

# The timing of industry and firm earnings information in security prices: A re-evaluation

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## Abstract

This paper re-evaluates evidence in Ayers and Freeman [Ayers, F., Freeman, R., 1997. Market assessment of industry and firm earnings information. *Journal of Accounting and Economics* 24, 205–218] suggesting that investors anticipate industry-wide components of earnings earlier than firm-specific components, and that post-earnings-announcement drift following annual earnings announcements is due primarily to firm-specific components of earnings. Our tests indicate that post-announcement drift is entirely attributable to coefficient bias due to measurement errors in the use of realized earnings changes as proxies for unexpected earnings. Also, coefficient differences in the market's anticipation of subsequent-year industry and firm-specific earnings become insignificant when we introduce suitable controls for non-linearity in the return/earnings relation.

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## 1. Purpose and motivation

The breakdown of security returns into macro-economic, industry and firm-specific components has been a recurrent issue in studies of the timing of the dissemination of valuation-relevant information in financial markets (Roll, 1988; Morck et al., 2000; Bhojraj et al., 2003). Recently, similar disaggregations of reported earnings changes have been employed in accounting research that addresses the timing of the security price effects of earnings information (Ayers and Freeman, 1997, 2000, 2003; Piotroski and Roulstone, 2004). Generally, these accounting inquiries evaluate the premise that investors anticipate aggregate (market-wide and/or industry) earnings components earlier than firm-specific earnings components. In addition, the more aggregate market-wide and industry components of earnings innovations are expected to be more persistent, and consequently to have larger capitalization factors than firm-specific components.

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Ayers and Freeman (1997), hereafter AF (1997), evaluate whether security prices anticipate industry earnings components earlier than firm-specific earnings components, based on two main hypotheses. First, AF (1997) propose that, if security prices exhibit a delayed response to earnings announcements, the resulting post-announcement drift in returns will be more significant for firm-specific earnings components than for industry earnings components. This expectation reflects the intuition that industry-level information is widely available from a variety of public sources, and its valuation implications are readily recognized and quickly impounded in security prices. In contrast, firm-specific information is assumed to be less timely, and its valuation implications less transparent, and thus is more likely to be reflected in security prices with a delay. Second, AF (1997) propose that the extent to which investors anticipate the earnings of the subsequent period will differ for the industry and firm components of earnings. Specifically, lead earnings response coefficients (the slope coefficients from regressions of current-year returns on subsequent-year earnings changes), which indicate investors' anticipation of future earnings, will be larger (smaller) for industry (firm-specific) components of earnings.

AF (1997) provide empirical results, based upon returns–earnings regressions of current year security returns on lagged, current and subsequent-year industry and firm earnings components, that strongly support both hypotheses. Current-year security returns are significantly positively associated with the prior year's firm-specific earnings changes. In contrast, current year security returns exhibit no significant relation to the prior-year's industry earnings changes. In other words, investors appear to have fully reflected the industry component of annual earnings changes in returns by the earnings announcement date, but appear to have a delayed reaction to the firm-specific component of earnings changes. In addition, the estimated slope (earnings response) coefficients relating current year security returns to the subsequent year's earnings change components show that the industry component has a significantly higher coefficient than does the firm-specific component. This relation is interpreted in AF (1997) as further corroboration that investors anticipate the industry component of the subsequent year's earnings changes earlier than the firm-specific component.

This paper re-evaluates the evidence in AF (1997) of differential timing of industry and firm components of earnings changes in security prices. Two related attributes of the evidence in AF (1997) motivate this re-evaluation. First, the specification of the returns–earnings relation in AF (1997) employs realized changes as proxies for unexpected innovations in the earnings components. The extant literature, however, documents a negative serial dependency between successive earnings changes (Abarbanell and Bernard, 1992; Elgers and Lo, 1994; Fama and French, 2000). To the extent that investors' earnings expectations impound these serial dependencies, there is measurement error in the earnings change variable as a proxy for unexpected earnings. Moreover, earnings changes in a given year are correlated with the measurement error in the subsequent year, in a manner that biases the regression estimates in a direction supporting the premise that security returns exhibit a delayed market reaction to earnings changes. Further, because these serial dependencies are more (less) pronounced for the firm-specific (industry) components of earnings changes, the coefficient bias is more severe for the firm-specific components. The greater relative bias in the measurement of the firm-specific components potentially provides spurious support for the hypothesis that post-announcement drift is attributable primarily (or entirely) to the firm-specific component of unexpected earnings.

A second factor motivating our re-evaluation of the AF (1997) findings is the non-linear relation of earnings surprises to abnormal security returns (Freeman and Tse, 1992). This non-linearity implies that a linear specification of the returns–earnings relation imparts a downward bias to estimated earnings response coefficients. The extent of the downward bias varies directly with the variance of the unexpected earnings measure. We expect the industry components of earnings changes to have substantially lower cross-sectional variances than do the firm-specific changes, because industry components are measured as average earnings changes for multiple firms. Consequently, the expected downward bias in the coefficient estimate is greater for the firm-specific component of earnings changes, and for this reason we expect to find a higher coefficient for the industry component of subsequent earnings changes. The higher coefficient, however, is not interpretable as evidence that industry components of subsequent earnings changes are impounded earlier than are firm-specific components. AF (1997) recognize this potential bias and attempt to control for the non-linear response function by imposing a common truncation rule on both industry and firm components. Such an approach, however, is unlikely to equate the variances of the earnings components in this setting, and a larger variance for the firm component continues to bias the tests against the null hypothesis of coefficient equality.

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