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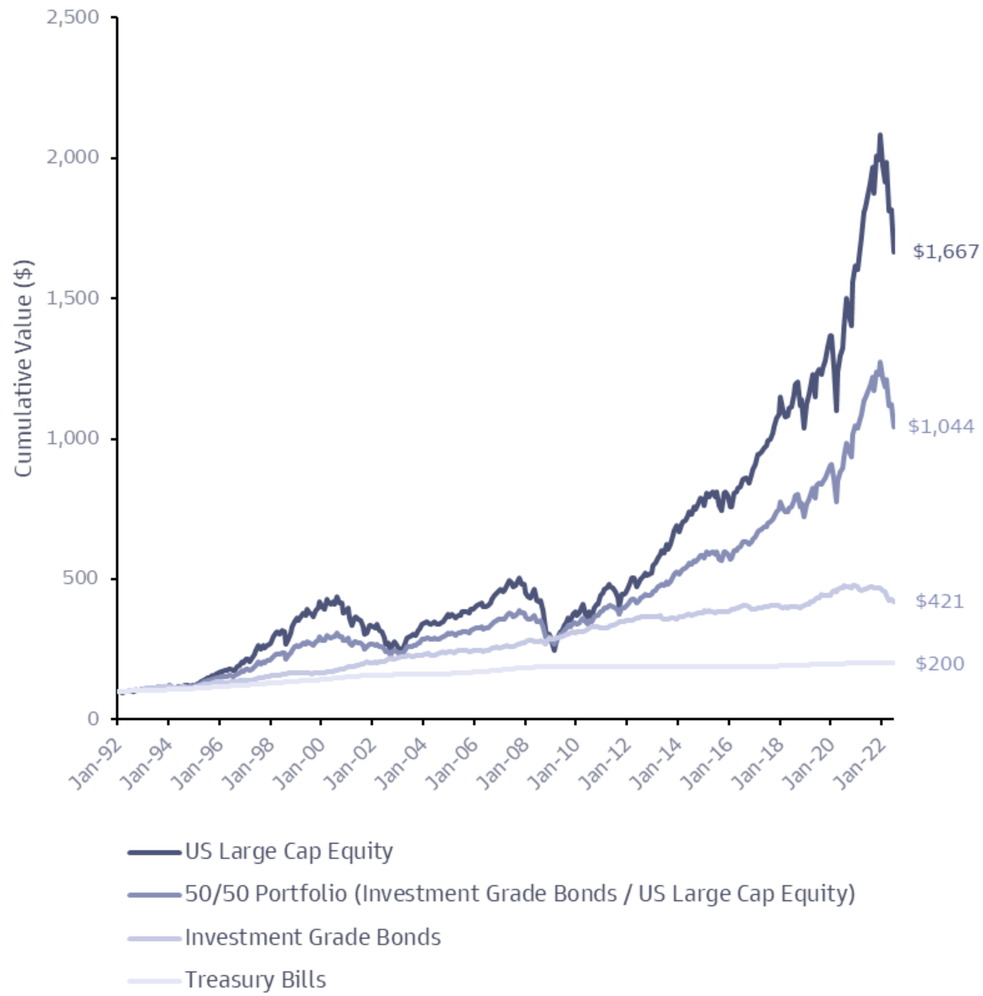
Investing 101

What is Investing and Why Invest?

Investing is the act of putting money to work with the expectation of growing one's assets over time.

- Protect the purchasing power of your money
  - Money has value that can change over time (a dollar today is worth more than a dollar tomorrow); this value can be measured by purchasing power.
  - Inflation—the phenomenon of rising prices—erodes purchasing power. Investing can help protect against this erosion by providing growth and income that offsets the effect of inflation.
- Grow your asset base and/or to provide income
  - Investing can not only preserve the purchasing power of your money (i.e. the real value), but it can also provide excess income and/or grow the size of the underlying investment by generating returns above the rate of inflation.
  - Through the power of compounding, a small amount of money can grow into a substantial sum. When returns are reinvested, you have potential to earn returns on top of returns.

Cumulative Value of $100 Invested on January 1, 1992 As of June 30, 2022



Source: Bloomberg, Portfolio Advisory Group.
US Large Cap Equity: S&P 500. Investment Grade Bonds: Bloomberg Barclays US Aggregate. Treasury Bills: S&P Treasury Bill 0-3 Month.

Why Invest?

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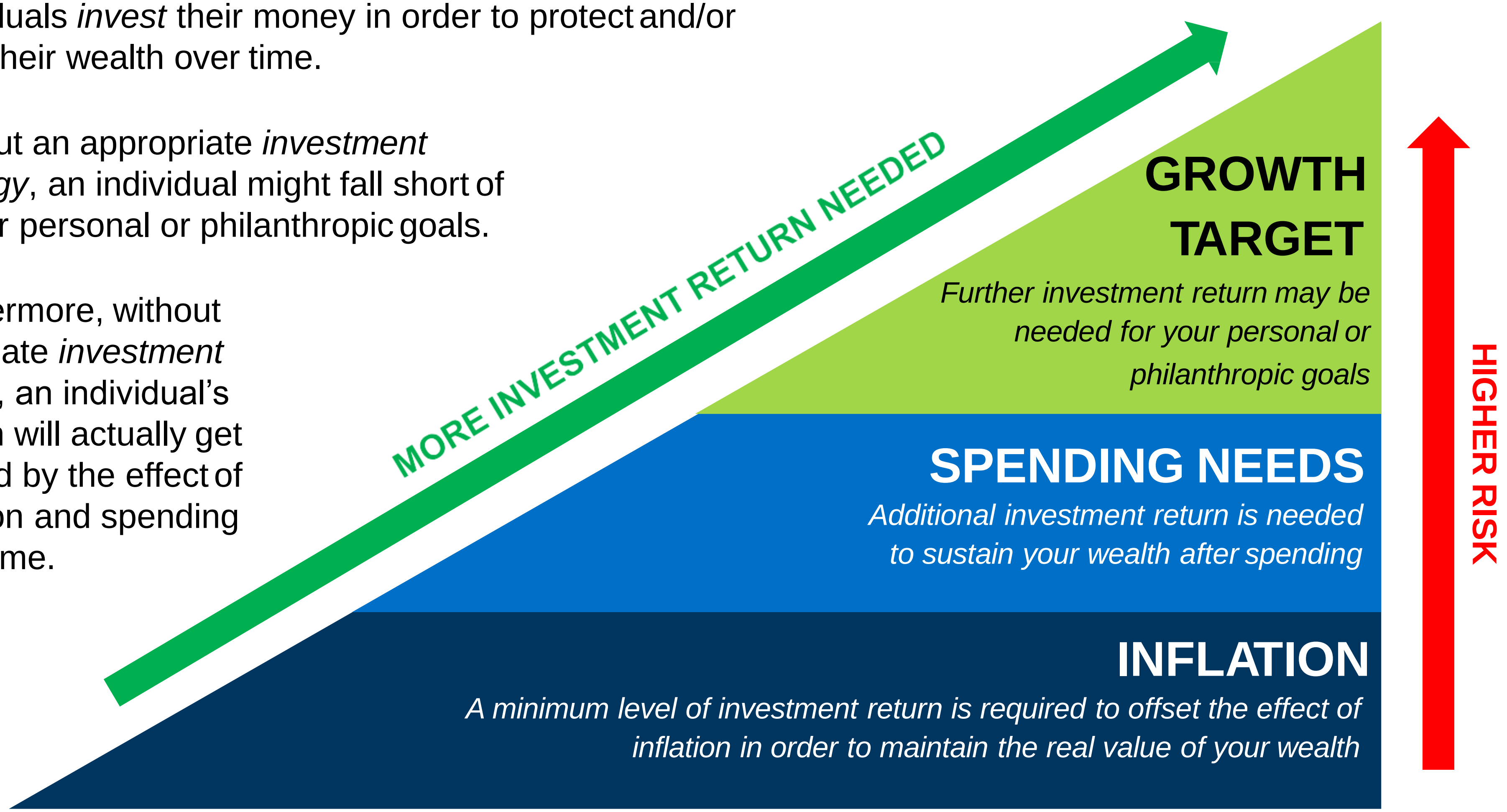
Identifying Targeted Investment Return / Risk

Individuals *invest* their money in order to protect and/or grow their wealth over time.

