

ANGELES' LONG-TERM CAPITAL MARKET ASSUMPTIONS AS OF JULY 2022

INTRODUCTION:

This report presents Angeles Investment Advisors' updated capital market assumptions as of July 2022. These assumptions are used in asset allocation modeling for our clients over a long-term horizon (>10 years).

Versus our most recent assumptions from our January 2022 review, we have made the following changes:

- Our global equity assumption increased by 40 basis points to 6% as a result of increased inflation expectations for international markets and the removal of valuation contraction expectation (approximated by the price/earnings ratio) for the US equity market.
- Our private equity assumption increased by 50 basis points to 9%, continuing to reflect a 300-basis point premium to public global equity. Our direct hedge funds and hedge fund of fund assumptions increased by 25 basis points to 3.75% and 3.25%, respectively, as a result of increased return expectations in the equity and fixed income markets.
- Our private real estate (value added) return assumption increased by 50 basis points to 7.5%.
- Our long-term credit-related assumptions increased across the board as a result of increasing yields as of June 2022. High yield debt increased by 125 basis points to 5.25%, bank loans increased by 100 basis points to 5.25%, opportunistic credit increased by 60 basis points to 5%, and private credit increased by 15 basis points to 7.25%.
- Our liquidity/fixed income return assumptions increased across the board, reflecting increasing yields in the space. We increased US core fixed income by 185 basis points to 3.75%, long-term credit by 200 basis points to 5.1%, liquidity pool by 130 basis points to 2.5%, and cash by 190 basis points to 2%.

*** * ***

We continue to underscore the importance of judgment in using these long-term return and risk assumptions in a quantitative mean variance optimization framework. The recommendations that Angeles presents to its clients on investment policy are derived more from our experience and knowledge than from the "black box" output of mean variance optimization.

WHAT ARE CAPITAL MARKET ASSUMPTIONS?

Capital market assumptions are forecasts for future long-term annualized returns, the standard deviation (volatility) of expected returns, and the correlation of expected returns among asset categories. These assumptions are inputs into asset allocation models. At Angeles, we view the long-term as an investment horizon of at least ten years.

On an annual basis, Angeles formally develops long-term capital market assumptions whereby our Investment Committee forecasts the total return, risk (measured by standard deviation), and correlation coefficients for all major and many sub-asset classes as well as inflation. Angeles reviews these assumptions semi-annually as well.

Asset class assumptions are based on passively invested portfolios, net of investment management fees and transaction costs. In other words, public market equity and fixed income forecasts do not include the impact of active management or any premium/shortfall due to active management decisions. In categories where there is no passively managed vehicle, such as private equity, hedge funds, and private real estate, we estimate the broad asset class return based upon private partnership vehicle performance, net of all fees and expenses. As such, these return expectations do incorporate some level of active premium.

The capital market assumptions used in asset allocation modeling cannot be relied upon by themselves as a recommendation to invest in any particular asset class. Considerations such as diversification, supply and quality of investment managers, implementation issues and costs, capacity constraints, liquidity constraints, business risks, and the potential for active management premiums should all be evaluated. Each investor's particular circumstances should be considered as part of the asset allocation process.

Angeles' conceptual approach to asset allocation is illustrated below and groups a portfolio into two broad categories: (i) Long-Term Growth and (ii) Liquidity. These two categories serve distinct and important roles in a portfolio and will behave differently in various capital market environments.



FIGURE 1 | CAPITAL MARKET ENVIRONMENT

Long-Term C	Growth Portfolio	Liquidity Portfolio
Inflation-Linked Bonds, Timber, Commodities, Real Estate, Infrastructure	Equities (Public and Private), Hedge Funds, Income (Public and Private)	Nominal Bonds Cash
Role: Inflation protection	Role: Long-term growth	Role: Nominal capital preservation
Pros: Diversification; Inflation hedge	Pros: Expected to perform well in periods of rising growth and low moderate inflation	Pros: Maintains value during economic weakness and periods of deflation and low inflation; Low volatility
Cons: Moderate volatility; Moderate long-term growth; Underperforms in periods of deflation; Sensitive to leverage	Cons: Higher volatility, Suffers during economic weakness; Suffers during periods of high inflation or deflation	Cons: Limited long-term growth; Value eroded by inflation

Our capital market assumptions by asset and sub-asset class, shown on the following page, are organized in this fashion.

Angeles

	Expected Return	Expected Standard Deviation	Expected Yield	Expected Sharpe Ratio
Long-Term Growth / Capital Appreciation				
Equities				
Global Equity	6.0%	17.0%	2.1%	0.24
US Equity	5.75%	16.0%	1.75%	0.23
International Equity	5.75%	18.0%	2.75%	0.21
Emerging Market Equity	7.75%	24.0%	2.5%	0.24
Private Equity	9.0%	20.0%		0.35
Direct Hedge Funds	3.75%	8.0%		0.22
Hedge Fund of Funds	3.25%	7.0%		0.18
Income				
High Yield Debt	5.25%	12.0%	5.25%	0.27
Bank Loans	5.25%	10.0%	5.25%	0.33
Opportunistic Credit	5.0%	9.5%	5.0%	0.31
Private Credit	7.25%	14.0%	7.25%	0.38
Preferred Stock	4.5%	14.0%	4.5%	0.18
Emerging Market Debt (External/\$-Denom)	6.0%	12.0%	6.0%	0.33
Emerging Market Debt (LCL)	5.5%	14.0%	5.5%	0.25
Real Assets				
US TIPS	3.4%	7.5%	3.4%	0.19
Global Real Estate Securities	4.0%	19.0%	3.75%	0.11
US REITs	4.0%	19.0%	3.75%	0.11
MLPs	6.75%	20.0%	6.5%	0.24
Private Real Estate - Core	4.0%	10.0%		0.20
Private Real Estate - Opp./Value Added	7.5%	12.0%		0.46
Gold	2.0%	23.0%		0.00
Infrastructure (Private)	4.5%	12.0%	4.0%	0.21
Timber	4.0%	12.0%	3.5%	0.17
Commodities	2.0%	23.0%		0.00
Liquidity / Capital Preservation				
US Fixed Income	3.75%	5.0%	3.8%	0.35
Global Fixed Income	3.2%	7.0%	3.2%	0.17
Investment Grade Credit	4.7%	7.0%	4.7%	0.39
Long-term Credit	5.1%	12.0%	5.1%	0.26
US Short-term	3.0%	3.0%	3.0%	0.33
Municipals (National 1-10 Yr)	2.6%	4.0%	2.6%	0.15
Liquidity Pool	2.5%	2.0%	2.5%	0.25
Cash	2.0%	1.0%	2.0%	0.00
Global Inflation	2.4%			
US Inflation	2.5%			

