Forecasts



Historical Returns as of 09/30/23

S&P 500 TR USD					
	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	21.6%	10.2%	9.9%	11.9%	11.3%
Annualized Standard Deviation	16.0%	17.9%	19.0%	15.0%	16.0%

Pros:

- *Large and Liquid Market:* U.S. large cap stocks represent the largest and most liquid segment of the global equity market.
- *Long Historical Data Set:* The S&P 500 Index performance history dates back to January 1, 1926.
- *Less Volatility:* Lower long-term volatility than mid cap, small cap, or foreign equity markets.

Cons:

- *Risk:* Subject to equity risk.
- *Lower Risk Premium:* Less risk, but potentially less long-term return than mid cap, small cap, or emerging market equities.
- *Concentration:* Some large cap benchmarks (S&P 500 Index and Russell 1000 Growth Index) have become increasingly more concentrated with 5-7 stocks driving most of the return, making it challenging for active managers on a relative performance basis.

Highest Correlation:

U.S. All Cap
U.S. Mid Cap
Global Equity

Lowest Correlation:

Foreign Bonds
TIPS
Municipal Bonds

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Mid Cap U.S. Stocks

Stocks between \$3 and \$15 billion in market capitalization.

10-Year Forecasts

Annual
Return

6.7%

Annual
Risk

18.4%

Historical Returns as of 09/30/23

Russell Mid Cap TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	13.4%	8.1%	6.4%	9.0%	10.3%
Annualized Standard Deviation	19.1%	19.5%	21.7%	16.8%	18.5%

Pros:

- *Risk Premium:* Offers a potential risk-premium over large cap stocks.
- *Higher Growth:* Smaller companies can grow earnings faster than larger companies.
- *Less Volatility:* Lower long-term volatility than small cap stocks.

Cons:

- *Risk:* Higher volatility than large cap stocks.
- *Diversification:* High correlation to both large cap and small cap stocks. Mid cap has a very high correlation to a 60/40 large & small cap mix.
- *Arbitrary Classification:* Arbitrary divide between "smaller" large cap and "larger" mid cap stocks. Conflicting definitions of mid-small cap barrier.

**Highest
Correlation:**

U.S. All Cap
U.S. Large Cap
U.S. Small Cap

**Lowest
Correlation:**

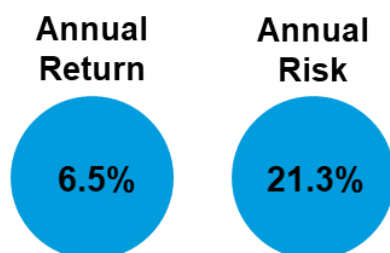
Foreign Bonds
Municipal Bonds
TIPS

Small Cap U.S. Stocks



Stocks with market capitalizations of \$3 billion or less.

10-Year Forecasts



Historical Returns as of 09/30/23

	Russell 2000 TR USD				
	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	8.9%	7.2%	2.4%	6.6%	8.1%
Annualized Standard Deviation	22.1%	22.4%	24.4%	19.6%	21.1%

Pros:

- *Risk Premium:* Offers a potential risk-premium over large and mid cap stocks.
- *Higher Growth:* Smaller companies can grow earnings faster than larger companies.
- *Upside:* Virtually all large cap stocks started as small cap stocks at one time in their history.

Cons:

- *Risk:* Higher volatility than large cap and mid cap stocks.
- *Liquidity/Opportunity Set:* Smaller capitalization stocks have less liquidity and marketability. Access to quality small cap managers is often constrained.

Highest Correlation:

U.S. Mid Cap
U.S. All Cap
U.S. Large Cap

Lowest Correlation:

Foreign Bonds
Municipal Bonds
TIPS



International Developed Equity

Stocks of companies located outside of the U.S. in developed countries. Countries include Japan, the United Kingdom, France, Germany, Australia, Austria, Belgium, Denmark, Finland, Hong Kong, Ireland, Italy, Israel, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, and Switzerland. Canada is also considered an international developed market but is not included in the MSCI EAFE Index.

