



Dividend Tilt Portfolios, The Tax Effect and Misspecified Returns¹

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¹ Originally published in: Heard on the Random Walk, Bache, NYC, August 1979.

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Heard on the Random Walk

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The relationship of dividend yield and stock returns is an issue of ongoing interest for financial theory and investment practice. Some studies, in particular Litzenberger and Ramaswamy (*Journal of Financial Economics*, 1979) have reported that average return has a statistically significant positive linear relationship with beta and dividend yield. The conventional rationale for the dividend yield-return relationship, the tax effect hypothesis, assumes that individual investors attempt to maximize their after-tax return. Since dividend income is taxed at a higher rate than capital gains, investors will require a higher pre-tax return on high dividend yield stocks, all other things being equal.

The tax effect hypothesis, if true, has important implications for portfolio management and has increased interest in and the use of "dividend tilted" or high dividend yield portfolios. Many financial institutions are tax exempt and are indifferent to the form of the returns they receive. Therefore, the tax effect hypothesis implies the existence of positive risk-adjusted returns with little or no increase in the portfolio's total risk. Passively and actively managed dividend tilted portfolios have emerged as important new investment management tools.

There is, however, mounting evidence against the tax effect hypothesis. If the rationale is incorrect, dividend tilting may imply that the fund manager is assuming additional, and poorly understood, systematic risk. Readers of the past three issues of *Quantitative Investment Strategies* (QIS) will recall that there is substantial evidence that the return generating model, which is consistent with the Sharpe-Lintner Capital Asset Pricing Model (CAPM), is misspecified. The Ball hypothesis (QIS, June, 1979) suggests that dividend yield, earnings yield, market capitalization and other "yield surrogates" proxy for

systematic risk factors omitted from the return model. In this view, dividend tilted portfolios have an expectation of positive risk-adjusted returns simply because they are assuming more risk. Further, this risk is unlikely to be measurable using risk measurement techniques designed with CAPM as the underlying theoretical model.

Purely on an a priori basis, the tax effect hypothesis is open to serious reservations. While individuals may rationally prefer capital gains to dividend income on an after-tax return basis, corporations may prefer dividend income and many tax-exempt financial institutions are indifferent. Also, as Lintner has suggested, investors may prefer dividends over capital gains because they are less risky. The tax effect hypothesis implies an imbalance of supply and demand along the dividend yield spectrum. Black and Scholes (*Journal of Financial Economics*, 1974) argue that since corporations have a vested interest in minimizing their cost of capital, they will adjust their payout policies to attract a clientele of investors that most desire its dividend policy. In equilibrium, the spectrum of payout policies will be such that there would be no observable relationship between return and dividend yield. Finally, Blume and Friend (*The Changing Role of the Investor*, Wiley, 1978) report, in a survey of investor attitudes, that investors prefer dividends to capital gains, and that this preference increases with increasing income.

Litzenberger and Ramaswamy's study included further results on the dividend-return relationship in the context of the tax hypothesis. In this issue of QIS, we will examine this data and some related results by Blume (Working Paper 1-79, University of Pennsylvania).

If the tax hypothesis is correct, a "clientele" effect may exist which is associated with a changing marginal tax rate along the dividend yield spectrum. To test this hypothesis, Litzenberger and Ramaswamy included a squared dividend yield term in their (cross-sectional, multiple) regressions. The coefficient was statistically

significant (at the 0.05 level) and negative. These results are consistent with the notion that the marginal tax rate of investors investing in stocks of a given dividend yield decreases as dividend yield increases.

They also examined the possibility that the return model is misspecified in accordance with the Ball hypothesis. If the misspecification hypothesis is correct, monthly cross-sectional regression coefficients for ex-dividend and non ex-dividend months should be similar. Conversely, the tax hypothesis implies that the coefficient for yield in non ex-dividend months should be statistically insignificant. While the dividend coefficient in non ex-dividend months was approximately three times smaller than the ex-dividend month coefficient, it was positive and statistically significant. Their results are consistent with both the Ball hypothesis and a tax effect.

Using quarterly data and a methodology which was similar to that used by Black and Scholes (1974), Blume found a statistically significant return-dividend-beta relationship similar to that found by Litzenberger and Ramaswamy. However, closer analysis revealed that the dividend-return relationship was non-linear in a manner which is inconsistent with the tax effect hypothesis.

Blume found that average quarterly returns on non dividend paying stocks exceeded average quarterly returns on all dividend paying stocks over the period (January 1936 to December 1977). The dividend-return relationship in Blume's data can be described roughly as positive linear for dividend paying stocks and discontinuous with high average return for non-dividend paying stocks. While zero dividend stocks, on a capitalization weighted basis, represent a small part of the market (compare the security valuation histograms for dividend yield on an equal and capitalization weighted basis, pp. 13-14 of this booklet), their returns are nevertheless inconsistent with the tax effect hypothesis.

Further evidence contradicting the tax hypothesis was found by Rolf Banz of the University of Chicago, (personal communication). Litzenberger and Ramaswamy used monthly return data available from CRSP tapes from January 1936 to December 1977. The January 1936 date was chosen because dividends were not taxed prior to that time. Banz replicated the Litzenberger and Ramaswamy study on return data prior to January 1936 with results similar to theirs.

As a digression of perhaps some interest, at least in terms of the evaluation of the security valuation data of this report, we point out that the ex ante dividend-expected return data graphed on page 17 of the booklet is qualitatively consistent with empirical data. In our case, however, the concave dividend-return relationship for dividend paying stocks is primarily attributable to utility stocks.

In summary, a statistically significant relationship appears to exist between dividend yield and average return, which is consistent with the notion that investors maximize after tax return. For tax-exempt financial institutions, dividend tilted portfolios offer an increase in expected returns without a significant increase in risk, if the tax effect hypothesis is correct. On a priori grounds, however, the tax effect rationale is ambiguous. There is, moreover, growing empirical evidence which suggests that the dividend yield-return relationship is not a tax effect but is rather phenomena consistent with the Ball hypothesis of a misspecified return generating process. In the latter case, dividend tilted portfolios may achieve positive risk-adjusted average returns simply because they assume more risk. Under the Ball hypothesis, the nature and magnitude of the omitted risk factors are relevant concerns in the evaluation of dividend tilted portfolio strategies. In a future issue, we will turn to some further results on this subject.

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