TABLE 1 ANGELES' CAPITAL MARKET ASSUMPTIONS - AS OF JULY 2022 U.S. Dollar Nominal Returns (10+ Years)

Long-term expected return and risk assumptions are not a guarantee of future performance and actual results can and will differ from forecasts over time. The assumptions should not solely be relied upon as a recommendation to invest in any particular asset class. Note that these asset class assumptions are based upon passively invested portfolios net of management fees; they do not consider the impact of active management. Return estimates are shown on a compound return basis, not on arithmetic returns.

Asset class assumptions presented constitute our judgment at the time they were forecasted and are subject to change without notice. Angeles Investment Advisors, LLC attest the information contained herein has been prepared from sources believed reliable but is not guaranteed by us as to its timeliness or accuracy and is not a complete summary or statement of all available data. This data is intended solely for our clients, is for informational purposes only and may not be publicly disclosed or distributed without our prior written consent.

4



TABLE 2 | CAPITAL MARKET CORRELATION ASSUMPTIONS

			Long-Term Growth / Capital Appreciation												Liquidity / Capital Preservation																		
						Equities				Income							Real Assets																
								Direct	Hedge												Private					US Core			Global				
		Asset Class	Global Equity	US Equity	Inti Eq	EM Equity	Private Equity	Hedge Funds	Fund of Funds	DIF	High Yield	Bank Loans	Private Credit	Pref Stock	EMD External	EMD Local	US TIPS	Global REITs	US REITs	MLPs	Real Estate	Gold	Infrastruc ture	Timber	Commo dities	Fixed Income	IG Credit	Long Credit	Fixed Income	US Short- term	Munis (National)	ALP	Cash
		Global Equity	1.00																														
		US Equity	0.95	1.00																													
	50	International Equity	0.95	0.90	1.00																												
	quiti	Emerging Market Equity	0.90	0.85	0.85	1.00																											
	ч	Private Equity	0.65	0.65	0.65	0.60	1.00																										
		Direct Hedge Funds	0.85	0.85	0.85	0.85	0.65	1.00																									
		Hedge Fund of Funds	0.80	0.80	0.80	0.80	0.65	0.90	1.00																								
ation		DIF	0.75	0.75	0.70	0.75	0.50	0.80	0.75	1.00																							
preci		High Yield	0.75	0.75	0.70	0.75	0.50	0.80	0.75	0.95	1.00																						
I Ap	9	Bank Loans	0.75	0.75	0.70	0.75	0.50	0.80	0.75	0.95	0.95	1.00																					
apita	ncon	Private Credit	0.80	0.75	0.75	0.80	0.50	0.80	0.75	0.95	0.95	0.90	1.00																				
2	-	Preferred Stock	0.60	0.60	0.55	0.60	0.40	0.65	0.60	0.80	0.85	0.85	0.50	1.00																			
owt		Emerging Market Debt External	0.70	0.60	0.70	0.75	0.40	0.65	0.60	0.80	0.80	0.80	0.80	0.80	1.00																		
Ō		Emerging Market Local Currency	0.80	0.70	0.85	0.80	0.50	0.65	0.60	0.65	0.65	0.65	0.65	0.65	0.75	1.00																	
Г.		US TIPS	-0.10	-0.10	-0.10	-0.10	0.00	0.00	0.00	0.30	0.30	0.30	0.25	0.30	0.45	0.15	1.00																
٩,		Global REITs	0.80	0.75	0.80	0.75	0.60	0.75	0.70	0.75	0.75	0.75	0.80	0.75	0.75	0.80	0.10	1.00															
		US REITs	0.70	0.75	0.70	0.60	0.50	0.60	0.50	0.65	0.65	0.65	0.70	0.65	0.60	0.70	0.10	0.90	1.00														
	sets	MLPs	0.70	0.70	0.70	0.70	0.60	0.80	0.80	0.75	0.80	0.80	0.60	0.65	0.70	0.50	0.20	0.60	0.50	1.00													
	ol As	Private Real Estate	0.20	0.20	0.20	0.10	0.50	0.20	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.25	0.25	0.00	1.00												
	Re	Gold	0.10	0.05	0.15	0.30	0.10	0.20	0.20	0.15	0.15	0.05	0.10	0.10	0.40	0.30	0.55	0.10	0.10	0.10	0.05	1.00											
		Infrastructure	0.50	0.50	0.50	0.50	0.40	0.40	0.40	0.40	0.40	0.40	0.50	0.40	0.65	0.70	0.30	0.50	0.40	0.30	0.30	0.15	1.00										
		Timber	0.10	0.10	0.10	0.00	0.20	0.00	0.00	-0.10	-0.10	-0.10	-0.15	-0.10	0.00	0.00	0.00	0.00	-0.15	-0.20	0.30	0.15	0.20	1.00									
		Commodities	0.50	0.40	0.50	0.50	0.30	0.60	0.65	0.50	0.50	0.50	0.55	0.50	0.45	0.50	0.30	0.40	0.35	0.60	0.30	0.40	0.40	0.00	1.00								
5		US Core Fixed Income	0.05	0.05	0.00	0.00	-0.10	-0.05	-0.05	0.10	0.10	0.10	0.10	0.10	0.30	0.20	0.60	0.00	0.00	0.00	-0.10	0.35	0.10	0.10	-0.10	1.00							_
rvat		Investment Grade Credit	0.20	0.20	0.20	0.20	0.00	0.25	0.20	0.45	0.45	0.45	0.40	0.45	0.65	0.55	0.45	0.40	0.30	0.30	-0.10	0.30	0.30	0.00	0.10	0.75	1.00						
Prese		Long Credit	0.35	0.25	0.35	0.35	0.00	0.25	0.20	0.35	0.40	0.40	0.20	0.40	0.60	0.50	0.25	0.45	0.35	0.25	-0.10	0.20	0.40	0.00	0.00	0.75	0.95	1.00					
oital		Global Fixed Income	0.25	0.20	0.35	0.25	0.00	0.15	0.10	0.15	0.15	0.15	0.25	0.05	0.45	0.55	0.40	0.40	0.30	0.05	0.00	0.45	0.35	0.20	0.15	0.70	0.70	0.65	1.00				
Cap		US Short-term	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.25	-0.20	-0.20	-0.40	-0.20	-0.10	-0.05	0.40	-0.15	-0.15	-0.20	0.00	0.30	0.00	0.20	-0.15	0.75	0.35	0.25	0.50	1.00			
, Allb		Munis (National 1-10 Yr)	-0.10	-0.20	-0.10	0.00	-0.30	-0.20	-0.20	0.05	0.05	-0.10	-0.05	0.25	0.45	0.20	0.40	0.05	0.05	0.05	-0.25	0.40	0.00	0.00	-0.15	0.90	0.70	0.65	0.60	0.55	1.00		
Liquid		ALP	0.00	0.00	-0.05	-0.05	-0.10	-0.10	-0.10	0.05	0.05	0.05	0.00	0.05	0.20	0.15	0.55	-0.05	-0.05	-0.05	-0.10	0.35	0.10	0.10	-0.10	0.95	0.05	0.05	0.65	0.95	0.85	1.00	
		Cash	0.00	0.00	0.00	0.00	0.10	0.10	0.00	-0.10	-0.10	-0.10	-0.20	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.20	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.50	0.05	0.10	1.00

