

USING A VALUE PREDICTION APPROACH TO ASSESS VALUE RELEVANCE OF EVA-BASED VERSUS GAAP-BASED ACCOUNTING INFORMATION

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ABSTRACT

Stern Stewart & Company (SS) has advocated a measure of residual income, trademarked as EVA (economic value added)¹, for firm valuation. SS claims that “EVA stands well out from the crowd as the single best measure of wealth creation on a contemporaneous basis” [5, p.75].² The potential superiority of EVA for firm valuation comes from two aspects: 1) it applies the residual income (RI) valuation model, where RI focuses on earnings performance after capital charges or normal earnings are compensated for, and 2) it adjusts the accounting numbers based on Generally Accepted Accounting Principle (GAAP) to less biased measures of invested capital (i.e. book value, BV) and RI. While the RI valuation model can be applied to both EVA and GAAP accounting numbers, it is the second aspect that distinguishes EVA from other residual income measures. Viewing EVA and GAAP as two distinct accounting systems, this paper applies RI valuation models to both systems and investigates how effective the SS adjustments improve GAAP accounting numbers for firm valuation.

This study examines the superiority of EVA-based numbers versus GAAP-based numbers by evaluating the ability of the two systems in firm value prediction. Many recent

¹ While EVA is trademarked, EVA is abbreviated for EVA®.

² Stewart III, G.B. 1994. EVA: fact or fantasy? Journal of Applied Corporate Finance 7: 71-84.

papers [1] [2] [3] have applied Ohlson's residual income model [4] to estimate firm value. A general form of residual income valuation models can be expressed as Value (V) = Book Value (BV) + Present Value of Residual Income (RI). Assuming RI follows an autoregressive process, the valuation model can be stated as $V = BV + \alpha RI$ where α is affected by cost of capital and the autoregressive parameter of the RI series [1] [3]. In the same spirit, this paper applies the residual income valuation method to compare the valuation accuracy of EVA system and GAAP system in predicting value. However, instead of incorporating calculated RI's autoregressive parameters based on observed RI time series to estimate firm value as in [1] [3], similar to [2] we focus on predetermined parsimonious residual income valuation models. "Predetermined" means that the parameters in the valuation models are prefixed without relying on the empirical behavior of data. That is, we simply vary α in the residual income valuation model to compute predicted firm value for each system. Using the parsimonious models, we then contrast the valuation accuracy between EVA system and GAAP system by varying assumptions on current RI persistence period ranging from 0, 1, 2, ... to infinity.

We find that EVA-based numbers is superior to GAAP-based numbers in predicting firm value for more than 70% of the studied sample. However, the results by no means suggest that the former be more value relevant (i.e. have a higher association with market value) than the later. Hence, we conduct a value relevance analysis by regressing market value on book value and residual income for both systems. Similar to previous research, we find that on average EVA-based book value and residual income measures are less value relevant than those of GAAP. We further group the sample into EVA-Superior vs. EVA-Inferior sub-samples based on the valuation accuracy resulted from previous value prediction models. The results show that the inferiority of value relevance in EVA system is due to a small number of observations that belong to the EVA-Inferior group, firms that have worse value prediction under the EVA system than under the GAAP system. A further investigation reveals that firms in the EVA-Inferior group are relatively smaller and riskier than those in the EVA-Superior group.

REFERENCE

- [1] Dechow, P., A. Hutton, and R. Sloan., "An Empirical Analysis of The Residual Income Valuation Model" **Journal of Accounting and Economics** (January 1999), pp. 1-34.
- [2] Frankel, R. and C. M. C. Lee., "Accounting Valuation, Market Expectation, and Cross-Sectional Stock Returns" **Journal of Accounting & Economics** (June 1999), pp. 283-319.
- [3] Myers, J., "Implementing Residual Income Valuation with Linear Information Dynamics" **The Accounting Review** (January 1999), pp. 1-28.
- [4] Ohlson, J.A., 1995. "Earnings, Book Values, and Dividends in Equity Valuation" **Contemporary Accounting Research** (Spring 1995), pp. 611-687.
- [5] Stewart III, G.B., "EVA: Fact Or Fantasy?" **Journal of Applied Corporate Finance** (1994), pp. 71-84.