Without an appropriate *investment strategy*, an individual might fall short of his/her personal or philanthropic goals.

Furthermore, without adequate *investment return*, an individual's wealth will actually get eroded by the effect of inflation and spending over time.



For Illustrative Purposes Only.

How to Think About YourWealth

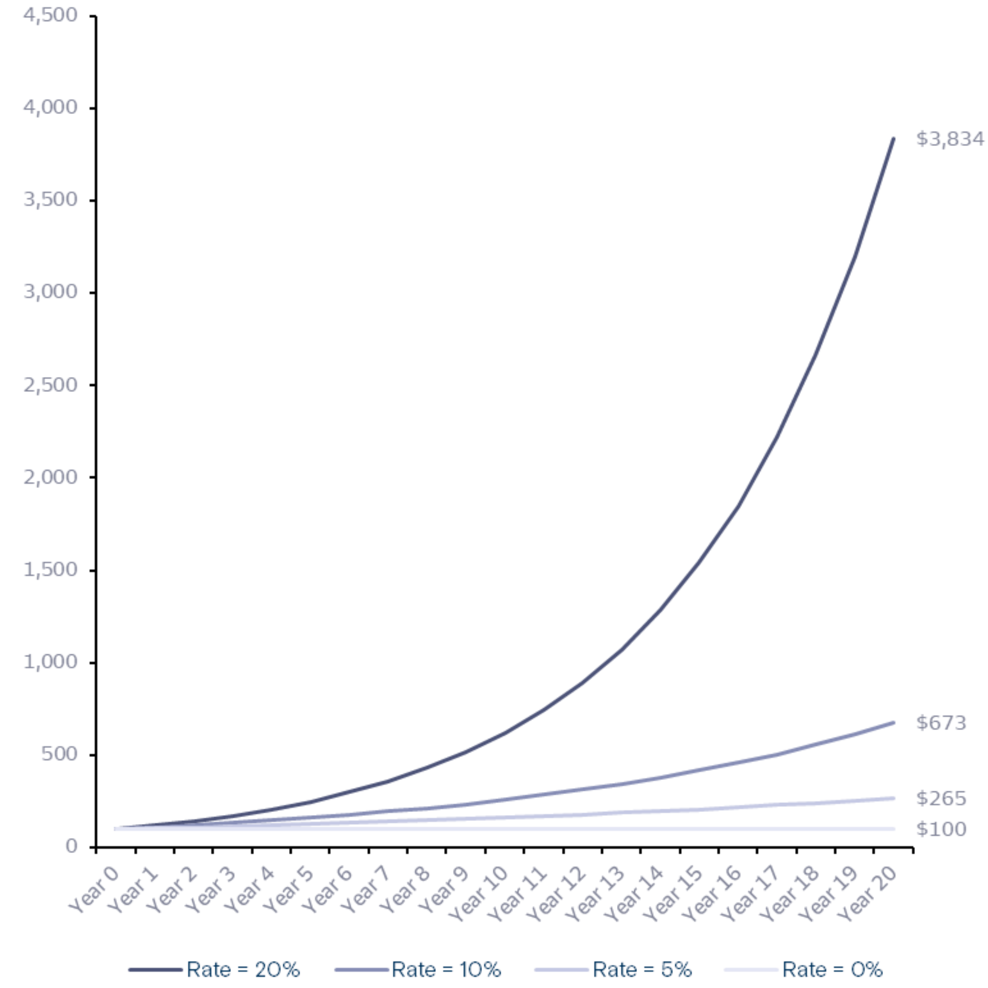
Security	Investment	Opportunity
Capital Preservation ▪ The part of your wealth that absolutely must be protected ▪ Typically this will represent several years of living expenses, and any future liquidity requirements ▪ Returns will likely be low, as capital risk must be at a minimum ▪ The only appropriate assets here are cash and short term government bills	**Capital Growth** ▪ This is your *investment portfolio*. It does not need to be static, but there needs to be a long term plan in place ▪ The returns will be a function of the investor's willingness to take risk ▪ The time horizon should be at least 5 years, so that the portfolio can ride through short term difficulties ▪ The portfolio can contain a wide range of assets, from bonds to equities to alternatives	**Trading Gains** ▪ The capital you are willing to commit to interesting ideas or trades ▪ Importantly the opportunistic capital should not be part of your essential core wealth ▪ Risk and return level can be low or high, depending on the trade, and any type of investment can be considered

What is Compounding?

Compounding is the process in which an asset's earnings (from capital gains[1] or interest) are reinvested to generate additional earnings over time.

- In other words, over time, the investment will generate returns from its initial principal as well as the accumulated earnings from preceding periods.
- Thus, compounding expands purchasing power.
- Compounding represents an exponential function; the returns gained over a set period of time increase over time (i.e., the increase in value from year 19 to year 20 will be greater than the increase in value from year 0 to year 1).
- According to Albert Einstein, compounding is "the most powerful force in the universe."

The Effects of Annual Compounding on a $100 Investment



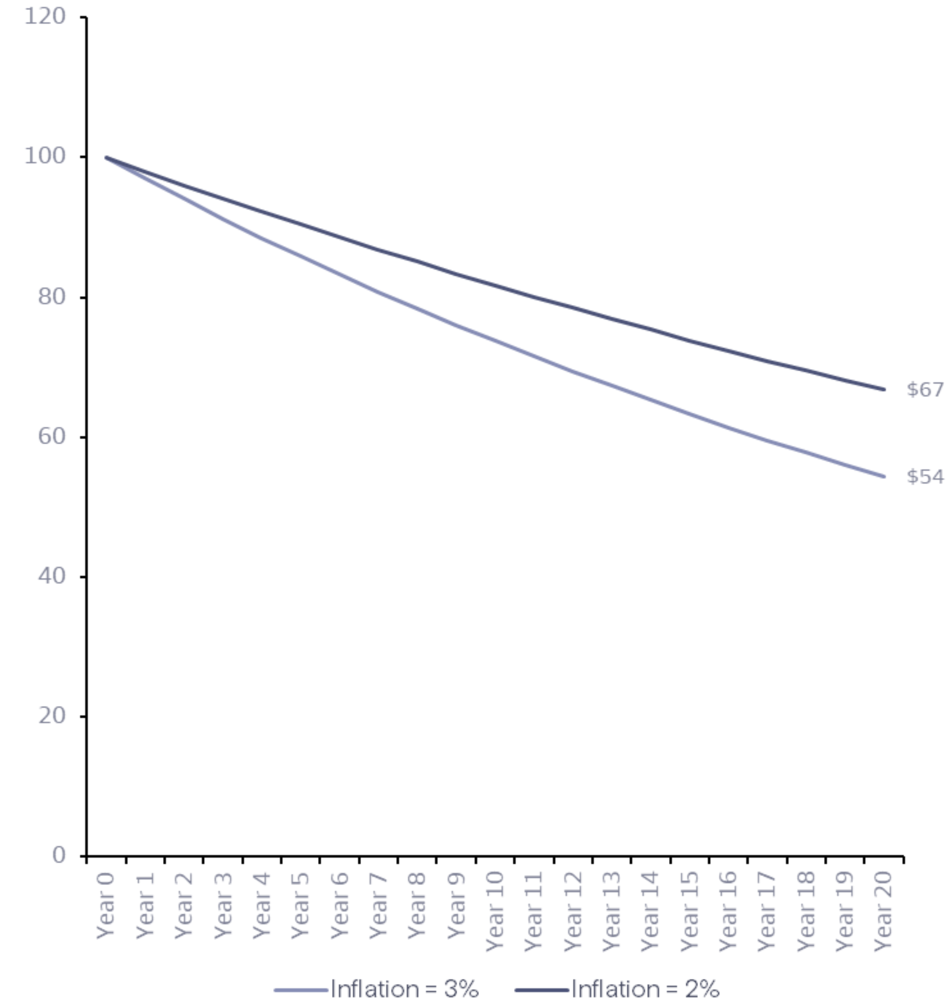
Source: Portfolio Advisory Group.
[1] Investors may not always experience capital gains.

