
Earnings, Earnings Growth and Value

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Abstract

A recent paper by Ohlson and Juettner-Nauroth (2005) develops a model in which a firm's expected earnings and their growth determine its value. At least on its surface, the model appeals because it embeds the core principle used in investment practice and, further, generalizes the Constant Growth model (Gordon and Williams) without restricting the firm's dividend policy. This text reviews the valuation model and its properties. It also extends previous results by analyzing a number of issues not adequately covered in the original paper. These topics include the precise nature of dividend policy irrelevancy, how the model relates to other well-known valuation models, the role of accounting principles, and how it can be developed on the basis of an underlying information dynamics. A central result shows why the model should be accorded "benchmark" status.

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Introduction

Equity valuation in practice relies on an easy-to-state principle: As a first-cut, the price to forward-earnings ratio should relate positively to the subsequent growth in expected earnings. The claim is readily appreciated if one simply reviews financial media, such as Barron's, or summaries of financial analysts' reports. Still, in spite of the principle's centrality in investment practice, textbooks of equity valuation often allocate most of their space to what appears to be competing valuation methodologies, namely, the Free Cash Flows model and the Residual Income Valuation (RIV) model. But textbooks do leave some space for the first-cut investment practice principle. In deference to the apparent need for a model that embodies the first-cut investment principle they provide the so-called Constant Growth model (often attributed to Gordon or Williams), which assumes, of course, a constant dividend to earnings payout ratio and a constant growth for the two variables. The setup guarantees, in a crude way, that the growth in expected earnings relates positively to the price to forward-earnings ratio. However, the model's earnings-construct fails the smell-test because it introduces earnings via an arbitrary rescaling of dividends. Such a model runs at

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stark cross-purposes with the Miller and Modigliani concept of dividend policy irrelevancy, not to speak of empirical realities. Due to these limitations, a more appealing model could potentially be beneficial to investment practice and research. “Is there a better way to model earnings and dividends that captures the principle of equity valuation?” becomes the obvious question.

A recent paper by Ohlson and Juettner-Nauroth (2005) develops a model of earnings and dividends leading up to the core principle that growth in earnings explains the price to forward-earnings ratio. We will refer to this model as the OJ model. The OJ model takes into account two growth measures of earnings – the near term and the long term – to explain the price to forward-earnings ratio. Further, the model allows for a broad set of dividend policies: The model does not rely on a dividend payout parameter, and it permits, for example, zero expected dividends for any number of future periods. The paper shows that the Constant Growth model obtains as a special case. On the surface at least, the OJ model would seem to be a worthwhile generalization of the Constant Growth model.

This paper revisits the OJ model. We start from basics and derive the valuation formula which shows how value depends on earnings and their growth. An extensive examination of the formula’s properties follows. The remainder of the work addresses the many subtle issues which the original paper either treats too crudely, incompletely, or not at all. Each of the topics enhances an understanding of how the model deals with various aspects of accounting and economics. We also provide a message that concerns the uniqueness of the model. Broadly speaking, we will argue that no model other than the OJ model can parsimoniously explain the price to forward-earnings ratio in terms of growth in earnings (given that value also equals the present value of expected dividends). Thus the OJ model extends the model of value that disregards the issue of growth, i.e., the so-called “permanent earnings” model in which next period’s expected earnings capitalized, by itself, determines value. In other words, the analysis here speaks to the question: “How do we move from a model of next-period earnings capitalization to a simple model that admits growth in earnings without putting a burden on the dividend policy?”

Among the topics not (adequately) covered by the original paper which we develop here are the following: dividend policy irrelevancy (DPI) and its central role in the model; properties of the primitive variable “ x_t ” and reasons why it makes sense to label it earnings; how one extends the model to incorporate an underlying information dynamic in the spirit of Ohlson (1995); accounting rules and their influence on the model; the ways in which the model can be extended to reflect operating vs. financial activities much like Feltham and Ohlson (1995).

Aside from the original OJ paper, and its companion Ohlson (2005), the analysis draws on Christensen and Feltham (2003), Fairfield (1994), Feltham and Ohlson (1995), Ohlson (1995, 1999a, 1999b, 2005), Ohlson et al. (2006), Ohlson and Zhang (1999), Olsson (2005), Ozair (2003), Penman (2005, 2006), Ryan (1986), Sougiannis and Yaekura (2001), and Yee (2005, 2006).

Finally, we should note here that this paper will not discuss many empirical papers that have looked at, or used, the OJ model and similar valuation formulas (e.g., Botosan and Plumlee, 2005, Begley and Feltham, 2002, Cheng, 2005, Cheng et al., 2006, Daske, 2006, Easton, 2004, Easton, 2006, Easton and Monahan, 2005, Easton et al., 2002, Francis et al., 2004, Gebhardt et al., 2001, Gode and Mohanram, 2003, Hutton, 2000, Ohlson, 2001, Thomas and Zhang, 2006). Our sole interest pertains to the conceptual underpinnings and implications of the model. These aspects, we believe, are of sufficient interest although there will always be numerous questions related to how the model holds up in empirical and practical applications.

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