The Mission-Aligned Portfolio

Building a sound investment program for endowments and foundations through purpose, people and policies

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The Role of Nonprofits in Society

A unique contribution to culture and wellness

A free and democratic society has needs that neither the government nor business will meet. These needs generally center around issues of common goods, such as health, education and culture, particularly those that don’t reach the large scale requiring government support, or the profitability that would attract business support. Museums, nature preserves, private schools, youth sports and advocacy organizations are all good examples of entities that require the collective action nonprofits voluntarily provide.

America’s ability to form civil associations impressed the political philosopher Alexis de Tocqueville, who wrote: “Among democratic nations all citizens are independent and weak; they can achieve almost nothing by themselves and none of them could force his fellows to help him. Therefore, they sink into a state of impotence if they do not learn to help each other voluntarily.” While government and business provide essential common goods, nonprofits represent citizens forming associations voluntarily to provide additional common goods, beyond government and business, that enrich the wellness and quality of our society.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Government</th>
<th>Business</th>
<th>Nonprofit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motive</td>
<td>Not for profit</td>
<td>For profit</td>
<td>Not for profit</td>
</tr>
<tr>
<td>Financial Support</td>
<td>Taxes, fees</td>
<td>Sales, income, capital gains</td>
<td>Sales, grants, donations, endowment distributions</td>
</tr>
<tr>
<td></td>
<td>c. Smithsonian</td>
<td>c. Hard Rock Cafe</td>
<td>c. Getty Museum</td>
</tr>
<tr>
<td></td>
<td>d. Food stamps</td>
<td>d. Grocery store</td>
<td>d. Food bank</td>
</tr>
<tr>
<td></td>
<td>e. Justice Department</td>
<td>e. Private law firm</td>
<td>e. American Civil Liberities Union</td>
</tr>
</tbody>
</table>

Endowment Fundamentals

Overview
Nonprofits seek endowments that serve their mission, which includes short- and long-term goals. While unrealistic demands on the endowment (i.e., unsustainable distributions) and unfavorable investor behavior during volatile markets can weaken the endowment, having clarity about the endowment’s purpose, people and policies can provide necessary direction and stability. With these three elements in place, the endowment will have the underpinning necessary to serve its current and future beneficiaries.

Purpose
An institution’s stakeholders want the endowment to support the institution’s needs, both in the short and long term. The more clarity around these needs, the better. Although clarity in and of itself is not always sufficient. Certain needs may conflict with one another. For example, the two most common endowment needs are maintaining stability in distributions in the short term and maintaining the inflation-adjusted value of the distributions in the long term. Overemphasizing one of these needs relative to the other can lead to an endowment portfolio that has too much or too little risk. Articulating the endowment’s purpose will help stakeholders balance these needs, leading to better alignment amongst stakeholders and a more appropriately allocated portfolio.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Establish a fund’s mission.</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>Clarify roles and responsibilities.</td>
</tr>
<tr>
<td>Policies</td>
<td>Institute investment and spending guidelines.</td>
</tr>
</tbody>
</table>
People

There are a number of contributors involved in building an investment program. Successful programs assign specific responsibilities and establish clear decision-making authority and reporting lines.

Key contributors include:

- **Endowment trustees** — Members of a board or investment committee responsible for oversight and the overall direction of the fund
- **Investment staff** — Internal or external staff responsible for allocating the endowment fund and the daily management of the fund
- **Operational staff** — Nonprofit staff responsible for budget planning and implementation of endowment distributions
- **Development staff** — Nonprofit staff responsible for attracting donors and gifts to the institution
- **External investment managers** — Firms with specialized investment capabilities who manage a portion of the fund
- **Custodian bank** — Financial services firm responsible for securing the fund, maintaining records and providing valuation services
- **Consultants** — External firm that provides guidance on asset allocation, investment manager selection or other investment topics
- **Auditors** — External agents that review the handling of monies moving into, within and out of the endowment

The investment staff must also consider its relationship to the development and operational staffs. These people play a large role in determining how money flows into and out of the fund, and coordination with them is critical to a successful investment program.²

Policies

Coordinating policies among development, investment and benefits staffs and committees is critical to setting realistic expectations for stakeholders and establishing a sustainable endowment. The primary purpose of an endowment is to channel financial resources toward current and future beneficiaries. Therefore, the investment staff and committee should pay particular attention to the spending and investment policies. The next two sections look deeper at these considerations.