10-Year Forecasts

Annual
Return

8.9%

Annual
Risk

21.9%

Historical Returns as of 09/30/23

	MSCI EAFE GR USD				
	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	26.3%	6.3%	3.7%	4.3%	5.2%
Annualized Standard Deviation	17.0%	18.2%	18.0%	14.9%	17.6%

Pros:

- **Large Universe:** Consists of publicly traded companies in developed countries domiciled outside of the U.S. Many of the best companies in the world are located outside of the U.S.
- **Diversification:** Higher correlation to U.S. equity markets in recent years, but still low enough to provide diversification benefits.
- **Currency Diversification:** Add diversification through foreign currency exposure (away from the U.S. dollar).

Cons:

- **Equity Risk:** Subject to global economic/financial conditions.
- **Currency Risk:** Subject to currency risk as investment returns are translated back into U.S. dollars.
- **Political, Financial, Currency, and Regulatory Risks:** Each country or region has its own political, financial, currency and regulatory risks.
- **Relative Performance:** Can experience prolonged periods of out- or underperformance relative to U.S. equities. A strong U.S. Dollar can be a major headwind for performance relative to U.S. equities.

**Highest
Correlation:**

Global Equity
Global
Infrastructure
EM Equity

**Lowest
Correlation:**

Municipal Bonds
US Bonds
TIPS



Emerging Markets Equity

Stocks of companies located outside of the U.S. in developing countries. Emerging markets countries are nations with social or business activity in the process of rapid growth and industrialization. Emerging market countries in the MSCI Emerging Markets index include China, Brazil, South Korea, Taiwan, South Africa, India, Mexico, Israel, Malaysia, Chile, Turkey, Thailand, Poland, Hungary, Greece, Colombia, the Czech Republic, Egypt, the Philippines, Argentina, Indonesia, Kuwait, Peru, and Saudi Arabia.

10-Year Forecasts

Annual
Return

10.8%

Annual
Risk

28.6%

Historical Returns as of 09/30/23

MSCI EM GR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	12.2%	-1.3%	0.9%	2.5%	4.1%
Annualized Standard Deviation	21.7%	17.9%	19.3%	17.0%	20.6%

Pros:

- *Higher Return Potential:* Emerging economies may exhibit higher GDP growth than developed markets.
- *Diversification:* Diversification benefits, particularly if measured over longer holding periods (decades).
- *Currency:* Provides diversification through foreign currency exposure (away from the U.S. dollar).
- *Large Opportunity Set:* The universe includes thousands of companies and contains many world class companies.

Cons:

- *Volatility:* Opportunity for high returns comes with increased risk.
- *Sensitivity to Extremes:* More sensitivity to global economic crisis. Correlations with other risky assets rise during periods of extreme stress.
- *Sensitivity to Capital Flows:* Capital flows into and out of the asset class can cause heightened volatility.
- *Political, Financial, Currency, and Regulatory Risks:* Emerging market countries have greater political, financial, currency and regulatory instability than developed markets.
- *Increased Governance Risk:* Companies in emerging markets sometimes have governance structures that are less favorable to minority investors and a lack of transparency can also be an issue for investors.

Highest Correlation:

Global Equity
EM Bonds
International Equity

Lowest Correlation:

U.S. Bonds
Municipal Bonds
Foreign Bonds

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Real Estate Investment Trusts

Real Estate Investment Trusts (or REITs) is a tax designation for a companies investing in real estate that reduces or eliminates corporate income taxes. In return for the favorable tax treatment, REITs are required to distribute 90% of their (taxable) income to investors. REITs can be publicly or privately held. Public REITs may be listed on public stock exchanges like shares of common stock in other firms.

10-Year Forecasts

Annual
Return

6.4%

Annual
Risk

18.6%

Historical Returns as of 09/30/23

FTSE Nareit All Equity REITs TR USD

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	-1.7%	2.7%	2.8%	6.2%	6.1%
Annualized Standard Deviation	18.8%	20.4%	20.1%	16.8%	23.0%

Pros:

- *Dividend Yield:* While an equity asset class, dividend yields have historically exceeded other equity classes.
- *Diversification Benefits:* Have often offered relatively low correlation to both stocks and bonds.

