

DISSERTATION DEFENSE

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Essays on Earning Management and Leading Indicator Variables

This dissertation consists of two essays. The first essay provides a rational explanation of the mysterious earnings discontinuity phenomenon. It also develops two new empirical predictions which are supported by the empirical results. The second essay identifies conditions under which leading indicator variables discourage long-term investment.

Essay 1: Discontinuity in Earnings Distribution: A Theory and Evidence

This paper presents a rational model of financial reporting in which investors use reported earnings not only to infer true (pre-managed) earnings but also to update their beliefs about the precision (inverse of the variance) of earnings. In the model, over-reporting earnings has two opposing pricing effects. For example, when earnings are positively auto-correlated, inflating a positive (reported) earnings surprise has a positive pricing effect because investors infer higher (pre-managed) earnings for both current and future periods. However, investors also infer a lower earnings precision from the higher earnings surprise, leading to a lower pricing weight placed on the higher surprise. This is the negative pricing effect of over-reporting earnings. For firms whose earnings are strongly positively auto-correlated, the trade-off between the two opposing effects creates a pooled report right above the prior mean of the earnings distribution and a no-reporting "hole" right below the prior mean in equilibrium (i.e., an earnings discontinuity around the prior mean). The pricing function of reported earnings exhibits an overall "S-shape" and a negative slope for medium (positive and negative) earnings surprises. The above theoretical results are consistent with existing empirical findings. What distinguishes the paper are two new empirical predictions: (1) no earnings discontinuity exists for firms whose earnings are negatively or weakly positively auto-correlated, and (2) the earnings discontinuity is

more pronounced for firms with more positively auto-correlated earnings (higher auto-covariance or lower variance). The paper also presents empirical evidence supporting the two predictions.

Essay 2: When Leading Indicator Variables reduce Long-term Investment

One apparent advantage of leading indicator variables is that they encourage long-term investments. In this paper, we show that leading indicator variables sometimes increase and sometimes decrease long-term investments. We study a two-period short-term contracting relationship between a principal and an agent in which the agent takes both a short-term and a long-term (investment) action. At the beginning of the second period, the principal can either retain the existing agent or hire a new agent and incur a nontrivial replacement cost. The short-term action increases the first-period outcome, while the long-term investment decreases the first-period outcome, and only the net effect is observed with noise. The long-term investment also increases the second-period outcome. There is no pure strategy equilibrium but instead a mixed strategy equilibrium in which the agent sometimes takes the long-term investment and the principal sometimes retains the existing agent. So far, the possibility of retention is the only means of encouraging the long-term investment. We then introduce a non-contractible binary leading indicator variable made available to both parties at the end of the first period. If the net return on investment is small and/or the leading indicator variable is highly likely to be high when investment is high, there is a unique equilibrium in which the principal retains the existing agent upon seeing a low realization of the leading indicator variable and randomizes upon seeing a high realization. When the principal observes a high realization of the leading indicator variable, her updated belief about the agent's probability of investment (which is higher than the agent's ex ante/equilibrium probability of investment) is the same as the agent's equilibrium probability of investment under the no-leading-indicator scenario. Hence, in this case, the agent's ex ante expected investment is lowered by the presence of the leading indicator variable. The effect of the smaller expected investment dominates other factors, and the principal is worse off with the leading indicator than without it. We also identify conditions under which the leading indicator variable leads to more investment and the principal is better off.