Beyond accounting and back: An empirical examination of the relative relevance of earnings and "other" information

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ABSTRACT

Ohlson (1995) models firm value as a function of book value, earnings, and analysts' earnings forecasts which capture "other" information not yet reflected in the financial statements. Within this framework, stock returns reflect information from earnings and forecasts, each of which is different in terms of reliability and timeliness. For the period 1984–2012, this paper examines time trends and the influence of aggregate market conditions on the relative relevance of earnings and forecasts. In this context, relative relevance is defined as the incremental explanatory power of earnings or forecasts, relative to their combined explanatory power with respect to the cross-section of stock returns. This inquiry is motivated by anecdotal evidence and recent research, which suggests that aggregate market conditions influence the usefulness of accounting information for investors. The findings show that while the relative relevance of earnings has remained stable, the relative relevance of forecasts has increased over time. I also find that the relative relevance of earnings is higher in bad years, i.e. years with low market returns or elevated market uncertainty. Overall, the results reported in this study suggest that despite the increase in the relevance of timely "other" information, investors tend to rely more on reliable accounting information during bad years.

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1. Introduction

Ohlson (1995) models firm value as a function of reported earnings and analysts' forecasts of earnings which capture "other" information. Within this framework, value relevant information comes from two identifiable sources—earnings and forecasts of earnings—each of which is different in terms of reliability and timeliness. Accounting earnings are a direct result of the accounting system in which transaction data are analyzed, condensed, aggregated, and refined into audited and therefore more reliable information (Cascino et al., 2013; Elliott, 1995). In contrast, analysts' forecasts are not a direct product of this financial reporting system and therefore not subject to the same thresholds in terms of reliability and verifiability. These forecasts are the result of financial analysts' efforts to gather, process, and interpret any type of useful information that is deemed value relevant.

This paper investigates systematic changes in the relative relevance of earnings information, as measured by earnings levels and earnings changes, and the relative relevance of other information, which is measured by changes in analysts' forecasts, over the 1984 to 2012 sample period. Relative relevance is operationalized in the following two ways. The first metric of relative relevance (rR^2) is defined as the incremental explanatory power of earnings (or forecasts) scaled by

the combined explanatory power of earnings and forecasts with respect to the cross-section of annual stock returns. As a result, this measure of relative relevance is different from commonly used measures of value relevance because it measures relevance relative to a clearly defined information set (i.e. earnings and forecasts) rather than relative to all information captured in stock returns.[1] The second metric of relative relevance (rH) is defined as the incremental hedge portfolio return that could be earned with perfect foreknowledge of earnings (or forecasts), scaled by the hedge portfolio return that could be earned with perfect foreknowledge of both earnings and forecasts.[2]

Prior literature shows that the value relevance of accounting information has declined over time (e.g. Brown, Lo, & Lys, 1999; Core, Guay, & Buskirk, 2003; Lev & Zarowin, 1999; Ryan & Zarowin, 2003). Although many of these studies use Ohlson (1995) as their valuation framework, this literature mostly ignores other information in the empirical tests. Hence, there is scarce evidence about any temporal trends in the value relevance of forecasts. Given that firm value is a function of earnings and forecasts, and in light of the documented

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[1] Stock returns reflect trading activity based on information and noise (e.g. see Lee, 2001; Aboody et al., 2002; Dontoh et al., 2004; Kim & Kross, 2005; Dontoh et al., 2007; Fung et al., 2010).

[2] These hedge portfolio return measures of relative relevance are similar in spirit to the RATIO2 metric used by Francis and Schipper (1999, p. 331) and the Perfect Foresight Returns used by Balachandran and Mohanram (2011).

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decline in the value relevance of earnings, the natural question emerges as to whether forecasts have become relatively more relevant to investors. Using two different approaches to measure relative relevance, this paper examines the relative relevance of earnings and forecasts over time. I find that the relative relevance of forecasts has increased significantly over the 1984 through 2012 period.

Anecdotal evidence suggests that overall market conditions influence the extent to which investors rely on accounting information. For instance, in his book The Number, New York Times investigative journalist Alex Berenson claims that investors examine financial statements much less closely when stocks are rising (Berenson, 2004, p. 70). Pastor and Veronesi (2009) provide a simple learning model in which signals with lower signal uncertainty (i.e. higher precision) are more useful to investors. Consistent with this model, Loh and Stulz (2014) predict and find that analysts' forecasts are more useful to investors if market uncertainty is high. However, Loh and Stulz (2014) do not include an accounting signal in their model. Since the accounting signal (i.e. earnings) is more precise than the signal issued by analysts (i.e. forecasts), one would expect earnings to be relatively more relevant than forecasts in bad years, i.e. years with unfavorable aggregate market conditions, such as elevated market uncertainty or low market performance. Consistent with this prediction, I find that the relative relevance of earnings (forecasts) is higher (lower) during bad years.

