

# Inflation hedges: Some work, some don't, some better

By Michael Edgerton

**EVEN IF INVESTORS** had 20-20 foresight to guide them in their selection of investment vehicles, their vision would be clouded by inflation — expected inflation and unexpected inflation.

Thus two researchers have been prompted to investigate the inflation-hedge values of several assets, such as common stocks [widely thought to be an inflation hedge], private residential real estate, government bonds and bills, and labor income.

The researchers are Eugene F. Fama, professor of finance at the University of Chicago Graduate School of Business, and G. William Schwert, assistant professor of finance at the University of Rochester Graduate School of Management. They published their findings in the December, 1977, issue of the *Journal of Financial Economics*.

**IN A NUTSHELL**, the authors find that private residential real estate is a complete hedge against both expected and unexpected inflation, and that U.S. government bonds and bills are a complete hedge against expected inflation. Labor income shows little short-term relation to either expected or unexpected inflation. Common stock returns are negatively related to expected inflation and probably also to the unexpected inflation rate.

The period chosen for the comparison study was 1953 through 1971, with the common stock results extended through 1975. "Pre-1953 stock returns are just not related to either expected or unexpected inflation," Fama says. "In the early 1950s interest rates and expected inflation were very low and returns on common stocks very high. After 1968 you get just the reverse."

Fama and Schwert use a statistical technique called regression analysis to estimate, for example, the relationship between interest rates and common stock returns. If the relationship is close enough, interest rates can't be ruled out as a factor in stock returns. The problem is that interest rates might be proxying for some other influential variable.

**CHANGES IN** interest rates, generally speaking, correspond to changes in the expected inflation rate. That allows Fama and Schwert to use the interest rate on a Treasury bill as a stand-in for the expected inflation rate for the life of the bill.

The basis of inflation-hedge analysis is Irving Fisher's 1930 theory that the nominal interest rate on bonds is the sum of the real interest rate — the purchasing power of interest — and the expected rate of inflation.



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New empirical research shows that some assets are better inflation hedges than others.

"He [Fisher] hypothesized that the expected real return is determined by real factors, like the productivity of capital, investor time preferences, and tastes for risk, and that the expected real return and the expected inflation rate are unrelated," Fama and Schwert write.

**THUS, THE** going interest rate on a one-, three-, or six-month Treasury bill is taken as the expected rate of inflation for that period. The difference between the monthly rate of change in the consumer price index at the end of a month minus the one-month Treasury bill interest rate observed at the beginning of a month is taken as the unexpected rate of inflation.

The interest rate itself includes the expected real return component and the expected inflation component. Earlier work by Fama shows that expected real rates of return on bills are roughly constant over time.

**BASED ON** their statistical tests, the authors confidently assert that common stocks aren't a hedge against expected monthly inflation. However, the average return on common stocks is generally higher than the return on good inflation hedges. That seeming paradox means only that no matter what level stocks are at, little change

in their price is explained by inflation.

Thus the return on the common stock portfolio was 12.3 per cent in the period of January, 1953, through December, 1957, while inflation during that time was 1.3 per cent annually.

But from January, 1968, through July, 1971, inflation was increasing 5.1 per cent annually and the return on common stocks at a 3 per cent annual rate. Through December, 1975, the results were even worse: Inflation was increasing at a 7.1 per cent annual pace, the common stocks return at only 1.6 per cent.

**AS FOR REAL** estate as an inflation hedge, "the nominal return to real estate varies directly with both the expected and unexpected components of the inflation rate," Fama and Schwert say. Historically, though, the housing index has had a smaller average rate of change than the consumer price index.

Measurement of total returns to real estate are difficult to calculate because it is impossible to obtain income and expense flow information about housing. Instead, the measurements are only of capital gain increases.

Treasury bills were found to be a complete hedge against expected inflation. Not surprising-

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on reverse