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Establishing a Spending Policy

Two goals
Nonprofits have the responsibility of balancing the current needs of the communities they serve while continuing and building upon that support in the future. When planned for and pursued with discipline, these two goals can allow an organization to efficiently meet their objectives across all time frames.

A critical step in this process is developing a spending policy. The spending policy serves as a plan for how and when funds will be disbursed to support the goals of the organization. This disbursement is often expressed as a percentage of the value of the endowments’ assets. Having an effective policy helps to ensure that the operations of the organization are in line with the mission and values. In determining an appropriate spending policy, it’s helpful to weigh two goals: purchasing power preservation and spend rate stability.

Purchasing power preservation
The late Yale economist James Tobin once said: “the trustees of an endowed institution are the guardians for the future against the claims of the present. Their task is to preserve the equity among generations. The trustees of an endowed university like my own assume the institution to be immortal. They want to know, therefore, the rate of consumption from endowment which can be sustained indefinitely.”³ In essence, James Tobin is describing the ideal consumption for the endowment as the rate of sustainable return above inflation.

Endowments and foundations exist to help fund institutions’ missions. To do this in a sustainable manner, endowments and foundations must decide how to distribute dollars in a way that supports the current mission, while allowing its portfolio to grow and provide future funding to the institution.

Providing equitable current and future support to an institution and its beneficiaries is often referred to as intergenerational equity. Support in this context represents the amount of money an endowment or foundation distributes, otherwise known as spend rate. Equitable funding means the future capital is comparable to current support on an inflation-adjusted basis.

Maintaining the inflation-adjusted value of a portfolio over time is challenging. The portfolio must grow at a rate that is equal to or greater than the organization’s spend rate plus inflation and the cost of the endowment’s operations (including investment management fees).

Empirical results show that most endowments have portfolio returns below their spend rate plus inflation.

Figure 3 | 10-year average return versus spending*

Histogram of 10-year average returns for participants in NACUBO-TIAA’s 2018 Study of Endowments.⁴

CPI represents the Bureau of Labor Statistics’s Consumer Price Index.

HEPI represents the Commonfund Higher Education Price Index.

Spend rate stability

Beneficiaries plan around a certain amount of shorter-term support from an endowment. For example, a scholarship recipient expects their scholarship to be available for the duration of their education with an institution. The expectation is that the distributions from the endowment will be stable. If the distributions are volatile, beneficiaries will not know what to expect, and planning becomes a challenge.

Endowments can improve the stability of distributions in two ways:
- Diversified allocation
- Smoothing methods

Imagine an institution whose operating budget is funded entirely by distributions from their endowment. Any fluctuation in distributions would have a material impact on the institution’s ability to fund its operations. For example, a 30% drop in the value of the endowment would translate to a 30% drop in distributions.

Figure 4  |  Endowment distribution and risk of budgetary shortfall

This chart from NACUBO-TIAA’s 2018 Study of Endowments shows institutions’ percentage of operating budget funded from endowment.
Asset allocation

Asset allocation helps endowments manage portfolio volatility by diversifying stock and asset-class-specific risk. While specific risk can be reduced through diversification, different asset allocations still exhibit various risk profiles. Greater allocations to equity asset classes can lead to greater portfolio drawdown. Endowments can reduce the probability of such a steep drop by diversifying their portfolio into less volatile asset classes such as cash and investment-grade bonds. However, endowments must be mindful that such a shift also lowers a portfolio’s return potential.

The asset allocation decision should factor in two risks:

1) Organizational risks

Investment committees must consider organizational risks in order to better understand spend rate decisions. Organizational risks in this context relate to the institution’s overall financial health and can include the following elements:

- Debt: Credit rating; How much does the size and stability of the endowment affect the institution’s credit rating?
- Revenue stability: Tuition, grants, gifts, income from sales or services
- Cost stability: Payroll, capital projects, lawsuits, uninsured risks, inflation risk

Stakeholders need to assess the endowment portfolio’s role in supporting these organizational risks.

2) Portfolio risk

Once a board understands its organizational risk, it will have a better sense of its tolerance for portfolio risk. It is helpful to think of portfolio risk as maximum drawdown of the portfolio’s value, or how much of a temporary loss in the portfolio’s value the institution can tolerate.

