



Wade D. Pfau, PhD, CFA

Sustainable Spending Rates for Single Family Offices



THE FAMILY OFFICE ASSOCIATION

Sustainable Spending Rates for Single Family Offices

Copyright © Wade Pfau. All rights reserved. This white paper or parts thereof may not be reproduced in any form or redistributed for commercial use. For more information about this publication, please contact angelo@familyofficeassociation.com.

Disclaimer: The Family Office Association (FOA) is an affinity group dedicated primarily to the interests of Single Family Offices. FOA is intended to provide members with educational information and a forum in which to exchange information of mutual interest. FOA does not participate in the offer, sale or distribution of any securities nor does it provide investment advice. Further, FOA does not provide tax, legal or financial advice.

Materials distributed by FOA are provided for informational purposes only and shall not be construed to be a recommendation to buy or sell securities or a recommendation to retain the services of any investment adviser or other professional adviser. The identification or listing of products, services, links or other information does not constitute or imply any warranty, endorsement, guaranty, sponsorship, affiliation or recommendation by FOA. Any investment decisions you may make on the basis of any information provided by FOA is your sole responsibility.

The FOA logo and all related product and service names, designs, and slogans are the trademarks or service marks of Family Office Association. All other product and service marks on materials provided by FOA are the trademarks of their respective owners. All of the intellectual property rights of FOA or its contributors remain the property of FOA or such contributor, as the case may be, such rights may be protected by United States and international laws and none of such rights are transferred to you as a result of such material appearing on the FOA web site.

The information presented by FOA has been obtained by FOA from sources it believes are reliable. However, FOA does not guarantee the accuracy or completeness of any such information. All of such information has been prepared and provided solely for general informational purposes and is not intended as user specific advice.

TABLE OF CONTENTS

Sustainable Spending Rates for Single Family Offices

- 004** Introduction
- 006** Risks for Single Family Offices
- 008** A Note on Reasonable Portfolio Returns
- 012** Sustainable Spending Rates When Investment Returns are Fixed
- 016** A Primer on the 4% Spending Rule
- 018** Spending Rules for Family Offices
- 020** Sustainable Spending Rates for Family Offices
- 024** Conclusion
- 025** Appendix
- 026** About the Author
- 027** About Family Office Association

INTRODUCTION

Sustainable Spending Rates for Single Family Offices

Probability-based methods rely on spending from a well-diversified but volatile investment portfolio with the hope that the spending strategy can be maintained for the life of the retiree or institution.

What is a sustainable distribution rate from an investment portfolio? This is a fundamental question which cuts to the heart of distribution planning for a single family office. It is also the fundamental question of retirement income planning, which is a relatively new field of study within the wider discipline of personal financial planning. Spending policies for family offices share many similarities and some differences with retirement income planning. The field of retirement income planning has blossomed with new research about sustainable spending over the past five years. Within this article, I will explore similarities and differences for the decisions in both areas, in order to provide updated guidance to family offices about sustainable spending rates.

Within the field of retirement income planning, I have described in past works two opposing schools of thought about how to build a retirement income plan and manage risks. What I call the

‘probability-based’ approach shares the most in common with family offices. Probability-based methods rely on spending from a well-diversified but volatile investment portfolio with the hope that the spending strategy can be maintained for the life of the retiree or institution. Spending plans shifted in this direction since the 1970s, as previous ideas about only spending interest from a fixed income portfolio were slowly abandoned for not providing enough income and inflation protection.

These strategies rely on a total-returns investment approach, in which the principal value of the portfolio may be spent as necessary in addition to any interest and dividends generated by the portfolio. Total returns investing focuses on building diversified portfolios with stocks and bonds to seek greater long-term investment growth. By focusing on total returns, the objective is that over the long-run such strategies can produce a greater and steadier amount of income relative to

Introduction

what could be obtained only by focusing on the interest generated by fixed income investments. The view is that a greater allocation to stocks will reliably provide a return premium above fixed income assets to support greater inflation-adjusted spending over time. This is a calculated risk that the additional spending potential created by planning for higher market returns is justified in light of the low chance that those returns will not sufficiently materialize. At the same time, these strategies do create greater portfolio volatility as a part of striving for a greater sustainable spending rate, which in turn does create greater risks for whether the full principal value of assets may be preserved.

Sustainable spending rates for retirees and family offices depend on many factors: asset allocation, market valuations at the present (particularly, current interest rates), the desired spending pattern over time, the degree of budget flexibility to adjust spending in response to market performance, the desires to preserve a portion of the portfolio over long periods of time, and the length of the planning horizon.

A sustainable spending strategy will generally seek to provide a proper balance among three goals:

(1) Preserve some portion of the underlying portfolio (in inflation-adjusted terms)

(2) Maximize spending to meet current budgetary needs

(3) Stabilize spending to keep pace with inflation and meet future budgetary needs.

Many family offices will maintain a great deal of importance on preserving the underlying value of the assets so that they can continue to support distributions for many years to come. At the same time, current budgetary needs call for being able to spend as much as possible at the present. But with a long-term perspective, family offices also seek to continue spending on a sustainable basis without drastic cuts to future budgets.

There are trade-offs between these objectives. Most obviously, spending more today creates risk for future asset preservation and/or future spending goals. As well, a lack of flexibility to adjust spending from a volatile portfolio uniquely amplifies what is known as sequence risk (more on this later). With inflexibility to adjust spending, a more conservative spending rate is the only available risk management technique for a total-returns investment portfolio. Flexibility with spending creates synergies that allow for a higher initial spending rate.