Long-term expected return, risk and correlation assumptions are not a guarantee of future performance and actual results can and will differ from forecasts over time. The assumptions should not solely be relied upon as a recommendation to invest in any particular asset class. Note that these asset class assumptions are based upon passively invested portfolios net of management fees; they do not consider the impact of active management. Return estimates are shown on a compound return basis, not on arithmetic returns.

Asset class assumptions presented constitute our judgement at the time they were forecasted and are subject to change without notice. Angeles Investment Advisors, LLC attest the information contained herein has been prepared from sources believed reliable but is not guaranteed by us as to its timeliness or accuracy and is not a complete summary or statement of all available data. This data is intended solely for our clients, is for informational purposes only and may not be publicly disclosed or distributed without our prior written consent.

Looking back at the last ten years, we revisited our 2012 long-term capital market assumptions to see how our predictions then fared versus actual results through June 2022. The past decade was a volatile period, including the period of deleveraging, the Eurozone debt crisis, the decline in oil and commodities since mid-2014, historically low and falling interest rates, the COVID-19 induced global economic shutdown in early 2020, the growth-value shift in late-2021/2022, the high inflationary environment in 2022, increasing rates, and a looming recession. During this period, actual returns were below Angeles' expectations for cash, TIPS, US short-term, fixed income, investment grade credit, hedge fund of funds, direct hedge funds, global REITS, timber, international equity, high yield debt, and EM equity and above expectations for US and global equities, US REITS, private equity, private real estate, and infrastructure. Expected risk was generally below expectations across all major asset classes. (In reading the charts below, if the asset class plots above the blue line, then the actual trailing 10-year return/risk was higher than our assumption and vice versa.)

FIGURE 2 | EXPECTED RETURN AND RISK ASSUMPTIONS IN 2012 VS. ACTUAL TRAILING 10-YEAR RETURN AND RISK



2012 Expected Returns vs. Actual 10-Year Returns

As of June 30, 2022. Data sourced from Morningstar. Expected return and risk data based on Angeles' 2012 Capital Market Assumptions.

INFLATION:

Angeles' long-term US inflation assumption remains unchanged from our January 2022 review at 2.5%. Angeles expects elevated inflation in the near- to medium-term and we believe that the 50 basis point increase in January 2022 takes this into account. We believe inflation will stay above the US Federal Reserve longer run target of 2%, but below the long-term average of 2.9% (average since 1922).

The "breakeven" inflation rate is an important factor in setting Angeles' inflation assumption, as it captures where the market for TIPS¹ is pricing inflation for the coming ten years (assuming a ten-year maturity). The TIPS market has gone from forecasting close to zero inflation at the depth of the financial crisis and COVID-19 economic shutdown (breakeven rate of 0.1% at December 2008 and 0.9% in March 2020, respectively), to a breakeven rate of 2.3% as of June 2022. The low breakeven rates of late 2008 and early 2020 reflected the market's recessionary and deflationary fears coupled with the illiquidity in the credit markets. Since then, the TIPS and bond markets normalized amid the reflationary central bank and fiscal policy response around the globe. As of June 2022, the market was pricing 10-year future inflation to be 2.3%, in-line with the historical average inflation of 2.4% (from August 1998-June 2022); see Figure 3.



FIGURE 3 | US BREAKEVEN INFLATION AND CPI

As of June 30, 2022. Data sourced from Bloomberg. The average CPI of 2.4% is calculated using data from August '98- June '22. It differs from the average CPI shown in Figure 4 due to the shorter time horizon.

Headline inflation, as measured by the Consumer Price Index (CPI), ended June 2022 at 9.1%, an increase from December 2021 (7%). While current CPI is high, we continue to expect inflation to remain below the long-term average of 2.9% (going back to 1922), but above 2.0% in the long run.