The board can establish asset allocation policy by evaluating the trade-offs between portfolio risk and estimated portfolio return. Portfolio risk and return are directly related — in order for a portfolio to generate greater returns, it must take on greater risk.

Smoothing methods

A certain amount of endowment volatility is unavoidable. Endowments use smoothing techniques to manage market volatility from one year to the next. Institutions typically use one of three methods to improve consistency in their annual distributions:⁵,⁶

1) Fixed target percentage of portfolio’s moving average year-end value

In this most commonly used method, the institution establishes a target percentage and applies it to the portfolio’s average value over the past several years. Using a moving average smooths annual distributions compared to an approach that simply uses the current portfolio value.

2) Fixed dollar amount (inflation-linked) with banded target percentages

The institution establishes a fixed dollar amount to the payout. That dollar amount adjusts higher every year based on inflation and must also fall within a minimum and maximum target percentage of the portfolio. If the fixed dollar amount falls below the minimum target percentage, distributions are adjusted higher. If the fixed dollar amount rises above the maximum target percentage, the distributions are adjusted lower.

3) Hybrid

The hybrid method uses elements of the two previous methods. For example, the fixed target percentage may be used for part of the portfolio while the fixed dollar amount is used for the remaining part. Another example involves applying the moving average technique to banded target percentages.

Considerations:

- A market decline is more disruptive to the absolute dollar amount distributed when using the fixed target percentage.
- Methods 2 and 3 are more commonly used by the largest institutions ($500 million or larger) in the NACUBO study.

Balancing the two goals

Our ideal portfolio will address the two goals of spend rate stability in the near term and maintaining purchasing power in the longer term. If we consider modern portfolio theory, multiple portfolios lie on an “efficient frontier,” meaning that each of these portfolios provides the most amount of return per unit of risk. From here, we can identify a set of portfolios that would best serve the endowment’s goals.

With our forward-looking investment assumptions, we forecast portfolios’ returns using simulation analysis and identify which portfolios suit our needs.

Assuming a 20-year time horizon and 4% annual spend rate, we can use our simulation analysis to project the endowment’s real (i.e., today’s dollars) value with four different asset allocations. For this exercise, we assume the endowment’s initial value is $100 million.

We see in the projections below that the portfolios with higher returns also carry higher variability in outcomes. While the higher returns help serve the longer-term goal of purchasing power preservation, the accompanying high variability may challenge the near-term goal of spend rate stability.

Figure 6 | Estimated risk and return

The chart below depicts the results of the forward-looking estimates of the portfolio’s return and risk, using First Republic’s capital market assumptions (CMAs).

<table>
<thead>
<tr>
<th>Portfolio Structure</th>
<th>Estimated Return</th>
<th>Projected Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% Equity / 60% Bonds</td>
<td>3.66%</td>
<td>7.23%</td>
</tr>
<tr>
<td>60% Equity / 40% Bonds</td>
<td>4.56%</td>
<td>10.06%</td>
</tr>
<tr>
<td>80% Equity / 20% Bonds</td>
<td>5.47%</td>
<td>13.09%</td>
</tr>
<tr>
<td>100% Equity / 0% Bonds</td>
<td>6.37%</td>
<td>16.24%</td>
</tr>
</tbody>
</table>

Please see Figure 10 for more information about our CMAs.
Estimated outcome

The chart below depicts the results of the forward-looking Monte Carlo simulation that was performed on the portfolio, using First Republic’s Capital Market Assumptions. The results depict the estimated range of portfolio values over progressively longer time horizons. The Monte Carlo simulation incorporates such items as inflation and cash flow, if applicable.

The portfolio projections also allow us to calculate the probability that the endowment will maintain its real value over a specified time and spend rate. The table below shows the probability of successfully maintaining the endowment’s $100 million in real terms over 20 years with a 4% spend rate.

Figure 7 | Estimated outcome (real)

![Chart showing estimated outcomes over different years and asset allocations]

Please refer to our capital market assumptions at the end of this paper.

Probability of achieving target

This report is based on the forward-looking Monte Carlo simulation that was performed on the portfolio, using First Republic’s Capital Market Assumptions. The confidence level represents the probability that the portfolio value will be greater than or equal to the portfolio value listed, at the end of the plan. The minimum acceptable portfolio value is the key assumption in the analysis. The Monte Carlo simulation incorporates such items as inflation and cash flow, if applicable.