SECTION 1

Risks for Single Family Offices

Retirement income planning has emerged as a distinct field in the financial services profession, as it becomes increasingly clear the financial circumstances facing retirees differ dramatically from pre-retirees. In this regard, the financial circumstances of family offices share much more in common with retirees than with the accumulation-based mindset that has pervaded traditional wealth management for so long. We can identify several risks shared both by retirees and family offices.

Reduced Earnings Capacity

Family offices face greater risk for having to reduce their spending over time to the extent that they do not have other sources of spending from outside the portfolio that they can rely upon more heavily in the event of market downturns. Likewise, retirees face reduced flexibility to earn income in the labor markets as a way to cushion their standard of living from the impact of poor market returns. This shared vulnerability reduces the capacity for the investment portfolio to take on as much investment risk as in a typical accumulation phase.

Visible Spending Constraint

While investments were once a place for saving and accumulation, family offices and retirees must try to create an income stream from their existing assets, an important constraint on their investment decisions. The spending constraint amplifies investment risks by increasing the importance of the ordering of investment returns over time. Taking distributions from investments will amplify the impact of investment volatility through what is known as sequence of returns risk.

Heightened Investment Risk

Retirees and family offices experience heightened vulnerability to sequence of returns risk once they are spending from their investment portfolio. Poor returns in the near term can push the sustainable withdrawal rate well below what is implied by long-term average market returns. If the portfolio reaches \$0, the game is truly over without any chance for recovery.

SECTION 1: Risks for Single Family Offices

Once spending begins, the financial market returns experienced in the near-term matter a great deal more than most people realize. The average market return over a 30-year or longer period could be quite generous, but if negative returns are experienced in the early stages of distribution, wealth can be depleted rapidly through withdrawals, leaving a much smaller remainder to benefit from any subsequent market recovery.

Though this sequence risk is related to general investment risk and market volatility, sequence of returns risk differs from general investment risk. The average market return over a 30-year period could be quite generous, but if negative returns are experienced in the early stages when someone has started to spend from their portfolio, sequence of returns risk manifests through the fact that the early portfolio decline creates a subsequent hurdle that cannot be overcome even if the market is offering higher returns later. Sequence risk is uniquely triggered and amplified by a strategy which seeks a fixed or constant spending amount (potentially with inflation-adjustments) from a volatile investment portfolio. Allowing spending to fluctuate in response to market returns can help to mitigate the impacts of sequence risk.

Longevity Risk

With the indefinite planning horizon, family offices cannot use any of the tools available to individual retirees to pool longevity risks (the uncertainty of the planning horizon) across a large group of participants. Without risk pooling, family offices must spend conservatively as a part of the strategy to allow spending to continue indefinitely.

Compounding Inflation

Family offices with budgets that require spending to grow with inflation over time face the risk that inflation will erode the purchasing power of the underlying portfolio as time passes. Low inflation may not be noticeable in the short term, but it can have a big impact over a longer period, leaving families vulnerable. Even with just three percent average annual inflation, the purchasing power of a dollar will fall by more than half after 25 years. This is a concern in any case where an underlying objective is to allow distributions to keep pace with inflation.

SECTION 2

A Note on Reasonable Portfolio Returns

Before discussing sustainable spending rates, it is important to be clear about the nature of portfolio return assumptions to support the spending. For an indefinite spending plan, the most intuitive way to express a portfolio return assumption is as the inflation-adjusted compounded portfolio return. Unfortunately, this is generally not the most common way returns are discussed. It is worth a quick review of the steps needed to arrive at a real compounded return. This topic is important, because if returns are overestimated in the process of determining sustainable spending rules for family offices, then spending will be too high and the remaining value of the portfolio will tend to dwindle much more rapidly than planned.

Morningstar and Ibbotson Associates have compiled US financial market returns since 1926 in their Stocks, Bonds, Bills, and Inflation dataset. This data is usually the source for calculating average historical market performance and creating assumptions for future portfolio returns.

Historically, between 1926 and 2014, the S&P 500 index of large-capitalization stocks provided an arithmetic return of 12.1%. This is the number one gets by adding up all the annual returns from

the historical data and then dividing by the number of years in the data set. For intermediate-term government bonds, the arithmetic return was 5.4%.

Volatility

While these numbers could possibly be used to provide a best guess of what the next year's return will be, leaving other issues temporarily aside they are still not good return assumptions for a long-term spending plan. Returns are volatile, and high and low returns do not have a symmetric impact on wealth. Negative returns must be followed by even larger positive returns to get back to where one started (for instance a 50% drop requires a 100% gain to get back to the starting point). For this reason, wealth will grow at a lower compounded rate than arithmetic averages. Compounded returns take a larger haircut as the volatility of returns increases. In the case of this historical data, the historical compounded returns were 10.1% for the S&P 500 and 5.3% for intermediate-term government bonds.

Inflation

Another important step is to remove the effects of inflation. This puts the analysis on a consistent

SECTION 2: A Note on Reasonable Portfolio Returns

basis over time so that the long-run spending plans may be discussed in terms of today's purchasing power. Providing the discussion in terms of real returns allows us to plan for the assumption that future spending will grow with inflation. Even low inflation can compound over time into a big impact on purchasing power. Not removing inflation from the calculations can lead to confusion about the purchasing power of future dollars. With the Morningstar data, if we remove the effects of inflation from the compounded returns, historically the S&P 500 provided an inflation-adjusted compounded return of 7%, and it was 2.3% for intermediate-term government bonds.