Since 1922, year-over-year headline inflation in the US has averaged 2.9%, with considerable amount of variability in the level of inflation, particularly from the 1920s through the 1940s (a period that included both Depression-era deflation as well as post-World War II inflation). Since spiking in the mid-1970s and early 1980s, inflation has remained close to the long-term average and volatility has declined meaningfully. The

¹ TIPS, which stands for Treasury Inflation Protected Securities, is a US Treasury inflation-linked principal indexed bond that is adjusted by the change in inflation as measured by the Consumer Price Index (CPI) over the term of the bond.

⁴²⁹ Santa Monica Blvd., Ste 650 • Santa Monica • California • 90401 • p (310) 393.6300 • f (310) 393.6200 • www.angelesinvestments.com

standard deviation of year-over-year inflation declined from 17.5% (from 1922 through 1981) to approximately 5.6% (from 1982 through June 2022). This reduction in volatility is attributable to both the globalization of trade and manufacturing, as well as the US Federal Reserve's focus on keeping inflation well-contained. More recently, inflation in the US has been exacerbated by the significant increase in fiscal spending (\$6 trillion) in response to the pandemic; this spending influx created a demand-side boom where too much money was chasing too few goods. Additionally, COVID-19 constrained the global supply of raw materials and products and created supply chain challenges across industries, which has also contributed to inflation pressures. Lastly, the Russian invasion of Ukraine that began in February 2022 has been a contributing factor to inflation, particularly as it relates to energy and food prices. In order to combat high inflation, the Fed has increased the federal funds rate target several times in 2022 to bring the current rate as of the end of July 2022 to 2.25%. The market expects the fed funds rate to end the year at 3.25% to 3.5%. Over time, we expect the Federal Reserve to tame inflation and bring it closer to its target.



FIGURE 4 | HEADLINE INFLATION: US CONSUMER PRICE INDEX (CPI)

As of June 30, 2022. Data sourced from Bloomberg.

LONG-TERM GROWTH/ CAPITAL APPRECIATION

GLOBAL EQUITY RETURNS:

Angeles continues to advocate for considering US and international equity as a single asset class, global equity. We believe globalizing the equity portfolio is appropriate given the greater interdependence among nations and businesses, the increased influence of global trade on domestic economies, and the fact that country factors are less important attributes in equity performance than in years past. The correlation of US and non-US equity markets has been steadily increasing since the late 1990s and has hovered between 0.7 and 0.9 for most of the past 10 years, as illustrated in Figure 5. This is consistent with the notion that geographic distinctions are of decreasing importance to equity investors.



FIGURE 5 | ROLLING CORRELATIONS OF THE MSCI EAFE AND RUSSELL 3000 INDEX

The global equity market rallied strongly in 2020 and 2021 (with the MSCI ACWI IMI up 16.3% and 18.2%, respectively), despite the economic shutdown and rising COVID-19 cases. The first half of 2022 has been a volatile period for the global equity market, resulting in more moderate equity valuations. Concerns about rising inflation and labor shortages continue into the rest of 2022.

Over the last 10 years, the US has outperformed the international developed market and emerging markets equities. From the start of 2012 to mid-2022, the US share in global equity markets (approximated by the MSCI All Country World Index [ACWI]²) grew from 46% to 61%, while the share of non-US developed nations shrank from 41% to 28%. The share of emerging market-domiciled issues has remained consistent since 2012 (11-13%).

As of June 30, 2022. Monthly returns used. Data sourced from eVestment Alliance. MSCI EAFE returns are in US dollars.

² MSCI ACWI is a common global equity benchmark that is market capitalization weighted and includes the US, developed non-US countries, and emerging equity markets.

⁴²⁹ Santa Monica Blvd., Ste 650 * Santa Monica * California * 90401 * p (310) 393.6300 * f (310) 393.6200 * www.angelesinvestments.com



FIGURE 6 | REGIONAL ALLOCATION WITHIN THE MSCI ACWI (2004-2022)

In determining our expected return for global equities, Angeles applies a forward-looking fundamental, economic "building block" approach while being mindful of historical returns and trends. The framework used to arrive at the forecasted return of 6.0% for the global equity market separates the total return for equities into five components by major region, as illustrated in Figure 7.

	US	Intl	EM	Global				
Real GDP Growth	1.5	1.25	3.5	1.7				
Dividend Yield	1.75	2.75	2.5	2.1				
Inflation	2.5	1.75	3.0	2.4				
P/E Expansion or Contraction	flat	flat	flat	flat				
Currency Movements	flat	flat	-1.25	-0.1				
Expected Total Return for Equities	5.75	5.75	7.75	6.0				

FIGURE 7 | EQUITY BUILDING BLOCKS

Note: Assumes Global Equity weights of 61% for the US, 28% for developed non-US and 12% for emerging markets.

As of June 30, 2022. Data sourced from MSCI. Emerging Markets classified by MSCI.

<u>Inflation</u>: Angeles' assumption for global inflation is 2.4% with lower inflation in developed markets (ex-US) counteracting higher inflation in emerging markets. Our inflation expectations in non-US developed countries increased by 25 basis points to 1.75%.



FIGURE 8 | IMF INFLATION DATA

As of April 30, 2022. Data sourced from the IMF. Dashed lines represent forecasts by the IMF.

<u>Dividend/Income Return</u>: The return from dividends has historically been the most stable component of equity returns, though the last few years have experienced some volatility as a result of dramatic price swings in global equity markets. As global equity market prices bottomed in early March 2009, the dividend yield of the MSCI ACWI Index peaked at 4.3%. As of June 2022, the dividend yield was 2.3%.

Angeles' US, international, and EM dividend yield assumptions remain unchanged from January 2022 at 1.75%, 2.75%, and 2.5%, respectively. As such, our global dividend yield assumption also remains unchanged at 2.1%, which is below the rolling 10-year average of 2.4% and the long-term average of 2.9% (Figure 10).



