



THE BAM ALLIANCE®

INVESTMENT POLICY RESEARCH:

Evaluating Inflation Rate for Specialized Expenses

By Kevin Grogan, CFA, Director of Investment Strategy

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Our Investment Policy Research articles provide an in-depth look at due diligence that has been completed by the BAM Advisor Services investment policy committee (IPC). We hope you find these articles to be educational and that they offer insight into the policies formed by our IPC.

A common question we've received is what inflation rate should be used for more specialized expenses like medical costs and college tuition. Both of these specialized expenses have been rising at a rate faster than the general rate of inflation, so it may make sense to carve out these expenses separately and assign them their own inflation rate.

MEDICAL INFLATION

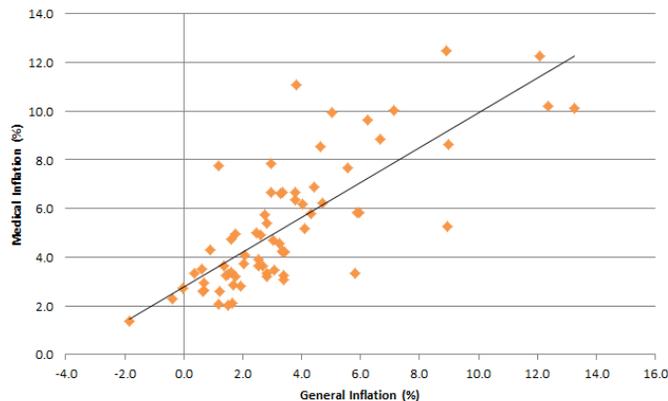
I'll define medical inflation as the Consumer Price Index for All Urban Consumers: Medical Care, obtained from the Federal Reserve Bank of St. Louis Database. Medical inflation has averaged +5.3 percent per year from 1948–2016 versus +3.5 percent per year for general inflation (defined as the Consumer Price Index for All Urban Consumers). The increase in medical costs has been approximately 50 percent higher than general inflation.

Figure 1 shows the relationship between general inflation and medical inflation. I find a relatively strong relationship historically, with an R^2 of 60 percent (meaning that 60 percent of the variation in medical inflation is explained by general inflation). The regression gives the following equation:

$$\text{Medical Inflation} = 2.78 + 0.71 * \text{General Inflation}$$

Our current capital market assumptions assume general inflation will be 2 percent. The forecasted medical inflation using the above formula is 4.2 percent. If you want to break out medical expenses separately, an inflation assumption around 4 percent is reasonable based on the historical relationship.

Figure 1: General Inflation vs. Medical Inflation



It is important to note that medical costs are likely to affect retirees differently. Some retirees will have the majority of their medical expenses covered by Medicare while others will incur significant long-term-care expenses not covered by Medicare.

COLLEGE INFLATION

I'll define college inflation as Consumer Price Index for All Urban Consumers: College Tuition and Fees, obtained from the Bureau of Labor Statistics' website. College inflation has averaged 7.1 percent per year from 1979–2016 versus

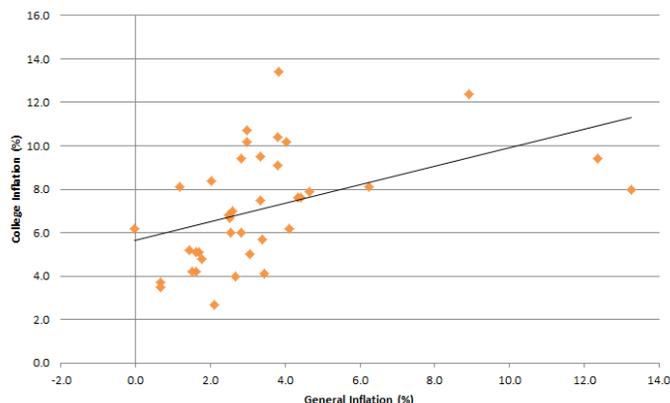
3.4 percent per year for general inflation. The increase in college costs has been more than double general inflation.

Figure 2 shows the relationship between general inflation and college inflation. Unlike the relationship between medical inflation and general inflation, the relationship between college inflation and general inflation is relatively weak. The R^2 is 21 percent (meaning that just 21 percent of the variation in college inflation is explained by general inflation). The regression gives the following equation:

$$\text{College Inflation} = 5.63 + 0.43 * \text{General Inflation}$$

Our current capital market assumptions assume general inflation will be 2 percent. The forecasted college inflation using the above formula is 6.5 percent. However, given the relatively low explanatory power of this regression, I would not recommend using this figure. A better approach for college expenses would be to simply look at the "real return" of college inflation, and add that to our general inflation assumption. The real return over the full period was 3.6 percent per year, while the real return over the past 10 years has been 2.9 percent. A reasonable college inflation assumption would be 3.0 to 3.5 percent greater than general inflation, or in the 5.0 to 5.5 percent range.

Figure 2: General Inflation vs. College Inflation



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