

Analyzing Your Financial Health Using Personal Financial Ratios

Investors commonly use stock ratios such as price to earnings, price to book and dividend yield to assess the financial health of a company. The reasons the ratios are so widely used are because they convey a great deal of information in a concise format and allow investors to benchmark a company's financial status.

When it comes to assessing the financial health of individuals, however, there are no comparable ratios that would allow investors to conduct a similar analysis of their personal financial circumstances.

This article establishes a set of personal financial ratios that individuals can use to analyze their financial standing.

A Road Map to Retirement

Just as stock ratios are primarily based on a company's earnings, the personal financial ratios are based on an individual's income.

There are three ratios:

- Savings-to-income,
- Debt-to-income, and
- Savings-rate-to-income.

Benchmarks are then created for each ratio at different ages. For example, the debt-to-income ratio is generally much different at age 30 than it is at age 60, reflecting the fact that individuals move from a situation of high debt and low savings at the beginning of their working careers, to one where they have high savings and no debt at the end of their working careers.

The ratios are designed to serve as a roadmap so you can compare your individual ratios with the benchmarks to determine whether you are on track to retire by age 65.

The theoretical foundation for the ratios is that there is a fundamental relationship between income, debt levels and saving rates. One affects the other, and you need to get your finances in proper balance.

While assumptions about savings rates, debt and income can be addressed in sophisticated planning tools and software, the ratios are unique because they express these relationships in a concise format.

Just as stock ratios do not tell the entire story of a company's finances, personal financial ratios have limitations as well. They are not meant to substitute for individual advice or account for all of the specific variations in people's financial lives. But they can serve as an important guideline, to help you understand how your income, savings and debt are related, and how those ratios must change over time.

Table 1 shows a sample set of personal financial ratios for an individual from age 30 to retirement at age 65. The primary objective of the ratios is to help the person reach age 65 with no debt, and savings worth 12 times their salary.

Why 12 times salary versus, say, 10 or 15 times?

This ratio would put the individual in a position to generate approximately 60% of his or her preretirement income from savings.

For example, a 65-year-old with \$100,000 of preretirement household income would ideally have \$1.2 million in savings. At a hypothetical 5% withdrawal rate, that would produce approximately \$60,000 of income. Add the person's Social Security benefit of approximately \$20,000, and the individual has an income that is 80% of their preretirement income.

Of course, the ratios are based on specific assumptions, including household budgets, percentage of post-retirement income replacement, rates of return and retirement distribution rates, and if you alter these assumptions the ratios change.

But the fundamental purpose of the ratios is to provide a quick financial assessment of the progress an individual is making toward their target retirement date under certain reasonable stated assumptions.

Age	Savings to Income	Debt to Income	Savings Rate to Income
30	0.1	1.7	12%

35	0.9	1.5	12%
40	1.7	1.25	12%
45	3	1	12%
50	4.5	0.75	12%
55	6.5	0.5	12%
60	8.8	0.2	12%
65	12	0	12%

Calculating the Ratios

How do you calculate your ratio?

Here are the definitions I used to determine the ratios:

Savings

Savings include the current value of your investments, such as a 401(k), profit sharing, individual retirement accounts and brokerage accounts, the fair market value of investment real estate and the value of any private business interests.

The home is excluded as an investment (for retirement purposes) because people need a place to live. Moreover, few people downsize in price during their retirement years; consequently the equity in one's home is not generally available for retirement income.

Debt

Debt comprises all debt, including mortgage, student loans, car and consumer debt. The financial obligations under any auto leases also are included as debt.

For example, if you lease a \$25,000 car for three years and the payments are \$350 a month, the lease is a \$12,600 obligation.

Savings Rate

This refers to the percentage of pretax income you are saving each year out of your total income. Savings include any amount contributed to a 401(k), IRA or other investment account, plus the value of any vested employer contribution into your retirement account.

For example, if you contribute 8% of pay to a 401(k) and receive a 4% company match, your savings rate would be 12%.

The savings rate does not include dividends, interest or capital gains on current investment holdings. The gains on investment holdings are incorporated into the account growth assumptions discussed later.

Using the Ratios

You can use the table by looking up your age and the corresponding ratios. For example, if you are 45 years old, you should (under the stated assumptions):

- Have accumulated investments worth three times your annual salary;
- Have debt of no more than one times salary, and
- Be saving 12% of pay.