What is Inflation?

Inflation refers to the rising price of goods and services over time.

- Due to the time value of money, a dollar today is worth more than a dollar tomorrow.
- Inflation decreases purchasing power and increases cost of living.
- Inflation is not when the price of a single good increases due to heightened demand for or limited supply of the good. Inflation is when the average price of all goods and services rises, sustainably, over time.
- One of the mandates of the United States Federal Reserve is to have “low and stable” inflation.

The Effects of Inflation on a $100 Investment



Source: Portfolio Advisory Group.

What is Inflation?

INFLATION

- The rise in the price of goods over time
- Consequently $1 today will buy less in the future

PRESERVATION

- Invest to protect the purchasing power of money
- This is the “real” value of money vs “nominal” value

Inflation from 2002 to 2020:
<u>1.58% per year</u>

$100 in 2002
is worth
$75 in 2020

A $30,000 car today
would cost
$40,000 in 2038

The Purpose of Diversification

What is diversification?

Selecting the right balance between assets to deliver returns over the long-run and having enough protection to withstand market crises over the short-term.

Diversification is...

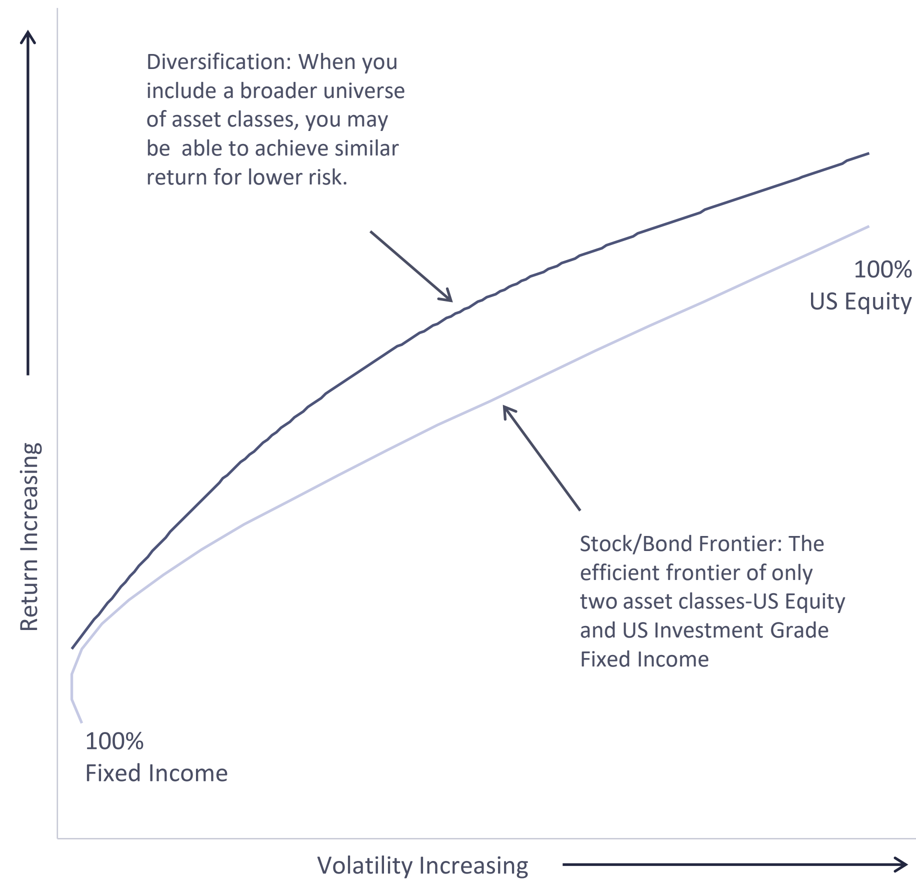
Investing in asset classes that play unique functional roles and/or benefit from different sources of return.

Increasing expected return for the same amount of risk or decreasing risk for the same amount of return.

Diversification is not...

Equivalent to constantly positive returns.

Diversification is a way to increase returns at a given level of risk



For Illustrative Purposes Only

Investing in Stocks | Growth and Income

+ $$$
Income from Sales

- $
Expenses & Taxes

=$$
Net Profit

"Choice"