Diversified Portfolio

A further step is to consider the asset allocation for the underlying portfolio. This is the point where we must move away from the higher stock returns number, so that it is generally not meaningful to talk about 12% or even 8% returns. A typical family office portfolio may use an asset allocation of approximately 60% stocks and 40% fixed income assets. In real terms, a 60/40 portfolio historically earned a 5.1% compounded return since 1926.

Adjustments for Fees and Performance Relative to Underlying Indices

There are a number of further adjustments we could make to this 5.1% number to create a more realistic and useful number for planning purposes. The number could potentially be a bit larger with a more diversified portfolio including international assets, alternative investments, real estate and small-cap stocks. This diversification

would primarily serve to reduce portfolio volatility, which can provide a lift for the compounded return. Though it would entail risk, one might also wish to assign a premium to the return assumption to account for a belief that the investment manager can beat the returns on the underlying indices. On the other hand, the 5.1% return may need to be reduced further to account for any fee drag associated with the management of the underlying investments.

Adjustments for Taxes

Another issue besetting family offices is that returns will also be affected by tax drag, as ongoing taxes for interest, dividends, and realized capital gains must be paid with the passage of time. The tax efficiency for various types of funds varies, and actively managed funds generally have less tax efficiency than index funds. Morningstar has estimated that taxes for a large-capitalization portfolio like the S&P 500 can reduce annual returns net of tax by 0.68%. As for bonds, taxes must be paid on the ongoing interest earned by the funds, which could easily reduce returns net of tax by 1% or more. Returns net of taxes will be less for family offices working with taxable investment accounts.

Adjustments for Current Market Conditions

Another important consideration is the fact that today's interest rates are much lower than the historical averages. They are near historical lows, in fact. The historical average return is not relevant for someone seeking to estimate future market returns from today's starting point.

SECTION 2: A Note on Reasonable Portfolio Returns

The general problem with attempting to gain insights from the historical outcomes is that future market returns and withdrawal rate outcomes are connected to the current values for the sources of market returns, rather than their historical performance.

Future stock returns depend on dividend income, growth of the underlying earnings, and changes in the valuation multiples placed on those earnings. If the current dividend yield is below its historical average, then future stock returns will also tend to be lower. When price-earnings multiples are high, markets tend to exhibit mean reversion and relatively lower future returns should be expected.

Returns on bonds, meanwhile, depend on the initial bond yield and on subsequent yield changes. Low bond yields will tend to translate into lower returns due to less income and the heightened interest rate risk associated with capital losses when interest

rates rise. Decreasing interest rates provide the only mechanism for bond returns to outpace bond yields, but this can only go so far and bond yields are now low.

Sustainable spending rates are intricately related to the returns provided by the underlying investment portfolio. And with sequence of returns risk, the returns experienced early on will weigh disproportionately on the final outcome. In other words, for those already spending, the assumption that returns will one day normalize to their historical averages is much less relevant than it is for accumulators who will rely more on distant market returns. Current market conditions are much more relevant, making it a mistake to blindly apply a historical average return without further thought.

Going back to 1926, the historical average yield for intermediate-term government bonds was 4.6%. Because interest rates declined overall during

Sustainable spending rates are intricately related to the returns provided by the underlying investment portfolio.

SECTION 2: A Note on Reasonable Portfolio Returns

this time, the yield is less than the total return including capital gains. In December 2015, yields on these bonds were about 1.6%, which is 3% less than the historical average. This suggests that we should seriously consider taking 3% off of the 5.1% return discussed earlier, leaving a forwarding looking 2.1% compounded real return for the 60/40 portfolio. Adjusting the return assumption to reflect today's bond yields would link future bond returns to a more realistic starting point, and it would preserve the historical premium that stocks were able to earn above bonds.

Adjustments for a Conservative Return Assumption

One final type of adjustment must be considered. Traditionally, when building financial plans, the plan is designed to work with a high degree of success,

such as 80% or 90%. But when thinking in terms of a fixed return assumption, we usually consider what we view as the best guess for future returns. It is important to realize that this "best guess" really only implies a 50% chance for success. Half of the time, the realized return will be higher and half the time it will be less. In order to have a conservative assumption, we must further scale down from our best guess estimate.

This is a point that many investment management professionals have not internalized into their thinking, as they are conditioned to using their idea about average returns as the input. With this and the previous considerations, assuming a compounded real return that is much above 2% or so is becoming an aggressive return assumption for today's starting point. In terms of the returns model described further below that includes market volatility, today's low yields, and the potential for returns to adjust upward over time toward their historical averages, I estimate that a real compounded return assumption of 0.4% will provide about a 90% chance for success from today's starting point.

It is important to realize that this "best guess" really only implies a 50% chance for success.

SECTION 3

Sustainable Spending Rates When Investment Returns are Fixed

As a first step toward seeking a sustainable spending rate for family offices within the world of randomness, it is worthwhile to first step back and consider sustainable spending rates if we could know the future investment returns in advance. This analysis will help to illustrate the impacts of two important matters for family offices:

(1) what happens to sustainable spending rates as the planning horizon extends further outward, and

(2) what happens to sustainable spending rates if we build in a constraint to preserve wealth and not let the portfolio be depleted by the end of the planning horizon.

We undertake this analysis by considering inflation-adjusted investment returns, which allows the sustainable spending rate to be defined as a percentage of the assets available at the initial date, with the spending amount adjusting for the realized inflation experience in subsequent years.