If you have these ratios at age 45, you would be on track to retire by age 65, assuming you continue to save 12% of pay and achieve a 5% real rate of return on your investments.

Similarly, a 50-year-old ideally should have savings worth 4.5 times current wages, and debt of no more than 0.75 of current wages.

The ratios are based on the total household income, debt and savings rate, which means the ratios can be used by a single head of household or a married couple. In a married household, if only one spouse works, then the age of the working spouse is used for purposes of the benchmarks.

If both spouses work and there is less than a five-year age difference, then a simple averaging of the ages can be used. This is reasonable because both spouses are likely to retire within a few years of each other.

If there is an age difference of more than five years and both spouses work, then each spouse should run their own ratios based on the spouse's age and income and one-half of the total household

savings and debt. Running the ratios separately is helpful when there is a large age difference because one spouse may retire more than five years earlier than the other spouse, which means there is less household income available for savings and debt reduction.

The table begins at age 30 because, before that age, most individuals cannot seriously start saving for retirement. Over the next 35 years, however, the individual must move from having a small amount of savings compared with their income to having a large amount of savings compared with income.

I use a constant savings rate of 12% every year for the entire 35 years. To save at 12% of pay, you need to keep your debt level in check at an early age. Too much debt will reduce your discretionary cash flow and inevitably reduce the savings rate. Although the debt levels here may seem low, these levels have been developed from hypothetical budgets that are designed to provide a family with enough cash flow to save 12%.

If an individual falls behind in the savings rate and does not start to seriously save until age 40 or 45, then the savings percentage must increase dramatically. For example, if an investor saved only 5% of pay from age 30 to 39, they would have a savings to income ratio of 0.8 at age 40. This means the savings rate will need to increase to 18% for every year thereafter to reach a savings-to-income ratio of 12 at age 65. A savings rate of 18% is difficult for all but a few investors. Therefore, it is important for individuals to get their financial ratios in order at a young age, or they may find that they do not have enough time or income to rectify the situation.

If you wait longer to begin accumulating significant savings, then the risk of poor market performance becomes a larger threat to your financial security. For instance, if you wait until age 50 to start aggressively saving and the markets suffer from a decade of poor returns, you will be unlikely to achieve your savings goals. By shortening the time horizon, you are relying on many things going right over that time period, which is dangerous in the financial markets.

A Hypothetical Example

Let's take a look at a hypothetical 45-year-old individual to see how they might use the ratios to assess their financial circumstances. This person has the following financial circumstances:

- Salary: \$110,000
- Mortgage: \$125,000
- Auto Loan: \$25,000
- Investments: \$260,000

- Annual Savings: \$10,000
- Employer 401(k) Match: \$3,000

Based on this situation, the individual has personal financial ratios of:

- Savings to Income: $\$260,000 \div \$110,000 = 2.36$
- Debt to Income: $(\$125,000 + \$25,000) \div \$110,000 = 1.36$
- Savings Rate to Income: $(\$10,000 + \$3,000) \div \$110,000 = 11.8\%$

Comparing these ratios to the **Table 1** benchmarks for a 45-year-old, the individual can quickly see that their savings are low for their age and their debt is too high. Their current savings rate is appropriate, but they will need to save more in the future to make up for their low total savings now. They must also focus on paying down their debt.

How is this information helpful?

Let's assume this individual is considering whether to buy a new home. Many people trade up to a larger home in their mid-40s without critically analyzing their financial status as it relates to their retirement. A mortgage lender would certainly qualify this person for much more debt, which may lead the person to believe that they can afford the bigger home.

But if they were to run the ratios, they might make the decision to dedicate this additional cash flow to their retirement plan and paying down their current debt.

The Assumptions

Several assumptions underlie the ratios, and to the extent your situation varies from the assumptions, you need to adjust the ratios.

Real Returns

First, I assume a 5% real rate of return on an individual's savings. Is 5% a realistic assumption?

Many financial analysts believe that the U.S. and global economies are facing the prospects of lower rates of return for the next decade or two. I also believe there is a high probability that the current markets will experience lower rates of return. If the ratios were simply based on a 10-year time horizon starting today, then I would have to drop the real rate of return to 3.5% or 4.0%. But the table is designed as a savings, debt and investment roadmap for a 35-year cycle, starting at age 30.

Therefore, the question is, for purposes of the 35-year time horizon, is a 5% real rate of return reasonable?