The table below highlights the impact of the spend rate and asset allocation on the endowment’s ability to maintain spend rate stability and purchasing power. Spend rate and asset allocation are two key decisions a board controls. While financial markets are uncontrollable, we can make probabilistic assessments of how markets will behave, and consequently, we can gauge the likelihood that a portfolio’s asset allocation will support a given spend rate.

The sensitivity table below shows the probabilities of successfully supporting different spend rates given different asset allocations.

This analysis provides a realistic perspective of maintaining purchasing power over the near and long term. We can conclude that in the near term, defined as two years, we find the lower risk portfolios and lower spend rates provide a higher probability of maintaining the portfolio’s real initial value. For long-term results, portfolios with higher risk and return expectations provide a higher probability of maintaining the portfolio’s real initial value.
Why are probabilities so low? To maintain purchasing power, the portfolio must grow at a rate that is equal to or greater than the organization’s spend rate plus inflation and the cost of the endowment’s operations including investment management fees. While near-term market returns and inflation are uncontrollable, organizations can control their asset allocation, spend rate and investment management costs. Focusing on the controllable elements can help improve the chances of maintaining a portfolio that provides intergenerational equity.

### Probability of maintaining spend rate stability in the near term (2 years)

<table>
<thead>
<tr>
<th>Risk Profile</th>
<th>40% Equity / 60% Bonds</th>
<th>60% Equity / 40% Bonds</th>
<th>40% Equity / 60% Bonds</th>
<th>40% Equity / 60% Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Portfolio Return(^7)</td>
<td>3.7%</td>
<td>4.6%</td>
<td>5.5%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Spend Rate Before Inflation(^8)</td>
<td>Probability of maintaining 90% real value of portfolio over 2 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6%</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>5%</td>
<td>70%</td>
<td>65%</td>
<td>65%</td>
<td>60%</td>
</tr>
<tr>
<td>4%</td>
<td>75%</td>
<td>70%</td>
<td>65%</td>
<td>65%</td>
</tr>
<tr>
<td>3%</td>
<td>80%</td>
<td>75%</td>
<td>70%</td>
<td>70%</td>
</tr>
</tbody>
</table>

### Probability of maintaining purchasing power preservation in the long term (20 years)

<table>
<thead>
<tr>
<th>Risk Profile</th>
<th>40% Equity / 60% Bonds</th>
<th>60% Equity / 40% Bonds</th>
<th>40% Equity / 60% Bonds</th>
<th>40% Equity / 60% Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Portfolio Return(^7)</td>
<td>3.7%</td>
<td>4.6%</td>
<td>5.5%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Spend Rate Before Inflation(^8)</td>
<td>Probability of maintaining 100% real value of portfolio over 20 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6%</td>
<td>0%</td>
<td>5%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>5%</td>
<td>0%</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>4%</td>
<td>10%</td>
<td>25%</td>
<td>35%</td>
<td>40%</td>
</tr>
<tr>
<td>3%</td>
<td>25%</td>
<td>40%</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Please refer to our capital market assumptions in Figure 10 at the end of this paper.

\(^7\) Based on First Republic’s capital market assumptions.
\(^8\) First Republic has a forward estimated inflation of 1.96%.
Establishing an Investing Policy

Overview

Imagine serving on the investment committee for a nonprofit endowment during March 2020 when equity markets fell precipitously as investors absorbed the gravity of the impending pandemic. What actions would you, as a committee member, recommend? Textbooks say to rebalance the endowment portfolio and stay the course. But textbooks do not have to answer to donors, board members, administrators or beneficiaries who may question that course of action.

Having a governing document like an investment policy statement (IPS) forces the investment committee to consider, in advance, how to manage the endowment. It factors in elements such as the purpose and people of the endowment. It looks at the objectives, risks and other considerations. And finally, it addresses how to monitor and review the endowment portfolio, making sure it is properly serving its current and future stakeholders.

Purpose and people

The IPS clarifies the purpose of the fund in the context of the broader institution. It identifies the institution’s mission, the fund’s beneficiaries and the intergenerational role of the fund, providing a North Star toward which the fund can align.