Cons:

- *Volatility:* Relatively high volatility.
- *Heavy Reliance on Credit:* REITs are unique in their heavy reliance on the credit markets, subjecting them to added risk in difficult credit environments.
- *Fat Tails:* Relatively high fixed cost businesses coupled with leverage make REITs vulnerable to extreme events (or fat left tails).

**Highest
Correlation:**

Broad Real Assets
Global
Infrastructure
U.S. Mid Cap

**Lowest
Correlation:**

Foreign Bonds
Municipal Bonds
U.S. Bonds

Any forecast represent median expectations and actual returns, volatilities and correlations will differ from forecasts. Please see Apollon's most recent 10-Year Capital Market Forecasts white paper for additional information.



Broad Real Assets

A real asset is a value-generating, physical/tangible asset that has intrinsic value in and of itself. Examples of real assets include land, metals, real estate, infrastructure and commodities. Diversified real asset portfolios strategically and tactically allocate among the various real asset categories, with the goal of providing investors with absolute return, a hedge against rising inflation, and low correlation to more traditional investments.

10-Year Forecasts



Historical Returns as of 09/30/23

S&P Real Asset TR USD					
	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	6.2%	4.3%	2.9%	3.2%	4.8%
Annualized Standard Deviation	12.4%	12.8%	13.7%	10.9%	12.1%

Pros:

- *Hedge against rising inflation:* Due to their inherent physical nature, real assets provide a hedge against rising levels of inflation, especially unexpected inflation. Additionally, many real asset securities have cash flows and revenue streams that are directly linked to CPI.
- *Diversification:* Real assets have low correlations with traditional asset classes, such as stocks and bonds.
- *Alternative Income:* Select areas, such as Real Estate and Infrastructure, often have an attractive income component that helps to mitigate volatility.

Cons:

- *Short history:* Diversified Real Assets are a relatively new asset class. While many of the underlying components themselves have longer track records, others, such as TIPS (late 1990's) and MLPs (early 1990's) remain limited.
- *Exposure to super-cycles:* The more tangible real asset categories (direct commodities, natural resources) have historically gone through super-cycles. This can result in lower returns for extended periods when inflation is subdued. This risk is mitigated through diversified portfolios' exposure to equities, which should mitigate prolonged periods of muted returns.
- *Unique Risk Exposures:* Real assets may be more heavily exposed to geopolitical, weather-related, and regulatory risks. These risks can often be sudden and unavoidable.
- *Heterogeneity:* Due to the breadth of the investable universe with multiple underlying categories, real asset portfolios can look quite different from another. This can create challenges in benchmarking and in comparing portfolios.



Commodity Futures

The Bloomberg Commodity Index is composed of futures contracts on physical commodities. Broad sectors include Energy, Precious Metals, Industrial Metals, Grains, Livestock, Softs and Agriculture. Specific commodity examples include Crude Oil, Gold, Copper, Natural Gas, Soybeans, Aluminum, Corn, Gasoline, Wheat, Live Cattle, Sugar, Silver, Heating Oil, Coffee, Zinc, Lean Hogs, Soybean Oil, Nickel and Cotton. For modeling purposes, futures contracts are collateralized by TIPS rather than T-Bills.

10-Year Forecasts

Annual
Return

6.7%

Annual
Risk

20.5%

Historical Returns as of 09/30/23

BCI+TIPS-CASH

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	-4.8%	11.5%	6.2%	-0.3%	-0.6%
Annualized Standard Deviation	14.8%	19.7%	18.8%	16.1%	18.6%

**Highest
Correlation:**

Broad Real Assets
Global
Infrastructure
TIPS

**Lowest
Correlation:**

Municipal Bonds
U.S. Small Cap
Municipal High
Yield

Pros:

- **Diversification:** Have often offered low (and sometimes negative) correlation to financial markets (stocks & bonds).
- **Geopolitical Risk Protection:** Commodity futures often rise during periods of heightened geopolitical risk.
- **Inflation Hedge:** Commodity futures often protect against inflation as underlying commodities include many inputs to the production process.
- **Historical Risk Premium:** Passive (long-only) commodity futures (collateralized by T-Bills) have provided long-term historical returns on par with equities.