Robustness checks confirm that the reported results are not sensitive to the increase in the frequency of loss observations and changes in terms of the industry composition of the cross-sectional samples used in this study. This study makes several contributions to the literature on the value relevance of earnings and forecasts. First, this study shows empirically that forecasts are highly value relevant and that the relative relevance of forecasts has increased over time. This finding answers Hand's (2001) call for research on the extent to which other information is actually relevant to investors.[3] Furthermore, this result adds to the large body of literature that has documented the declining value relevance of financial statement information (e.g. Brown et al., 1999; Core et al., 2003; Lev & Zarowin, 1999; Ryan & Zarowin, 2003).

Second, this study fills a gap in the literature and answers a recent call for research by investigating two factors that influence investors' use of earnings and forecasts. Based on a recent literature review, Cascino et al. (2014) call for further research on the factors that influence the use of various information sources by investors.[4]

Third, Pastor and Veronesi (2009) show analytically that both a signal's precision and overall market uncertainty affect that signal's usefulness to investors. Based on this theoretical framework, this study shows empirically that investors rely more heavily on accounting earnings during bad times. This suggests that despite the temporal increase in the relevance of forecasts, investors still tend to rely more heavily on audited accounting information during times of elevated uncertainty.

2. Background and hypothesis development

2.1. Two information sources: earnings and forecasts

Reported earnings are a product of the accounting system in which transaction data are analyzed, condensed, aggregated, and refined into audited and therefore more reliable information (Cascino et al., 2013; Elliott, 1995). More specifically, earnings primarily summarize: 1) the effects of sales transactions that almost certainly will generate cash or already have generated cash (e.g. accounts receivables); 2) the effects of activities from prior periods (e.g. depreciation); and 3) cash

expenditures for investments with uncertain future benefits (e.g. R&D expense) (Kothari & Sloan, 1992). In contrast, analysts' forecasts are not a direct product of the financial reporting system and therefore not subject to the same thresholds in terms of reliability and verifiability. Financial analysts have access to a multitude of information sources aside from financial statements. Information captured by these alternative sources of information is relatively more timely, relatively less reliable, and subject to higher uncertainty than information reported in financial statements (Hail, 2013, p. 333). Hence, forecasts are the result of financial analysts' efforts to gather, process, and interpret any type of useful information that is deemed relevant for future earnings and firm value (Lambert, Matolcsy, & Wyatt, 2009). Relative to forecasts, reported earnings have a limited ability to capture relevant information about future earnings in a timely manner (i.e. contemporaneously with stock returns).

Since audited financial statements and analysts' forecasts are at least partial complements, evaluating their relevance separately is likely to understate the value relevance of accounting information. This is because an investigation of the value relevance of accounting information in isolation, without including other information, overlooks the important confirmatory and disciplining effects of financial reporting on other more timely information sources such as analysts' forecasts (Ball et al., 2012, p. 164).

In semi-strong efficient stock markets, asset prices reflect all relevant information that is publicly available about the intrinsic value of the asset (Fama, 1970). Ohlson (1995) models firm value as a function of reported accounting information and other information which is summarized by analysts' earnings forecasts but not yet captured by the financial reporting system. Within this framework, value relevant information comes from two identifiable sources—earnings and forecasts of earnings—each of which differ in terms of reliability and timeliness. Consistent with this framework, annual stock returns (i.e. change in stock price) reflect revisions in the market's expectation of future earnings (i.e. forecasts) as well as reported earnings over the return period (Easterday, Sen, & Stephan, 2011; Kothari & Sloan, 1992).

2.2. Has the relative relevance of forecasts increased?

A vast body of literature has examined the value relevance of accounting data (for a review see Holthausen & Watts, 2001 and Barth, Beaver, & Landsman, 2001). The question of whether earnings have lost their relevance has been of intense interest to academics and standard setters. One stream of this literature investigates intertemporal trends in the relevance of accounting data, measured as the explanatory power (R^2) from annual cross-sectional regressions of stock returns (or prices) against accounting variables. The accumulated evidence suggests that the relevance of accounting information has declined over previous decades.

There are several possible explanations for this decline in the value relevance of earnings. First, historical cost financial statements could have become inadequate and less relevant to investors due to the increased importance of knowledge-intensive intangible assets (e.g. Collins, Maydew, & Weiss, 1997; Elliott, 1995; Lev & Gu, 2016). Second, the accounting system could have become unable to keep up with the increasing rate of change in the business environment (e.g. Lev & Zarowin, 1999). Third, the value relevance of accounting information could have declined in light of the increasing availability of more timely alternative information which preempts reported accounting numbers (e.g. Francis and Schipper, 1999, p. 324). Fourth, accounting measurement has become more reliant on fair values over historical cost when measuring assets and liabilities (Barth, 2007; Hail, 2013; Laux, 2012; Laux & Leuz, 2009). Consequently, poorer matching of revenues and expenses yields more volatile and less persistent earnings (Dichev and Tang, 2008, p. 1426).

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[3] To what extent is "other information" (ν_t) actually relevant? "When, where, how, and why?" (Hand, 2001, p. 125).

[4] "In some important areas, the academic literature yields few insights. Examples include the factors that influence the use of various information sources and the impact of different institutional and national environments." (Cascino et al., 2014, p. 7).