- Good example: Support the university’s mission of providing best-in-class education to a cross section of global citizens. Maintain this support for both current and future generations of students through sustainable management of the endowment fund.
- Bad example: Outperform, year in and year out, other endowments in our peer group.

The IPS provides an organizational overview, highlighting roles and responsibilities and supporting fund continuity as various roles change over time.

Key roles and guidance found in an IPS:

- Investment committee: The IPS defines the relationship with the development and benefits trustees, as well as the process for selecting committee members and their terms.
- Investment staff: The IPS provides guidance on internal versus external chief investment officer (CIO) and the associated duties.
- External investment managers: The IPS assists with the process of selecting and removing managers.
- Consultants: The IPS clarifies rules of engagement for, and the scope of, external consultants.
- Beneficiaries: The IPS highlights the relationship between the endowment and beneficiaries. Examples include the operating budget of the nonprofit or scholarship recipients in the case of a school.

Objectives and risk

Investment objectives and risk tolerance are highly dependent on one another. The investment objectives represent the target return for a fund. Establishing this target return is a function of both the institution’s spend rate policy and the institution’s risk tolerance. Risk in this context represents capital market risk, or how movements in capital markets affect the fund’s value.

There are two spend rates to consider: policy spend rate and effective spend rate.

- Policy spend rate: The rate used to determine distributions during a fiscal period.
- Effective spend rate: This rate represents the actual dollars distributed in a fiscal year divided by the portfolio’s value at the beginning of the fiscal period. The effective spend rate over the last 10 years, ending in 2018, for U.S. endowments has ranged from 4.2% to 4.6%.⁹

The policy spend rate should be captured in the IPS. The effective spend rate should be regularly (e.g., quarterly) calculated and reviewed vis-à-vis the policy spend rate.

Risk tolerance consists of two components:

1. Willingness to take risk: Consider how much drawdown in the fund’s value the investment committee members are willing to accept.
2. Ability to take risk: Consider how much drawdown in the fund’s value the institution can withstand.

Organizational and portfolio risks highlighted in the “Establishing a Spending Policy” section can help inform the willingness and ability to take risk in the IPS.

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Policy asset mix

Figure 6 highlights four core risk profiles with estimated returns and corresponding risk (standard deviation). Each risk profile relates to a policy asset mix (weights to equities, fixed income and other asset classes).

Policy asset mix is exceptionally important in that it explains over 90% of variation in portfolio returns.¹⁰,¹¹ It should include guidance on frequency of rebalancing, which helps to ensure the portfolio isn’t taking on more risk than initially planned.

Investment considerations

The investment committee should outline additional considerations specific to unique risks, policies and preferences.

Risks

• Liquidity risk: Identify any cash flow requirements or other cash buffer needs.
• Active manager risk: Clarify willingness to deviate from policy asset mix and benchmarks (i.e., tracking error).
• Legal or regulatory risk: Recognize any legal or regulatory considerations unique to the institution or fund.

Policies

• Sustainable and responsible investing (SRI): The fund or institution may have its own SRI policies or follow external SRI guidelines.
• Proxy voting: Identify who’s responsible for voting the fund’s proxies and outline voting guidance (e.g., SRI-specific instructions).
• Conflict of interest: Outline what represents conflicts of interest and establish a process for disclosing, should they occur.

Preferences

• Fees and expenses: Outline expectations for consultants and asset managers to report fees and expenses.
• Alternative investments: Specify any preferences regarding access, fees, liquidity, transparency or tracking error.
• Securities lending: Clarify if and how much securities lending is permissible. Counterparty risk is a consideration.

Creating a mission-aligned portfolio through SRI

Nonprofit stakeholders, such as donors, employees and beneficiaries, often view endowment capital as a reflection of the larger institution and its mission. For this reason, stakeholders are challenging endowments to integrate criteria into their investment process.

Endowments create mission alignment through capital allocation and advocacy. Capital allocation involves adjusting the portfolio’s investments to consider environmental, social and governance (ESG) factors. Capital advocacy involves leveraging the endowment’s role as owner (e.g., stock investor) or lender (e.g., bond investor) to drive mission-related change with the corporation to which capital is allocated.