reinvest in company

Retained Earnings

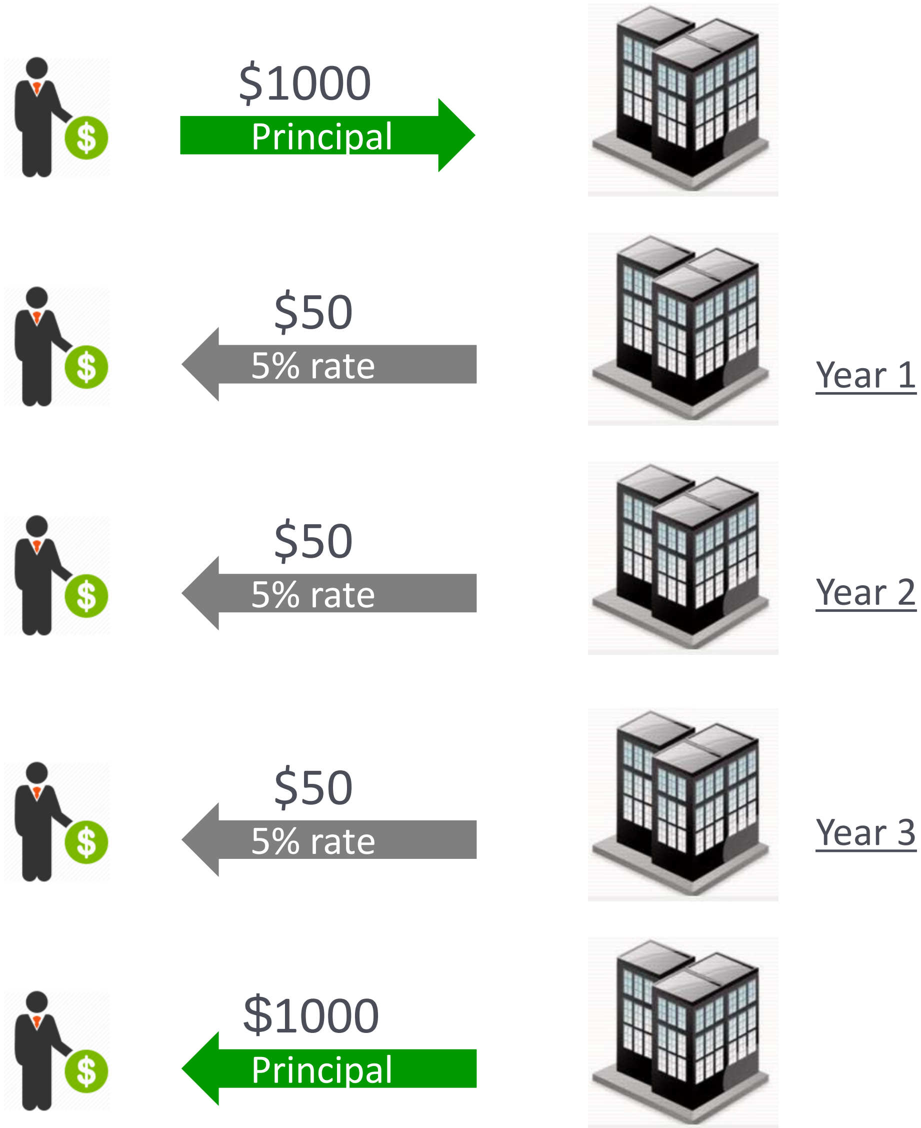
pay-out to owners

Dividends

What is a Stock?

- When you purchase a company's stock, you're purchasing a small piece of that company, called a share.

Investing in Bonds | Income and Safety



What is a Bond?

- When you lend a government or business money for a set period of time, with the promise of repayment of that money plus interest.
- Bonds have different ratings that can help investors understand how safe or risky their investment is. Safer bonds are labeled investment grade (rated between BBB/Baa3 and AAA/Aaa). Higher risk bonds are considered High Yield or Junk Bonds (rated below BBB/Baa3).

Total Return: $150

The Risk/Return Spectrum

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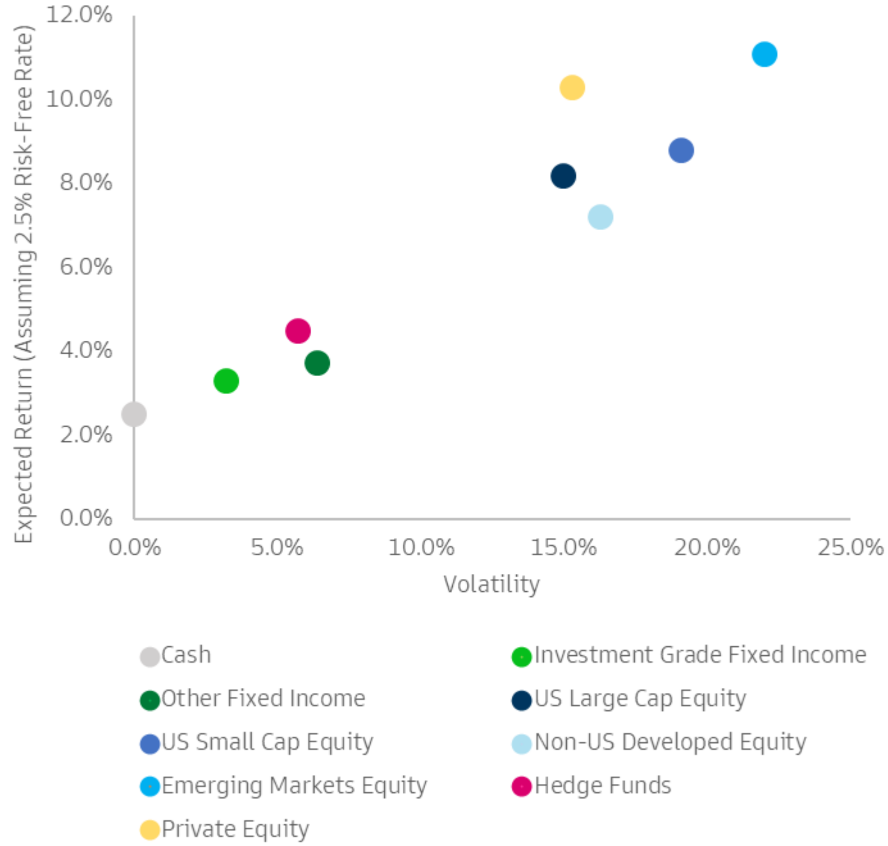
When thinking about investing, it is important to weigh your options against your risk appetite.

- Risk refers to the measurable possibility that an investment could decline in value.
- Investing requires that money be put at risk in order to receive a return; this is the risk/return tradeoff.
- The calculated volatility of an investment's returns are often used as a proxy for the asset's risk.
- Investors are able to define volatility by looking at the deviation of returns around their average.
- Generally, there has been a strong positive relationship between the two – the higher the risk, the greater the expected rate of return.

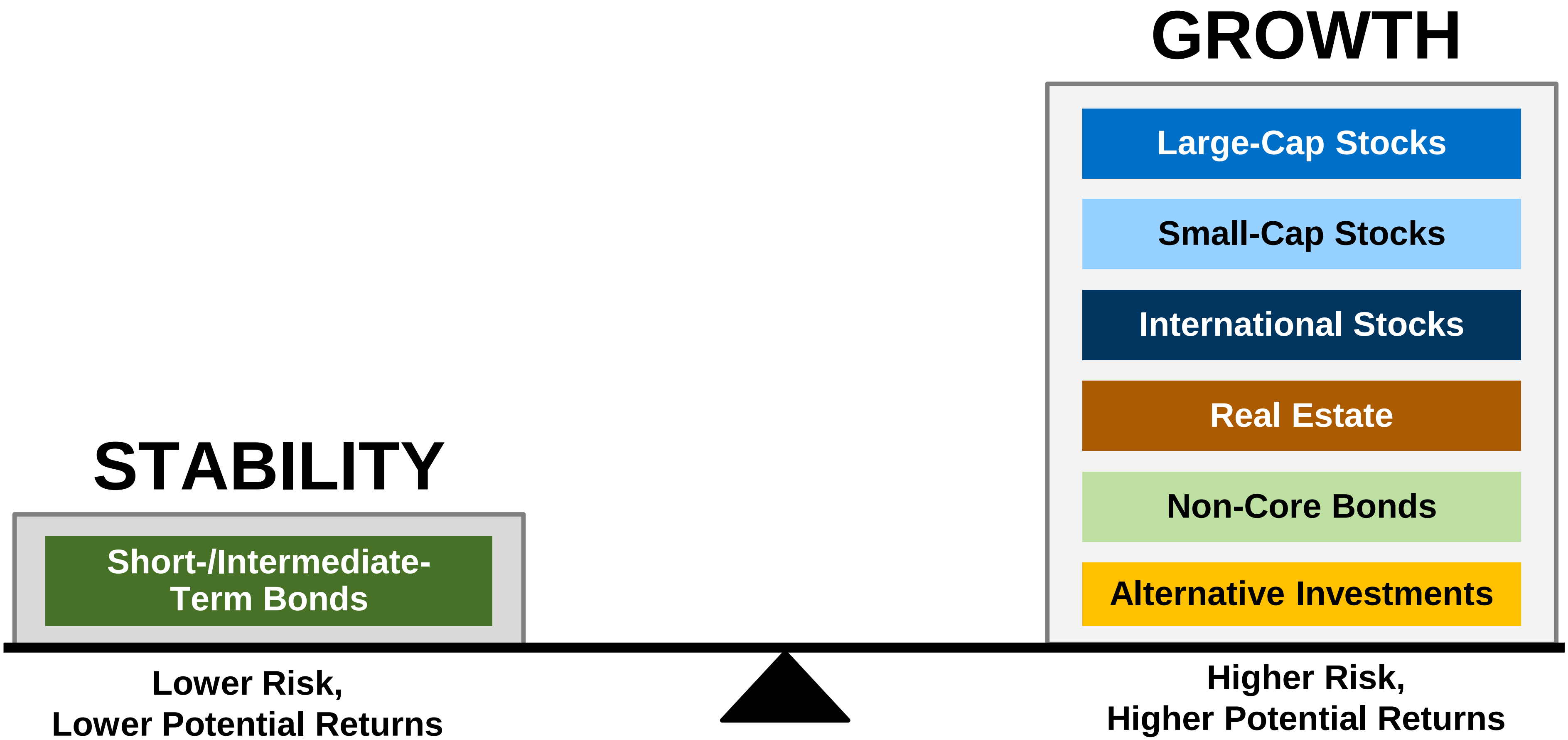
Asset Class Returns and Volatilities[1]