FIGURE 9 | DIVIDEND YIELD BY REGION

As of June 30, 2022. Data sourced from Bloomberg.



FIGURE 10 | HISTORICAL DIVIDEND YIELD: GLOBAL EQUITY MARKET*

As of June 30, 2022. Data sourced from Bloomberg. *MSCI World (ex-Emerging Markets) prior to 1996, MSCI ACWI (including EM) beyond.

<u>Real GDP Growth</u>: Angeles' long-term forecast for real GDP growth in the US remains unchanged from our January 2022 review when we reduced our assumption by 50 basis points to 1.5%. We expect supply-chain disruptions and low labor participation to continue to result in relatively low productivity levels into the near to medium-term horizon.



FIGURE 11 | IMF REGIONAL GROSS DOMESTIC PRODUCT (GDP) GROWTH

As of April 30, 2022. Data sourced from the IMF. Dashed lines represent forecasts by the IMF.



FIGURE 12 | REAL US GDP

As of June 30, 2022. Chart sourced from JPM Asset Management. Underlying data sourced from BEA, FactSet, and JPM Asset Management.

<u>Multiple Expansion/Contraction</u>: Equity valuations, typically measured by the price/earnings (P/E) multiple, measure how much investors are willing to pay for corporate earnings. Since January 1995, the MSCI ACWI (global equity index) has had an average P/E ratio of about 20.3x (based on trailing earnings). As of June

13

2022, the ACWI Index's P/E was 15.6x, lower than the long-term average since 1995. P/E ratios (which reflect trailing 12-month earnings) were skewed upward by the drop in earnings during 2020 related to COVID-19 shutdowns globally. In 2021, we observed P/E contractions in both global and US equity markets as earnings bounced back. The equity markets experienced another P/E contraction in the first half of 2022 as valuations have come down.



FIGURE 13 | PRICE/EARNINGS RATIO OF MAJOR MARKETS

As of June 30, 2022. Data sourced from Bloomberg. Note: P/E is calculated as price per share divided by earnings per share from continuing operations and before extraordinary items. PE for the index is market cap weighted.

As of June 2022, the current P/E ratio of the US broad equity market (Russell 3000 Index) was 20.5x, slightly lower than the long-term average of 21.2x. Relative to historical data, equities appear to be fairly valued.

<u>Currency Movements</u>: Currency movements can depress or amplify returns for US dollar-based investors over short time intervals. Our current global foreign currency returns have an expected return of -0.2% over the long-term due to contracting currency return expectations in emerging markets.

Incorporating the five elements discussed above results in an expected return forecast of 6.0% for global equities. While below the average rolling ten-year total return of the S&P 500 (11.2% since 1936), Angeles believes this return is appropriate given the impact of short-term market conditions on long-term total returns. The S&P 500 was used as a proxy given its extensive record; our 6.0% estimate is a global equity return assumption.



FIGURE 14 | ROLLING LONG-TERM ANNUALIZED RETURNS OF THE S&P 500 INDEX

As of June 30, 2022. Data sourced from Dimensional Fund Advisors prior to 1970 and eVestment Alliance post-1970.

ALTERNATIVE INVESTMENTS RETURN FORECASTS:

Alternative investments include less traditional asset classes such as real estate, private equity, private credit, and hedge funds that tend to have lower correlations with traditional asset classes (i.e., stocks, bonds, and cash). According to Greenwich Associates' most recent Key Trends in Institutional Asset Management Report, the average allocation to alternatives among institutions was 26% in 2021, a slight increase since 2011 (24%).



FIGURE 15 | INSTITUTIONAL ALLOCATION TO ALTERNATIVES

Data sourced from Greenwich Associates' 2021 Key Trends in Institutional Asset Management – United States (most recent available at time of this writing); Greenwich Associates is a strategic consulting and research firm that conducts annual surveys among institutional investors. Angeles used a blend of Public Funds' Defined Benefit Asset Mix and Endowment and Foundations' Investment Pools Asset Mix.

Given liquidity issues, the importance of fund/manager selection, the lack of investable benchmarks, and the multiplicity of sub-strategies, Angeles tends to be more conservative in setting the return and risk assumptions for alternative assets. We gauge the return expectations for these alternative asset classes in conjunction with the expectations for traditional asset classes to ensure that they are reasonable and comparable to one another.

Private Equity: For a private equity portfolio, we assume an allocation to both buyout and venture capital partnerships and assume a collective return of 9.0%, which is a 300-basis point premium above public global equity markets. While this reflects the value-added from manager and partnership selection, it represents Angeles' estimate of a median return for a mature portfolio that has vintage year diversification while accounting for the lack of liquidity and long-term nature of a private equity investment.

The distribution around median private equity returns are largely due to significant selection and execution risk. Successful private equity partnership selection is critical to achieving premium returns in excess of public markets. Private equity funds have experienced a wide dispersion in returns with the average spread between top and bottom quartile private equity funds averaging over 15% for the past ten years. This is five to twenty-three times the average spread between top and bottom quartile managers for traditional asset classes. For example, the

spread between top and bottom quartile managers over the past ten years was 1.5% for large cap US equity strategies and less than 1% for core plus US bond strategies.



FIGURE 16 | DISTRIBUTION OF RETURNS BY ASSET CLASS

25th percentile to 75th percentile Quartile Chart – Trailing 10 years through June 30, 2022

*Data as of June 30, 2022 Data sourced from Morningstar, eVestment Alliance, and Burgiss. The green bars represent median (50th percentile) returns, while the blue bars represent returns for the 25th and 75th percentile funds within the respective peer universe. Quartile data based on returns from Morningstar open-ended universes with exception of private equity, which is based on private equity funds compiled by Burgiss. Morningstar universes: US Equity (US OE Large Blend), International Equity (US OE Foreign Large Blend), Public Real Estate (US OE Real Estate), and Fixed Income (US OE Intermediate-Term Bond). Hedge Fund data based on constituent performance within the HFRI Fund Weighted Index through June 30, 2022. Burgiss Private Equity data based on 2012 Vintage Year funds through March 31, 2022 and shown on a net IRR basis.

