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Private investment and public equity returns

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ABSTRACT

Because of external financing costs, private business owners often need to self-finance new investment projects. These self-financing needs create an incentive for business owners to hold financial assets whose payoffs are positively correlated with self-financing needs. If this effect is aggregated, expected returns on financial assets should be negatively correlated with aggregate private investment self-financing needs. To test the cross-sectional asset pricing implications of this conjecture, we use realized noncorporate investment growth and future forecasted noncorporate investment growth as proxies for self-financing needs. We find that our private investment model can explain a good share of the cross-sectional returns of size-, value- and distress-sorted equity portfolios, almost as well as the Fama–French factors. In contrast to the Fama–French model, however, we find the signs on our estimated coefficients to be consistent with our theoretical predictions.

1. Introduction

The effect of the private business sector on the prices of public-traded stocks has received only scant attention in the finance literature. The most notable study is Heaton and Lucas (2000) who find that including aggregate private business profits in Jaganathan and Wang's (1996) labor-enhanced conditional CAPM can help explain the cross-section of size and value portfolio returns. Heaton and Lucas find that stocks which have positive correlation with aggregate private business income trade at a discount, and thus have higher average returns, relative to stocks that have low or negative correlation with aggregate private business income. This is in accordance with their prediction based

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on income-diversification incentives that background income risk commands a positive risk premium. However, when we test a version of the Heaton–Lucas model using an updated time horizon and a different set of test assets which includes distress-sorted portfolios, we find that labor income and proprietary business income are traded at a premium instead of a discount. One of the main purposes of this paper is to propose and test a theoretical framework in which this result can be related to a rational, economic incentive.

Rather than starting from traditional diversification theory, we consider the hedging incentives that financially constrained private business owners face. If private business owners face external financing costs, they will have an incentive to inject money from their personal financial savings into their private business in order to either expand via new investment projects during up-cycles or to prevent inefficient downsizing during down-cycles. The private investment self-financing needs at work here are analogous to the hedging incentives analyzed by Froot, Scharfstein, and Stein (1993) who show that, in the presence of external financing costs, assets whose returns are correlated with investment opportunities make good hedging instruments. The implication of this result, applied to private business owners, is that assets whose returns have high correlation with self-financing needs should face higher demand by private business owners than assets whose returns have low correlation with self-financing needs. In aggregate, this extra demand implies that financial assets whose returns have high correlation with private investment self-financing needs should, all else equal, trade at a premium and thus exhibit lower average returns.

Testing this conjecture would be straightforward if self-financing needs were directly observable. Since this is not the case, we infer self-financing needs using forecasted and realized noncorporate investment growth. These variables are used in order to approximate self-financing needs for, respectively, planned and contemporaneous private investment. We use forecasted noncorporate investment as a proxy for planned investment since there is typically a delay between the preliminary financing stages of investment planning and the actual implementation and reporting of investment projects. Realized noncorporate investment, on the other hand, captures self-financing needs associated with contemporaneously realized investment projects.

For test assets, we use the 25 Fama–French size- and value-sorted portfolios plus 10 distress-sorted portfolios following Campbell, Hilscher, and Szilagyi (2008). Using Fama–Macbeth and generalized method of moment estimation procedures, we find that our model is able to explain the cross-section of expected returns about as good as the Fama–French size and value factors. More importantly, whereas the estimated sign on key risk premium coefficients is puzzling in the Fama–French specification, and other specifications, the sign on our risk premium coefficients is consistent with our private investment explanation. For example, the estimated coefficient for market returns in the Fama–French model using our test assets is significantly negative. This is in accordance with the findings in Campbell et al. (2008) who show that market beta is significantly related to their distress portfolios, but with higher betas corresponding to the more distressed portfolios which have lower average returns. Although this is puzzling from a traditional portfolio-diversification perspective, this is not surprising from the perspective of our private investment approach: positive market returns are an indicator of greater investment opportunities and self-financing needs, and since private business owners have an incentive to hedge these needs, the risk premium on market returns is negative.

We also analyze the effect of time-varying credit conditions. In credit crunch periods, we find statistical evidence of investment-cash flow sensitivity in the noncorporate business sector, consistent with the hypothesis of Fazzari, Hubbard, and Petersen (1988) who argue that invest-cash flow sensitivity is evidence of costly external financing. We also find evidence that suggests self-financing needs are more associated with investment plans during a credit boom, and more associated with contemporaneous investment projects in a credit crunch. That is, in periods where the credit spread is below its mean (a credit boom), we find that expected future noncorporate investment growth has a stronger effect on asset prices than when the credit spread is above its mean (a credit crunch). This is consistent with idea that business conditions and next-quarter investment opportunities are better in a credit boom than in a credit crunch. On the other hand, in periods where the credit spread is above its mean, we find that contemporaneous noncorporate investment growth has a stronger effect on asset prices than when the credit spread is below its mean. This is consistent with the idea that during