Source: Investment Strategy Group.
(1) Estimates are for illustrative purposes and based on the Investment Strategy Group's proprietary factor model.

The Risk/Return Tradeoff

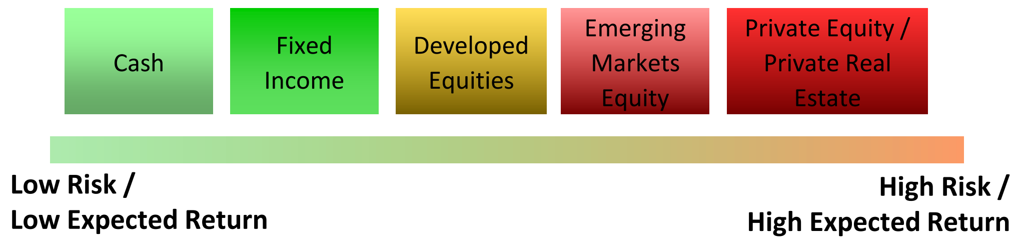
Higher Risk Investments May Generate Higher Returns, But Also Can Experience Greater Losses



How much allocation do you want to the stability side vs. growth side?

Mitigating Risks

Diversification is the process of allocating capital in a way that reduces the exposure to any one asset in order to reduce the overall risk by investing in a variety of assets.



✓ **<u>Diversification IS</u>** ...investing in asset classes that play <u>unique</u> functional roles and/or benefit from <u>different sources of return</u>

✗ **<u>Diversification IS NOT</u>** … equivalent to constantly positive returns

Roles of Different Asset Classes in a Portfolio

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Investment Grade Fixed Income	Non-Core Fixed Income	Public Equities	Hedge Funds	Private Equity	Real Estate
• Dampens volatility • Provides cash flow • Hedges one’s portfolio during a crisis • Acts as a deflation hedge	• Exposes portfolio to different sources of credit risk • May produce high income	• Long-term appreciation potential • Inflation hedge over long time horizon • Exposure to global economic growth through international diversification • Currency exposure through international equities	• Diversified portfolio of hedge funds dampens overall portfolio volatility • Offer actively managed short and long-term trading strategies across a diverse universe of investments • Exposure to potential alpha from active management	• Participation in value creation through investments in innovative ideas or operating improvements • Can increase potential returns of overall portfolio • General persistence of performance in top third of managers provides exposure to higher potential alpha from active management	• Provides high and relatively stable income • Diversification benefit through a distinctive profile of exposures to systematic risk factors

Source: Investment Strategy Group.
Please refer to the Important Disclosures Section for additional disclosures on Alternative Investments.

The Benefits of Diversification — Taxable

Asset Class Returns – As of December 31, 2022

2001- 2022		Returns										
Returns (Ann.)	Vol (Std. Dev.)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MLPs 8.5%	MLPs 24.2%	Emerging Market Equity 18.6%	US Small Cap 38.8%	REITs 31.9%	Non-US Equity (USD Hedged) 5.0%	US Small Cap 21.3%	Emerging Market Equity 37.8%	High Yield Munis 4.8%	US Large Cap 31.5%	US Small Cap 19.9%	REITs 45.9%	MLPs 30.9%
Emerging Market Equity 8.4%	REITs 22.1%	High Yield Munis 18.1%	US Large Cap 32.4%	High Yield Munis 13.8%	REITs 4.5%	MLPs 18.3%	Non-US Equity 25.6%	Investment Grade Munis 1.6%	Global Equity 27.3%	Emerging Market Equity 18.7%	MLPs 40.2%	Non-US Equity (USD Hedged) -4.6%
REITs 8.3%	Emerging Market Equity 21.1%	Non-US Equity 17.9%	MLPs 27.6%	US Large Cap 13.7%	Investment Grade Munis 2.4%	US Large Cap 11.9%	Global Equity 24.7%	Hedge Funds -4.0%	US Small Cap 25.5%	US Large Cap 18.4%	US Large Cap 28.7%	Hedge Funds -4.7%
US Large Cap 7.6%	US Small Cap 20.0%	Non-US Equity (USD Hedged) 17.5%	Non-US Equity (USD Hedged) 26.7%	Non-US Equity (USD Hedged) 5.7%	High Yield Munis 1.8%	Emerging Market Equity 11.6%	US Large Cap 21.8%	REITs -4.2%	Non-US Equity (USD Hedged) 24.6%	Global Equity 16.9%	Non-US Equity (USD Hedged) 19.4%	Investment Grade Munis -4.8%
US Small Cap 7.6%	Non-US Equity 16.9%	REITs 17.1%	Global Equity 23.5%	US Small Cap 4.9%	US Large Cap 1.4%	Global Equity 8.5%	Non-US Equity (USD Hedged) 16.8%	US Large Cap -4.4%	REITs 23.1%	Hedge Funds 10.9%	Global Equity 19.0%	High Yield Munis -13.1%
Global Equity 6.7%	Global Equity 15.9%	Global Equity 16.8%	Non-US Equity 23.3%	MLPs 4.8%	Hedge Funds -0.3%	REITs 6.6%	US Small Cap 14.6%	Global Equity -8.9%	Non-US Equity 22.7%	Non-US Equity 8.3%	US Small Cap 14.8%	Non-US Equity -14.0%
Non-US Equity 5.3%	US Large Cap 15.3%	US Small Cap 16.4%	Hedge Funds 9.0%	Global Equity 4.8%	Non-US Equity -0.4%	Non-US Equity (USD Hedged) 6.1%	High Yield Munis 9.7%	Non-US Equity (USD Hedged) -9.0%	Emerging Market Equity 18.9%	High Yield Munis 4.9%	Non-US Equity 11.8%	Global Equity -18.0%
High Yield Munis 4.9%	Non-US Equity (USD Hedged) 14.3%	US Large Cap 16.0%	REITs 1.3%	Investment Grade Munis 4.7%	Global Equity -1.8%	High Yield Munis 3.0%	Hedge Funds 7.8%	US Small Cap -11.0%	High Yield Munis 10.7%	Investment Grade Munis 4.2%	High Yield Munis 7.8%	US Large Cap -18.1%
Non-US Equity (USD Hedged) 4.9%	High Yield Munis 7.4%	MLPs 4.8%	Investment Grade Munis -0.3%	Hedge Funds 3.4%	US Small Cap -4.4%	Non-US Equity 1.5%	REITs 3.8%	MLPs -12.4%	Hedge Funds 8.4%	Non-US Equity (USD Hedged) 2.5%	Hedge Funds 6.2%	Emerging Market Equity -19.7%
Hedge Funds 3.5%	Hedge Funds 5.1%	Hedge Funds 4.8%	Emerging Market Equity -2.3%	Emerging Market Equity -1.8%	Emerging Market Equity -14.6%	Hedge Funds 0.5%	Investment Grade Munis 3.5%	Non-US Equity -13.4%	MLPs 6.6%	REITs -11.2%	Investment Grade Munis 0.5%	US Small Cap -20.5%
Investment Grade Munis 3.2%	Investment Grade Munis 3.2%	Investment Grade Munis 3.6%	High Yield Munis -5.5%	Non-US Equity -4.5%	MLPs -32.6%	Investment Grade Munis -0.1%	MLPs -6.5%	Emerging Market Equity -14.2%	Investment Grade Munis 5.6%	MLPs -28.7%	Emerging Market Equity -2.2%	REITs -26.0%