A blend of buyouts and venture capital (70%/30% assumed in Figure 18 below) has outpaced the 300 basis point assumed premium to equity markets in over longer time horizons.

1 Year

3 Years

5 Years

10 Years

20 Years



FIGURE 17 | RETURN-RISK TABLE AND SCATTERPLOT

10 YEARS ENDING MARCH 31, 2022

Private

	Equity (Buyouts)	Venture Cap	70% PE / 30% VC	US Bonds	Global Equity
5 Years	10.8	13.8	11.2	4.5	18.8
10 Years	8.3	11.5	8.7	3.8	14.6
20 Years	9.8	11.4	9.6	3.8	17.8



FIGURE 18 | ROLLING 5-YEAR RETURNS ENDING MARCH 31, 2022

PRIVATE EQUITY 70/30 BLEND VS. PUBLIC EQUITY MARKET (RUSSELL 3000)



As of March 31, 2022 (most recent data available at time of this writing). Based on quarterly returns. Private Equity and Venture Capital index data is sourced from Cambridge Associates. US Bonds are represented by Bloomberg Aggregate, Global Equity by MSCI ACWIMI from Sep 1994 and beyond (MSCI ACWI used for prior returns), US Equity by Russell 3000 Index, and International Equity by MSCI EAFE Index. 70/30 private equity/venture cap blend assumes quarterly rebalancing.

Hedge Funds/Absolute Return Strategies. Hedge funds vary widely in the range of investment strategies and risk characteristics of funds. The term "hedge fund" can encompass investments in virtually any public security, derivative and private vehicle, and may utilize no to large amounts of leverage. Generally, hedge funds seek to earn positive absolute returns, irrespective of market movements.

Angeles' return forecast for hedge funds is based on a combination of underlying traditional asset class forwardlooking return assumptions, which predominately centers on global equities and high yield bonds, the largest drivers of "beta" in hedge fund returns. Our direct hedge fund and hedge fund of fund return expectations increased by 25 basis points from our January 2022 review to 3.75% and 3.25%, respectively.

The credit crunch that started in 2007 and peaked in 2008 and early 2009 roiled the hedge fund market as forced selling from leveraged players exacerbated the downward spiral in markets. As a result, this period marked the largest drawdown experienced among hedge funds since the inception of the first benchmark for hedge funds (the oldest benchmark, Hedge Fund Research, started January 1990). A broad index for hedge funds (the HFRI Fund Weighted Composite Index) lost 21% over the 16-month span ending February 2009. While this was weak in absolute terms, it managed to provide some protection from the extreme losses experienced in the equity markets, where the MSCI ACWI returned -55% during the same period. In addition to losses, illiquid markets in 2008 led to considerable illiquidity for hedge funds, with many unable to meet redemption requests in a timely fashion.





As of June 30, 2022. Data sourced from eVestment Alliance.

Hedge funds' ability to offer solid risk-adjusted returns versus equities and other asset traditional classes over the long-term has diminished, as shown in Figure 20. A broad measure of the hedge fund market, approximated by the HFRI Fund Weighted Composite, has gained an annualized 5.4% over the past 10 years – below global equity market (which has gained 9.2%) and above the broad bond market (up 1.5% for this period). Risk, as measured by standard deviation, has been less than half that of the equity market.



FIGURE 20 | RISK/REWARD FOR HEDGE FUNDS: 10-YRS ENDED JUNE 2022

As of June 30, 2022. Data sourced from HFRI and Morningstar Direct.

Real estate: Angeles' return forecast for public real estate securities (REITs and real estate operating companies) remains unchanged for both domestic and global securities at 4.0%. As of June 2022, the dividend yields for the global and US REIT markets were 3.8% and 3.4%, respectively.





As of June 30, 2022. Data sourced from NAREIT and FTSE EPRA.

Core private real estate offers investors a stable level of income combined with the potential for modest price appreciation, particularly in periods of *unexpected* inflation. However, private real estate is relatively illiquid as open-ended funds are subject to "redemption queues" that often restrict redemptions during times of duress, when liquidity is most needed. Our return expectation for core private real estate remains unchanged and expect new investors in core private real estate portfolios to earn returns of 4%, in-line with REITs.

Like private equity investments, "value added" and "opportunistic" real estate strategies employ more leverage in acquiring underperforming properties and real estate related assets and making significant improvements to the assets. "Value-added" strategies employ leverage of 40-60% (versus 20% to 30% for core private real estate) and similarly seek to benefit through improved operating income and significant capital appreciation, as opposed to a steady yield. In the case of private opportunistic and value-added real estate portfolios, Angeles forecasts returns by adjusting our REIT model for the increased level of leverage employed. We increased our private opportunistic/value-added real estate return assumption by 50 basis points to 7.5% reflecting current robust deal activity in the market.

Income:

High Yield Bonds: For high yield bonds, Angeles adjusts the yield-to-worst for expected default levels and recovery rates. Angeles forecasts a long-term return of 5.25% for high yield bonds.

Bank Loans: Angeles takes a similar approach for assessing the outlook on bank loans. Angeles forecasts long-term return of 5.25% for bank loans, a 100 basis points increase from January 2022.



FIGURE 22 | BANK LOAN AND HIGH YIELD HISTORICAL YIELDS

As of June 30, 2022. Data sourced from Bloomberg.

Private Credit: Angeles expects Private Credit investments to offer a long-term annualized return of 7.25% over the long-term. Our Private Credit assumption increased by 115 basis points as a result of the increase to our Bank Loan and High Yield return expectations. Given the lack of a comparable investable index, Angeles' return assumption is calculated using a blend of high yield bonds and leveraged loans and includes a 200 basis point premium to account for illiquidity and dislocated acquisition prices of underlying assets.