Table 1 begins the analysis with planning horizons of 10-50 years and real investment returns of 0%-6%. As discussed in the previous section, reasonably conservative family offices will likely

wish to focus on the spending rates for returns between 0% and 2%.

For the first table, we allow wealth to be fully depleted by the end of the planning horizon. In looking at this table, the sustainable spending rates for a 0% real return should be intuitive. With no returns, spending 10% of each assets will spend down the portfolio in 10 years, spending 5% per year will spend down the portfolio in 20 years, and so on. Without real investment growth, longer time horizons continue pushing the sustainable spending rate to lower levels. As we move down the rows, we see that earning returns on the underlying portfolio naturally allows the spending rate to increase. For longer time horizons, spending rates continue to decline, but the speed of decline slows. In other words, long horizons allow for relatively more investment growth to better stabilize spending. For instance, with the investment growth associated with a 5% real return, the sustainable spending rate is 12.3% over 10 years, and it is 5.2% over 50 years.

To provide context, the traditional 4% rule from retirement income planning (more on this later) includes assumptions that can be found in this table: it uses a spending horizon of 30 years and

SECTION 3: Sustainable Spending Rates When Investment Returns are Fixed

allows wealth to be depleted at the end of the horizon. With these circumstances, a 1% return supports a 3.8% spending rate, and a 2% return supports a 4.4% spending rate. We can therefore understand that the real compounded return that led to the 4% rule fell somewhere between 1% and 2%.

Table 1
Sustainable Spending Rates for Different Time Horizons and Investment Returns
Objective: Deplete all assets at end of time horizon

Inflation-Adjusted Investment Return	Spending Horizon (in years)				
	10	20	30	40	50
0%	10.0%	5.0%	3.3%	2.5%	2.0%
1%	10.5%	5.5%	3.8%	3.0%	2.5%
2%	10.9%	6.0%	4.4%	3.6%	3.1%
3%	11.4%	6.5%	5.0%	4.2%	3.8%
4%	11.9%	7.1%	5.6%	4.9%	4.5%
5%	12.3%	7.6%	6.2%	5.6%	5.2%
6%	12.8%	8.2%	6.9%	6.3%	6.0%

While the allowance for wealth depletion characterizes the baseline assumption used in retirement income planning, Table 2 moves us in the direction of a more common objective for family offices, which is to also preserve assets for indefinite use. The difference between Table 1 and Table 2 is that at the end of the planning horizon, the lower spending rates in Table 2 are designed to preserve 50% of the initial portfolio in inflation-adjusted terms. The intuition is most basic with a 0% return. With the desire to keep half of the initial portfolio (adjusted for inflation), sustainable spending rates drop in half compared with Table 1. Now 5% is sustainable for 10 years, and 1% is sustainable for 50 years. As return assumptions increase, the degree of differences between the two tables gets smaller. For instance, with a 5% real return, the sustainable spending rate over 50 years fell from 5.2% in Table 1 to 5% in Table 2. This small reduction to sustainable spending

SECTION 3: Sustainable Spending Rates When Investment Returns are Fixed

reflects just how sensitive remaining wealth is to small differences in spending rates over longer-periods of time when returns are high. Within the context of the 4% rule from retirement income planning, returns would need to be a bit above 3% to sustain a 4% spending rate over 30 years with an additional objective to preserve 50% of the purchasing power of the initial portfolio.

Table 2
Sustainable Spending Rates for Different Time Horizons and Investment Returns
Objective: Preserve 50% of wealth (inflation-adjusted) at end of horizon

Inflation-Adjusted Investment Return	Spending Horizon (in years)				
	10	20	30	40	50
0%	5.0%	2.5%	1.7%	1.3%	1.0%
1%	5.7%	3.2%	2.4%	2.0%	1.8%
2%	6.4%	4.0%	3.2%	2.8%	2.5%
3%	7.1%	4.7%	3.9%	3.6%	3.3%
4%	7.9%	5.5%	4.7%	4.4%	4.2%
5%	8.5%	6.2%	5.5%	5.2%	5.0%
6%	9.2%	6.9%	6.3%	6.0%	5.8%

Finally, Table 3 includes the objective that the full inflation-adjusted purchasing power of the initial portfolio must be preserved at the end of the planning horizon. With 0% returns and a desire to preserve the portfolio, the sustainable spending rate is obviously 0% regardless of the planning horizon. Nothing may be spent, because the portfolio would not have an ability to make up the difference. As for other investment returns, sustainable spending rates fall a bit below the investment return due to the assumption that spending is taken from the portfolio at the start of each year. For instance, regardless of horizon, the sustainable spending rate is 4.8% when the return is 5%. Again, this is only slightly less than the value found in Table 2. The investment

SECTION 3: Sustainable Spending Rates When Investment Returns are Fixed

return must be a bit higher than the spending rate so that the portfolio balance can return to its initial level by year end. Had spending been taken at the end of each year, the spending rate would equal the investment return, as one could sustain indefinitely a plan that spent each year's investment return.