Please refer to the Methodology and Glossary of Terms sections for an explanation of terms used in this presentation.

Key Questions to Help Determine Your Asset Allocation

1	Lifestyle needs	How much money do you need per year and after-tax to maintain your standard of living?
2	Capital preservation	How much of your capital do you need to have in lower risk assets to sleep well?
3	Risk tolerance	What percent of your capital can you tolerate losing on paper without panicking?
4	Liquidity	What percent of your capital are you willing to have tied up in illiquid assets?
5	Time horizon	What is your investment time horizon? How long do you want to take to get fully invested?
6	Return expectations	What are your return expectations over your time horizon? Do you benchmark to US or global equity?
7	Preferences	What constraints or personal preferences do you have for your portfolio?

In addition to the above, it's also important to consider one's external investments, tax status and age.

Bucket I: Liquid, lower risk

Cash
Investment grade bonds

Bucket II: Liquid, higher risk

Non-investment grade bonds
Stocks

Bucket III: Illiquid

Private equity
Real estate
Hedge funds

Goldman Sachs does not provide legal, tax or accounting advice. You should obtain your own independent tax advice based on your particular circumstances.

Taxable Model Portfolios

	Low Volatility	Conservative	Moderate	Aggressive
Investment Grade Fixed Income	**71.5%**	**51.0%**	**32.0%**	**15.0%**
US Investment Grade Municipal Bonds	20.0	51.0	32.0	15.0
US Investment Grade Short Duration Municipal Bonds	51.5	-	-	-
Other Fixed Income	**3.0%**	**4.0%**	**5.0%**	**3.0%**
US High Yield Municipal Bonds	3.0	4.0	5.0	3.0
Public Equity	**15.5%**	**28.0%**	**38.5%**	**56.5%**
US Large Cap Growth Equity	4.0	8.0	11.0	16.5
US Large Cap Value Equity	5.0	9.0	12.0	18.0
US Small Cap Growth Equity	0.5	1.0	1.5	2.0
US Small Cap Value Equity	1.0	1.5	2.0	3.5
Non-US Developed Equity	3.5	6.5	9.0	12.5
Emerging Market Equity	0.5	0.5	1.0	1.5
Income-Oriented Equity	1.0	1.5	2.0	2.5
Hedge Funds	**1.5%**	**1.5%**	**3.0%**	**1.5%**
Event Driven	0.5	0.5	1.0	0.5
Equity Long/Short	0.5	0.5	1.0	0.5
Tactical Trading	0.5	0.5	1.0	0.5
Private Equity	**5.5%**	**10.5%**	**15.5%**	**19.0%**
Buyout	4.0	8.0	11.0	13.0
Growth	1.5	2.5	3.5	4.5
Venture	-	-	1.0	1.5
Other Private Assets	**3.0%**	**5.0%**	**6.0%**	**5.0%**
Private Credit	0.5	1.5	2.0	2.0
Core Private Real Estate and Infrastructure	2.5	3.5	4.0	3.0
TOTAL	**100.0%**	**100.0%**	**100.0%**	**100.0%**
After-Tax Estimated Mean Return Assuming 2.50% Risk-Free Rate	**4.1%**	**5.0%**	**5.7%**	**6.6%**
Sharpe Ratio	**0.72**	**0.58**	**0.52**	**0.47**
Volatility	**3.6%**	**6.1%**	**8.2%**	**10.9%**
Risk-Equivalent Benchmarks (Bond/Equity)	**80/20**	**65/35**	**50/50**	**30/70**

Please refer to the Methodology and Glossary of Terms sections for an explanation of terms used in this presentation.

$1 Million After-Tax Wealth Illustration with No Annual Spending[1]

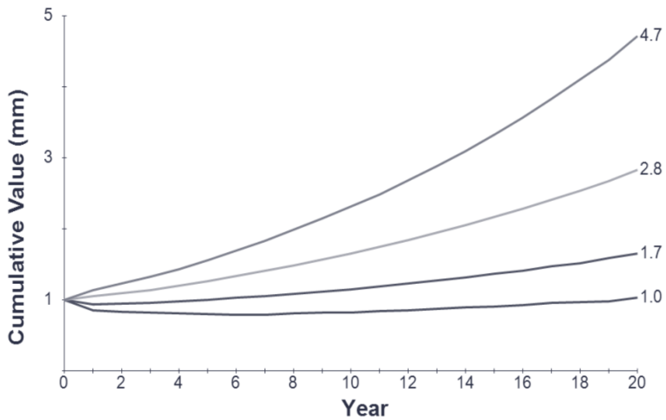
Taxable Moderate Portfolio

The graph illustrates wealth outcome ranges based upon the asset allocation for the portfolio. The illustration tracks the estimated accumulated value over a period of 20 years. The line graph shows a range of outcomes between the 1st and 90th percentiles.

The outcome ranges should not be construed as providing any assurance or guarantee as to actual income or wealth.

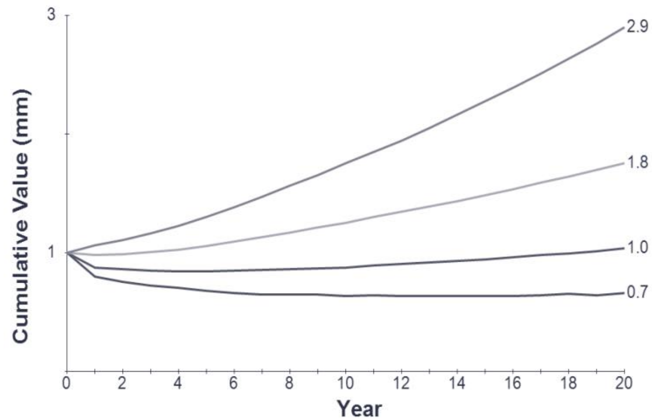
Nominal Portfolio Values

Without Inflation



Real Portfolio Values

After Inflation Rate of 2.0%



90th Percentile — Median — 10th Percentile — 1st Percentile

Assuming no inflation

	Year 10	Year 15	Year 20
90th Percentile ($mm)	2.32	3.33	4.71
Median ($mm)	1.65	2.17	2.83
10th Percentile ($mm)	1.15	1.37	1.65
1st Percentile ($mm)	0.82	0.91	1.03

Assuming inflation rate of 2.0%

	Year 10	Year 15	Year 20
90th Percentile ($mm)	1.75	2.28	2.90
Median ($mm)	1.25	1.49	1.76
10th Percentile ($mm)	0.88	0.95	1.04
1st Percentile ($mm)	0.64	0.64	0.66

[1] The analysis is based on modeled asset classes only. The portion of your portfolio invested in net short positions, if any, is pro-rated among the rest of the portfolio for modeling purposes.

