# EDITOR'S CORNER

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Editor

## The Mystery of TIPS

A version of TIPS has been with us for a long, long time—not merely since 1997 but since the dawn of the capital markets.[1] After all, TIPS are not really all that different from stocks. Consider:

What does a well-diversified equity portfolio do for an investor? It provides income that typically grows slightly faster than inflation, thereby providing a real yield roughly indexed to inflation. The return to equities also rises if the dividend yield (proxying for the real cost of capital) falls.

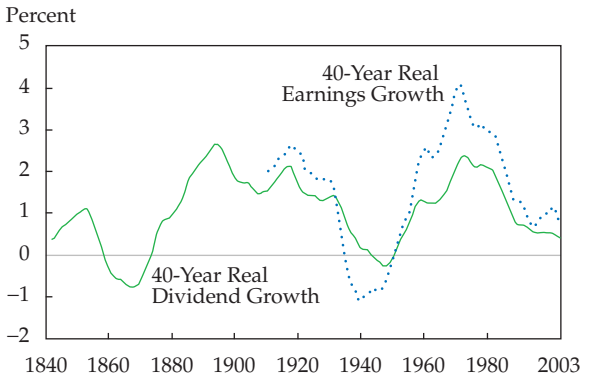
What do TIPS do for an investor? They provide income that rises with inflation and thereby provide a real yield tightly indexed to inflation. The return to TIPS also rises if the government's real cost of capital, the TIPS yield, falls.

The biggest difference between stocks and TIPS is that TIPS have an expiration date and stocks do not. A secondary difference is that stocks provide imperfect inflation tracking. A third difference is that dividends typically rise slightly faster than inflation. In other words, stocks can be seen as inflation-tracking "corporate TIPS consols" with an uncertain growth kicker averaging about 1 percent a year.[2]

## Reliability of the Real Growth of Dividends

How reliable is the index tracking of stock dividends—that is, the "real coupon" that we clip from indexed stock ownership? **Figure 1** shows that best-fit measures (which dampen the effect of market cycles over long, 40-year spans) of dividend growth for U.S. stocks are almost always between 0 and 2 percent. Earnings growth follows a similar path, albeit with a wider range.

**Figure 1. Forty-Year Real Dividend and Earnings Growth, Ending March 2003**
(loglinear best-fit growth rate)




*Note*: The dividend data start in 1802; the earnings data start in 1871.

Where are the sustained 5 percent real earnings growth rates that Wall Street likes to forecast for the broad market averages? The highest ever, 4.1 percent, was in the span from 1931 (in the depths of the Great Depression, a most auspicious starting point for any measure of real earnings growth!) to 1971. What of the much-vaunted "new paradigm" of the late 1990s? It appears as a tiny uptick in 40-year best-fit real earnings growth—to a scant 1.2 percent annual growth rate above inflation; it was never mirrored in dividends, which continued their slow decline to the current 0.4 percent real 40-year growth.

*Editor's note*: In the interests of full disclosure, I should acknowledge that my own personal investments include a significant commitment to TIPS, as do the mutual funds that my firm subadvises for Pacific Investment Management Company (PIMCO).

*The Editor's Corner is a regular feature of the* Financial Analysts Journal.
*It reflects the views of Robert D. Arnott and does not represent the official views of the* FAJ *or AIMR.*

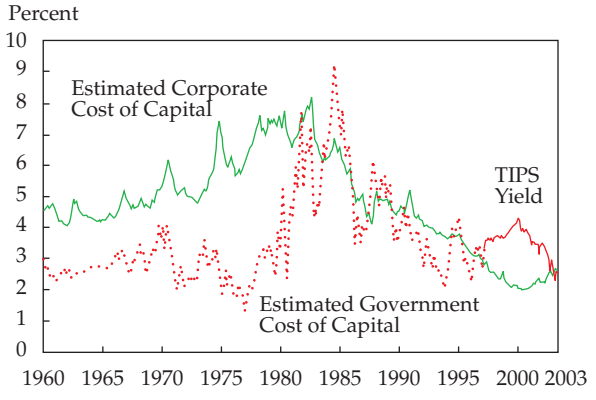
## The Real Cost of Capital

Simplistically stated, stock dividends have (1) a real yield, (2) a default premium for the risk of bankruptcy, and (3) a real growth expectation. For a broad market index, the default risk and the growth expectation combine to deliver a real growth rate of about 1 percent, so the real cost of corporate capital is approximately the dividend yield plus 1 percent. Therefore, the average *real* cost of capital for the broad market averages, when funded through the equity markets, lies about 1 percentage point above the average dividend yield. Surprisingly, corporate bonds are a weaker measure of the real cost of corporate capital than are stock dividends because of the unknowable future rate of inflation.