Table 3

Sustainable Spending Rates for Different Time Horizons and Investment Returns
Objective: Preserve 100% of wealth (inflation-adjusted) at end of horizon

Inflation-Adjusted Investment Return	Spending Horizon (in years)				
	10	20	30	40	50
0%	0.0%	0.0%	0.0%	0.0%	0.0%
1%	1.0%	1.0%	1.0%	1.0%	1.0%
2%	2.0%	2.0%	2.0%	2.0%	2.0%
3%	2.9%	2.9%	2.9%	2.9%	2.9%
4%	3.8%	3.8%	3.8%	3.8%	3.8%
5%	4.8%	4.8%	4.8%	4.8%	4.8%
6%	5.7%	5.7%	5.7%	5.7%	5.7

There are two final points which are important to make with regard to these tables before we transition toward incorporating randomness into the results. First, it is important to fully internalize how dependent spending rates are on investment returns. Naturally, lower returns allow for less spending. Secondly, it's important to note that when returns are lower, the characteristics which tend to be associated with family offices (a longer planning horizon and a desire to preserve assets at the end of the planning horizon) lead to more significant reductions to the spending rate. Even with considerably high returns, it is difficult to sustain a spending rate greater than 5% when the objectives also include preserving wealth indefinitely. Introducing randomness will make the situation even more stark.

SECTION 4

A Primer on the 4% Spending Rule

In the field of retirement planning, William Bengen initiated formal study of sustainable spending from a total returns portfolio with an article he published in the *Journal of Financial Planning* (Bengen, 1994)¹. His research responded to more simplistic approaches related to plugging a fixed return assumption into a spreadsheet, like we just discussed. Bengen recognized that it is naïve to assume fixed returns for such calculations, as this masks significant underlying financial market volatility.

In the process, he uncovered the concept of sequence of returns risk as it applies to field of wealth management. Though this risk is related to general investment risk and market volatility, sequence of returns risk differs from general investment risk. The average market return over a 30-year period could be quite generous, but if negative returns are experienced in the early stages when someone has started to spend from their portfolio, sequence of returns risk manifests through the fact that the early portfolio decline creates a subsequent hurdle that cannot be overcome even if the market is offering higher returns later in retirement.

¹ Bengen, W. P. 1994. "Determining Withdrawal Rates Using Historical Data." *Journal of Financial Planning* 7, 4 (October): 171–180.

In 1994, Bengen considered 30 years to be a reasonably conservative planning horizon for a 65-year-old couple. He then looked at all the different rolling 30-year periods of financial market returns in the U.S. historical record since 1926 (i.e. 1926-1955, 1927-1956, and so on, up to 1985-2014 for the most recent 30-year period available today). For a hypothetical retiree beginning retirement at the start of each year, he tested what was the highest sustainable spending rate as a percentage of retirement date assets, such that the subsequent spending amounts could be adjusted for inflation and the portfolio would survive for precisely 30 years. For a 50 to 75% allocation to the S&P 500, with the remainder placed into intermediate-term government bonds, he found that the 1966 hypothetical retiree could withdraw just over 4% of their retirement date assets and sustain this spending amount over 30 years. That was the worst-case scenario from the U.S. historical record.

Naturally, Bengen could use many simplifying assumptions in his research, since his aim was to show how sequence risk should temper retiree expectations downward from loftier numbers like 7%. But the idea of the 4% rule took hold in the

SECTION 4: A Primer on the 4% Spending Rule

popular consciousness for financial advisors and the public alike.

The following table identifies key similarities and differences between the underlying assumptions of Bengen's 4% rule and family office spending policy. Both seek stable spending and some degree of asset preservation by taking distributions (including some underlying principal when needed) from a well-diversified and low-cost investment portfolio with a total returns strategy. As for differences, the 4% rule is specifically calibrated to have spending adjust precisely for underlying inflation, to be sustainable over a 30-year time horizon, and to allow the portfolio balance to potentially deplete to \$0 at the end of 30 years. Meanwhile, family office spending may allow for some flexibility to reduce or increase future spending in response to market performance, which can allow for a higher initial spending rate. But family office spending is also more likely to be designed to work longer than 30 years and to preserve some portion of the portfolio over longer time horizons to allow continued spending indefinitely, both of which suggest a lower spending rate.

Table 4
"4% Rules" Retirement Assumptions vs. Family Office Assumptions

	4% Rule	Family Offices
Similarities	Seek a combination of stable spending and asset preservation	
	Focus on a well-diversified low-cost total returns investment portfolio	
Differences	30-year Planning Horizon	Indefinite Planning Horizon
	\$0 remaining balance acceptable	Assets must be preserved for ongoing spending
	Inflation-adjusted spending	Some flexibility to adjust spending

SECTION 5

Spending Rules for Family Offices

Endowment spending policy is an active area of research, with the policies developed by different university endowments often guiding the way for others. It is interesting that research on endowment spending policies has evolved separately from research on spending policies for retirees. Family offices can generally be identified as a branch of the endowment world, at least for as far as the research on spending policies goes. Each area, endowments and retirements, developed its own tools for balancing the trade-off between the desire to keep spending growth consistent with inflation, while also recognizing that poor market returns might eventually trigger a need to reduce spending. The balance to strike is how and when to reduce spending so as to avoid creating too much spending volatility and uncertainty, while also preserving enough future potential spending and avoiding even bigger subsequent cuts.

Family office spending rules can be classified into three general categories:

(1) Constant Inflation-Adjusted Spending

This spending rule shares the same underlying characteristic of retirement planning's 4% rule, which is that annual spending increases by the

Family Offices follow one of three rule sets for spending:

- (1) Constant Inflation-Adjusted Spending
- (2) Moving Average Rules
- (3) Hybrid Rules

previous year's inflation rate and does otherwise adjust for market returns or the present size of the underlying investment portfolio. The withdrawal rate is defined only in terms of the first year of the plan, and subsequent spending rates are no longer tracked as an input to guide spending. Spending continues to adjust for inflation regardless of the portfolio size, unless and until the underlying portfolio is fully depleted.