The graph illustrates wealth outcome ranges based upon the asset allocation for the portfolio. The illustration tracks the estimated accumulated value over a period of 20 years. The line graph shows a range of outcomes between the 1st and 90th percentiles. The outcome ranges should not be construed as providing any assurance or guarantee as to actual income or wealth.

$1 Million After-Tax Wealth Illustration with 5% Annual Spending[1]

Taxable Moderate Portfolio

The graph illustrates wealth outcome ranges based upon the asset allocation for the portfolio. The illustration tracks the estimated accumulated value over a period of 20 years. The line graph shows a range of outcomes between the 1st and 90th percentiles.

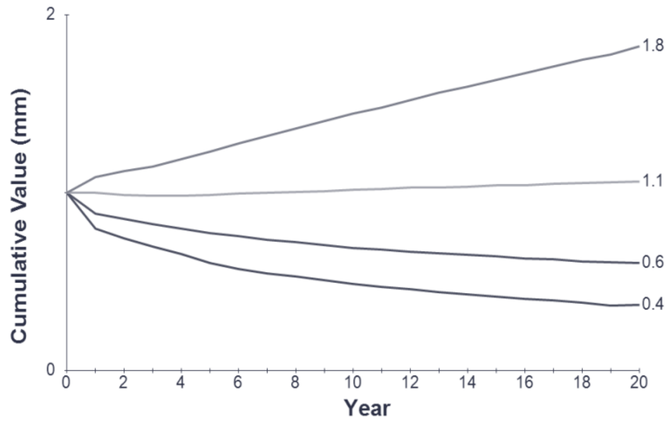
The outcome ranges should not be construed as providing any assurance or guarantee as to actual income or wealth..

Annual Outflows: 5.0%

Annual Inflows and Outflows are expressed as a percentage of the total portfolio value each year.

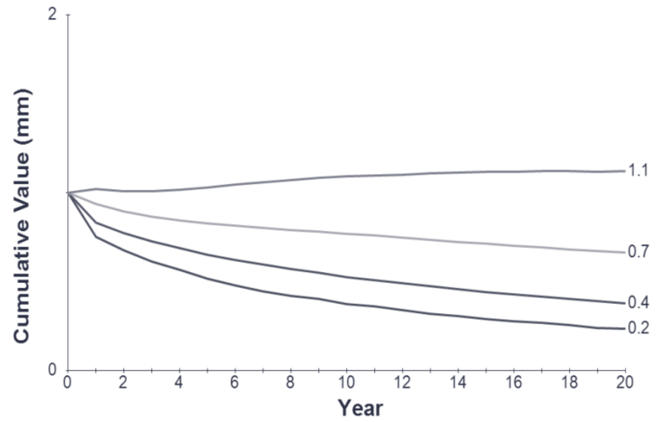
Nominal Portfolio Values

Without Inflation



Real Portfolio Values

After Inflation Rate of 2.0%



90th Percentile — Median — 10th Percentile — 1st Percentile

Assuming no inflation

	Year 10	Year 15	Year 20
90th Percentile ($mm)	1.45	1.63	1.82
Median ($mm)	1.01	1.04	1.07
10th Percentile ($mm)	0.69	0.64	0.61
1st Percentile ($mm)	0.49	0.42	0.37

Assuming inflation rate of 2.0%

	Year 10	Year 15	Year 20
90th Percentile ($mm)	1.09	1.12	1.12
Median ($mm)	0.77	0.71	0.66
10th Percentile ($mm)	0.53	0.44	0.38
1st Percentile ($mm)	0.38	0.29	0.23

[1] The analysis is based on modeled asset classes only. The portion of your portfolio invested in net short positions, if any, is pro-rated among the rest of the portfolio for modeling purposes.

The graph illustrates wealth outcome ranges based upon the asset allocation for the portfolio. The illustration tracks the estimated accumulated value over a period of 20 years. The line graph shows a range of outcomes between the 1st and 90th percentiles. The outcome ranges should not be construed as providing any assurance or guarantee as to actual income or wealth.

$1 Million After-Tax Wealth Illustration with 10% Annual Spending[1]

Taxable Moderate Portfolio

The graph illustrates wealth outcome ranges based upon the asset allocation for the portfolio. The illustration tracks the estimated accumulated value over a period of 20 years. The line graph shows a range of outcomes between the 1st and 90th percentiles.

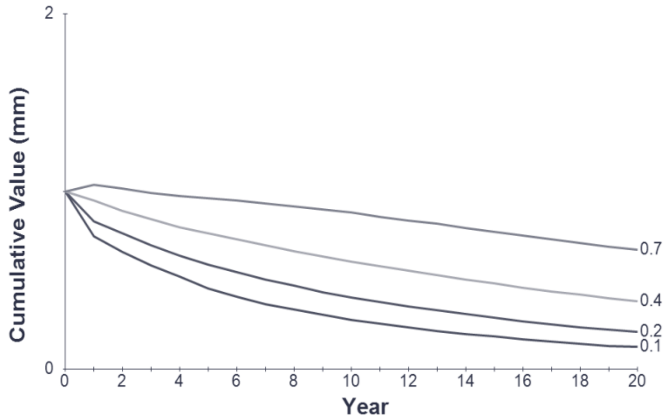
The outcome ranges should not be construed as providing any assurance or guarantee as to actual income or wealth..

Annual Outflows: 10.0%

Annual Inflows and Outflows are expressed as a percentage of the total portfolio value each year.

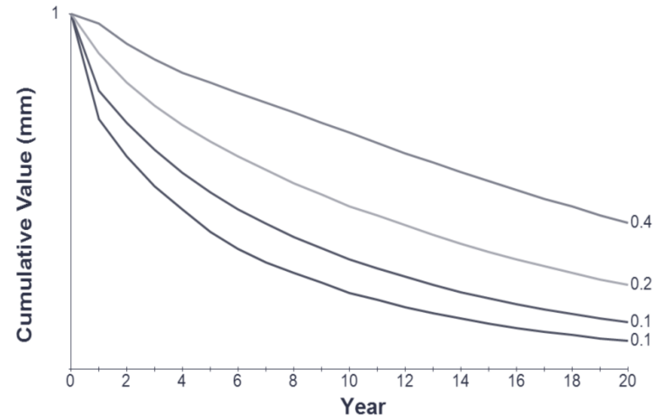
Nominal Portfolio Values

Without Inflation



Real Portfolio Values

After Inflation Rate of 2.0%



90th Percentile Median 10th Percentile 1st Percentile

Assuming no inflation

	Year 10	Year 15	Year 20
90th Percentile ($mm)	0.88	0.77	0.67
Median ($mm)	0.61	0.48	0.38
10th Percentile ($mm)	0.40	0.29	0.21
1st Percentile ($mm)	0.28	0.18	0.12

Assuming inflation rate of 2.0%

	Year 10	Year 15	Year 20
90th Percentile ($mm)	0.67	0.53	0.41
Median ($mm)	0.46	0.33	0.24
10th Percentile ($mm)	0.31	0.20	0.13
1st Percentile ($mm)	0.22	0.13	0.08

[1] The analysis is based on modeled asset classes only. The portion of your portfolio invested in net short positions, if any, is pro-rated among the rest of the portfolio for modeling purposes.