Cons:

- **Volatility:** Can be extremely volatile and a poor *stand-alone* investment.
- **Long-term flat periods:** May experience sustained periods of negative-to-flat performance (decades) followed by periodic extremely positive returns.
- **Increased Investor Base:** More capital has moved into the space potentially driving down future returns (lower roll returns) & diversification benefits.
- **Limited Product Availability:** Limited number of product offerings.

Any forecast represent median expectations and actual returns, volatilities and correlations will differ from forecasts. Please see Apollon's most recent 10-Year Capital Market Forecasts white paper for additional information.

Midstream Energy



MLPs (Master Limited Partnerships) are publicly traded partnerships. MLPs are limited (by U.S. Tax Code) to enterprises that engage in certain natural resource and energy businesses such as petroleum and natural gas extraction and transportation. The vast majority of MLPs are pipeline businesses, which earn (relatively) stable income from the transportation of oil, gasoline, or natural gas.

10-Year Forecasts



Historical Returns as of 09/30/23

Alerian MLP TR USD					
	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	32.7%	43.1%	6.8%	1.9%	8.4%
Annualized Standard Deviation	17.1%	23.5%	39.5%	30.7%	27.3%

Pros:

- **Distribution Yield:** Offers high distribution yields with growth potential.
- **Long-Term Contracts:** Set long-term contracts with energy companies adjusted for inflation.
- **Diversification Benefits:** Historically offer relatively low correlation to stocks, bonds, and commodity prices.

Cons:

- **Volatility:** Historical volatility has been similar to traditional U.S. equities.
- **Limited Access:** Limited number of product offerings.
- **Tax Complexity:** MLP investment structures (i.e., closed-end fund, '40 Act mutual fund, commingled trust fund, separate account, etc.) have unique and varying degrees of (implicit and explicit) costs to deal with UBTI (unrelated business taxable income) issues and reduce complexity of multiple K-1s.
- **Thinly Traded:** Closed-end funds and/or the underlying MLPs may lack sufficient liquidity for large institutional investors.
- **Relatively Short History:** MLP Index data only goes back to early 1990s. Prior to the 1990s, MLPs were largely exploration rather than transportation companies.
- **Volume Risk:** The volume of energy transported through pipelines declines due to supply-demand forces.

Highest Correlation:

High Yield Bonds
U.S. Mid Cap
Global Equity

Lowest Correlation:

Foreign Bonds
U.S. Bonds
TIPS

Any forecast represent median expectations and actual returns, volatilities and correlations will differ from forecasts. Please see Apollon's most recent 10-Year Capital Market Forecasts white paper for additional information.



Marketable Alternatives

A portfolio that allocates to a diversified pool of underlying hedge fund strategies and managers.

10-Year Forecasts

Annual
Return

8.1%

Annual
Risk

8.7%

Historical Returns as of 09/30/23

HFRI Fund of Funds Composite USD*

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	4.9%	3.9%	3.4%	3.3%	2.8%
Annualized Standard Deviation	2.7%	4.9%	6.2%	4.9%	5.0%

*HFRI Fund of Funds Index subject to periodic revisions.

Pros:

- *Capital Preservation:* Ability to make money and/or limit losses in down markets. High (relative) historical risk-adjusted return.
- *Diversification:* Provides investors ability to generate a higher expected return for an aggregate portfolio while reducing overall equity allocation.
- *Alignment of Interests:* Managers invest alongside their clients and charge incentive fees.