This rule preserves the most stability for the spending path, at least while assets remain. Spending remains stable until it is forced to drop to \$0. When combined with a diversified total

SECTION 5: Spending Rules for Family Offices

returns investment portfolio, this rule uniquely amplifies investment risk, because it is the unique cause of sequence of returns risk. As a result, the sustainable spending rate with this spending policy will be lower, because the rule does not include a mechanism to create any spending reductions in the event of poor market returns.

(2) Moving Average Rules

To some extent, constant inflation-adjusted spending rules are a simplification for what is actually done in practice. Generally, there will be some mechanism to adjust spending over time in response to market performance, either by increasing spending when portfolio growth is strong, or decreasing spending as the portfolio declines in size. But spending adjustments are generally taken gradually to avoid too much disruption to the budgeting process for the family office.

The most common smoothing rules for family offices are moving average rules. Rather than defining the spending rate only in terms of the initial year of the plan, the spending rate is instead kept as a constant value over time. But rather than spending a constant percentage of the remaining portfolio balance each year, which would create a great deal of spending volatility, moving average rules seek to spend a constant percentage of the average portfolio balance over the previous few years. Most frequently, the average portfolio value over the previous three years or 12 quarters

is multiplied by a spending rate to determine the feasible spending amount for a given year. This approach allows spending to adjust somewhat gradually over time.

Naturally, a higher spending rate would lead to quicker depletion for the portfolio value. The spending rate used for the moving average rule can be calibrated to support related goals with regard to preserving assets. For instance, we might ask what spending rate can be applied to a moving average rule so as to allow a 90% chance that the initial portfolio value remains intact in inflation-adjusted terms after 30 years of spending. With randomness, it is important to emphasize that some risk of failure to meet the goal must be accepted, as with a volatile investment portfolio there is no such thing as a guaranteed spending rate.

(3) Hybrid Rules

Hybrid rules combine elements of each previous rule. A simple example of a hybrid rule would be to calculate the current year's spending amount as the average of (1) the previous year's spending amount adjusted for inflation, and (2) the spending determined by applying the spending rate to the 3-year moving average of the portfolio balance. Hybrid rules will lead to more stable spending than moving average rules, but they increase the risk that assets can be depleted as well. For this reason, the sustainable spending rate associated with hybrid rules will generally fall between the spending rates for the other two rules.

SECTION 6

Sustainable Spending Rates for Family Offices

We now have a sufficient foundation to discuss the impacts of random portfolio returns on the sustainable spending rates for family offices. With randomness, there must be specific allowances for portfolio depletion as principal may be spent and the underlying portfolio is volatile. The appendix discusses the market return assumptions which guide the 5,000 Monte Carlo simulations for this analysis. Underlying returns reflect today's low bond yields, but returns will tend to shift toward their historical averages over time. The portfolio uses a 60% stock allocation and seeks a 90% chance that the remaining wealth goal will be met in the final year of the planning horizon. The analysis assumes that withdrawals are made at the start of each year and no portfolio administrative fees are deducted.

Table 5
Sustainable Spending Rates for Family Offices, rules providing a 90% chance for meeting remaining real wealth target at the end of the time horizon
Asset Allocation: 60% stocks and 40% bonds

Table 5.1 Inflation-Adjusted Spending Rule

Remaining Real Wealth Target	Time Horizon		
	15	30	50
0%	5.6%	3.1%	2.3%
25%	4.1%	2.5%	2.0%
50%	2.4%	1.8%	1.8%
75%	0%	1.2%	1.6%
100%	0%	0%	1.3%

SECTION 6: Sustainable Spending Rates for Family Offices

Table 5.2
3-Year Moving Average Rule

Remaining Real Wealth Target	Time Horizon		
	15	30	50
0%	5.6%	3.1%	2.3%
25%	8.0%	5.1%	4.3%
50%	3.5%	2.8%	3.0%
75%	0%	1.4%	2.2%
100%	0%	0%	1.6%

Table 5.3
Hybrid Rule (50% Inflation-Adjusted, 50% Moving Average)

Remaining Real Wealth Target	Time Horizon		
	15	30	50
0%	n/a	n/a	n/a
25%	7.2%	4.8%	4.2%
50%	3.3%	2.7%	2.9%
75%	0%	1.4%	2.1%
100%	0%	0%	1.6%