The graph illustrates wealth outcome ranges based upon the asset allocation for the portfolio. The illustration tracks the estimated accumulated value over a period of 20 years. The line graph shows a range of outcomes between the 1st and 90th percentiles. The outcome ranges should not be construed as providing any assurance or guarantee as to actual income or wealth.

S&P 500 Performance Over the Long Term

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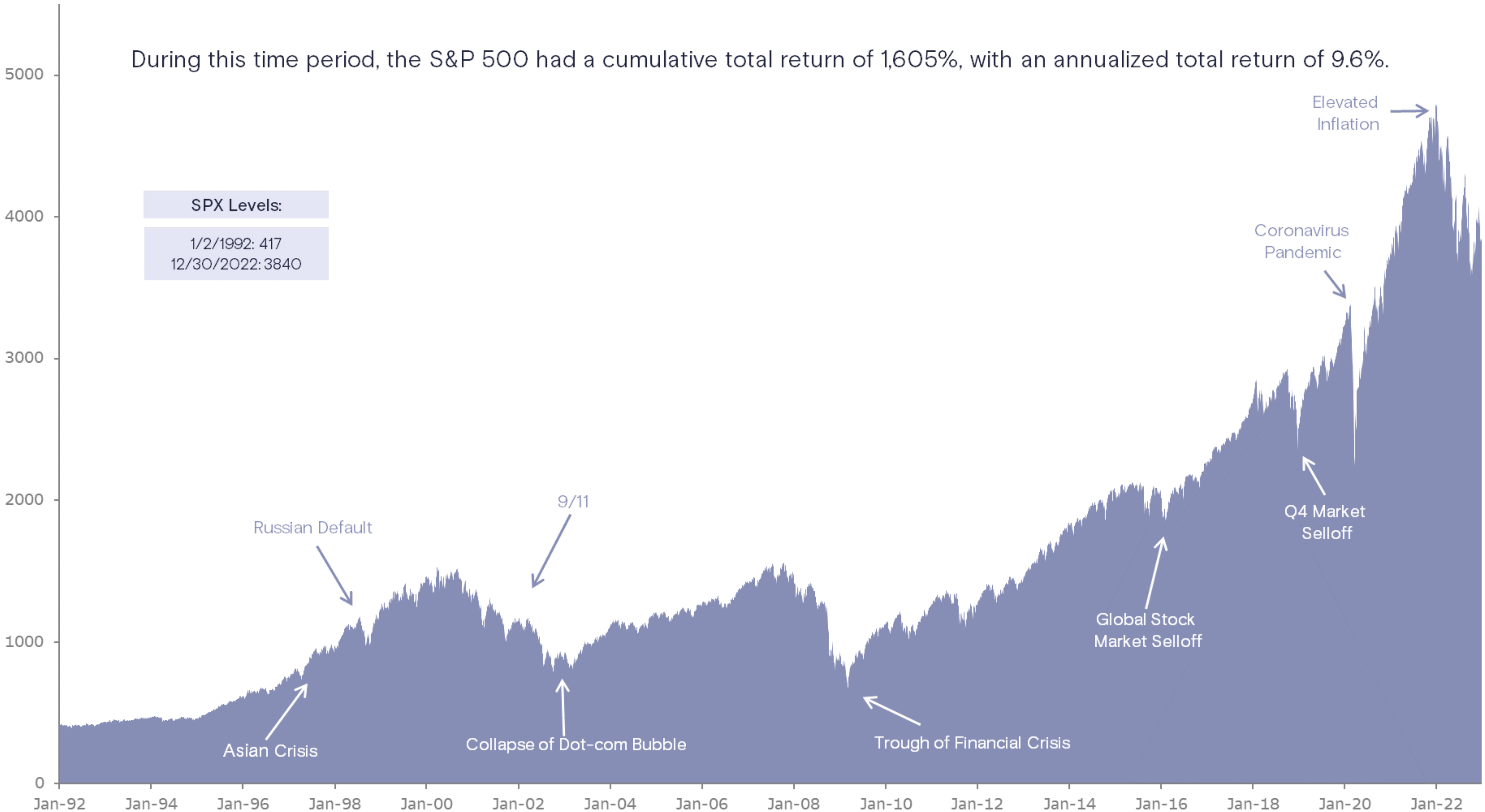
S&P 500 Return: December 31, 1991 to December 31, 2022



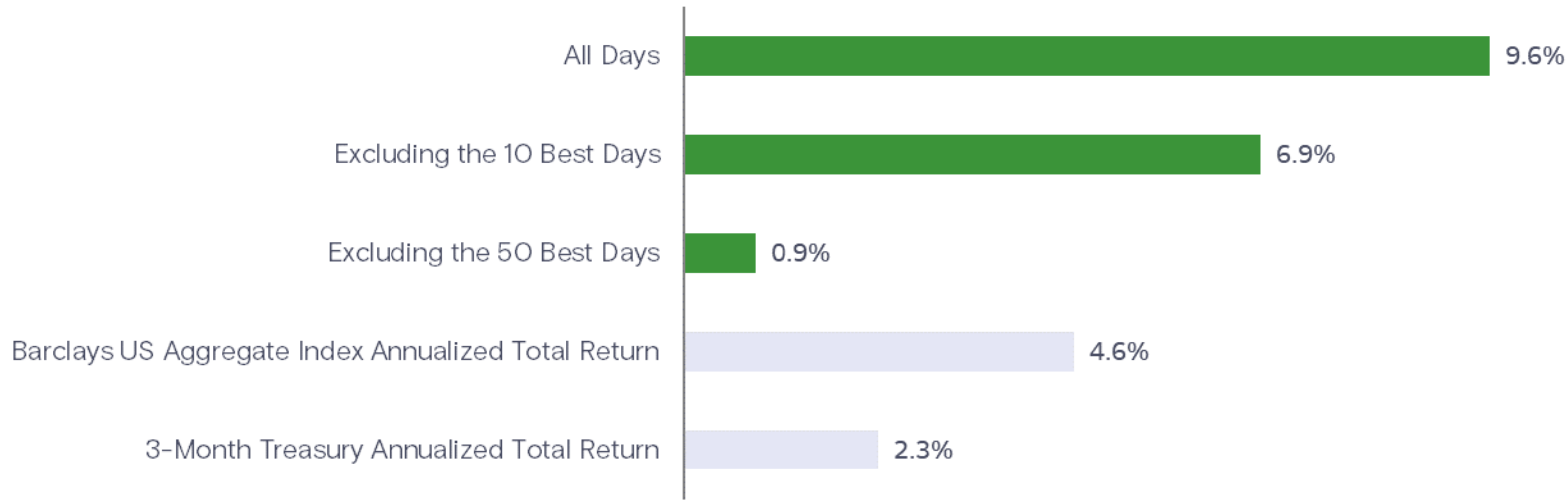
The total return assumes reinvestment of dividends for the S&P 500. The S&P 500 total return was 1,605% and the price appreciation was 821%.

Source: Bloomberg, Portfolio Advisory Group.

Penalties for Missing the Market’s Best Days are Stiff

December 31, 1991 to December 31, 2022

S&P 500 Annualized Total Return: December 31, 1991 to December 31, 2022[1]



Percent of Total Days		Percent of Total Return Contributed	
All Days:	100.0%	All Days:	100%
Best 10 Days:	0.1%	Best 10 Days:	58%
Best 50 Days:	0.6%	Best 50 Days:	98%

[1] Excluded days assume a 0% return. “Total Days” refers to open-market days.
Source: Portfolio Advisory Group, Bloomberg.

Important Information

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