Cons:

- *Transparency:* Holdings, style, strategy and leverage may be constantly changing. By definition, hedge fund strategies are constantly evolving.
- *Fees:* High management fees and (trading) expenses. Funds of hedge funds have another layer of management fees.
- *Leverage:* Underlying hedge fund strategies often require leverage, increasing return potential and risk.
- *Esoteric Risks:* Illiquidity, fraud, regulatory, herd behavior, blind pool, extreme non-normal returns (or fat tails), fluid structure and terms, and others.

**Highest
Correlation:**

Global
Infrastructure
EM Equity
U.S. Mid Cap

**Lowest
Correlation:**

Foreign Bonds
Municipal High
Yield Bonds
Municipal Bonds

Any forecast represent median expectations and actual returns, volatilities and correlations will differ from forecasts. Please see Apollon's most recent 10-Year Capital Market Forecasts white paper for additional information.



Private Equity

Private equity is a non-publicly traded asset class with a wide range of investment strategies and styles. Investment strategies typically follow the corporate lifecycle; **Venture Capital (VC)**, **Growth Equity**, **Levered Buyout** and **Distressed/Special Situations**.

10-Year Forecasts



Historical Returns as of 09/30/23

*Cambridge PE 67% Buyout vs. 33% Venture

	1 Year	3 Year	5 Year	10 Year	15 Year
Annualized Total Returns	0.0%	14.3%	14.2%	14.0%	12.6%
Annualized Standard Deviation	0.0%	7.5%	7.1%	5.3%	5.4%

*Returns are typically lagged by 1-2 quarters.

*Illiquidity makes performance volatility impossible to measure precisely.

Pros:

- **Inefficiency & Risk Premiums:** Greater opportunity for active management to add value. Theoretically requires an illiquidity risk premium.
- **Board Representation:** Ability to proactively influence business strategy and operations.
- **Excess Return Potential:** Top managers have historically outperformed publicly traded equity indexes.
- **Access to Smaller Companies:** Ability to access a part of the market not available to public equity investors.

Cons:

- **Illiquidity Risk:** 10 plus year investment cycles. Illiquidity and J-Curve investment cycle makes it difficult to hold a targeted allocation percentage (and rebalance).
- **Higher Performance Dispersion:** High dispersion of returns between top and bottom performing managers compared to most other asset classes.
- **Blind Pool Risk and Low Transparency:** Inability to preview investments before committing capital and more difficult to monitor investments.
- **Leverage:** Some private equity strategies require substantial leverage adding risk.
- **Fees:** Very high management and incentive fees as well as administrative expenses.
- **Esoteric Risks:** Fraud, regulatory, disparate/complex structures and terms, and others.

Any forecast represent median expectations and actual returns, volatilities and correlations will differ from forecasts. Please see Apollon's most recent 10-Year Capital Market Forecasts white paper for additional information.

Structured Notes



A structured product, also known as a market-linked investment, is a pre-packaged investment strategy based on derivatives, such as a single security, a basket of securities, options, indices, commodities, debt issuance and/or foreign currencies, and to a lesser extent, swaps. Structured products were created to meet specific needs that cannot be met from the standardized financial instruments available in the markets. Structured products can be used as an alternative to a direct investment, as part of the asset allocation process to reduce risk exposure of a portfolio, or to utilize the current market trend.

Pros:

- *Market Access:* products are often structured to gain access to a market that you are not able to get thru traditional investments.
- *Principal Protection:* some notes offer downside protection
- *Reduced Volatility:* as the notes are generally not priced daily, clients receive less day-to-day volatility
- *Returns:* In some environments such as flat equity markets, structure notes can provide positive returns.

Cons:

- *Counterparty:* Most notes are structured as unsubordinated debt of the counterparty, exposing the client to payback risk. Best practice is to diversify across counterparties.
- *Performance:* As these products are structured to build off of human emotion and created from the banking desk, the outcomes generally favor the issuer versus the investor.
- *Taxability:* Many structured notes have unfavorable tax consequences. Investors must read the fine print to understand any implications.
- *Fees:* Most structure products have a built in minimum 1% fee and also do not pay the dividend for any indices they replicated (i.e. sometimes >2%).
- *Highly Complex:* the complexity of the return calculations means that it is difficult to determine how the structured product would perform versus simply owning the underlying asset.