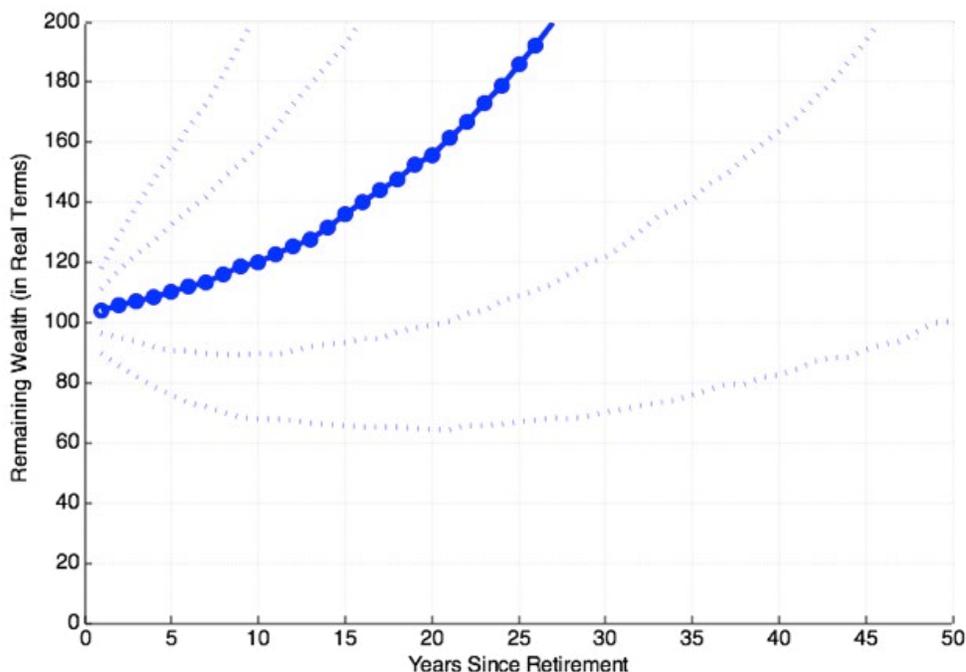
Table 5 provides these results. Table 5.1 provides results for inflation-adjusted spending from a 60/40 portfolio of stocks and bonds. The analog to the “4% rule” is for a real remaining wealth target of 0%, allowing the portfolio to be depleted with 10% probability (i.e. a 90% chance for success) by year 30. The market return assumptions reflecting lower bond yields today support a spending rate of 3.1%. These numbers vary for

SECTION 6: Sustainable Spending Rates for Family Offices

other circumstances. For instance, if half of the portfolio's real value is to be preserved, then a 1.8% initial spending rate, with subsequent spending adjusting for inflation, works for 30-year and 50-year horizons.

Wanting to fully preserve the portfolio value is a more complicated task. Because wealth outcomes are too volatile over shorter time horizons, no portfolio spending can be supported over 15 and 30-year horizons, as even a lump-sum amount invested for these time periods does not maintain a 90% chance to preserve its inflation-adjusted value. However, by 50-years into the plan, the range of long-term compounded returns has narrowed enough to make it possible to spend 1.3% and still maintain a 90% chance that the inflation-adjusted value is preserved. The probability that the real values of the portfolio fails to grow decreases over time. To better illustrate this, Figure 1 shows remaining real wealth over time with a 1.3% inflation-adjusted spending rule, with the goal of preserving the real purchasing power of initial wealth with a 90% probability by year 50. The 10th percentile curves down at the start, but it eventually starts to rise after 20 years. To be clear, while meeting the wealth target at the end of the horizon, the family office must be prepared to fall below the stated goal for much of the time leading up to the horizon. The figure also highlights that with this focus on downside protection, wealth grows dramatically for most of the distribution of outcomes.

Figure 1
Distribution of Remaining Real Wealth (10th, 25th, 50th, 75th, & 90th Percentiles)
Constant Inflation-Adjusted Spending, 1.3% Withdrawal Rate
Goal: 90% Probability that 100% of Real Wealth is Preserved in Year 50



SECTION 6: Sustainable Spending Rates for Family Offices

Sustaining an income stream from a volatile portfolio is a complicated task that creates a great deal of downside risk as well as upside potential. We cannot know in advance what the specific sequence of returns will be, so sustainable withdrawal rates must inherently be conservative to allow the spending rate to work in the vast majority of cases.

For the moving average rule, adjusting spending in response to market returns can create disproportionate improvements to spending rates because sequence-of-returns risk is mitigated when a participant withdraws less from a declining portfolio. We also observe this in Table 5. For the 3-year moving average rule, withdrawal rates can increase more dramatically when wealth may be spent down, though this could imply that spending, which is linked to remaining wealth, may decrease by too much as well. When the wealth target is 0%, then the 3-year moving average rule shifts to an extreme in which initial withdrawal rates could be quite high with the caveat that spending will be dramatically reduced later. This is why “n/a” is listed in the table for these cases. With a goal of preserving 50% of the wealth at the end of the time horizon, spending rates are 3.5% with a 15-year check, 2.8% with a 30-year check, and 3% with a 50-year check. If the goal is to preserve 100% of

the initial wealth, spending must be lower, though with a 50-year target the spending rate could be 1.6%.

As for the hybrid rule, which determines subsequent spending as 50% of the previous year’s spending amount adjusted for inflation, and 50% of spending determined using the 3-year moving average for the portfolio value, we can observe spending rates which fall between the previous two rules. Table 5 does reveal that these spending rates are generally closer to the moving average rule than to the inflation-adjusted rule.

Sustaining an income stream from a volatile portfolio is a complicated task that creates a great deal of downside risk as well as upside potential. We cannot know in advance what the specific sequence of returns will be, so sustainable withdrawal rates must inherently be conservative to allow the spending rate to work in the vast majority of cases.

Conclusion

With today's low bond yields, family offices may wish to consider lower spending rates than the general conventional wisdom implies. How low spending may fall, however, does relate to a number of considerations. Three primary considerations herein were the degree of flexibility with regard to future spending, length of the planning horizon, and the amount of wealth to be preserved at the end of the planning horizon. With inflation-adjusted

spending, it would be difficult to suggest spending rates above 2% for family offices in today's low-yield world. However, the flexibility afforded by the moving average spending rule could allow withdrawal rates of about 3% for those willing to take greater risk that the real purchasing power of their assets (and, therefore, future spending as well) may be forced to decline.