TIPS clearly define the government's *real* cost of capital. Before the launch of TIPS, we had to infer that cost. For an estimate of the real cost of capital for the government, we used long-term government bond yields minus a model for long-term prospective inflation.[3]

The finance literature suggests that the real cost of capital should reflect expected real productivity growth plus some premium for default risk and/or illiquidity. Because productivity growth closely tracks real per capita GDP growth, this suggestion leads to a real cost of capital for the government (assuming zero default risk, which is not quite true) that approximately matches real per capita GDP growth. This growth has averaged 1.4 percent since World War II. Equities should have a risk premium reflecting both the volatility of equities and the uncertain rate of real earnings or dividend growth. **Figure 2** shows that this picture has been inaccurate: The government's real cost of capital has sharply exceeded 1.4 percent (particularly in the 1980s, when investors factored in a large premium for expected inflation, which failed to materialize). The corporate real cost of capital then swung sharply *below* the government's cost of capital at the peak of the 1998–2000 bubble.

**Figure 2. Corporate and Government Real Cost of Capital, January 1960–March 2003**




The real cost of capital for the government and the real cost of capital in the corporate arena have also been sharply negatively correlated since late 1996, just before the launch of TIPS, as Figure 1 shows and **Table 1** summarizes.

**Table 1. Correlations, February 1997–March 2003**
(*t*-statistics in parentheses)

| Assets | Correlation |
|---|---|
| Stock return and bond return | –0.204[a] |
| | (–1.9) |
| Stock return and TIPS return | –0.217 |
| | (–2.0) |
| Stock yield and TIPS yield | –0.637 |
| | (–9.0) |
| Bond return and TIPS return | +0.597 |
| | (+7.9) |

[a]As compared with a correlation of +0.078 since the end of World War II.

## The Mystery

We have seen that TIPS are more similar to stocks in their mechanism for producing investment returns than they are to bonds. We have corporate bonds and government bonds, which can readily be compared. Analogously, we have corporate stocks and government "stocks," which are called TIPS.

If TIPS should be viewed as, in effect, government-issued equities, why are TIPS negatively correlated with stocks? Stocks are like infinite-maturity TIPS, with some wiggles around the inflation tracking; both are real-return assets that directly measure the real cost of capital. Yet, TIPS have yielded as much as four times the stock yield (the circumstance in early 2000). That difference in yield implies that the government's cost of capital is far higher than the corporate cost of capital.

The only explanation for this mystery is that many in the investment community still think of TIPS as an alternative to conventional bonds rather than as an alternative to stocks. Or, perhaps, they think of TIPS as a different beast entirely!

## Why the Mystery Matters

TIPS and stocks are the two best ways to defease *real* pension liabilities and real spending for endowments and foundations. Remarkably, many in the investment community "studied" (i.e., largely ignored) TIPS in early 2000, when the TIPS yield was as high as 4.3 percent; yet, these practitioners focused their "real asset" exposure on stocks, with a yield of 1.1 percent. For stocks to merely match the performance of TIPS from that starting point, let alone provide a risk premium, we would have needed real dividend and earnings growth of 3.2 percent above inflation, a rate of growth that is without precedent apart from the recovery from the Great Depression.

TIPS yields and stock market yields (plus a 1 percent growth premium) are, in my view, the best measures of the cost of capital for, respectively, the government and the corporate world. A comparison of the two is, because of the remarkable (and largely unnoticed) parallels in the ways the two assets deliver returns to their investors, the best measure of the relative attractiveness of stocks and bonds.

## Notes

1. TIPS stands for Treasury Inflation-Protected Securities and is commonly used, although the formal title has been changed to Treasury Inflation-Indexed Securities.
2. Consols are perpetual bonds without an expiration date.
3. See Robert D. Arnott and Peter L. Bernstein, "What Risk Premium Is 'Normal'?" *Financial Analysts Journal*, vol. 58, no. 2 (March/April 2002):64–85.