I
vestment problems are complex and their solutions require thinking that is unlike our emotional responses and sometimes contrary to common sense. Further, financial advisors are hard-pressed to customize for clients who are not exceptionally wealthy to account for age, wealth, saving and spending patterns, a family business or high earnings, family size, charitable interests, and tax situations. Good advice often requires extended, sometimes painful, efforts to educate the client.

A coordinated spending and investment program is like designing a flight-control system for flying an airplane, which is subject to sudden wind gusts and pressure drops and must take off, fly, and land safely and economically. Few financial consultants are expert in the design of feedback control systems, so we get controls such as the 4-percent annual spending rule for retirees, which can be disastrous.

This article describes a tool that can help clients coordinate wealth, saving and spending, and investment policy. It is an extended balance sheet that includes everything we know about their future resources and needs. It can be implemented plainly or with advanced simulation and optimization tools.

The premise is that clients care about meeting future financial commitments and enhanced investment returns. The best way to meet these goals is to maximize the expected growth rate of discretionary wealth. Sometimes we have to first guide clients to change their saving and spending plans to create discretionary wealth, but that is another article. In this article, I couple extended balance sheets with a cousin of conventional mean-variance optimization. The key to its practicality is aggregation of investment securities into just two well-behaved categories that contain neither short positions nor the use of options.

A Simplified Case

The following case is a simplified example that clearly shows the extended balance sheet. Ted and Janet Johnson are wealthy and liquid as the result of the recent sale of Ted Johnson’s business. Their annual after-tax spending rate is about $1 million, which now must be provided by withdrawals from their investments. They have investment assets of $30 million and have not accumulated meaningful tax liabilities on unrealized gains. They wish to invest to maintain their lifestyle for approximately 30 years. They have no children and their noninvestment property is not immediately relevant because it’s part of the lifestyle they intend to protect.

You are their new investment advisor. You begin by constructing a basic extended balance sheet. On the asset side is $30 million. On the liability side is the present value of a $1-million annual payment for 30 years. The time discount rate you will use is your estimate of the long-term tax-exempt interest rate (5 percent) less the expected inflation rate (2.5 percent), which nets 2.5 percent. The formula for the present value of an ordinary annuity is shown below, with estimated values substituted into the expression.

\[
PV = C \times \frac{1 - (1 + i)^{-n}}{i} = \$1 \text{ million} \times \frac{1 - (1.025)^{-30}}{0.025} = \$20.93 \text{ million}
\]

where

- \(PV\) is the present value
- \(C\) is the periodic payment
- \(i\) is the time discounting rate
- \(n\) is the number of periods

The simplest form of the Johnsons’ extended balance sheet is shown in table 1.

The residual amount, $30 million–$20.93 million, or $9.07 million, is akin to owner’s equity or pension fund surplus. Call it discretionary wealth. This is the buffer that protects the Johnson’s lifestyle from the vagaries of investment markets and any unexpected spending needs. You plan to educate the Johnsons about the need to manage their investments as well as their discretionary wealth. They need to track their projected spending against their changing investment portfolio resources and buffer their spending.

<table>
<thead>
<tr>
<th>TABLE 1: SIMPLIFIED EXTENDED BALANCE SHEET</th>
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<tbody>
<tr>
<td>Ted and Janet Johnson</td>
</tr>
<tr>
<td>December 31, 2008 (millions of dollars)</td>
</tr>
<tr>
<td>Assets</td>
</tr>
<tr>
<td>Investment Portfolio</td>
</tr>
<tr>
<td>Implied Assets</td>
</tr>
<tr>
<td>TOTAL</td>
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<tr>
<td>TOTAL</td>
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<tr>
<td>Note: Investment leverage on discretionary wealth</td>
</tr>
</tbody>
</table>

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against market fluctuations and unexpected changes in spending needs.

Realistic Balance Sheet Additions
This case is much simpler than most you face. If the family still were saving for retirement, withdrawals would not begin for some time, and the implied asset would be based on projected savings until retirement. The appropriate time discounting rate would depend on whether we are talking in real or nominal terms. For example, the tax eventually payable on unrealized gains already in the portfolio is in nominal terms, not inflation-adjusted, so the appropriate discount rate for that potential liability would be just the after-tax interest rate without an adjustment for inflation.

Most of the balance sheet’s value comes from showing the impact of a few large categories and their changes through time. But you may find it worthwhile in some cases to elaborate on details of a family’s financial life. For example, you may need to factor in liabilities for gifts and estate taxes. There may be a commitment for a large charitable gift not part of normal annual spending. The asset side may include employer deferred compensation or the liquidated value of a business. Assets in tax-deferred programs such as individual retirement accounts, 401(k)s, and Roth plans may get special treatment. Spending for children’s education can be added to the liability side. As each item is entered, you can show the client its impact on discretionary wealth.