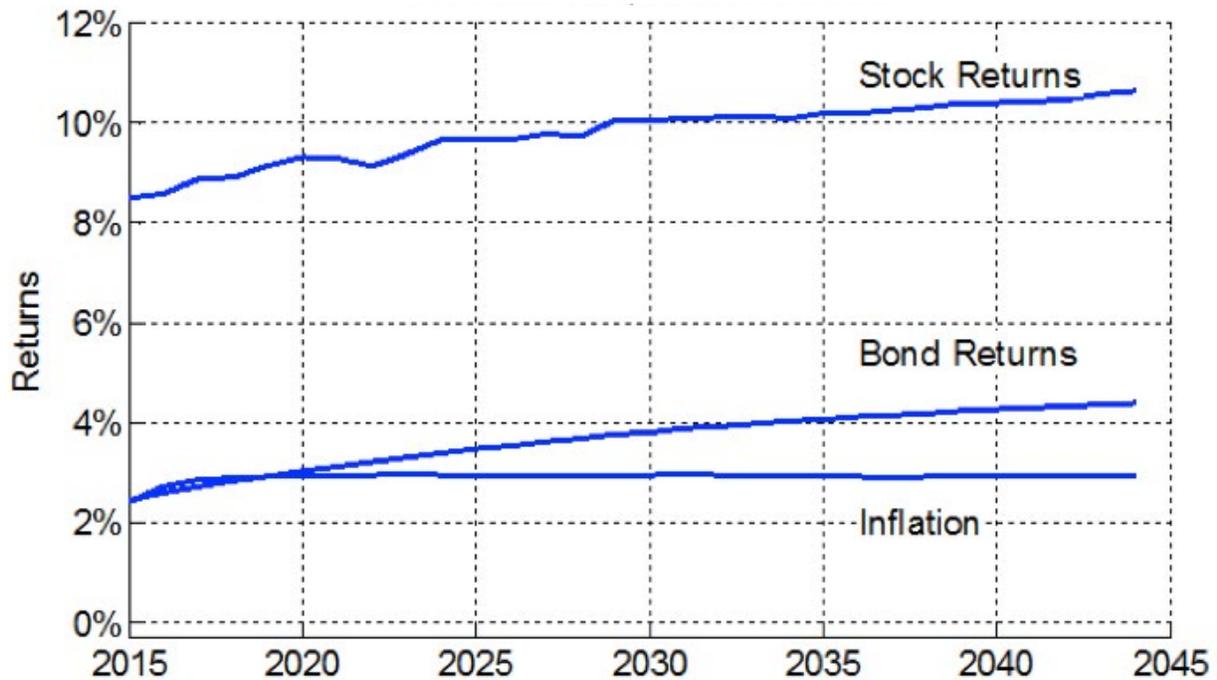
Family Offices may wish to consider lower spending rates than the general conventional wisdom implies.



Appendix

My market expectations connect the historical averages from Robert Shiller's dataset with the current values for inflation and interest rates. This makes allowances for the fact that interest rates and inflation are currently far from their historical averages (which is particularly important for retirees because of sequence risk - early returns matter disproportionately), but it also respects historical averages and does not force returns to remain low for the entire simulation period. Figure A1 shows the median simulated outcomes for this approach.

Figure A1
Medians of Simulated Returns for Inflation, Bonds and Stocks
(based on 100,000 simulations)



ABOUT the AUTHOR

Wade D. Pfau, PhD, CFA



Wade D. Pfau, Ph.D., CFA, is a Professor of Retirement Income at The American College for Financial Services in Bryn Mawr, PA. He also serves as a Principal and Director of Retirement Research for McLean Asset Management, where he helps clients and financial advisors to build comprehensive distribution and investment strategies. He is a past selectee for the InvestmentNews “Power 20” in 2013 and “40 Under 40” in 2014, the Investment Advisor 25 list for 2014, and Financial Planning magazine’s Influencer Awards. He is a two-time winner of the Journal of Financial Planning Montgomery-Warschauer Editor’s Award, a two-time winner of the Academic Thought Leadership Award from the Retirement Income Industry Association, and a best paper award winner in the Retirement category from the Academy of Financial Services. He is also a contributor to the curriculum of the Retirement Income Certified Professional (RICP) designation. He is a co-editor of the Journal of Personal Finance. He has spoken at the national conferences of organizations such as the CFA Institute, FPA, NAPFA, AICPA-PFP, and AFS. He holds a doctorate in economics from Princeton University and publishes frequently in a wide variety of academic and practitioner research journals. He hosts the Retirement Researcher website, and is a monthly columnist for Advisor Perspectives, a RetireMentor for MarketWatch, a contributor to Forbes, and an Expert Panelist for the Wall Street Journal. His research has been discussed in outlets including the print editions of The Economist, New York Times, Wall Street Journal, and Money Magazine.

ABOUT FAMILY OFFICE ASSOCIATION



Family Office Association is a global community of ultra-high net worth families and their single family offices. We are committed to creating value for each family that we serve; value that grows wealth, strengthens legacy, and unites multiple generations by speaking to shared interests and passions. FOA has the resources to solve your most difficult challenges and help you achieve your collective goals: to invest intelligently, give strategically, and learn exponentially.

FOA is the community leader in serving all the key imperatives for ultra-high net worth families, respecting your privacy but enabling an intimate community of global families like yours. Our organization delivers private education and networking opportunities, proprietary research, and access to salient thought leadership that will interest all generations of your family.

Contact Family Office Association

500 West Putnam Ave, Suite 400
Greenwich, CT 06830

Email: angelo@familyofficeassociation.com

Website: www.familyofficeassociation.com

Twitter: @familyoffice

Phone: (203) 570.2898