Emerging Market Debt. We increased our return assumptions for EM Local Currency Debt and EM Debt External by 100 basis points to 5.5% and 6.0%, respectively.





As of June 30, 2022. Data sourced from PIMCO and JP Morgan. EM Cash Local is represented by JPM ELMI+ Index, EM External Debt is represented by JPM EMBI Global Diversified Index, and EM Local Debt is represented by JPM GBI-EM Global Diversified Index.

LIQUIDITY/ CAPITAL PRESERVATION

FIXED INCOME RETURNS:

Angeles' fixed income return assumptions are based principally on bonds' yield-to-maturity (yield-to-worst³ for corporate holdings) since the return of a bond portfolio will essentially equal its yield if the portfolio is held until maturity or interest rates remain stable. In the short-term, yield levels are poor predictors of bond sector performance because yields can compress or widen based upon economic and business conditions. Historical data analysis shows that yield-to-maturity is a solid predictor of long-term performance when the forecast period is more than five years.

As of June 2022, the yield-to-worst for the Bloomberg US Aggregate Bond Index was 3.7%; the average maturity as of June 2022 was approximately 8.5 years. This yield provides an estimate for the return that an investor can expect to receive if they were to hold a portfolio similar to the Bloomberg US Aggregate Index for the next ~8 years.

Our expected return assumptions for US core fixed income increased to 3.75% from 1.9%, reflecting an increase in interest rates from our January 2022 review.



FIGURE 24 | HISTORICAL YIELD TO WORST (YTW)

As of June 30, 2022. Data sourced from Bloomberg. Yield data for Universal not available prior to 1990.

Yields have come down significantly since the late 1970s and early 1980s, when inflation hit double digit levels. Despite a recent rise in yields in 2022, the yield on the Bloomberg Aggregate Index remains well below the long-term average yield (since inception of the index in 1976) of 6.3%.

³ Yield to worst is generally defined as the yield to maturity assuming call provisions are exercised as early as possible.

⁴²⁹ Santa Monica Blvd., Ste 650 • Santa Monica • California • 90401 • p (310) 393.6300 • f (310) 393.6200 • www.angelesinvestments.com

EXPECTED STANDARD DEVIATION OF RETURNS AND CORRELATION:

The standard deviations of returns for asset classes tend to be relatively stable over time and historical data tends to be a reliable predictor of future volatility. To forecast expected standard deviations of returns, we review historical data, looking at the entire time series as well as multiple rolling time periods; in some cases, we may put greater weight on more recent historical periods. We may adjust upward an asset class' volatility assumption if it appears to be overvalued, i.e., at the high end of its historical valuation range. Risk estimates for private investments that utilize accounting data or where the use of market-related pricing may be lagged consistently underestimate investment volatility. As such, for private asset classes, we factor in the use of financial leverage and illiquidity when estimating standard deviation and correlation.

We reduced our volatility assumption for opportunistic credit by 290 basis points to 9.5%, reflecting a change in methodology – the opportunistic credit risk and return profile is now derived from high yield debt and investment grade credit assumptions. We increased our liquidity pool standard deviation assumption by 60 basis points to 2.0%, reflecting the change in methodology – the liquidity risk and return profile is now derived from US short-term and cash assumptions.

After a thorough examination of broader market data and observed volatility across client results, we made no other changes to our volatility assumptions. The chart below provides the rolling five-year standard deviation for the major asset classes.





As of June 30, 2022. Data sourced from eVestment Alliance. Historical data based on monthly returns.

To forecast correlations, we similarly look at historical data. In addition to examining the entire available time series, we analyze rolling time periods and place a greater weight on more recent historical periods. While correlations are generally thought to be stable for long periods of time, we have empirically observed relationships shift as certain macroeconomic factors evolve (such as inflation, leverage, growth) which is accounted for in our weighting scheme. This was particularly apparent during the financial crisis when correlations across many assets spiked upward before stabilizing. Despite the changes in certain correlations during economic downturns, historical data still supports the benefits of diversification. No changes were made to our correlation assumptions from our January 2022 review.

APPENDIX A | HISTORICAL ASSET CLASS STATISTICS (US\$)

