

### **Common risks factors in the returns on stocks and bonds**

In the cross-section of average stock returns, there is a relation of market beta, size, E/P, leverage, and BE/ME. Portfolios that mimic risk factors related to size and BE/ME are able to capture strong common variation in returns which can ignore time-series regressions which are in asset-pricing issues. Therefore, size and BE/ME reflect sensitivity to common risk factors in stock returns. The market factor and risk factors related to size and BE/ME can explain the cross-section of average stock return. The common risk factors in stock and bond returns and tests share common risks that capture the cross-section of average returns. There are at least five common factors in returns which are RMO, SMB, HML, TERM, and DEF. In the cross-section of average returns, TERM is a proxy for the deviation of long-term bond returns from expected returns due to interest rates change which are risk factors in bond-market return that capture common variation in bond return. DEF is a proxy for risk factors in stock-market return that capture common variation in stock return. The three stock-market factors construct common variation which link to bond returns through shared variation in two term-structure factors. Indeed, the explanatory returns have minimum variance because of firm-specific factors which represent returns for the common risk factors. In three-factor regressions, slope of a stock portfolio is close to 1, so the size and book-to-market factors can explain the differences in average returns across stocks. Except for low-grade corporate bonds that have nontrivial slopes in the stock-market factors when TERM and DEF are in the bond regressions, the stock-market factors have little role in returns on government and corporate bonds, and the average excess returns and the intercepts in the time-series regressions for bonds are close to 0. The stock and bond markets are linked; however, through two shared term-structure factors. The three common risk factors in stock returns appear to absorb a large spread in average returns produced by E/P portfolios.

Fama and French show that book-to-market equity is related to relative profitability. Growth stocks have low BE/ME due to negative slopes on HML; it implies that high earnings on book equity lead to high stock prices relative to book equity. In contrast, stocks which have low earnings on book equity that result in low stock prices have high BE/ME. The expected TERM and DEF returns change with business conditions. Then the business cycle troughs and negative near peaks, expected value of TERM is positive. Then when business conditions are weak, DEF is high; and default risk is low when business conditions are strong. The common sensitivity of stocks and bonds to TERM and DEF depend on intertemporal variation in expected stock and bond returns.

For application, when they want to guide a portfolio, they can apply the five factors in order to capture the cross-section of average returns and common variation in bond and stock returns. However, only one-factor sharpe-linear model is enough to evaluate the performance and estimate cost of capital, but cannot explain relation between average return and E/P. Then can use only three stock-market factors which can explain the common time-series variation in stock return and the cross-section of average stock returns if want to selecting and evaluating portfolio performance. In addition, residuals from three factor regressions can identify the firm-specific components of returns which impact on stock price; the intercept of three factor regressions is close to 0. Furthermore, acquiring firms are forecast to have high stock prices relative to book value with low loadings on HML that decrease the average stock returns of acquiring firms and produce persistent negative abnormal returns in tests which adjust for market and size factors.