What about uncertain contributions and withdrawals? Multiply a present value by a probability that it will happen. For example, an employee client may have a 10-percent probability each year of losing unvested benefits, leaving a 90-percent chance of collecting benefits that vest in one year, an 81-percent chance for collecting benefits that vest in two years, and so on. Similarly, a planned charitable contribution might be assigned a probability corresponding to the client’s degree of commitment to the gift. Even possible changes in tax treatment can be reflected in this way by assigning probability.

Such probability assignments and amounts are subject to judgment, but they can help crystallize the client’s financial picture in quantitative terms.

Like all financial estimates, your present value extensions to the conventional balance sheet will not fully capture the client’s appropriate response to uncertainty. Generally, uncertainty about expected values properly leads to increased conservatism. But this uncertainty can stimulate saving, limit spending, and help educate the investor about the most appropriate tradeoff between risk and return.

Balance Sheet Leverage
Once Ted and Janet have recovered from their surprise at seeing their focus reduced from $30 million of investments to $9 million of discretionary wealth, they want to make their discretionary wealth grow. Is this possible? Or might you have to tell them that they need to adjust their spending plans before they have enough discretionary wealth to take the investment risks that would result in growth after inflation and taxes?

To answer this question you will need to make some further estimates, and perhaps you will want to include an optimistic and pessimistic case. The following framework can help anchor the analysis.

To communicate perspective about investment policy, you describe two funds: one that might be too risky for the Johnsons and one that would be too safe. The risky fund might be a diversified stock and bond fund with 80-percent stocks and 20-percent tax-exempt bonds. The safe fund might contain a mix of short-term fixed-income securities with practically no risk.

How much should the Johnsons invest in each fund to make their $9 million of discretionary wealth grow at the best sustainable long-term rate? This will be determined by more than the funds’ investment characteristics. It also is a function of the relationship between the size of their investment portfolio and the size of their discretionary wealth, a ratio in this case of 30/9.07, or 3.31. This multiplier, which is essentially leverage, means that a 10-percent return on investments implies 33.1-percent growth in discretionary wealth. This sounds great until you explain that a 10-percent loss means that the Johnsons have lost a third of their protection against lifestyle change.

Because of compounding, any serious erosion of discretionary wealth may take a long time to make up, even if average returns are positive. Note that quantifying the leverage multiplier at 3.31 highlights the need to be a bit conservative. It takes the place of psychological questionnaires; it helps you tell Ted and Janet how much risk they should take.

What if Discretionary Wealth Were Negative?
Sometimes you will need to guide clients about future spending and saving so that their extended balance sheet...
A 35-percent allocation to short-term fixed income sounds too conservative to Ted, but Janet pulls him back to earth by pointing out that they no longer will have Ted’s business-owner compensation.

So the Johnsons’ plan is feasible. (They probably could do better if they reduced their spending a bit, bringing down their leverage to better fit investment opportunities. This may be a subject for future conversation and education.) You warn them that things may go better or worse, and that they need to update this analysis annually and be ready to make changes in either their investment mix or in their planned spending rate.

For example, if stock returns are negative they may need to go to a more-defensive investment allocation. And even though you are wary of any radical attempt at market timing, greater defensiveness also might be called for if your estimates of long-term after-tax return and risk change to reflect
a changed investing environment. In either case, you tell Ted and Janet that if the returns projected on a resulting safer mix could not be expected to keep up with projected inflation, they might need to cut back on projected spending.

On the other hand, it seems more likely now that after a few years, discretionary wealth might grow to the point where reduced leverage on it enables the family to choose between being a little less defensive in their investments or planning for increased charitable giving.

Finally, you indicate that after each calendar quarter you will be sending the Johnsons a chart of their discretionary wealth as it relates to their investment assets. This will reflect investment returns and any reported changes in personal financial plans. Together, you can see whether they are getting ahead or falling behind with respect to their goals.

Reprise
The extended balance sheet can serve as both an educational tool and a means of incorporating relevant information in a cost-effective manner. One of its best uses comes after a period of years when you and the client can look back and evaluate how well spending and investment policy have been coordinated and how well investment policy has been customized to the needs of the client family.

Good investment policy at any point depends on the investor’s life history, economic environment, and goals. Just as importantly, over time it depends on the ability of the advisor and the client to coordinate that investment policy with the client’s changing financial circumstances.

Real skill in market timing and stock picking is rare and hard to identify, but every advisor can add value through balance sheet financial planning.

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Endnotes
1 The discretionary wealth approach to determining investment policy is described in more detail in Jarrod Wilcox, Jeffrey Horvitz, and Dan diBartolomeo, 2006, Investment Management for Taxable Private Investors, Research Foundation of CFA Institute.
2 Variance also is defined as the square of standard deviation, that is, the result of multiplying standard deviation by itself. You can easily experiment with this calculation in a spreadsheet such as Microsoft’s Excel.