Index Proxy Summary Proxy Slide

Indices used to generate historical risk and return metrics	Most Recent Index	Index Dates		Linked Index 1	Index Dates		Linked Index 2	Index Dates		Linked Index 2	Index Dates	
Cash	FTSE Treasury Bill 3 Mon USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
ST Bonds	Bloomberg US Gov/Credit 1-3 Yr TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
TIPS	Bloomberg US Treasury US TIPS TR USD	11/22	- 3/97	Bloomberg US Agg Bond TR USD	2/97	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Muni Bond	Bloomberg Municipal 5 Yr 4-6 TR USD	11/22	- 1/88	Bloomberg US Agg Bond TR USD	12/87	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Muni High Yield	Bloomberg HY Muni TR USD	11/22	- 11/95	Bloomberg Municipal 5 Yr 4-6 TR USD	10/95	- 1/88	Bloomberg US Agg Bond TR USD	12/87	- 1/79	N.A.	N.A.	- N.A.
US Bond	Bloomberg US Agg Bond TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
US Bonds - Dynamic	*Custom Blend of Indices	11/22	- 2/90	Bloomberg US Agg Bond TR USD	1/90	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
For. Dev. Bond	50% CITI WGBI NonUSD Hdg 50% CITI WGBI NonUSD	11/22	- 1/85	Bloomberg US Agg Bond TR USD	12/84	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
HY Bond	Bloomberg US Corporate High Yield TR USD	11/22	- 7/83	Bloomberg US Agg Bond TR USD	6/83	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
EM Bond	JPM GBI-EM Global Diversified TR USD	11/22	- 1/03	JPM EMBI Global Diversified TR USD	12/02	- 1/94	Bloomberg US Corporate High Yield TR USD	12/93	- 7/83	Bloomberg US Agg Bond TR USD	6/83	- 1/79
Global Bonds	Bloomberg Global Aggregate TR USD	11/22	- 2/90	Bloomberg US Agg Bond TR USD	1/90	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Long Term Bonds	Bloomberg US Gov/Credit Long TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Global Equity	MSCI ACWI GR USD	11/22	- 1/88	S&P 500 TR USD	12/87	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
US Equity (AC)	Russell 3000 TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
US Equity (LC)	S&P 500 TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
US Equity (MC)	Russell Mid Cap TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
US Equity (SC)	Russell 2000 TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Non-US Equity (ACWI)	MSCI ACWI Ex USA GR USD	11/22	- 1/88	MSCI EAFE GR USD	12/87	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Int'l Dev. Equity	MSCI EAFE GR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
EM Equity	MSCI EM GR USD	11/22	- 1/88	MSCI EAFE GR USD	12/87	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Real Estate	FTSE Nareit All Equity REITs TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Private Real Estate	Wilshire US RESI TR USD	11/22	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Broad Real Assets	S&P Real Asset TR USD	11/22	- 5/05	*Custom Real Assets Index	4/05	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Commod. Fut.	BCI+TIPS-CASH	11/22	- 3/97	BCH-AGG-CASH	2/97	- 1/91	GSC+AGG-CASH	12/90	- 1/79	N.A.	N.A.	- N.A.
Global Infrastructure	DJ Brookfield Global Infra TR USD	11/22	- 2/03	Aleian MLP TR USD	1/03	- 1/96	Wilshire US RESI TR USD	12/95	- 1/79	N.A.	N.A.	- N.A.
Marketable Alternatives	HFRI Fund of Funds Composite USD	11/22	- 1/90	HFRI Hedge Fund Aggregate Average	12/89	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Hedge Funds (Liquid)	HFRI Fund of Funds Composite USD	11/22	- 1/90	HFRI Hedge Fund Aggregate Average	12/89	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.
Private Equity	Cambridge PE 67% Buyout vs. 33% Venture	11/22	- 4/86	Russell 2000 TR USD	3/86	- 1/79	N.A.	N.A.	- N.A.	N.A.	N.A.	- N.A.