The investment committee and staff address the endowment stakeholders’ mission and monetary aspirations in the IPS, but their ability to integrate SRI criteria will vary. First, the investment solutions to integrate SRI criteria depend on the size of the endowment. The larger the endowment, the more likely an asset manager is willing to customize a portfolio to meet specific SRI criteria. Customization includes tilting the fund’s exposures and voting corporate proxies to align with SRI criteria. Second, more SRI-related investment funds are coming to market. This benefits relatively smaller endowments that may not be able to access customized separately managed accounts, but that can invest in funds that have predefined SRI allocations and advocacy mandates. Third, advancements in investment technology like direct indexing are making customization more accessible to endowments of all sizes.

Given the varying nature of SRI solutions, developing a mission-aligned portfolio can take time and requires flexibility. Having SRI language in the IPS that allows for flexibility is helpful. As the saying goes, “Don’t let perfect be the enemy of the good.” SRI language will recognize the limits of following SRI criteria precisely and discuss striving for alignment on a best-efforts basis. Once the right SRI language and framework are in place, the endowment can successfully meet its mission-alignment goals.

Monitoring and review

The investment committee should exercise appropriate oversight of the investment program and be informed about how the fund is doing relative to its mission, investment objectives, risk tolerance and additional investment considerations. The investment committee must outline the cadence and content of reviews for the investment staff.

Key review content includes but is not limited to:

- Effective spend rate data
- Performance data at the fund level relative to policy benchmark
- Performance data at the underlying manager level relative to asset class policy benchmarks
- Actual asset allocation relative to policy asset mix
- ESG
- Proxy voting summary
- Summary of fees and expenses

Material deviations should trigger a deeper level of due diligence and review for both the investment committee and investment staff.
Aligning the endowment with the institution’s mission

Endowments support institutional objectives, which range from financial stability, to channeling resources to beneficiaries, to upholding certain values. These objectives are part of the institution’s larger mission in society.

Mission alignment at the endowment level focuses on performance, goals and values. The investment and spending policies articulate these three areas in relation to the institution and its mission.

Aligning the endowment portfolio with the institution’s mission gives the endowment stakeholders a sense of pride and purpose in knowing the endowment serves the institution’s mission in society.

Figure 9 | Mission-aligned portfolio

<table>
<thead>
<tr>
<th>Performance</th>
<th>Goals</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Return</td>
<td>Essential</td>
<td>Values Alignment</td>
</tr>
<tr>
<td>Fees</td>
<td>Aspirational</td>
<td>Drive Change</td>
</tr>
<tr>
<td>Positioning</td>
<td>Risk</td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ephemeral</th>
<th>Enduring</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was our portfolio return? What is our risk profile? How was our performance compared to that of our peers?</td>
<td>Are we on track to support our current spend rate? How does our portfolio impact the environment?</td>
</tr>
</tbody>
</table>
Past performance is not a guarantee of future results. Hypothetical Example for illustrative purposes only. Capital market assumptions are hypothetical estimates based on market conditions and outlook in addition to qualitative input from senior First Republic Investment Management investment professionals. There are 3000 simulations run for each year of the investment plan.

Index Definitions

- **Cash**: US Generic Govt 3 Month Yield: The rates are comprised of Generic United States on-the-run government bill/note/bond indices.
- **Fixed Income – Tax Exempt**: Bloomberg Barclays Municipal Bond Index Total Return Index Value Unhedged USD: The Bloomberg Barclays U.S. Municipal Index covers the USD-denominated long-term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds and preretired bonds.
- **Fixed Income – Taxable**: Bloomberg Barclays Intermediate US Govt/Credit Intermediate Index: measures the performance of the U.S. Treasuries, government-related and investment grade U.S. corporate securities that have a remaining maturity of greater than one year and less than ten years.
- **Equities**: Russell 1000 Index®: measures the performance of the 1,000 of the largest companies in the U.S. equity markets.
- **Alternatives & Private Investments**: HFRI Fund of Funds Composite Index: Fund of Funds invest with multiple managers through funds or managed accounts. The strategy designs a diversified portfolio of managers with the objective of significantly lowering the risk (volatility) of investing with an individual manager.
- **Private Investments**: LPX50 Listed Private Equity Index TR: The LPX50 is designed to represent the global performance of the 50 most highly capitalized and liquid Listed Private Equity companies. The index is diversified across regions, private equity investment styles, financing styles and vintages.

Note: Each index is weighted by market capitalization unless otherwise noted.
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