

Beta and Return

This is the paper by Fischer Black where the author states an argument against Fama's statement that the "beta as the sole variable explaining returns on stocks is dead".

First, the author explains the concept of "data mining" by explaining that when a researcher tries to do a study in many ways by using various factors, various period, and various model, the researcher might only choose to report the successful runs that would support his conclusion. The author then proceeds to mention the "size effect" in Fama and French (1992) where they study the small-firm effect and report similar result on largely overlapping data sample as Banz (1981). Since the period of Banz study, they find no size effect at all, yet they claim that size is one of the variables that capture average stocks returns. Moreover, Fama and French did not provide any reason or theory that would explain the 74/size effect on stock returns, the author sees this as a sign that could potentially imply data mining.

In addition, the author also argues the Fama and French on the finding that book value to market value of firm's equity help captures the cross-sectional variation in average return. The author disagrees with Fama and French that the ratio does not capture any priced risk, but it is only the result of data mining as well. The author states think that the past success of this ratio may be due to market inefficiencies than "priced factors".

The author then mentions the beta factor, the factor that seems most likely to be priced, yet the factor that was not discuss by Fama and French at all. The beta factor can be constructed by creating a diversified portfolio that is long in low-beta stocks and short in smaller amounts of high-beta stocks. From this portfolio, the empirical evidence that the beta factor had extra returns is strong than the evidence for small-stock and book-to-market equity factor.

Not only that, but the beta factor also has some theory that supports the effect that it captures. Black (1972) showed that borrowing restrictions might cause low-beta stocks to have higher expected returns than the prediction of CAPM. Borrowing restriction could include margin rules, bankruptcy laws, and tax rules. BJS (1972) also discuss the issue of mismeasurement of the market portfolio in beta pricing. If the research uses a market portfolio that differs randomly from the true market portfolio, the stocks that seem to have low betas will on average have higher betas when the correct market portfolio is used.

Lastly, the author argues that even if you believe that the line relating expected return to beta will continue to be flat or flatter than CAPM suggest, in firm's investment and financing policy, the use of beta will still be important if not even more important than before. If the line is flat for investors, a corporation will increase its stock price whenever it increases the leverage because the firm can increase its leverage without increase the probability of bankruptcy. For corporate investment decision, if corporations have the same psychology as an individual, this means that corporate assets are priced like common stocks. This should also mean that the corporation would want to increase its leverage by investing in low-beta assets to maximize its stock price. Therefore, even if the line is flat, beta is still a crucial tool for making investment decisions.

In conclusion, the author argues that the statement that says "beta as the sole variable explaining returns on stocks is dead" comes from the result of data mining and does not have any theory to support that conclusion. Moreover, even if that statement were true, the use of beta would still be essential as the tool to make investment decision in the world of corporate finance.

The Equity Premium A Puzzle

Historically the average return on equity has been higher than the average return on short-term risk-free debt. For the period 1889-1978, the average real annual yield on S&P500 was seven percent while the average yield on short-term debt was less than one percent.

This paper addresses the question whether the difference in yield between return on equity and return on short-term debt can be accounted for by models that abstract from transactions costs, liquidity constraints, and other frictions absent in the Arrow-Debreu set-up.

The author uses the data from five basic series for the period 1889-1978. First, Series P: Annual average S&P composite stock price index divided by the Consumption Deflator. Second, Series D: Real annual dividends for the S&P series. Third, Series C: Kuznets-Kendrick-USNIA per capita real consumption on non-durables and services. Fourth, Series PC: Consumption deflator series. Lastly, Series RF: Nominal yield on relatively riskless short-term securities over 1889-1978.

Then, the series P and D are used to determine the average annual real return on the S&P 500 Composite Index. Series C is used to determine the process on the growth rate of consumption over the same period. Series RF and PC are used to determine the real return on a relatively riskless security. Lastly, the Risk Premium is calculated as the difference between Real Return on S&P500 and the Real Return on a Riskless security defined earlier. These are the series that the author uses to find the result of this paper.

The author then uses a class of competitive pure exchange economies for which the equilibrium growth rate process on consumption and equilibrium asset returns are stationary. The economies also have the elasticity of substitution for consumption in year t and $t+1$ consistent with the findings in macro, micro, and international economics. Moreover, the economies have the same mean, variance, and serial correlation of the consumption growth rate as the US economy in 1889-1978.

From the pure exchange economies, the results shows that the average real annual yield on equity is maximum of four-tenth of a percent higher than the yield on the short-term debt. This result is different from what can be observe in the real data at six percent. The results are robust to non-stationarities in the means and variances of the economies' growth process.

To explain that result, the author mentions that as the real per capita consumption growing at nearly two percent per year on average, the elasticities of substitution between the consumption in year t and $t+1$ are sufficiently small to yield the six percent average equity premium also yield real rates of return far in excess of those observed. In the case of growing economy, future consumption will probably exceed present consumption and since the marginal utility of future consumption is less, the makes the real interest to be higher on average.

The author concludes the equity premium puzzle may not come from a too high return on equity but rather why is the risk-free rate so low. If one accepts Friend and Blume (1975) that the α significantly exceed one, the risk-free rate will be significantly higher.