Note: Private Equity Index is frequently 3-6 months behind the other indices. For historical return calculation purposes, it is given 0% returns during the most recent period where gaps may exist. Past performance, actual or hypothetical, is no guarantee of future results and there is a possibility of a loss. Please see Frontier Engineer Hypothetical Performance Disclosures at the end of the presentation for additional information, including index proxies used to represent each asset class.

Frontier Engineer Hypothetical Performance Disclosures



The historical performance information derived from the Frontier Engineer and used or presented in charts, tables, or graphs represent simulated historical performance, which has been derived by retroactively applying an asset allocation modeling process in its most recently developed form with its most recently derived ten-year (forward-looking) capital market assumptions. Such historical return simulations (or back testing) was performed by simulating the combination of actual index returns for the historical period with a buy and hold strategy effective January 1, 1988 through the most recently available month-end date with simulated rebalancing occurring every month-end (with the reinvestment of dividends and capital gains from each index).

Back tested performance is hypothetical and does not reflect actual trades or actual client performance. As with all models, there are inherent limitations which are derived from the retroactive application developed with the benefit of hindsight, including the risk that certain factors such as material economic and market conditions could have contributed to materially different (either higher or lower) performance results than those depicted, or that certain material factors may have been included or excluded from consideration. As such, actual results during the applicable back tested period would have been different than those depicted.

The asset allocation modeling process currently used was initially developed in 2002, and was not offered as a strategy prior to that time. The output of a forward-looking model (or process) is a representation of allocation percentages among specific asset classes. Clients cannot invest directly in a target allocation, but rather, in underlying securities within designated asset classes. Advisor may change its models from time to time, and regularly updates its model as additional capital market assumption information becomes available or to increase or decrease relative weightings or emphasis on certain factors. Consequently, the Advisor may choose to deviate from a stated model over time as the model itself is revised, which could have a materially positive or negative impact on performance.

During the period represented, numerous modelling changes were made, including the regular changes in (ten- year) forward-looking expected returns, expected volatilities, expected non-normal return distribution assumptions, as well as tracking-error assumptions and risk budgets. Furthermore, such assumptions can be modified client-by-client depending on certain preferences, priorities, constraints or unique considerations applicable to each client.

All investments bear the risk of loss, including the loss of principal. Past performance, actual or hypothetical, is no guarantee of future results.



Index Definition

FTSE Treasury Bill 3 Month measures return equivalents of yield averages and are not marked to market. It is an average of the last three three-month Treasury bill month-end rates.

Bloomberg Capital US Treasury Inflation

Protected Securities Index consists of Inflation-Protection securities issued by the U.S. Treasury.

Bloomberg Muni 5 Year Index is the 5 year (4-6) component of the Municipal Bond index.

Bloomberg High Yield Municipal Bond Index covers the universe of fixed rate, non-investment grade debt.

Bloomberg U.S. Aggregate Index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.

FTSE World Government Bond Index (WGBI) (Unhedged) provides a broad benchmark for the global sovereign fixed income market by measuring the performance of fixed-rate, local currency, investment-grade sovereign debt from over 20 countries,

FTSE World Government Bond Index (WGBI) (Hedged) is designed to represent the FTSE WGBI without the impact of local currency exchange rate fluctuations.

Bloomberg US Corporate High Yield TR USD covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

JP Morgan Government Bond Index-Emerging Market Index (GBI-EMI) is a comprehensive, global local emerging markets index, and consists of regularly traded, liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure.

JPMorgan EMBI Global Diversified is an unmanaged, market-capitalization weighted, total-return index tracking the traded market for U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

MSCI ACWI is designed to represent performance of the full opportunity set of large- and mid-cap stocks across multiple developed and emerging markets, including cross-market tax incentives.

The S&P 500 is a capitalization-weighted index designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

Russell 3000 is a market-cap-weighted index which consists of roughly 3,000 of the largest companies in the U.S. as determined by market capitalization. It represents nearly 98% of the investable U.S. equity market.