Jeremy Siegel, the noted professor of finance from the Wharton School of the University of Pennsylvania and author of "Stocks for the Long Run" and "The Future for Investors," has calculated the long-term real return for equities since 1821 at 6.5% to 7.0%, a rate that he notes has been remarkably consistent for long-term investment cycles over the 180-year time horizon.

While I believe a 5% assumption is reasonable, the ratios can be modified for higher or lower return figures. A higher return assumption would lower the savings rate and a lower return assumption would increase the required savings rate.

Withdrawals

Second, the ratios assume a 5% portfolio withdrawal rate in retirement; the initial distribution would then be adjusted each year for inflation.

Is this withdrawal rate reasonable?

Today many advisers agree that a 4% distribution rate is appropriate right now.

But if one studies historical market returns and portfolio distribution failure rates, it is clear that distribution rates will vary significantly depending on market conditions. Some cycles can support a 7% rate, and others only a 4% rate. The 5% assumption is reasonable given what we know about historical market trends. The 1999 study by professors Cooley, Hubbard and Walz provides a detailed study of portfolio failure rates for rolling 30-year historical periods between 1926 and 1997. Their research determined that at a 4% inflation-adjusted distribution rate, the portfolio would last for a 30-year retirement cycle between 70% and 86% of the time. Investors will need to address the financial markets as they find them when they retire. For the majority, a 5% distribution is a likely scenario.

If you believe that a 4% real return and a 4% withdrawal rate are more realistic, then the ratios shown in **Table 2** can be used. At a 4% distribution, an investor needs savings equal to 15 times their wages to produce a retirement income stream of 60% of their preretirement level. The increased savings to income ratio, plus the reduced assumption for investment returns, push the savings rate to 19% of pay.

However, I believe these assumptions create ratios that most individuals would find difficult to

achieve. Not only would an individual have to save 19% of pay, they would also have to consider reducing their debt load to accommodate the higher savings rate. While it is possible to experience only a 4% real rate of return and also retire during an economic cycle that would only support a 4% distribution, I think it is less probable than the 5% return, 5% withdrawal assumptions. A 30-year-old today is facing a 60- to 65-year investment cycle, 35 years before retirement and 30 years in retirement. This timeframe is long enough to use assumptions that are closer to our historical norms.

Table 2. Personal Financial Ratios (Reasonable Assumptions)			
(Assumptions: 4% Real Return, 4% Withdrawals)			
Age	Savings to Income	Debt to Income	Savings Rate to Income
30	0.1	1.7	19%
35	1.2	1.5	19%
40	2.5	1.25	19%
45	4.1	1	19%
50	6.1	0.75	19%
55	8.5	0.5	19%
60	11.4	0.2	19%
65	15.0	0	19%

Debt

My third assumption concerns debt levels. The debt ratio at age 30 is based on an analysis of a hypothetical family household and is designed to allow the investor to save at a rate of 12% while still living a typical suburban lifestyle. The debt ratios then decline over time following a typical amortization schedule, since the largest debt is often the mortgage debt. Auto debt is also included in the declining debt ratios.

Some individuals may believe these debt levels are too low and do not reflect the debt that most families are carrying. But the purpose of the ratios is not to illustrate how much debt people are carrying, but to illustrate how much debt they should be carrying. If a family carries a high debt load at age 30, it will be very difficult for that family to save 12% of pay, and if they cannot do that, the required savings rate will increase substantially later in life, which may not be possible to achieve.

Why Not Include Your Home?

Many households would like to include the equity in their homes as part of their total retirement savings. One could argue that including some of the equity is reasonable, but “How much?” is the question.

The only practical way to extract the equity is to move to a less expensive home. That would require retirees to substantially change their lifestyles by moving to a significantly smaller home in the same area, or moving to a less expensive region of the country.

If you want to include a portion of your home equity, you should do so cautiously, with the full understanding of what steps need to be taken to access the equity. You could turn to reverse mortgages, but that should be a last resort. That equity may be needed for long-term care or other unexpected expenses.

Keeping on Track

The personal financial ratios are a useful guideline for individual investors in assessing their personal financial circumstances over time.

While the ratios do not tell a complete story, they simplify complex calculations and help illustrate the fundamental relationship between an individual’s income, savings and debt, and how those relationships should change over time.

The ratios also provide a practical tool for analyzing your personal finances and the progress you are making toward financial independence.

This article was written by Charles J. Farrell for the August 2006 issue of the *AAll Journal*.