as of June 30, 2022

			Yie	əld			Annualized Return			Sharpe Ratio				
Asset Class	Index Proxy	6/30/22	12/31/21	6/30/21	12/31/20	10 Year	15 Year	20 Year	25 Year	25 Year	10 Year	15 Year	20 Year	25 Year
Growth														
Equities														
Global Equity	MSCI ACWI Index (ND)	2.3	1.7	1.7	1.8	8.7	4.9	7.5	6.4	0.3	13.6	16.9	15.8	16.0
US Equity Total Market	Russell 3000 Index	1.7	1.2	1.3	1.5	12.6	8.4	9.1	8.6	0.5	14.1	16.3	15.3	15.8
International Equity	MSCI EAFE Index (ND)	3.4	2.5	2.3	2.4	5.4	1.4	5.3	4.2	0.2	13.9	17.7	16.7	16.6
Emerging Market Equity	MSCI Emerging Markets Index (ND)	3.1	2.4	1.8	1.9	3.1	2.0	8.4	4.8	0.2	15.7	21.4	20.7	21.5
Private Equity	Cambridge Private Equity Index ²	N.A.	N.A.	N.A.	N.A.	16.0	13.0	14.7	14.6	1.2	8.3	9.7	9.8	10.9
Venture Capital	Cambridge Venture Capital Index [∠]	N.A.	N.A.	N.A.	N.A.	20.5	15.3	11.4	15.8	0.6	11.5	11.1	11.4	23.9
Direct Hedge Funds	HFRI Fund Weighted Index	N.A.	N.A.	N.A.	N.A.	5.0	3.7	5.5	6.3	0.6	6.0	6.7	6.3	6.9
Hedge Fund of Funds	HFRI Fund of Funds Index	N.A.	N.A.	N.A.	N.A.	3.8	1.8	3.5	4.1	0.4	4.9	5.6	5.2	5.8
Income														
High Yield	Bloomberg US High Yield	8.9	4.9	3.8	4.2	4.5	5.8	7.3	6.0	0.5	7.0	10.0	9.2	9.0
Bank Loans	Credit Suisse Leveraged Loan	9.7	5.3	4.8	4.9	3.9	3.8	4.5	4.6	0.5	5.2	7.4	6.5	5.8
Private Credit	50% High Yield/ 50% Bank Loans + 200bps°	N.A.	N.A.	N.A.	N.A.	6.2	6.8	7.9	7.3	0.5	6.1	8.7	7.8	7.4
Preferred Stock	ICE BofAML Fxd Rate Pref	6.2	2.7	1.8	1.3	4.1	2.9	3.6	4.4	0.3	6.2	14.2	12.5	11.1
Emerging Market Debt External	JPM EMBI Global Diversified	8.6	5.3	4.9	4.6	2.2	4.5	6.6	6.7	0.4	8.5	9.4	8.9	10.8
Emerging Market Debt Local	JPM GBI-EM Diversified Unhedged	7.1	5.7	5.0	4.2	-2.2	1.3				11.4	12.6		
Real Assets														
US TIPS	Bloomberg TIPS Index	3.4	1.3	1.1	0.7	1.7	3.9	4.4			4.4	5.7	5.8	
Global REITs	FTSE EPRA/NAREIT Developed Index	3.8	2.9	3.2	3.9	5.6	2.8	7.8	6.5	0.3	15.0	20.1	18.6	18.1
US REITs	FTSE NAREIT All Equity REITs Index	3.4	2.6	2.9	3.6	8.3	6.4	9.3	9.1	0.4	15.4	22.8	21.2	19.7
Master Limited Partnerships	Alerian MLP Index	7.8	8.1	7.3	12.2	0.7	3.7	8.4	9.8	0.4	30.2	27.4	24.3	22.8
Private Real Estate	Cambridge Private Real Estate Index ²	N.A.	N.A.	N.A.	N.A.	11.3	5.3	9.4	9.9	0.9	4.5	9.8	9.9	9.1
Gold	London Gold Fixing Index	N.A.	N.A.	N.A.	N.A.	1.3	7.1	9.1	6.4	0.3	14.9	17.7	17.1	16.5
Infrastructure	FTSE Global Core Infrastructure Index	N.A.	N.A.	N.A.	N.A.	9.1	7.4				11.7	12.2		
Timber	NCREIF Timberland Index ²	N.A.	N.A.	N.A.	N.A.	5.6	5.2	6.6	6.5	0.9	3.2	4.0	4.6	4.9
Commodities	Bloomberg Commodity Index	N.A.	N.A.	N.A.	N.A.	-0.8	-1.8	2.0	1.8	0.1	14.0	17.1	16.4	16.0
Liquidity														
US Core Fixed Income	Bloomberg Aggregate Bond Index	3.7	1.8	1.5	1.1	1.5	3.3	3.6	4.4	0.7	3.5	3.6	3.6	3.6
US Core Fixed Income	Bloomberg Universal Bond Index	4.2	2.0	1.8	1.5	1.8	3.4	3.9	4.6	0.7	3.5	3.6	3.6	3.5
Global Fixed Income	Bloomberg Multiverse	3.2	1.5	1.3	1.0	0.3	2.4	3.4			4.9	5.7	5.6	
Investment Grade Credit	Bloomberg Credit Index	4.6	2.3	2.0	1.7	2.5	4.1	4.5	5.0	0.6	5.4	5.9	5.6	5.3
Long-term Fixed Income	Bloomberg Long Credit	5.1	3.1	3.1	2.8	3.2	5.4	5.9	6.1	0.5	9.6	10.4	10.0	9.3
US Short-term	Bloomberg 1-3 Year Govt Index	3.0	0.7	0.3	0.1	0.8	1.6	2.0	2.9	0.7	1.1	1.3	1.3	1.5
Municipals (National 1-10 Yr)	Bloomberg US 1-10 Yr Municipal	2.6	0.8	0.6	0.6	1.8	3.1	3.2	3.7	0.6	2.7	3.1	3.0	3.0
Cash	ICE BofAML 3M US Trsy Note	1.8	0.1	0.1	0.1	0.7	0.8	1.3	0.0	0.0	0.3	0.3	0.4	0.0
Inflation	CPI All Urban Consumers NSA	N.A.	N.A.	N.A.	N.A.	2.6	2.4	2.5	2.5	0.4	1.3	1.4	1.4	1.3

Based on monthly returns through 6/30/22. ¹ Prior to 12/31/98, performance was based off returns of the MSCI Emerging Markets Index (Gross Dividends). ² Based on Quarterly returns. Trailing period as of 3/30/2022. ³50% CS Leveraged Loan/ 50% Bloomberg US High Yield + 200 bps premium. Long-term expected return and risk assumptions are not a guarantee of future performance and actual results can and will differ from forecasts over time. The assumptions should not solely be relied upon as a recommendation to invest in any particular asset class. Note that these asset class assumptions are based upon passively invested portfolios net of management fees; they do not consider the impact of active management. Return estimates are shown on a compound return basis, not on arithmetic returns. Asset class assumptions presented constitute our judgment at the time they were forecasted and are subject to change without notice. Angeles Investment Advisors, LLC attest the information contained herein has been prepared from sources believed reliable but is not guaranteed by us as to its timeliness or accuracy and is not a complete summary or statement of all available data. This data is intended solely for our clients, is for informational purposes only and may not be publicly disclosed or distributed without our prior written consent. Neither MSCI nor any other party involved in or related to compiling, computing or creating the MSCI data makes any express or implied warranties or representations with respect to such data (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of such data. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in or related to compiling, computing or creating the data have any liability for any direct, indirect, special, punitive, consequential or any other damag