Russell Mid Cap measures the performance of the 800 smallest companies in the Russell 1000 Index.

Russell 2000 consists of the 2,000 smallest U.S. companies in the Russell 3000 index.

MSCI EAFE is an equity index which captures large and mid-cap representation across Developed Markets countries around the world, excluding the US and Canada. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI Emerging Markets captures large and mid-cap representation across Emerging Markets countries. The index covers approximately 85% of the free-float adjusted market capitalization in each country

The Wilshire US Real Estate Securities Index (Wilshire US RESI) is comprised of publicly-traded real estate equity securities and designed to offer a market-based index that is more reflective of real estate held by pension funds.

Alerian MLP Index is a float adjusted, capitalization-weighted index, whose constituents represent approximately 85% of total float-adjusted market capitalization, is disseminated real-time on a price-return basis (AMZ) and on a total-return basis.

Index Definitions



Bloomberg Commodity Index (BCI) is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification.

Treasury Inflation-Protected Securities (TIPS) are Treasury bonds that are indexed to inflation to protect investors from the negative effects of rising prices. The principal value of TIPS rises as inflation rises.

HFRI Fund of Funds Composite is an equal-weighted index consisting of over 800 constituent hedge funds, including both domestic and offshore funds.

Cambridge Associates U.S. Private Equity Index (67% Buyout vs. 33% Venture) is based on data compiled from more than 1,200 institutional-quality buyout, growth equity, private equity energy, and mezzanine funds formed between 1986 and 2015.

HFN Hedge Fund Aggregate Average is an equal weighted average of all hedge funds and CTA/managed futures products reporting to the HFN Database. Constituents are aggregated from each of the HFN Strategy Specific Indices.

Goldman Sachs Commodity Index (GSCI) is a broadly diversified, unleveraged, long-only composite index of commodities that measures the performance of the commodity market.



Material Risks & Limitations

Fixed Income securities are subject to interest rate risks, the risk of default and liquidity risk. U.S. investors exposed to non-U.S. fixed income may also be subject to currency risk and fluctuations.

Cash may be subject to the loss of principal and over longer period of time may lose purchasing power due to inflation.

Domestic Equity can be volatile. The rise or fall in prices take place for a number of reasons including, but not limited to changes to underlying company conditions, sector or industry factors, or other macro events. These may happen quickly and unpredictably.

International Equity can be volatile. The rise or fall in prices take place for a number of reasons including, but not limited to changes to underlying company conditions, sector or industry impacts, or other macro events. These may happen quickly and unpredictably. International equity allocations may also be impact by currency and/or country specific risks which may result in lower liquidity in some markets.

Real Assets can be volatile and may include asset segments that may have greater volatility than investment in traditional equity securities. Such volatility could be influenced by a myriad of factors including, but not limited to overall market volatility, changes in interest rates, political and regulatory developments, or other exogenous events like weather or natural disaster.

Private Equity involves higher risk and is suitable only for sophisticated investors. Along with traditional equity market risks, private equity investments are also subject to higher fees, lower liquidity and the potential for leverage that may amplify volatility and/or the potential loss of capital.

Private Credit involves higher risk and is suitable only for sophisticated investors. These assets are subject to interest rate risks, the risk of default and limited liquidity. U.S. investors exposed to non-U.S. private credit may also be subject to currency risk and fluctuations.

Private Real Estate involves higher risk and is suitable only for sophisticated investors. Real estate assets can be volatile and may include unique risks to the asset class like leverage and/or industry, sector or geographical concentration. Declines in real estate value may take place for a number of reasons including, but are not limited to economic conditions, change in condition of the underlying property or defaults by the borrow.

Marketable Alternatives involves higher risk and is suitable only for sophisticated investors. Along with traditional market risks, marketable alternatives are also subject to higher fees, lower liquidity and the potential for leverage that may amplify volatility or the potential for loss of capital. Additionally, short selling involved certain risks including, but not limited to additional costs, and the potential for unlimited loss on certain short sale positions.



A P O L L O N

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<http://apollonwealthmanagement.com>

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