

[What happens to the expected equity premium, when the common stock P/E ratio reverts toward historical norms?](#)

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What happens to the expected equity premium, when the common stock P/E ratio reverts toward historical norms?

Summary: U.S. equities prices have had a long-term tendency to revert toward their average price to earnings ratio. In the 1980s and 1990s, the PE had increased substantially above the long-term average. Much, but not all, of this reversion occurred in the first five years of the 21st century. Over the long-term history of the U.S. equity securities markets, common stocks have exhibited a "mean reversion" pattern or a tendency for the price earnings ration to move back toward the average. In multi-year cycles, the P/E ratio for the overall market has fluctuated around its long-term average. U.S. equities prices collapsed in the grinding bear market from 2000 through 2002, deflating much of the market bubble. However, at the end of 2002 certain valuation standards indicated that stock prices remained at higher than average historical levels. In particular, the equity price/earnings ratio remained well above its long-term historical average of about 14 to 15. Since then there has been a significant reduction in PE ratios, as corporate earnings have steadily recovered, while equity price growth as been comparatively subdued. Near the end of the bear market that collapsed the dot com equity market bubble, Professor William Reichenstein of Baylor University analyzed the potential impact of PE reversion in his paper, "What Do Past Stock Market Returns Tell Us about the Future?"¹ First, he looked to the scientific investment literature on the equity risk premium to measure the long-term return that one might expect for taking investment risk related to equities. (See: [What have average investment asset class risk premiums been over long periods?](#)) Professor Reichenstein summarized the methods of selected equity risk premium studies and derived a forecast based on the expected earnings growth model for equity returns. With historical data, the earnings growth model can be measured as the earnings yield or the E/P ratio, which is the inverse of the P/E ratio. (See the endnote below.)* Professor Reichenstein analyzed several scenarios to estimate the impact on the future equity premium, if there were to be: 1) no reversion, 2) some reversion, or 3) significant reversion of the P/E ratio back toward historical averages. With the earnings growth model, Professor Reichenstein estimated the expected equity risk premium for the market to be 4.78% in late 2001. This also is the scenario in which no reversion back toward historical norms occurs in the P/E ratio. Prior to the beginning of the 1980s when common stocks began their two-decade price escalation and the market's P/E ratio increased, the long-term historical average P/E had been approximately 14.3. As of November 1, 2001 when Professor Reichenstein's measured the market's P/E ratio for this study, most but not all of the stock market bubble had deflated. The S&P 500 Index was 1060 and the projected twelve-month P/E ratio was 20.9. The inverse of 20.9 is 4.78%, which was also approximately the average forward equity premium estimate from two key studies that Professor Reichenstein cited, which both had used the expected earnings model. In Professor Reichenstein's "middle view" projection scenario of some reversion, he analyzes what the expected equity premium might be, if the P/E ratio gradually reverted toward the historical average of 14.3 over a ten-year period. He assumes that the then current P/E of 20.9 would

gradually shift back to a P/E of 19. This mild reversion would cause the expected equity premium to decline from 4.78% to 3.83%. [Note that 3.83% is not the simple inverse of a P/E of 19, because this 3.83% figure also incorporates the effects of the P/E reversion from 20.9 to 19 over the 10-year period.] In his third projection scenario of significant reversion, which Professor Reichenstein dubbed the "irrational markets" view, he assumed that the equity premium could decline much further and more rapidly over just a five-year period. In this scenario, he assumed that the P/E ratio would completely revert back to the pre-1980s average of 14.3. In this scenario, the equity premium would decline dramatically from 4.78% down to a negative 2.53%. Obviously, a negative expected equity premium means that investors would expect to lose money on risky equities versus holding the risk free security. This explains why he named this the "irrational markets" view. Professor Reichenstein stated in summary that "the evidence from the market-predictability literature best supports the "middle" view. This literature suggests that the equity premium is slowly mean reverting. The equity risk premium will likely slowly increase. After nearly two decades of superlative returns, in early 2000 investors had underestimated stocks' risks. Since then, investors' perceptions of stock market risk have increased, risk tolerances, have fallen, the equity risk premium has risen, and the normal P/E has fallen from the low thirties to 20.9. Furthermore, as the adjustment process continues the normal P/E will decline from today's level, but it will not decline to 14.3." As an update, as of March 31, 2005, you might note that P/E ratios for the S&P 500 had declined significantly over the four-year period since Professor Reichenstein wrote his paper. In fact, the reversion that occurred was closer to Professor Reichenstein's "significant reversion" scenario. * Endnote:

The earnings growth model predicts that the average expected equity return over time will equal the average expected dividend-to-price ratio (or yield) plus the average expected growth rate of earnings. To develop an estimate for the future using historical averages, the dividend yield and the earnings growth rates are combined. The result is the earnings yield or E/P ratio. When you invert the current or longer-term historical P/E ratio, it becomes the E/P ratio or earnings yield. You can think of the total earnings yield as being the percentage of the price that would be paid to you before taxes, if all earnings were distributed as dividends. Of course, companies rarely distribute all their earnings, so some of the earnings yield is reflected in the dividend rate and the rest may be reflected in the common stock price. You should note that the earnings growth model is not a perfect predictor and other factors may influence equities valuation. (See: [What explains the recent common stock equity risk premium?](#))

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2) ibid